

1 **Practical Guidance for Outpatient Spasticity Management during the Coronavirus**  
2 **(COVID-19) Pandemic: Canadian Spasticity COVID-19 Task Force**

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46 **Background**

47 Spasticity is a common sequela of upper motor neuron conditions that can reduce quality of life,  
48 impair function and heighten economic burden.<sup>1</sup> Identification and treatment of problematic  
49 spasticity is key in order to decrease impairments including contracture formation, pain, skin  
50 breakdown, functional decline and to limit disability.<sup>2</sup>

51 The COVID-19 pandemic has affected health care systems worldwide including Physical Medicine  
52 and Rehabilitation (PMR) and Neurology practices in Canada.<sup>3,4,5</sup> Inpatient hospital care for the  
53 management of patients with COVID-19 has been prioritized, while elective surgeries and  
54 outpatient clinics have been limited or cancelled as part of resource allocation management and  
55 mitigation of risks during the pandemic. Subsequently, the delivery of outpatient spasticity care in  
56 the PMR and neurology setting has been directly impacted.<sup>6</sup> The great majority of Canadian  
57 spasticity outpatient clinics have been cancelled or are now predominantly administered through  
58 telemedicine, which has led to a dramatic reduction in patient volume.

59 As the pandemic evolves, there is a possibility of continuous or intermittent physical distancing  
60 being required until a vaccine becomes available.<sup>7</sup>

61 For this reason, a COVID-19 spasticity task force was created. This task force is comprised of  
62 seventeen Canadian experts in the field of spasticity management. These sixteen PMR specialists  
63 and one neurologist have collaborated extensively regarding spasticity clinical practice, research,  
64 and education for more than ten years nationally and internationally. Our task force experts have  
65 academic appointments from ten Canadian universities and representation at the executive level in  
66 the Canadian Association of Physical Medicine and Rehabilitation, Canadian Advances in Neuro-  
67 Orthopedics for Spasticity Congress, and Canadian Stroke Best Practices Advisory Committee.

68 There was an attempt for geographic diversity by seeking representation from all provinces with  
69 spasticity clinics, but we lacked representation from Nova Scotia, Prince Edward Island,

70 Newfoundland and the territories. We did not specifically attempt to attain gender diversity. Almost  
71 all spasticity clinics in Canada are run by physiatrists while only a very small number are headed by  
72 neurologists, hence the majority of task force members are physiatrists.

73 The COVID-19 spasticity task force conducted their first web-based meeting on April 21, 2020,  
74 during which consensus was obtained based on expert opinion for strategies to optimize spasticity  
75 outpatient care during the pandemic. Subsequent web-based, telephone, and email discussions  
76 regarding regional approaches to the response and procedures of spasticity clinics during the  
77 pandemic were conducted and the conclusions are included in our guidance paper. Our task force  
78 recommends that clinicians continue to deliver spasticity management via telemedicine for both  
79 follow-up care and new patient assessments during this pandemic.

80 We have also identified a subset of patients that require in-person assessment and access to  
81 treatment modalities such as intrathecal baclofen pump therapy, focal chemodenervation and  
82 orthotic adjustments.

83 In this practical guidance paper, we outline a triaging strategy to determine the urgency of  
84 managing spasticity patients in-person versus using telemedicine. We provide strategies to best  
85 protect patients, physicians, caregivers, and staff from possible exposure to COVID-19 during  
86 outpatient visits. We acknowledge that there may be significant regional differences in personal  
87 protective equipment (PPE) access and restrictions regarding provision of care for outpatient  
88 clinics. Practitioners should refer to their local and hospital guidelines to ensure that they are in  
89 compliance with current recommendations, and our suggestions should be adapted accordingly.

#### 90 **Patient selection for telemedicine versus in-person assessments**

91 Spasticity clinics should not be cancelled. Our opinion is that the majority of our spasticity patients

92 should be assessed by telemedicine as a temporary measure. This includes patients who are treated  
93 without interventional procedures, those who are treated with oral antispasmodics and/or were  
94 recently injected with botulinum toxin or phenol, and those who are stable on intrathecal baclofen  
95 treatment.

