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Primary Care Asthma Program (PCAP)

Program Manual

Version 2020

Ontario Lung Association is a registered charity operating as the Lung Health Foundation

Ontario

Primary Care Asthma Program

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Section 1: Introduction

Primary Care Asthma Program

Introduction

Thank you for your expressed interest in the Primary Care Asthma Program (PCAP).

PCAP is an evidence-based program that provides a model of care to primary care health practices in Ontario. PCAP is a part of the Ministry of Health and Long-term Care's Asthma Program (AP) mandate to reduce the utilization of health care through an integrated plan including prevention, health promotion, education, management (including treatment), surveillance and research.

This program is designed to equip primary care sites to provide evidence-based respiratory care to their patients through implementation processes, program standards and respiratory resources and tools.

We hope that this program serves you well in providing the best lung health outcomes for your patient.

Disclaimer: The content of this guide is based on current available evidence and has been reviewed by medical experts. It is provided for informational purposes only. The views set out in this guide are those of the authors and do not necessarily reflect those of the Government of Ontario or the Ministry of Health and Long-Term Care. The information is general in nature and is not intended to be a substitute for sound clinical judgment. Seek the advice and expertise of your health care provider with any questions you may have about your health.

Primary Care Asthma Program

Background Summary

The Primary Care Asthma Program (PCAP) is an evidence-based asthma program intended to provide primary care providers with decision aids to support best practice regarding asthma assessment, diagnosis and management. Its development, implementation and evaluation as a pilot program were funded through the Ontario Ministry of Health and Long-Term Care, as one of the initiatives of the Asthma Plan of Action (APA), now called the Asthma Program (AP). The pilot for this program was evaluated through a research study led by Drs. Teresa To and Lisa Cicutto in 8 primary care sites across the province from 2002-2006.

Results of the pilot were very positive for asthma management, patient outcomes and acute care use and were sustained at 6 and 12 month intervals. There were statistically significant improvements in:

- the amount of spirometry completed almost doubled to 67.4% from 38.4% ($p<0.0001$)
- relative reduction of 33.7% in daytime asthma symptoms ($p=0.0432$)
- relative reduction of 45.2% in night time awakening symptoms ($p<0.0001$)
- relative reduction of 29.9% in asthma attacks ($p<0.0001$)
- relative reduction of 48.8 % in missed school days ($p=0.0004$)
- relative reduction of 50.0% in emergency department visits ($p<0.0001$).[1]

The PCAP tools are intended for use by a multi-disciplinary team and include:

- Care Maps (Asthma and COPD)
- Action Plans (Asthma and COPD)
- Decision and Management Algorithms (Asthma and COPD)
- Generic program standards

In partnership with the Lung Health Foundation, PCAP also provides COPD program resources and tools to deliver a lung health program. The PCAP tools are based on the latest Canadian Asthma and COPD Consensus Guidelines. The care map and action plan are being adapted for integration into electronic medical records (EMRs) in primary care.

The eight sites that participated in the Primary Care Asthma Pilot Project (PCAPP) include:

- Gizhewaadiziwin Health Access Centre (Fort Frances)
- Group Health Centre (Sault Ste. Marie)
- Rural Kingston Primary Care Network (Kingston and area),
- South Riverdale Community Health Centre (CHC) (Toronto East)
- Stonegate CHC (Toronto West),
- North Lanark CHC (Lanark and Renfrew counties)
- North Hamilton CHC (Hamilton)
- Somerset West CHC (Ottawa)

[1] T. To, L. Cicutto, N. Degani, S. McLimont, J. Beyene, Can a Community Evidence-based Asthma Care Program Improve Clinical Outcomes? A Longitudinal Study. *Med Care* 2008;46: 1257-1266

Primary Care Asthma Program

Background Summary

After the pilot, PCAP was implemented in four additional locations through the following coordinating centres:

- Asthma Research Group Inc. (Windsor – various locations)
- St. Joseph's Health Care (London)
- Royal Victoria Hospital (Barrie)
- Thunder Bay Regional Health Sciences Centre* (Thunder Bay)
  *now St. Joseph's Care Group in Thunder Bay

In addition, Kingston General Hospital, Firestone Institute for Respiratory Health and Sunset Country FHT have taken on coordination of PCAP programs in the Kingston, Hamilton and Kenora areas respectively. **There are now 13 PCAP sites funded by the MOHLTC AP in Ontario.**

PCAP is part of Ontario's Asthma Program (AP), an integrated strategy of thirteen initiatives based on the Canadian Asthma Consensus Guidelines[2,3] and the Canadian Thoracic Society Guidelines for occupational asthma.[4] The goal of the AP is to reduce mortality, morbidity and health care costs for children and adults with asthma through an integrated plan focused on health promotion and prevention, management and treatment and research and surveillance.

