



**Guardian
Consulting
Services, Inc.**

Consultant Pharmacists for Healthcare Organizations, Industry, and the Community.

To: All Administrators, Directors of Nursing, and Medical Directors
From: Dr. William C. Hallett, Pharm.D., MBA, BCGP, C-MTM
Date: March 26, 2020
**Subject: COVID-19 UPDATE: Nebulizers to Handheld Devices Chart;
Alternatives in the Event of Shortages**

Background

On March 3rd, 2020, an [article](#) was published in CMAJ, the Journal of the Canadian Medical Association. In the article, the author outlined COVID-19 transmission risks he believed may associated with the use of nebulizer treatments. The article was widely circulated, and at the same time, others were undoubtedly drawing similar conclusions. In response, many institutions looked to switch nebulizers to handheld devices, including multidose inhalers. *To read the article click here*, or copy and paste this link into your browser: <https://www.cmaj.ca/content/re-transmission-corona-virus-nebulizer-serious-underappreciated-risk>

Discussion

In an effort to assist practitioners interested in alternatives, we have developed a simple, two page reference chart, titled *“List of Common Nebulizer Treatments for Asthma/COPD and Possible Metered Dose/Hand Held Inhaler Alternatives”* (Attached, see below.) The chart is organized by therapeutic class and lists the metered dose and other handheld devices in relative acquisition cost order, depending on source.

Shortages

It is important to note that we are becoming increasingly aware that as utilization of the metered dose and handheld devices has increased, sporadic shortages have developed. The attached chart may also be used, of course, for practitioners to quickly view alternatives should their first choice be temporarily unavailable, or for clinicians to make decisions should a particular product be unavailable for refill.

Research and Assistance on this and other topics

We are continuing to monitor the clinical literature as it relates to medication use issues in COVID-19. We have a wealth of information and research capabilities at our disposal. We welcome your questions along with your comments and feedback. *Please do not hesitate to reach out to us if we can be of assistance!*

Respectfully,

Dr. William C. Hallett, Pharm.D., MBA, CGP, C-MTM
President/CEO, Guardian Consulting Services, Inc.

New York - Albany/Syracuse/Southern Tier [\(518\) 708-8101](tel:5187088101)

New York - Downstate/NYC/Long Island [\(516\) 775-6235](tel:5167756235)

Connecticut and Rhode Island [\(203\) 889-4915](tel:2038894915)

Massachusetts/Vermont/New Hampshire [\(617\) 301-4147](tel:6173014147)

New Jersey, Pennsylvania and the Mid-Atlantic [\(732\) 719-1915](tel:7327191915)

Florida and the Southeast [\(772\) 403-8215](tel:7724038215)

Visit us on the web at GuardianConsulting.com



**Guardian
Consulting
Services, Inc.**

Consultant Pharmacists for Healthcare Organizations, Industry, and the Community.

**List of Common Nebulizer Treatments for Asthma/COPD and
Possible Metered Dose/Hand Held Inhaler Alternatives**
(Alternatives listed from relative least to most expensive, depending on source)

Anticholinergic Nebulizers:

Ipratropium Bromide Inhalation Solution 0.5mg

Possible Metered Dose/Handheld Alternatives:

Incruse Ellipta (Umeclidinium)
Tudorza (Aclidinium)
Atrovent HFA (Ipratropium)
Spiriva Handihaler (Tiotropium)
Spiriva Respimat (Tiotropium)

Short Acting Beta Agonist Nebulizers:

Accuneb (Albuterol Sulfate Inhalation Solution) 0.63mg or 1.25mg
Xopenex (Levalbuterol Inhalation Solution) 0.31mg, 0.63mg, or 1.25mg

Possible Metered Dose/Handheld Alternatives:

Proair HFA, Proventil HFA, Ventolin HFA (Albuterol)
Xopenex HFA (Levalbuterol)

Combination Anticholinergic/Beta Agonist Nebulizers:

Duoneb (Ipratropium Bromide 0.5mg and Albuterol Sulfate 3mg)

Possible Metered Dose/Handheld Alternatives:

Anoro (Umeclidinium/Vilanterol)
Combivent Respimat (Albuterol/Ipratropium)
Stiolto (Tiotropium/Olodaterol)

Long Acting Beta Agonist Nebulizers:

Brovana (Arformoterol Tartrate) 15mcg
Perforomist (Formoterol)

Possible Metered Dose/Handheld Alternatives:

Foradil (Formoterol Fumarate)
Serevent (Salmeterol)
Striverdi (Olodaterol)

Steroid Nebulizers:

Pulmicort Respules (Budesonide) 0.25mg, 0.5mg or 1mg

Possible Metered Dose/Handheld Alternatives:

Qvar Redihaler (Beclomethasone)

Flovent (Fluticasone Propionate)

Asmanex Twisthaler (Mometasone 110mcg and 220mcg)

Pulmicort Flexhaler (Budesonide)

Certain products are ONLY available in handheld forms, with no direct nebulizer equivalent. These products should be considered according to clinical needs.

Combination Products available ONLY as Metered Dose or Handhelds:

Advair (Fluticasone/Salmeterol)

Breo (Fluticasone/Vilanterol)

Symbicort (Budesonide/Formoterol)

Dulera (Mometasone/Formoterol)