

**Point-of-Care Procedures in Physiatry**

**Practice Considerations During the Covid-19 Pandemic**

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**Abstract:** Coronavirus disease 2019 is an active pandemic that has required rapid conversion of practice patterns to mitigate disease spread. Although recommendations have been released for physicians to postpone elective procedures, the utility of common physiatry procedures and their infectious risk profile have yet to be clearly delineated. In this article, we describe an update on existing national recommendations and outline considerations as practitioners and institutions strive to meet the needs of patients with disabilities.

**Key Words:** Physiatry, Procedures, Coronavirus, Covid-19

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With the ongoing coronavirus disease 2019 (Covid-19) pandemic, efforts to mitigate disease spread by minimizing communal contact are vital.1–3 In March 2020, the Centers for Disease Control and Prevention (CDC) and Center for Medicare and Medicaid Services (CMS) have released recommendations urging clinicians to postpone elective procedures and use telemedicine for ambulatory care.4,5 However, the response by many healthcare providers and settings, especially with elective procedures, continues to be heterogeneous.6,7 In particular, the utility of common point-of-care physiatry procedures and their associated risk profiles during the Covid-19 pandemic need further clarification.

**Infectious Spread**

The Covid-19 is caused by the severe acute respiratory syndrome from novel coronavirus 2, which is a respiratory virus presumed to be primarily spread via droplet contact.8,9 Viral spread occurs via exposure of the nasopharyngeal mucosa and respiratory tract directly to microdroplets expelled during coughing and/or sneezing by infected individuals or indirectly via self-inoculation of microdroplets from contaminated surfaces onto the nasopharyngeal and oropharyngeal mucosa. To this end, rescheduling elective medical visits and procedures, implementing careful screening and quarantining protocols for potentially infectious patients and personnel, proper hand washing and equipment cleaning practices, and judiciously yet appropriately using personal protective equipment (PPE) can reduce viral transmission and potentially reduce Covid-19-related deaths.4,5,10,11

**General Considerations and National Guidelines**

The CDC and CMS recently released recommendations that all elective and nonessential medical, surgical, and dental procedures be deferred in an attempt to optimize use of healthcare equipment and resources amid the Covid-19 pandemic.4,5 The overarching aims for the current national recommendations are four-fold: (1) to preserve PPE, inpatient beds, and ventilators; (2) to ensure that the healthcare workforce is available to care for patients most in need; (3) to encourage patients to remain home as much as possible to limit exposure; and (4) to provide a framework for triaging nonessential surgeries and procedures. As an illustration of this framework, CMS provides examples of common elective procedures with division into tiers and recommendations for scheduling based on associated patient and procedural risks.5 However, these tiered procedural recommendations largely focus on invasive and/or surgical procedures and make scant reference to minimally invasive and noninvasive procedures, which comprise most general physiatry procedures in which earlier intervention can optimize recovery and reduce cost burden.

Beyond these recommendations, both the CDC and CMS agree that decisions about proceeding with nonessential surgeries and procedures will be made at the local level by the clinician, patient, hospital, and state and local health departments.4,5 Physiatry-based procedures are unique in that their overall goals are to allow for functional independence; this is particularly important in such times as we try to reduce the functional decline in our vulnerable patient population.10,12 Most physiatry procedures are performed on an outpatient basis and so do not directly impact the availability of valuable hospital resources needed to care for inpatients. Use of PPE is an important consideration and varies based on procedural and patient risk factors, which will be discussed further hereinafter.

Although most physiatry procedures are considered elective, this designation does not suggest that they are unnecessary but rather are not time sensitive in nature. Given the current status of national recommendations, practitioners have a level of autonomy in deciding which patients may be appropriate candidates for a nonemergent or nonlife-sustaining procedure.4,5 Therefore, blanket protocols to terminate all ambulatory could introduce barriers for persons with disabilities for whom timely physiatric care can be vital to their health and function.10,12

Persons with disabilities are medically vulnerable given their associated impairments.10 Furthermore, they often require several
accommodations ranging from caregiver and nursing support to transportation arrangements. As such, measures to mitigate healthcare interruptions are vital. In their recent report for disability considerations during the Covid-19 outbreak, the World Health Organization states that barriers to healthcare are likely increased for persons with disabilities. The CDC, CMS, and the American Medical Association have advocated for the use of telemedicine to provide ambulatory care, when possible.

The World Health Organization specifically recommends telemedicine as a means to decrease barriers to ambulatory care for persons with disabilities. In addition, telemedicine may provide a unique opportunity to stratify procedural urgency and identify appropriate procedural candidates.

