

## Inhaled Salbutamol Shortage – Mitigation Strategy for COPD

April 13, 2020

### Background

- 1) Health Canada and the pharmaceutical industry have identified that there was a three-fold increase in the demand for salbutamol inhalers in the first 3 weeks of March 2020.
- 2) This has resulted in a Tier 3 shortage, which by definition is “a situation when a manufacturer/importer is unable to meet demand for the drug. A tier 3 shortage is a shortage with the greatest potential impact on the Canadian drug supply and healthcare systems by virtue of availability of alternate supplies, ingredients, or therapies.”
- 3) Restrictions have been put in place by wholesalers and distributors to limit the supply of salbutamol which means that most patients will receive only one salbutamol inhaler or a one month supply at a time .
- 4) It is possible that the surge in demand relates to individuals and organizations projecting future need and purchasing product in advance of actual need [Stockpiling].

### Mitigation Strategy Step 1:

<b><i>Provider communication to patients regarding COPD inhalers:</i></b>
It is important that you take your regular maintenance inhaled medication as prescribed. This will keep your symptoms of COPD under control and reduce your need for rescue medication (e.g. salbutamol).
Ensure that you have a one month supply of COPD maintenance inhaled medication at home. Keep track of your medication supply and leave additional time to obtain your refills from the pharmacy.
Consider having the pharmacy or a trusted person deliver the medications to you so you can continue to stay at home and practice physical distancing.
There is a shortage of salbutamol inhalers in Canada, if you do not need it, do not attempt to refill your prescription.
When refilling your inhaled medications, you should expect to receive only a 1-month supply. This is in response to inventory control measures put in place.
You should carefully track doses of salbutamol by dose counting.
You should use all salbutamol inhalers that you may have in various locations before refilling medication. If you have multiple salbutamol inhalers use the one with the earliest expiry date first.
<b><i>In the event that a patient’s only option is to use an expired salbutamol inhaler:</i></b>
Not discard recently expired inhalers (e.g., expired in the last 6 months) until they have obtained a replacement. If they need to use their reliever inhaler and only have an expired inhaler, be aware that it may be less potent. They should use the expired inhaler and if not getting relief, seek medical attention.
Use the diskus inhaler even if it was removed from the wrapper more than 60 days ago.

## Mitigation strategy Step 2: Recommended options for Salbutamol MDI substitutions in the event of a shortage

The CTS COPD Assembly Steering Committee developed this rapid guidance for Canadian physicians treating patients with COPD for an emerging salbutamol inhaler shortage during the COVID-19 pandemic. The recommendations are evidence-based and expert-opinion, and we recommend that treatment decisions be individualized.

### List of Medication Substitutions for Salbutamol in COPD

	Substitution Comment
<b>Preferred substitution:</b> based on safety and efficacy when applied across the population recognizing that substitution decisions may be at the discretion of the community pharmacist without consultation by the primary care or specialty provider.	
Terbutaline 0.5mg Turbuhaler ( <b>Bricanyl</b> )	<ul style="list-style-type: none"> <li>• A direct substitution for salbutamol MDI or Diskus</li> <li>• 2 inhalations of salbutamol MDI are equivalent to 1 inhalation of terbutaline. Terbutaline is delivered as a dry powder inhaler (Turbuhaler), rather than in an MDI or Diskus</li> </ul> <p><b><i>Patients will need instruction on the proper use of this inhaler device.</i></b></p>
Salbutamol 200ug Diskus ( <b>Ventolin Diskus</b> )	<ul style="list-style-type: none"> <li>• A direct substitute for salbutamol MDI.</li> <li>• 1 inhalation of Salbutamol Diskus is the same as 2 inhalations of salbutamol MDI</li> </ul> <p><b><i>Patients will need instructions on the proper use of this inhaler device.</i></b></p>
Ipratropium Bromide (20ug)/Salbutamol (100ug) ( <b>Combivent Respimat</b> )	<ul style="list-style-type: none"> <li>• A direct substitution for salbutamol</li> <li>• However, the dosing approved in Canada is 1 inhalation q4h up to a maximum of 6 inhalations a day.</li> <li>• Combivent is delivered as a soft mist inhaler (Respimat)</li> </ul> <p><b><i>Patients will need instruction on the proper use of this inhaler device. Patient on a long-acting anti-muscarinic (LAMA) should continue to use their maintenance medication as prescribed.</i></b></p>
<b>Less Preferred</b>	
Ipratropium Bromide 20ug pMDI ( <b>Atrovent</b> )	<ul style="list-style-type: none"> <li>• This bronchodilator works by a different mechanism than salbutamol and has a slightly delayed onset of action when compared to salbutamol.</li> <li>• It is prescribed as a reliever medication but may not be as effective as salbutamol as an acute reliever medication due to the delayed onset of action.</li> <li>• It may be more effective for some patients when used in combination with salbutamol.</li> <li>• 2 inhalations of 20 mcg would be approximately equivalent to 2 inhalations of 100 mcg salbutamol and should not be given closer than 4 hours apart. Maximum daily dose of ipratropium: 12 inhalations or 240 mcg.</li> </ul> <p><b><i>Patient on a long-acting anti-muscarinic (LAMA) should continue to use their maintenance medication as prescribed.</i></b></p>

## Inhaler Devices

**Many of the alternative options to salbutamol do not come in an MDI. If an alternative is required it is likely that the patient will be using a different type of inhaler device and it is imperative that proper instructions are given to ensure adequate deposition and efficacy ( <https://cts-sct.ca/covid-19/how-to-properly-use-an-inhaler/>).**

Nebulizers are not the preferred method of COPD medication delivery at any time due to decreased deposition and effectiveness (this is why higher dose is used in nebulization than MDI), and the need for less portable and more expensive equipment. Nebulizing medication is an aerosol generating procedure and risks disseminating viruses, such as the virus responsible for COVID-19 (SARS-CoV-2). Therefore, it is not recommended that nebulized medications are used in suspected or confirmed COVID19 cases in healthcare settings unless there are no other alternatives. In situations where nebulized medications are the best available option for a particular patient, they should be given using airborne precautions. If this needs to be administered in hospital, it should be done in a negative pressure room with staff wearing proper personal protective equipment. If nebulization were administered at home or in other locations, it should be highlighted to all that could be affected, that there is a risk of viral transmission.