PCAP is delivered within a multi-disciplinary team of primary care providers with the leadership of a Site Coordinator and/or a Certified Respiratory Educator (CRE) who is also trained in doing Spirometry (is certified through SpiroTrec™ or is a RRT or RCPT). The Site Coordinator and/or a CRE assist with program implementation, mentoring, and education of patients and staff. The key to the success of this program is the expertise of the educator who provides current evidence-based knowledge and assists with on-site objective measurements via spirometry to facilitate accurate diagnosis and management of asthma. The program is modeled on fostering patient and family self-management.

A Provincial PCAP Coordinator was added in 2007 to maintain and enhance current AP and non-AP funded PCAP sites to address ongoing program integration challenges (identified through annual needs assessments) and to assist new primary care sites with implementation and integration of PCAP into their clinics. A strategic planning session was held in the fall of 2007, with key strategies including definition of the governance structure, development of a generic business case and marketing plan, and standardization of the program including the program manuals (site and spirometry). Project groups work to implement recommendations and suggestions identified by the PCAP Advisory.

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[2] Boulet, L.-P., A. Becker, D. Bérubé, R. Beveridge, and P. Ernst, on behalf of the Canadian Asthma Consensus Group. 1999. Canadian asthma consensus report. *CMAJ* 161 (11 Suppl.): S1-61.

[3] Boulet L.-P., T. R. Bai, A. Becker, D. Bérubé, R. Beveridge, D. M. Bowie, K. R. Chapman, et. al. 2001. What is new since the last (1999) Canadian Asthma Consensus Guidelines? *Can Respir J* 8 (Suppl A): 5A-27A.

[4] · Tarlo, S. M., L.-P. Boulet, A. Cartier, D. Cockcroft, J. Côté, F. E. Hargreave, L. Holness, G. Liss, J. L. Malo, and M. Chan-Yeung. Canadian Thoracic Society Guidelines for occupational asthma. 1998. *Can Respir J* 5 (4): 289-300.

Primary Care Asthma Program

Background Summary

Since 2007 and the addition of the PCAP provincial coordinator, PCAP has expanded..
Expansion:

- Over 190 sites across Ontario
  (36 co-ordinating AP-funded sites: includes branches, satellites, First Nation communities, orphaned clinics, group and single physician clinics)
- Comprehensive PCAP Training Schedule for program implementation

Other AP initiatives related to PCAP:

- Provider Education Program (PEP)
- Asthma Action (providing patient tools and resources)
- School-Based Initiatives (Asthma Friendly Schools and Ryan's Law implementation)
- Smoke Free Homes & Asthma
- EMR Project including: data standards and specifications, Asthma Quality of Life Questionnaire (AQLQ) and Work-Related Asthma Screening Questionnaire (WRASQ)
- Work-Related Asthma
- Emergency Department Asthma Care Pathway (EDACP) for adult and pediatric population
- Asthma Surveillance and Asthma Performance Indicators (PC-API)
- Collaborative Care Pilot Project (CCPP)

Primary Care Asthma Program

Site Coordinator and Site Certified Asthma/Respiratory Educator

Generic Primary Care Asthma Program (PCAP) Job Descriptions

The following job descriptions have been developed to help guide PCAP sites with the recruitment of a PCAP Site Coordinator and or Certified Asthma/Respiratory Educator.

Background

The Primary Care Asthma Program (PCAP) is an evidence-based program intended to provide primary care providers with decision aids to support best practice regarding asthma assessment, diagnosis, management, patient education, monitoring, and the primary and secondary prevention of asthma and occupational asthma. The program tools include:

- Generic program standards
- Care Map (asthma and COPD)
- Action Plan (asthma and COPD) and
- Decision and Management Algorithm (asthma and COPD)

These tools, based on the Canadian Respiratory Guidelines, are intended for use by a multi-disciplinary team. A PCAP site coordinator and or a certified asthma/respiratory educator support the implementation and ongoing sustainability of the asthma program in collaboration with the primary care providers at each location.

