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## Pain in the Pandemic: Ethical Approaches During COVID-19

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The novel coronavirus (COVID-19) has threatened world health. The morbid complications of COVID-19 include but are not limited to acute respiratory distress syndrome (ARDS), shock, arrhythmia, cardiac dysfunction, and secondary infections. Health care delivery for patients with COVID-19 infection is challenged by the virus's high rate of transmission and resource limitations. Precautions during the COVID-19 outbreak have strained the US health care system in unique ways, such as rationing of personal protective equipment (PPE), personnel safety, and widespread cancellation of elective health care services [1]. The US Centers for Disease Control and Prevention (CDC) recommended developing individual practice triaging systems stratified by care urgency for ambulatory providers [2].

Interventional pain management represents an important pillar of care for many pain conditions. However, pain interventions have traditionally been considered elective, with few exceptions. In late March 2020, the American Society of Regional Anesthesia and Pain Medicine (ASRA) and European Society of Regional Anesthesia and Pain Therapy (ESRA) released a joint advisory for the practice of chronic pain management during the COVID-19 “shelter in place” ordinance [3]. This advisory stated that “semi-urgent” scenarios that merit in-clinic procedures include intractable cancer pain, acute herpes zoster, intractable post-herpetic neuralgia, acute herniated disc with lumbar radiculopathy, complex regional pain syndrome (CPRS), acute cluster and/or intractable headache, and case-by-case medically refractory intractable pain. Yet, some state governments undermine the nuances of these “semi-urgent” scenarios with executive orders to halt elective procedures that do not “spare life or limb” altogether [4].

In March of 2020, hospitals across the United States deescalated elective procedures in anticipation of future surges in need for intensive care space, inpatient beds, ventilators, blood products, trained personnel, and PPE use. The American Hospital Association challenged the universal cancellation of elective procedures, stating that personnel and bed space allocation for surgical care must be nuanced to meet the current and predicted future demands of hospitals [5]. Truly elective matters, even in pain management, may become urgent if postponed long enough [3]. The American College of Surgeons (ACS) offers guidance on the urgency of an elective procedure from most necessary to least [6]. Yet, reports have documented continuation of the performance of truly elective procedures in the United States despite guidance from government entities and medical societies [7]. The response to the COVID-19 outbreak has underscored a dearth of systematic prioritization of procedural urgency based on ethical principles and patient acuity factors.

In light of the redistribution of care to remote patient-provider encounters, conservative therapies have become paramount to pain management. Medications, complementary medicine, and psychological care comprise conservative measures accessible by remote means. Yet many analgesics induce immunosuppression, a feature that is potentially harmful to patients at risk for COVID-19. The US Food and Drug Administration (FDA) suggested judicious use of nonsteroidal anti-inflammatory drugs (NSAIDs) for ongoing pain, while noting that interference in the detection of fever may pose diagnostic risks [8]. High fever, regardless of the cause, in patients utilizing transdermal fentanyl increases patient risk for increased plasma levels and subsequent side effects, including respiratory depression and coma. The *in vivo*

immunomodulatory effects of enteral opioid therapy raise concerns for immunosuppression, yet untreated pain may also have detrimental immune effects [9]. Indeed, situations exist wherein the risks of alternative therapy may not be ideal for patients. Thus, pain physicians must now weigh new risks in deciding whether to perform elective procedures during the COVID-19 pandemic.

Through two vignettes, we explore the pain physician's quandaries stemming from an inability to perform medically necessary pain interventions during the COVID-19 pandemic. We explore the ethical considerations for common targeted pain interventions vs systemic therapies.

