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Generic Name Trade Name Dosage Forms and Strengths	Usual Adult Daily Dose	Cost per Device <i>Approx. cost per usual daily dose</i>	PharmaCare Coverage	Therapeutic Considerations
SHORT-ACTING RELIEVER MEDICATIONS				
Short-Acting Beta₂ Agonists (SABA)				
Salbutamol Ventolin [®] , Airomir [™] , generics pMDI: 100 mcg/puff 200 doses 	Acute relief: 1 to 2 puffs prn Prevention: 1 to 2 puffs QID	\$6.48 \$0.13 to \$0.26 (1 to 2 puffs QID)	Regular Coverage	<ul style="list-style-type: none"> Potential adverse effects: tremor (particularly in the hands, usually disappears as treatment continues), cardiac arrhythmias (more likely in susceptible patients), tachycardia, restlessness, headache, muscle cramps, and nervousness. Use cautiously in patients with cardiovascular disorders (e.g., coronary insufficiency, arrhythmias, hypertension). Paradoxical bronchospasm is unusual and may be related to the propellant and in which case a dry powder formulation may be effective. An alternative therapy, such as a SAMA, may also be considered.
Salbutamol Ventolin [®] Diskus [®] Diskus: 200 mcg/inhalation 60 doses 	Acute relief: 1 inhalation prn Prevention: 1 inhalation q4-6 hour (maximum 3-4 inhalations daily)	\$12.50 \$0.62 to \$0.83 (3 to 4 inhalations/day)	No Coverage	
Terbutaline Bricanyl [®] Turbuhaler [®] Turbuhaler: 0.5 mg/inhalation 100 doses 	Acute relief: 1 to 2 inhalations prn (maximum 6 inhalations daily)	\$8.52 \$0.51 (6 inhalations/day)	Regular Coverage	
Short-Acting Muscarinic Antagonist (SAMA) or Short Acting Anticholinergic				
Ipratropium bromide Atrovent [®] pMDI: 20 mcg/puff 200 doses 	40 mcg (2 actuations) TID to QID Maximum: 240 mcg (12 actuations) daily, (minimum 4 hours between doses)	\$21.05 \$0.63 to \$0.84 (2 actuations TID to QID)	Regular Coverage	<ul style="list-style-type: none"> Potential adverse effects: headache, throat irritation, cough, dry mouth, GI motility disorders, dizziness, bitter/metallic taste. Use cautiously and monitor for worsening urinary retention in patients with pre-existing urinary tract obstruction. Use cautiously in patients with narrow-angle glaucoma. Avoid spraying the mist into the eyes (ocular complications have been reported). A SAMA and a LAMA should not be used concurrently.
Combination product: SABA and SAMA				
Ipratropium bromide salbutamol sulfate Combivent [®] Respimat [®] Inhalation solution via Respimat: 20 mcg/100 mcg salbutamol 120 doses 	1 inhalation QID Maximum: 6 inhalations/24 hours	31.00 \$1.03 (1 inhalation QID)	Regular Coverage	<ul style="list-style-type: none"> Similar therapeutic considerations as SABAs and SAMAs (see above).