96 Telemedicine can be used to gather a history, assess function, perform basic physical exam  
97 evaluation, and establish and monitor treatment goals.<sup>8</sup> It can also be used to help with stretching,  
98 range of motion and spasticity education prior to in-person assessment. Telemedicine is obviously  
99 limited due to the inability to perform a full physical examination to adequately assess spasticity,  
100 tone and contracture, and in certain clinical scenarios in-person assessment becomes essential to  
101 ensure appropriate treatment.

#### 102 **Triaging strategy for in-person assessment**

103 We estimate that approximately 10-30% of spasticity patients will require an in-person  
104 assessment. It is important to carefully triage this group to determine the urgency for spasticity  
105 assessments in order to reduce unnecessary exposure to COVID-19, to conserve PPE and to help  
106 decrease medical complications and emergency visits.

107 We propose the following patient triage strategy based on tiers of urgency:

- 108 • **The URGENT GROUP** classified as a need for in-person assessment/intervention within  
109 48 hours of contacting the clinic/physician with clinical scenarios including:
  - 110 o Patients requiring intrathecal baclofen pump refills to avoid withdrawal.; o Patients  
111 experiencing symptoms or signs of intrathecal baclofen underdosing or overdosing.
  - 112 o Patients experiencing symptoms or signs of baclofen pump device failure.
- 113 • **The SEMI-URGENT GROUP** classified as a need for in-person assessment between 48

114 hours to 4 weeks and includes clinical scenarios where spasticity is worsening over the last  
115 4 weeks and is associated with:

116 o Deteriorating function such as mobility (including falls and difficulty with  
117 transfers), perineal care/hygiene with increased caregiver needs and/or inability to  
118 function independently. o Increasing severe pain that is uncontrolled with other  
119 measures and has previously responded to chemodenervation. o Increased risk of joint  
120 dislocation.

121 o Development of new or worsening pressure ulcer or wound. o Inability to don and  
122 doff orthoses required for function.

123 o Impaired seating with increased pain and/or high risk of skin breakdown.

124 o Loss of joint range of motion affecting function, skin breakdown and/or

125 contracture development.

126 • **The NON-URGENT GROUP** classified as patients who can wait up to or beyond 3 months  
127 for reassessment and be seen as needed through telemedicine.

128 **For patients who are asymptomatic (of COVID-19) and in the urgent or semi-urgent groups:**

129 • Assume that asymptomatic transmission of COVID-19 is possible, therefore use appropriate  
130 PPE for all in-person encounters to protect both patients and health care providers.

131 • The WHO guidelines for use of PPE advise using surgical mask, goggles/face-shield/visor,  
132 gloves, gown when treating/injecting patients in the outpatient setting.<sup>9</sup>

133 **For patients in the urgent group who are suspected or confirmed COVID-19 positive:**

134 • Urgent in-person assessment and treatment must be undertaken if there are intrathecal  
135 pump delivery system concerns or intrathecal baclofen refills needed.

136 • Strict PPE and safety precautions adhering to local guidelines on how COVID-19

137 positive patients are to be managed need to be in place.

138 **For patients in the semi-urgent group who are suspected or confirmed COVID-19 positive:**

- 139 • Assess with telemedicine and plan for in-person assessment once asymptomatic  
140 (defined as 10 days from symptom onset AND no fever without fever-reducing  
141 medication AND symptom resolution (with the exception of post-viral cough).<sup>4,10</sup>  
142 • In the scenario where in-person treatment is required, ensure strict PPE and  
143 safety precautions adhering to local guidelines on how COVID-19 positive  
144 patients are to be managed.

145 **Setup of outpatient clinics during pandemic • Patient screening**

- 146 • Screen patients by phone prior to in-person assessments to ensure no COVID-19  
147 symptoms, including: fever, cough, shortness of breath, chills, muscle pain, new  
148 loss of taste or smell, vomiting or diarrhea and/or sore throat or close contacts  
149 who are ill prior to attending.<sup>11</sup> Advise patients to use the local health authority  
150 self-assessment tool.  
151 • Ask if any family members are ill or COVID-19 positive or if they have had recent  
152 travel or exposure to a person who is COVID-19 positive; if so, delay the inperson  
153 clinic visit, offer telemedicine visit and reassess in a timely fashion.  
154 • Given the current outbreaks in long term care (LTC) facilities, we recommend not  
155 to transfer patients from LTC or other assisted living and group home settings to  
156 outpatient clinics during the pandemic unless urgent or semi-urgent. Telemedicine  
157 can be used to triage these patients into whether they may require urgent or semi-  
158 urgent in-person assessment. At the time of this publication, patients in LTC

159 settings are not allowed to be transferred for non-urgent outpatient appointments in  
160 many regions of Canada. Assess the need for an overhead lift to transfer the  
161 patient. Consider options to prepare the patient to  
162 be treated in their wheelchair if possible, such as loose clothing, tilt in space  
163 wheelchair.