**Procedural Stratification**

Common point-of-care physiatry procedures include, but are not limited to:

- pain and musculoskeletal procedures, such as joint, peripheral nerve, epidural injections, and trigger point injections
- spasticity procedures, such as chemodenervation and neurolysis
- electrodiagnostic procedures, such as nerve conduction (NCS) and electromyography (EMG) studies

The elective nature and time sensitivity of these procedures have understandably come into question. Although no clearly delineated recommendations from governmental health agencies or major medical societies exist, considering the urgency and indication of each procedure on a case-by-case basis is instrumental. As previously mentioned, the use of telemedicine services in the Covid-19 pandemic, as extensively endorsed by the CDC, CMS, American Medical Association, and World Health Organization, may help stratify procedural urgency in patients pending elective procedures. We would like to more fully consider the elective and functionally driven nature of physiatry procedures, as well as their time sensitivity.

**Elective**

There exist purely elective procedures in chronic conditions that can be rescheduled without meaningful functional impairment or patient risk. Although elective physiatry procedures may not carry life-sustaining benefits, they can provide meaningful improvements in pain (Table 1, row 1). Consequently, if deferred long enough, some patients may resort to urgent care or emergency departments to address uncontrolled pain. Given the overwhelming estimates of expected respiratory illnesses and healthcare demands in the United States in the coming weeks and months, measures to decrease the burden of preventable emergency department visits and hospital admissions are highly desirable. Judicious use of elective pain management procedures in the clinic setting for certain at-risk patients may prove useful to decrease unnecessary emergency department visits. A recent article by Cohen et al. also support these sentiments as they list several considerations for triaging pain management options, which include likelihood of patients seeking emergency department services, be started on opiates, functional detriment, acuity, and work status.

**Functionally Driven**

Much uncertainty exists with time insensitive, “functionally driven” procedures that may optimize functional recovery or capacity in certain patients (Table 1, row 2). Similar to the previously discussed elective procedures, these procedures do not carry lethal implications if not performed. However, these procedures can offer or facilitate significant functional benefit and mitigate sequelae like falls or pressure wounds.

Early and goal-directed spasticity management has been shown to facilitate motor recovery and functional gains. Patients with chronic spasticity may necessitate timely chemodenervation or neurolysis to facilitate body positioning, enhance motor capacity, enable hygiene care, prevent contractions, and even provide pain relief. Pain management procedures in the inpatient and subacute rehabilitation settings may enhance patient participation and optimize their use of limited inpatient rehabilitation time. Patients with chronic pain may also benefit from timely peripheral joint, nerve, or trigger point injections for analgesic benefit that may accelerate mobility and function. Notably, the procedural driven analgesic benefit in the chronic pain population may prevent risk of opiate

| Procedure Indication | Clinical Scenario | Procedure |
|----------------------|------------------|-----------|
| Elective             | Primary and secondary osteoarthritis | Joint injections |
|                      | Radicular pain from cervical or lumbar radiculopathy, spinal stenosis, etc. or facetogenic pain from facet arthropathy | Axial procedures, including epidural steroid injections, medial branch blocks, facet injections, radiofrequency ablation |
|                      | Peripheral neuralgia | Peripheral nerve injections |
|                      | Myofascial pain syndrome | Trigger point injections |
|                      | trigger points | NCS and EMG |
|                      | Chronic neurogenic/neuromuscular/muscular compromise | Chemodenervation or neurolysis |
| Functionally driven  | Functionally impairing spasticity, often subacute | Axial or peripheral joint, nerve, and trigger point injections |
|                      | Suboptimal participation in rehabilitation program given musculoskeletal pain refractory to conservative measures, severe pain limiting ambulation, increasing caregiver burden, etc. | |
| Time sensitive       | Intrathecal drug withdrawal | Intrathecal pump catheter aspiration or intrathecal pump medication refill |
|                      | scheduled intrathecal drug refill | NCS and EMG |
|                      | Rapidly progressing ascending paraplegia or motor neuron disease, critical illness polyneuropathy/myopathy | |

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diversion or misuse, which may result in respiratory compromise that can be particularly dangerous with concomitant Covid-19 infection. It should be noted that articular corticosteroid injections have been shown to increase influenza risk and so too may increase the risk of contracting Covid-19. Therefore, careful consideration of patients’ immune status is imperative before peripheral corticosteroid administration.

An additional concern is that if these procedures are deferred, worsening impairments will increase dependence on caregivers and increase the vulnerability of disabled patients during the staffing limitations and social distancing associated with the pandemic. Therefore, physiatrists may consider performing functionally driven procedures in appropriate patient candidates who are deemed to have discrete functional goals. Appropriate patient and procedure-specific infectious prevention measures should be undertaken.