Generic Name Trade Name Dosage Forms and Strengths	Usual Adult Daily Dose	Cost per Device Approx. cost per usual daily dose	PharmaCare Coverage	Therapeutic Considerations
LONG-ACTING MEDICATIONS				
Long-Acting Beta₂ Agonists (LABA)				
Indacaterol maleate Onbrez [®] Breezhaler [®]  Inhalation powder capsules via Breezhaler: 75 mcg Boxes of 10 or 30 capsules	75 mcg once daily by oral inhalation	\$50.22/30 capsules \$1.67 (1 inhalation daily)	Limited Coverage	<ul style="list-style-type: none"> Potential adverse effects: cough, headache, palpitations, tachycardia, tremor, muscle spasms, upper respiratory tract infection. Use cautiously in patients with cardiovascular disorders (e.g., coronary insufficiency, arrhythmias, hypertension). Monitor for hyperglycemia in diabetic patients when initiating therapy. LABAs are not typically used to treat acute bronchospasm (rapid onset, short acting bronchodilator should be used to treat acute symptoms). When initiating treatment with LABA, discontinue the use of any regularly scheduled SABA and transition to PRN use of the SABA. Do not use more often or at higher doses than recommended.
Salmeterol SereVent [®] Diskhaler [®]  Disks of dry powder for inhalation: 50 mcg 60 doses	50 mcg BID	\$61.20 \$2.04 (50 mcg BID)	Limited Coverage	
Salmeterol SereVent [®] Diskus [®]  Diskus: 50 mcg/inhalation 60 doses	1 inhalation BID	\$62.41 \$2.08 (1 inhalation BID)	Limited Coverage	
Formoterol Oxeze [®] Turbuhaler [®]  Turbuhaler: 6 mcg, 12 mcg 60 doses <i>NOTE: not officially indicated for the treatment of COPD in Canada</i>	6 or 12 mcg Q12 hour Maximum: 48 mcg/day	6 mcg: \$36.35 \$1.21 (1 inhalation Q12 h) 12 mcg: \$48.39 \$1.61 (1 inhalation Q12 h)	No Coverage for COPD (Limited Coverage benefit for asthma)	
Formoterol Foradil [®]  Inhalation powder capsules via inhaler: 12 mcg Boxes of 60 capsules	12 mcg BID via oral inhalation May increase to 24 mcg BID via oral inhalation, if required Maximum: 48 mcg/day	\$54.58 \$1.82 (1 inhalation BID)	No Coverage for COPD (Limited Coverage benefit for asthma)	
Long-Acting Muscarinic Antagonists (LAMA) or Long Acting Anticholinergics				
Acclidinium bromide Tudorza [®] Genuair [®]  DPI: 400 mcg 60 doses	400 mcg BID	57.35 \$1.91 (1 inhalation BID)	Limited Coverage	<ul style="list-style-type: none"> Potential adverse effects: headache, dry mouth, urinary retention, metallic taste, nasopharyngitis. Use cautiously and monitor for worsening urinary retention in patients with pre-existing urinary tract obstruction (e.g., prostatic hyperplasia). Use cautiously in patients with narrow-angle glaucoma. Do not use LAMAs to treat acute bronchospasm (rapid onset, short acting bronchodilator should be used to treat acute symptoms that occur despite the regular use of a long acting medication). When initiating treatment with a LAMA, discontinue the use of any previous scheduled short acting bronchodilator. Use SABA as a rescue medication PRN and do not prescribe a SAMA. Avoid spraying the mist into the eyes (ocular complications have been reported).
Glycopyrronium bromide Seebri [®] Breezhaler [®]  Inhalation powder capsules via Breezhaler: 50 mcg Boxes of 6 or 30 capsules	50 mcg once daily by oral inhalation	\$57.35/30 capsules \$1.91 (1 inhalation daily)	Limited Coverage	
Tiotropium bromide Spiriva [®]  Inhalation powder capsule via HandiHaler: 18 mcg Boxes of 10 or 30 capsules	18 mcg once daily by oral inhalation	\$56.06/30 capsules \$1.87 (1 inhalation daily)	Limited Coverage	
Tiotropium bromide Spiriva [®] Respimat [®]  Inhalation solution via Respimat: 2.5 mcg per actuation 60 actuations	5 mcg (2 actuations) once daily by oral inhalation	\$56.06/60 actuations \$1.87 (2 actuations daily)	Limited Coverage	