### Case 1

Mr. Smith is a 76-year-old man with radicular lower back and leg pain in an S1 nerve root distribution, status post-L4-L5 lumbar posterior spinal fusion. He developed recurrent radicular pain six weeks ago. An absence of lower extremity motor strength changes was corroborated over telemedicine video encounters, as his toe-walking gait and single-leg-standing calf raises were intact, and he noted pain but no subjective strength asymmetry during these tests. His lancinating pain remained refractory to weeks of home exercising including guided physical therapy via a virtual platform. His medical history was significant for carotid arterial stenosis and a left carotid artery stent, managed with clopidogrel and aspirin. He was intolerant to gabapentinoids due to dizziness, mental fogging, and falls associated with prior use. Prior lumbar transforaminal epidural steroid injection (TFESI) provided 80% pain relief for over six months, and he was able to reestablish a baseline quality of physical functioning. Unfortunately, the reallocation of clinical resources to accommodate a projected surge in COVID-19 patients resulted in widespread elective procedure cancellations at the outpatient clinic.

Due to the evolving events with COVID-19, the pain physician must now triage whether Mr. Smith's scheduled TFESI is urgent, elective, or "semi-urgent." Treatment of discogenic lumbar radicular pain by TFESI results in clinically meaningful pain reduction, functional improvement, and surgical sparing in a proportion of patients [10]. Based on the American Society of Regional Anesthesia & Pain Medicine (ASRA) and European Society of Regional Anaesthesia & Pain Therapy (ESRA) COVID-19 advisory, pursuing TFESI for the above radicular pain is reasonable [3]. In the absence of lower extremity motor dysfunction, emergency decompressive surgery is likely not indicated. Although minimally invasive decompressive surgery (e.g., microdiscectomy) may provide pain relief, this represents an elective procedure whose performance would redirect personnel, equipment, operating room, and hospital space reserved for more emergent procedures during a pandemic.

Presentation to the hospital or emergency department for inpatient pain management may result in higher risk of COVID-19 exposure to the patient.

Should the physician offer an epidural steroid injection despite widespread cancellations and fears surrounding viral exposure in health care settings? The relevant ethical question is whether it is responsible pain medicine to offer semi-urgent treatment in light of the myriad factors raised by the COVID-19 pandemic. There are at least three levels of thought relevant to the ethical analysis. The first concerns the risk-benefit to the patient himself, who is at increased risk for significant morbidity and mortality from COVID-19 infection should he contract it. As a result, any physician considering the proposed intervention must both 1) carefully evaluate whether the benefit of the procedure could reasonably outweigh its risk and 2) clearly communicate all of the relevant information to the patient so that he can make a genuinely autonomous decision about whether to move forward with the procedure. In Mr. Smith's case, it is relevant that corticosteroids depress innate immunity and may increase the likelihood and/or severity of respiratory disease should viral exposure occur. As depressed serum cortisol levels may last up to nearly two to three weeks after epidural corticosteroid administration, decreased corticosteroid doses should be considered in order to attenuate this risk of immunosuppression [3, 11]. Moreover, lower epidural corticosteroid doses than are typical in routine clinical practice may be equally efficacious [12]. After epidural steroid administration, patients may reasonably follow CDC guidelines put forth for immunosuppressed patients. These risks must be made clear to the patient before clinic presentation and appropriate COVID-19 infection screening [13].

The second level of ethical analysis concerns whether the physician is obligated to offer services that are semi-urgent. In other words, the framework of elective/urgent/semi-urgent procedures allows individual physicians to attempt to be more or less aggressive in treating patients or in preserving resources. How, then, is a responsible physician to act? The response to the COVID-19 pandemic has forced pain practices to weigh the risks of personnel and patient virus exposure. Patient symptom and travel history screening tools, distancing patients more than six feet apart, escalating sanitation practices to include high-touch-volume surfaces, and the proper donning and doffing of PPE have been encouraged to limit clinic-based viral inoculation [3]. However, health care personnel may feel personally unsafe in providing care in a clinic/ambulatory surgery center during nonurgent procedures. Moreover, the limited availability of masks and other PPE further complicates this calculus.