The PCAP Site Coordinator leads program implementation including staff and patient education and participation in research as appropriate. Key to the success of this program is the expertise of the certified asthma/respiratory educator whose focus is patient and family guided self-management while providing current evidence-based asthma information and assistance with on-site objective measurements to facilitate accurate diagnosis and management of asthma and COPD.

Position: **PCAP Site Coordinator**

Reporting to: **Site Administrator**

Position Description:

The PCAP Site Coordinator participates in the planning, development, implementation and ongoing evaluation of the Primary Care Asthma Program, in collaboration with primary care providers, community/provincial agencies and the general public.

Primary Care Asthma Program

Site Coordinator and Site Certified Asthma/Respiratory Educator

Key Responsibilities

- Establishes (in consultation with the Site Administrator) goals, objectives and plans for effective implementation of the Primary Care Asthma Program for the site and associated locations.
- Develops (in consultation with the Site Administrator) PCAP site specific budget; implements the budget, monitors expenses and provides rationale for variances.
- Identifies and reports opportunities for program improvements, sustainability and possible expansion.
- Develops and maintains collaborative internal and external partnerships.
- Attends relevant events, meetings and participates as a member of committees and/or working groups.
- Utilizes the best available evidence to support decisions.
- Participates in research initiatives, as appropriate.
- Serves as a resource person for respiratory health education for the site and community.
- Responsible for staffing of PCAP
- Supervises and mentors other respiratory educators
- Facilitates training and continuing education for PCAP and site staff
- Works with educators and individual sites to ensure adherence to PCAP standards and protocols.
- Conduct individual and family assessments to identify strengths, resources, psychological factors, socioeconomic impact, knowledge, and potential barriers to learning and improved asthma management
- Provide spirometry testing as indicated in accordance with the Canadian Thoracic Society/American Thoracic Society/European Respiratory Society guidelines
- Provide asthma and COPD education to patients, families and care providers utilizing best practice strategies and standardized PCAP tools, in accordance with PCAP Advisory Group recommendations
- Work with patients/families and primary care provider to develop, implement and revise customized self-management plans (Action Plans)
- Complete documentation in accordance with PCAP standards and site specific policies and practice
- Identify community resources and help patients to understand how and when to best access those resources appropriately
- Monitor asthma education program outcomes and performance indicators, recommending changes to improve quality and effectiveness of program
- Serve as a resource to the community by providing information about asthma; liaise with local health care providers, hospitals and community organizations to increase awareness, knowledge and skills
- Performs other duties as assigned.

Primary Care Asthma Program

Site Coordinator and Site Certified Asthma/Respiratory Educator

Essential Qualifications:

- Licensed Ontario Regulated Healthcare professional (for example registered respiratory therapist, registered nurse or pharmacist).
- Certified Asthma Educator or Certified Respiratory Educator
- Demonstrated leadership, team development and facilitation skills
- Experience in and/or training in project management.
- Demonstrated ability to incorporate evidence into practice
- Demonstrated competency in spirometry testing, (in accordance with the American Thoracic Society/European Respiratory Society Standards) preferred.
- Other, as required by individual sites.

Preferred Qualifications:

- Previous experience with program development and evaluation
- Demonstrated ability to establish and meet goals/ objectives
- Demonstrated ability to develop and work within a budget
- Previous experience with participation and support of research
- Demonstrated ability to build relationships and work collaboratively with internal and external stakeholders
- Demonstrated ability to function independently and as a professional team member and/or team leader
- Demonstrated excellent organizational and time management skills
- Demonstrated excellent interpersonal and communication skills
- Previous experience in delivery and evaluation of asthma education programs
- Excellent facilitation and teaching skills
- Self-directed practitioner
- Ability to work as a member of an interdisciplinary care team
- Excellent interpersonal and communication skills
- Strong organizational skills
- Demonstrated commitment to professional development
- Demonstrated ability to incorporate evidence into practice
- Experience and comfort with computer applications
- Excellent assessment and independent decision making skills
- Demonstrated flexibility, adaptability and ability to manage change
- Demonstrated competency in spirometry testing in accordance to the CTS/ATS/ERS Standards