Generic Name Trade Name Dosage Forms and Strengths	Usual Adult Daily Dose	Cost per Device Approx. cost per usual daily dose	PharmaCare Coverage	Therapeutic Considerations
Umeclidinium bromide Incruse™ Ellipta®  DPI: 62.5 mcg 30 doses	62.5 mcg once daily	\$54.00/30 doses \$1.80 (1 inhalation daily)	Limited Coverage	
Combination: Inhaled Corticosteroid (ICS) and LABA				
Budesonide/ formoterol fumarate Symbicort® Turbuhaler®  DPI: 100 mcg/6 mcg, 200 mcg/6 mcg 120 doses	400 mcg / 12 mcg BID	200 mcg: \$92.22 \$3.07 (400 mcg/ 12 mcg BID)	Non-Benefit for COPD (Limited Coverage benefit for asthma)	<ul style="list-style-type: none"> Potential adverse effects: palpitations, oropharyngeal candidiasis, headache, tremor, throat irritation, coughing, hoarseness. Risk of oropharyngeal candidiasis and hoarseness can be reduced by using a spacer with pMDI AND by rinsing mouth and throat after each use (and cleansing dentures if applicable). ICS is associated with an increased risk of pneumonia, particularly at higher doses.
Fluticasone furoate/vilanterol Breo® Ellipta®  DPI: 100 mcg/25 mcg, 200mcg/25mcg 30 doses	100 mcg/25 mcg once daily	\$88.78 \$2.96 (100 mcg/ 25 mcg daily)	Limited Coverage	
Fluticasone propionate/ salmeterol Advair®  MDI: 125/25 mcg and 250/25 mcg 120 inhalations	125/25 mcg or 250/25 mcg: 2 inhalations BID	125/25 mcg: \$105.23 \$3.51 (2 inhalations BID) 250/25 mcg: \$149.38 \$4.98 (2 inhalations BID)	Limited Coverage	
Fluticasone propionate/ salmeterol Advair® Diskus®  DPI via Diskus: 100/50 mcg, 250/50 mcg, and 500/50 mcg 60 inhalations NOTE: 100/50 mcg DPI is not indicated for use in COPD	250/50 mcg: 1 inhalation BID 500/50 mcg: 1 inhalation BID	250/50 mcg: \$105.23 \$3.51 (1 inhalation BID) 500/50 mcg: \$149.38 \$4.98 (1 inhalation BID)	Limited Coverage	
Combination: LAMA and LABA				
Acclidinium/formoterol fumarate Duaklir™ Genuair®  DPI: 400/12 mcg 60 doses	400/12 mcg BID	\$64.80 \$2.16 (1 inhalation BID)	Limited Coverage	<ul style="list-style-type: none"> Potential adverse effects: throat irritation, cough, influenza, upper respiratory tract infection, tooth abscess, headache, tremor, dry mouth. Do not administer a combination LAMA and LABA product concurrently with other products containing LABA or LAMA. Similar therapeutic considerations as LABAs and LAMAs (see above).
Indacaterol/glycopyrronium Ultibro® Breezhaler®  Inhalation powder capsules via Breezhaler: 100 mcg/50 mcg Boxes of 30 capsules	100 mcg/50 mcg once daily by oral inhalation	\$86.84 \$2.89 (1 inhalation daily)	Limited Coverage	
Tiotropium/olodaterol Inspiro™ Respimat®  Inhalation solution via Respimat: 2.5/2.5 mcg 60 actuations	5 mcg/5 mcg (2 inhalations) once daily	\$65.78 \$2.19 (2 inhalations daily)	Limited Coverage	
Umeclidinium/vilanterol Anoro™ Ellipta®  DPI: 62.5/25 mcg 30 doses	62.5 mcg/25 mcg once daily	\$87.48 \$2.92 (1 inhalation daily)	Limited Coverage	

Generic Name Trade Name Dosage Forms and Strengths	Usual Adult Daily Dose	Cost per Device Approx. cost per usual daily dose	PharmaCare Coverage	Therapeutic Considerations
Inhaled Corticosteroids				
<i>NOTE: the following single agent ICS products are NOT officially indicated, as monotherapy, for the treatment of COPD; however, these products are commonly used in conjunction with a LABA, LAMA, or combination LABA and LAMA products.</i>				
Budesonide Pulmicort® Turbuhaler® DPI: 100, 200, 400 mcg/dose 200 doses 	100 to 400 mcg daily in combination with a long-acting bronchodilator (off-label use, GOLD 2014)	100 mcg: \$33.78 <i>\$0.17 (1 inhalation daily)</i> 200 mcg: \$68.97 <i>\$0.34 (1 inhalation daily)</i> 400 mcg: \$100.44 <i>\$0.50 (1 inhalation daily)</i>	Regular Coverage	<ul style="list-style-type: none"> Potential adverse effects: sore mouth, sore throat, dysphonia, oral thrush. Risk of oropharyngeal candidiasis and hoarseness can be reduced by using a spacer with pMDI AND by rinsing mouth and throat after each use (and cleansing dentures if applicable)
Fluticasone propionate Flovent® HFA pMDI: 50, 125, 250 mcg/dose 120 doses Flovent® Diskus® (DPI): DPI: 100, 250, 500 mcg/dose 60 doses  	50 to 500 mcg daily in combination with a long-acting bronchodilator (off-label use, GOLD 2014)	50 mcg pMDI: \$25.85 <i>\$0.22</i> 125 mcg pMDI: \$44.59 <i>\$0.37</i> 250 mcg pMDI: \$89.15 <i>\$0.74</i> 100 mcg DPI: \$25.85, <i>\$0.43</i> 250 mcg DPI: \$44.59, <i>\$0.74</i> 500 mcg DPI: \$69.34, <i>\$1.16</i>	Regular Coverage	<ul style="list-style-type: none"> ICS is associated with an increased risk of pneumonia, particularly at higher doses. Treatment should not be stopped abruptly (may lead to exacerbations in some patients); the drug should be
Systemic Corticosteroids				
Prednisone Generics Tablets: 1 mg, 5 mg, 50 mg	AECOPD: 30 to 50 mg once daily PO for 5 to 14 days	1 mg: \$0.11/tablet 5 mg: \$0.04/tablet 50 mg: \$0.37/tablet	Regular Coverage	<ul style="list-style-type: none"> Potential adverse effects: GI upset, fluid or electrolyte imbalance, hypertension, pituitary-adrenal suppression, skin effects (thinning, easy bruising, acne), hyperglycemia, weight gain, peptic ulcer, behavioural disturbances, insomnia, glaucoma, posterior subcapsular cataracts, myopathy, decreased bone mineral density, cushingoid syndrome. Increased risk of GI ulceration with concomitant NSAID. Increased risk of hypokalemia with concomitant diuretic (e.g., thiazide).
Macrolide – maintenance therapy to reduce AECOPD				
Azithromycin Zithromax®, generics Tablets: 250 mg Oral suspension: 300 mg/15 mL, 600 mg/15 mL, 900 mg/22.5 mL	To reduce risk of AECOPD: 250 mg daily or 250 mg three times per week	250 mg: \$1.33/tablet Susp: 300 mg/15 mL: \$6.04 600 mg/15 mL: \$8.56 900 mg/22.5 mL: \$12.84	Regular Coverage	<ul style="list-style-type: none"> Potential adverse effects: QT prolongation, hearing decrements, nasopharyngeal colonization with macrolide-resistant bacteria. Consider the risk of fatal cardiac arrhythmias in susceptible patients (e.g., patients with QT prolongation, electrolyte imbalance, arrhythmia, cardiac insufficiency, concurrent treatment with QT prolonging medications, elderly). Oral suspension contains 3.87 g of sucrose per 5 mL.