Physicians differ in how they weight the importance of their contribution to "flattening the curve" in parallel with their own sense of economic well-being. Providing concrete guidance on personal responsibility is difficult,

as determining the importance of moving forward with an interventional treatment will often require intimate knowledge of the patient and intended procedure. Individual physicians are most capable of making this determination. An ethical framework may be applied to assess circumstantial procedure appropriateness: first, in a case with genuine uncertainty as to whether it is sufficiently urgent to be performed during a pandemic, it is neither obligatory to perform the procedure nor obligatory to refrain. Rather, it is permissible for the physician to move forward if informed consent is obtained. Second, clinicians should decide whether to perform a given procedure based only on their evaluation of risks and benefits (to the patient, population, health care personnel, and oneself), and not on ulterior financial incentives. Lastly, regular checks within practices should evaluate whether some physicians abuse the leeway built into the concept of “semi-urgency” in order to continue something close to practice as usual. This brings us to the third level of ethical analysis, which concerns policy, rather than individual clinician behavior.

In the setting of a pandemic, providers must seek options that balance considerations of beneficence with risk to others while maintaining conscientiousness about resource allocation. This difficult equation might be better suited to institutional policy-makers or triage committees. As the COVID-19 pandemic has worsened, leaders in ethics have advised the use of triage committees in the hospital setting. Triage committees lighten the onus of decision-making for individual physicians and can help to promote justice by removing the potential for provider bias [14]. Thus, where reasonable, it may be helpful to employ impartial committees to evaluate individual physicians’ opinions on procedural urgency. However, the human resource of contributing to such a committee may be a scarce one. Judging the importance of every nonurgent procedure may not be realistic, especially in large hospital systems and practices. For smaller community practices, the provision of impartial committees may be even less feasible. Despite these obstacles, a plan for regular review of physician case load may prevent bias and promote the public health goals of restricting nonurgent elective procedures.

Weighing the probability of adequate, durable pain control with remotely accessible conservative therapies must be also considered in procedural planning. Over-the-counter analgesics, information regarding home exercise programs, app-based meditation and biofeedback tools, and online resources regarding pain psychology serve as important alternative strategies. Yet, many of these modalities do not effectively treat acute on chronic pain. Opioid analgesics pose significant risks to patients with limited efficacy for lower back pain [15]. NSAIDs pose risks for stent thrombosis and cardiac adverse events if used at higher doses, although selective cyclooxygenase (COX)-2 inhibitors at moderate doses may provide a greater cardiac safety profile than previously thought

[16]. Although oral steroids can improve physical functioning due to radicular pain, the risks of immunosuppression and lack of analgesia are not optimal [15, 17]. Muscle relaxants (e.g., cyclobenzaprine, baclofen) come with inherent risks of sedation, dizziness, and gait instability, with the potential for falls in elderly patients [15]. In weighing these considerations during the COVID-19 pandemic scenario, an ideal outcome is unlikely. Performing the procedure may be riskier than one would typically prefer, while forgoing it may provide suboptimal care. The goal is to provide the best care possible in challenging circumstances.

## Case 2

Mrs. Jones is a 72-year-old woman who suffers from phantom limb pain after a traumatic left lower extremity below-the-knee amputation. Ultrasound-guided residual limb sciatic neuroma injections with phenol repeated every nine to 12 months effectively managed her pain and facilitated physical function and mobility with her lower extremity prosthesis. Her medical comorbidities include nonvalvular atrial fibrillation, complicated by a prior stroke requiring ongoing anticoagulation therapy with warfarin, opioid use disorder (OUD) now on sublingual buprenorphine maintenance therapy, well-controlled anxiety, type 2 diabetes mellitus requiring daily insulin, and chronic kidney disease (stage III). Notably, she has a history of multiple esophageal ulcers complicated by gastrointestinal bleeding from heavy NSAID use in the past, which required red blood cell transfusion and intensive care unit admission. Her current analgesic regimen includes acetaminophen, lidocaine ointment, and topical capsaicin. She has had multiple intolerances to neuropathic pain agents, including gabapentin, pregabalin, duloxetine, and tricyclic antidepressants, due to significant adverse nonallergic reactions. The patient calls her pain physician and communicates desperation, as her pain is intractable to her usual analgesics and it has been nine months since her last phenol neurolysis procedure.