- 164 • Staff should acquire all patient information by telephone and limit interactions for  
165 information with patients during the in-person visit.
- 166 • Arrangements for all follow up appointments should be made by telephone to limit  
167 face-to-face interaction with front office staff.

- 168 • **Staff education regarding PPE and safety protocols**

- 169 • Bring clean work clothes/scrubs/shoes for the clinic and another set of clothes for  
170 home.
- 171 • Prior to leaving work or once home, shower and change into another set of clothing to  
172 decrease risk of transmission to family members/others living together.
- 173 • Hand washing with soap and water or disinfecting gel is essential before and after  
174 every patient contact.
- 175 • Ensure surgical masks, gloves, goggles/face visors fit properly before in-person  
176 contact with patients. Goggles/face visors (should be cleaned after each patient  
177 encounter) and masks can be reused for the day if not soiled or damaged.
- 178 • Wear a gown if available (ideally water-resistant) on top of scrubs or clothing when in  
179 contact with patients.
- 180 • N95 masks and face visors are recommended for high risk encounters (i.e., aerosol  
181 generating procedures for patients).<sup>9</sup>



- 182           • Appropriately dispose of gloves and gown after each procedure.
- 183           • When seeing patients with dysphagia and/or facial weakness use a full face visor due
- 184           to the potential for increased droplet risk.
- 185   • **Setup of outpatient office and treatment room**
- 186           • Create markings for physical distancing (6 feet or 2 meters separating front office staff
- 187           from patients).
- 188           • Avoid patients waiting in waiting room
- 189                   ■ Ask the patient to wait in their vehicle, if possible, to minimize patients in the
- 190                   waiting area until the treatment room is adequately clean.
- 191           • Dedicate a room as a clean room for staff to change and keep personal items.
- 192           • Dedicate a room for assessment and/or injection, removing all non-essential
- 193           objects/books/personal effects from room.
- 194           • Space out each assessment/injection by at least 30 minutes to ensure adequate time for
- 195           proper disinfection of rooms. Consider alternating appointments with telemedicine
- 196           visits between in-person assessments.
- 197           • Clean all patient contact points (e.g., chairs, doorknobs, ultrasound probes,
- 198           electromyography (EMG) equipment, lift system slings) with CAVI wipes <sup>TM</sup>,
- 199           isopropyl alcohol or a similar hard-surface disinfectant.
- 200           • Dedicate, if possible, another room for dictation and paperwork.
- 201           • Keep a separate injection supply kit/bag for each patient. Supplies can be kept in
- 202           individual sealable plastic bags (with syringe, swab, alcohol swab) then disposed of
- 203           after each patient encounter.
- 204           • If possible, pre-mix/reconstitute botulinum toxin for immediate use outside of the

205 injection room. This process can often be facilitated by preloading syringes with the  
206 appropriate amount of saline immediately before the clinic to streamline the  
207 reconstitution process once the patient arrives.

- 208 • Position bed, ultrasound, EMG and/or other equipment in an ergonomically optimized  
209 orientation prior to the patient entering the room.
- 210 • No more than two staff should be in the room if possible (nurse and physician) when  
211 assessing/injecting the patient.
- 212 • Limit the number of physicians running spasticity clinics at the same time in the same  
213 area.
- 214 • When trainees are present, all precautions should be strictly adhered to and bedside  
215 teaching can occur outside the treatment room.