Generic Name Trade Name Dosage Forms and Strengths	Usual Adult Daily Dose	Cost per Device Approx. cost per usual daily dose	PharmaCare Coverage	Therapeutic Considerations
Phosphodiesterase 4 (PDE4) inhibitor				
Roflumilast Daxas® Tablet: 500 mcg	500 mcg daily	\$2.27/tablet	No Coverage	<ul style="list-style-type: none"> • Potential adverse effects: diarrhea, weight loss (average of 2 kg), nausea, headache, abdominal pain. • Less common adverse events: suicide and/or suicidal ideation or behaviour, aspartate aminotransferase (AST) increase. • Diarrhea, nausea and headache usually occur within the first 4 weeks of treatment and are typically resolved within 4 weeks while still on continued treatment. • Contraindicated in moderate or severe hepatic impairment (Child-Pugh B or C). • Do not use concurrently with theophylline.
Mucolytics				
N-acetylcysteine (NAC) Generics Solution: 200 mg/mL	600 mg PO bid	30 mL vial: \$18.96	Regular Coverage	<ul style="list-style-type: none"> • Potential adverse effects of oral administration: nausea, vomiting, GI symptoms. • Solution must be diluted with cola or other soft drink to a final concentration of 5%. Water may be used as a diluent if administered via a gastric tube. Use dilutions within 1 hour of preparation. • The unpleasant, sulfur-like odour of the oral solution typically becomes less noticeable as treatment progresses. Administering the oral solution on ice, in a cup with a lid, and drinking through a straw may help. • Undiluted solutions in opened vials can be stored for up to 96 hours in the refrigerator. • Studies used NAC tablets; however, tablets are not readily available in Canada.

Abbreviations: AECOPD = acute exacerbation of COPD; BID = twice daily; DPI = dry powder inhaler; G = generic; GI = gastrointestinal; HF = heart failure; IR = immediate-release; kg = kilogram; mg = milligram; pMDI = pressurized metered dose inhaler; QID = four times daily; TID = three times daily.

Footnotes: Pricing is approximate as of March 8, 2017 and does not include dispensing fee or additional markups.

Note: Please review product monographs at hc-sc.gc.ca/dhp-mps/prodpharma/databasdon/index-eng.php and regularly review current Health Canada advisories, warnings and recalls at www.hc-sc.gc.ca/ahc-asc/media/advisories-avis/index_e.html

PharmaCare Coverage Definitions: **G:** generic(s) are available; **Regular Coverage:** also known as regular benefit; does not require Special Authority. Regular benefits may be fully or partially covered.*; **Limited Coverage:** requires Special Authority for coverage. Limited Coverage benefits approved by Special Authority may be fully or partially covered.*; **RDP:** Reference Drug Program. Drugs included in the RDP are comparable agents of the same therapeutic class. Patients receive full coverage of drugs designated as the Reference Drug(s) of the therapeutic class. Other drugs in the same RDP category are covered up to the price of the Reference Drug; **No coverage:** also known as non-benefit; does not fit the above categories.

* Note: Information on which products PharmaCare covers can be obtained using the B.C. PharmaCare Formulary Search (www.health.gov.bc.ca/pharmacare/benefitslookup/). In all cases, coverage is subject to drug price limits set by PharmaCare and to the patient's PharmaCare plan rules and deductibles. See: www.health.gov.bc.ca/pharmacare/plans/index.html and www.health.gov.bc.ca/pharmacare/policy.html for further information.

References

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