The case of Mrs. Jones adds further nuance to the framework described for Case 1. The urgency of providing an injection is heightened due to the particulars of the case, which change the standard risk–benefit profile, for both opioid and nonopioid analgesic agents. Her history and comorbidities place her at high risk of gastrointestinal bleeding and acute kidney injury with initiating enteral NSAIDs. Furthermore, adverse events related to antidepressants, gabapentinoids, analgesics, and muscle relaxants may pose risks that may undermine her acute on chronic pain management. For patients on medication-assisted therapy (MAT) for OUD, pain should be managed using a multidisciplinary approach taking into account the perceived risk of relapse with buprenorphine cessation and initiation of pure mu opioid

agonists, such as morphine, fentanyl, hydromorphone, and others [18]. Although not entirely inappropriate, the diagnostic and potentially therapeutic avenue of hospital admission for pain management poses significant risks of viral exposure. The risk of COVID-19 exposure in the hospital setting, given the patient's age and frailty, is likely greater than if she presented to ambulatory care for her usual procedure with historically reliable efficacy.

In the complicated medical landscape during COVID-19, pressing forward with Mrs. Smith's standard therapy may well be permissible, so long as she autonomously endorses the plan of care. Again, this does not imply that the treatment is obligatory for a physician and/or health care team to provide. Freedom of choice to increase exposure and to utilize health care resources in this way is important. For a willing physician and health care team and a willing, informed patient, semi-urgent interventional pain therapy for patients like Mrs. Smith can be reasonable during the COVID-19 pandemic.

Case 2 illustrates the limitations of blunt policies regarding elective procedures. In the context of pain medicine, cancellation of outpatient procedures may change physician opioid prescribing practices. Pain physicians may feel pressure to prescribe opioids due to the restrictions of pain procedures imposed by the reaction to COVID-19. In an effort to meet patient needs during the global emergency, the US Department of Health and Human Services and the US Department of Justice Drug Enforcement Agency (DEA) lifted the mandate for at least one in-person visit for new opioid prescriptions in March of 2020 [19]. Thus, any provider with a license to prescribe controlled substances may now prescribe these through a telemedicine encounter. While this measure provides an avenue of delivering care remotely during a pandemic, the policy may risk undermining efforts to limit the volume of opioid analgesic prescriptions in the community.

In patients like Mrs. Smith who carry the diagnosis of OUD, the impetus to continue non-opioid-based therapy is even stronger. Although public health crises like the COVID-19 pandemic may require policies such as canceling "elective" outpatient procedures and increasing access to opioid therapy, responsible pain medicine requires treatment to each unique patient using an individualized risk-benefit analysis. It may be preferable to avoid opioid therapy for Mrs. Smith, even if she is placed at greater risk of exposure to COVID-19. However, for patients who receive opioid therapy during the pandemic as a nonideal plan of care, clinicians inherit additional obligations as well. As has been recently argued, prescribing opioids comes with an obligation to safely and comfortably taper off the opioid when no longer necessary [20]; this implies that surplus prescriptions written in an effort to minimize outpatient procedures may result in increased provider responsibility when patients'

pain can once again be treated with a nonopioid strategy.

Medical care is not solely grounded in survivability but also in the relief of suffering. International health emergencies present new ethical challenges in weighing the risks and benefits in outpatient pain management. Pain interventions represent an essential service for many patients, and cessation of procedural care may lead to adverse effects yet to be well described. When possible, institutions should consider utilizing triage committees to alleviate the burden of decision-making from individual pain physicians. Such committees should recognize that the COVID-19 pandemic poses noninfectious risks to patients if pain is undertreated.

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