216 • **Patient education**

- 217 • Before arrival, explain the changes in place in the clinic during the pandemic and  
218 reinforce the need for physical distancing.
- 219 • Advise the patient to bring a mask, which may be homemade, or provide a mask upon  
220 arrival to the clinic.
- 221 • Advise no visitors or family members during the consultation/procedure unless  
222 essential (e.g., requiring support as a result of cognitive/language dysfunction).
- 223 • Advise not to bring purses/bags/unnecessary items to the clinic.
- 224 • Advise patients to wear clothing that is easily removable or accessible to reduce  
225 preparation time and potentially avoid the need for the use of an overhead lift to  
226 expose targeted regions.

227

228 **Conclusion**

229 It is essential to provide timely spasticity management while protecting patients and  
230 multidisciplinary spasticity teams from COVID-19 exposure.

231 Telemedicine is an effective tool for triage, assessment and teaching for the majority of  
232 patients. However, there will be patients that require in-person contact for spasticity  
233 management procedures in order to maintain function and reduce the risk of significant  
234 complications and emergency department visits during this pandemic.

235 Triageing patients into non-urgent versus semi-urgent or urgent groups is essential to determine the  
236 need for in-person assessment. Patient education regarding changes in the delivery of spasticity  
237 care during the pandemic, staff education regarding PPE, triage protocols, room setup for  
238 examination and injection procedures and outpatient clinic logistics are key in successfully  
239 treating spasticity during this pandemic. It is crucial to remember that our purpose is to maximize  
240 targeted and appropriate care to all patients during this unprecedented time and as spasticity  
241 specialists we will strive to safely provide the best possible care.

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247 RR led development of the content and drafted the manuscript; HF drafted the manuscript and  
248 coordinated the Task Force's feedback; CM drafted the figure and provided input on the content of  
249 the article, and helped RR and HF compile task force feedback and comments; the remaining co-  
250 authors provided key input on the guidance and content of the article.  
251

252 **Figure Caption:**

253

Triage for spasticity patients who are asymptomatic (of COVID-19) *		
NON-URGENT	SEMI-URGENT (48 hrs - 4 wks)	URGENT (<48 hrs)
Patients who can wait up to or beyond 3 months for re-assessment and be seen as needed through telemedicine	<ul style="list-style-type: none"> <li>• Deteriorating function</li> <li>• Uncontrolled severe pain</li> <li>• Risk of joint dislocation</li> <li>• Impaired seating with skin breakdown/pressure sore</li> <li>• Inability to don and doff orthosis for function or joint protection</li> <li>• Contracture development or progression</li> </ul>	<ul style="list-style-type: none"> <li>• Intrathecal baclofen pump refills /device failure</li> <li>• Risk of intrathecal baclofen underdosing/overdosing</li> </ul>
↓	↓	↓
Conduct risk-benefit assessment of delaying in-person care for weeks to months	<ol style="list-style-type: none"> <li>1. Conduct phone screen of patient symptoms, travel, contacts</li> <li>2. Gather all necessary clinical information prior to appointment -&gt; Goal setting by telemedicine</li> <li>3. Advise patient to wear mask/face covering to appointment</li> <li>4. Patient to wait in vehicle until called -&gt; If not possible, limit waiting room volume</li> <li>5. If possible, pre-mix/reconstitute botulinum toxin for immediate use outside of the injection room</li> <li>6. Plan room ergonomics before patient arrival</li> <li>7. Full PPE for staff prior to patient arrival</li> <li>8. Proper donning/doffing of PPE (can leave surgical mask, goggles/visor on if not soiled)</li> <li>9. Ensure thorough cleaning of contact surfaces after patient leaves</li> </ol>	
<p><b>*If patient is suspected or confirmed COVID-19 positive, delay in-person contact unless URGENT. If SEMI-URGENT assess with telemedicine and plan for in-person assessment once asymptomatic: (asymptomatic defined as 10 days from symptom onset AND no fever with no fever-reducing medication AND resolved COVID-19 symptoms except post-viral cough).</b></p>		

254

255 **Figure 1. Practical Guidance for Outpatient Spasticity Management Flow Chart Conflicts of**

256

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333 [CD%20Manual/Chapter%201%20-%20CDC/2019-nCoV-Interim Guidelines.pdf](https://www.bccdc.ca/resource-gallery/Documents/Guidelines%20and%20Forms/Guidelines%20and%20Manuals/Epid/CD%20Manual/Chapter%201%20-%20CDC/2019-nCoV-Interim%20Guidelines.pdf)

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