**Time Sensitive**

There are also time-sensitive physiatry procedures for which procedural benefits may include a reduction in mortality, morbidity, or immediate disease burden. Such procedures should continue to be performed given their importance in providing timely diagnostic and therapeutic benefit (Table 1, row 3).

Patients with intrathecal therapies are susceptible to a host of complications with interruptions to intrathecal drug delivery. Although withdrawal from intrathecal opiates can be unpleasant for patients and can require inpatient monitoring, withdrawal phenomena from intrathecal clonidine and baclofen can be life-threatening. Thus, it is imperative to ensure that patients with intrathecal pump systems have timely refills to avoid risk of drug withdrawal. In addition, those patients with suspected intrathecal drug delivery dysfunction require timely device interrogation, troubleshooting, possible catheter assessment, and rescue enteral medications.

Electrodiagnostic studies can be vital for adding diagnostic and prognostic benefit in persons with suspected neurogenic, neuromuscular, or muscular disorders. Although affected patients can vary in presentation, clinical concern for rapidly progressing paraparesis/paraplegia, motor neuron disease, and critical illness neuropathy/myopathy are some of most common reasons for inpatient NCS and EMG studies. Information gleaned from these studies can alter clinical management, which can be time sensitive depending on the severity of the condition. In a single-center study of 98 inpatient procedures, Perry et al. found that EMG and NCS studies yielded a clinically relevant and new diagnosis in 13% of cases and altered treatment decisions in 17% of cases. Because NCS/EMG studies involved prolonged patient contact and thus increased potential exposure, the American Association of Neuromuscular & Electrodagnostic Medicine recommends deferral of electrodiagnostic studies in cases of confirmed or suspected Covid-19 or recent exposures, unless necessary for management. In these cases, practitioners must wear appropriate PPE as allocated by their institution.

**Patient and Procedure-Specific Risks**

Despite implementation of recommended preventative measures, the risk of Covid-19 exposure or infection is likely increased with certain patients and procedures (Table 2). In higher-risk cases, proper prophylactic considerations must be taken so as to meaningfully minimize the risk of spread among the patient, physician, and supportive personnel. Such considerations are especially necessary in persons with disability as they are often at a higher risk for disease-related morbidity and mortality.

In addition, careful consideration is warranted for procedures where multiple direct patient encounters are necessary. Such scenarios that include diagnostic nerve blocks to be followed by neuroablative procedures, etc. or series of viscosupplementation understandably confer increased patient and practitioner risk given recurrent interactions. Given that meaningful or durable analgesic or functional benefit in such instances may only be fully achieved after completion of these procedural protocols, practitioners should carefully weigh the potential benefit of these procedures against the amplified risks posed to patients and physicians with recurrent encounters. Recently, the American Society of Interventional Pain Physicians has released risk stratification guidelines to help characterize patients at increased risk of Covid-associated morbidity. Although not substantiated, such resources can be instrumental in helping identify and exclude procedural candidates.

**CONCLUSIONS**

The uncertainty of Covid-19-associated disease burden has led to rapidly changing clinical practices and recommendations. The intent of our commentary is to provide an update on existing national recommendations and outline considerations as practitioners and institutions strive to make wise decisions.

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**TABLE 2.** High-risk clinical scenarios and prophylactic considerations based on procedure-specific risks

| Procedure-Specific Risks | High-Risk Clinical Scenarios | Prophylactic Considerations |
|--------------------------|-----------------------------|-----------------------------|
| Droplet or aerosolized contagion exposure | Head and neck procedures carry greatest risk of aerosol exposure | Consider using a respirator (ie, N95 mask) in patients with possible illness; consider adding a face shield when droplet exposure is likely |
| Steroid administration | Steroid-induced immunosuppression likely increases susceptibility for Covid-19 | Consider steroid dose reduction or other alternative medications for vulnerable and/or immunosuppressed populations |
| Reusable equipment | EMG leads and machine Ultrasound probes and machine procedure suite surfaces | Following CDC recommended cleaning and disinfection protocols is vital in maintaining sanitary equipment and surfaces |

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at the local and individual level for physiatrist practices. Given global and national disparities in healthcare resources, rehabilitation care models, and Covid-19 prevalence and healthcare burden, these decisions are inherently complex and individualized. Although the CDC and CMS recommend for elective procedures to be rescheduled to preserve healthcare resources and personnel, these recommendations do not account for the spectrum of physiatry procedures and the uniquely vulnerable population we serve. A more nuanced approach that takes procedure and patient specific risks into account will facilitate a more individualized approach to balancing the competing concerns of preserving PPE, protecting both medical staff and patients from Covid-19 exposure and infection, and continuing to provide high-quality care for conditions that substantially impact quality of life and function.

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