Primary Care Asthma Program

Site Coordinator and Site Certified Asthma/Respiratory Educator

Primary Care Asthma Program

Position: **Asthma/Respiratory Educator**

Reporting to: **PCAP Site Coordinator**

Position Description:

The Certified Asthma/Respiratory Educator (CAE/CRE) works along with primary care providers to assess diagnose and educate patients and their families or caregivers about asthma. The CAE/CRE fosters a collaborative approach to asthma management in the community; promotes and utilizes opportunities to increase awareness, skill and knowledge within the community, through their expertise; identifies and participates in continuing education and research opportunities as appropriate to the goals of PCAP and in accordance with host site guidelines.

Key Responsibilities

The following responsibilities are standards for a Certified Asthma/Respiratory Educator assigned to the Site and are not intended to address responsibilities that the incumbent might have elsewhere

- Conduct individual and family assessments to identify strengths, resources, psychological factors, socioeconomic impact, knowledge, and potential barriers to learning and improved asthma management
- Provide spirometry testing as indicated in accordance with the American Thoracic Society guidelines
- Provide asthma education to patients, families and care providers utilizing best practice strategies and standardized PCAP tools, in accordance with PCAP Advisory Group recommendations
- Work with patients/families and primary care provider to develop, implement and revise customized self-management plans (Action Plans)
- Complete documentation in accordance with PCAP standards and site specific policies and practice
- Identify community resources and help patients to understand how and when to best access those resources appropriately
- Monitor asthma education program outcomes and performance indicators, recommending changes to improve quality and effectiveness of program
- Serve as a resource to the community by providing information about asthma; liaise with local health care providers, hospitals and community organizations to increase awareness, knowledge and skills

Primary Care Asthma Program

Site Coordinator and Site Certified Asthma/Respiratory Educator

Essential Qualifications:

- Licensed Ontario Regulated Healthcare professional (for example registered respiratory therapist, registered nurse or pharmacist)
- Certified Asthma Educator or Certified Respiratory Educator

Preferred Qualifications

- Previous experience in delivery and evaluation of asthma education programs
- Excellent facilitation and teaching skills
- Self-directed practitioner
- Ability to work as a member of an interdisciplinary care team
- Excellent interpersonal and communication skills
- Strong organizational skills
- Demonstrated commitment to professional development
- Demonstrated ability to incorporate evidence into practice
- Experience and comfort with computer applications
- Excellent assessment and independent decision making skills
- Demonstrated flexibility, adaptability and ability to manage change
- Demonstrated competency in spirometry testing in accordance to the CTS/ATS/ERS Standards

Section 2: Getting Started

Primary Care Asthma Program (PCAP) Annual Best Practice Checklist

PCAP Best Practice Standard	Meets Standard	Site Comments
1. Health Care Providers (HCPs) have an understanding of the PCAP generic program standards consistent with their distinct roles and responsibilities b. There will be an identified plan for training and communication to all HCPs involved in PCAP.		
2. The PCAP site follows the current Lung Association (LHF) Asthma Care Map for patient assessment and follow-up		
3. The PCAP site follows the current LHF COPD Care Map for patient assessment and follow-up		
4. PCAP educator and/or lead is in good standing with their college or governing body		
5. PCAP educator and/or lead to provide college registration # _____		
6. PCAP educator and/or lead is a Certified Respiratory Educator (CRE) or Certified Asthma Educator (CAE)		
7. Each PCAP site must adhere to the PCAP Spirometry Policy and Procedure in the Spirometry Manual*		
8. PCAP site has a medical directive in place for conducting pre and post bronchodilator spirometry, including Salbutamol administration*		
9. The PCAP site uses the PCAP Operators Checklist when conducting spirometry*		
10. For children < 6 years of age who are unable to perform spirometry for diagnosis, Canadian Thoracic Society (CTS) Preschool Asthma Guidelines are followed		
11. If spirometry is inconclusive for diagnosis, alternative methods should be considered		

Primary Care Asthma Program (PCAP) Annual Best Practice Checklist

(e.g., methacholine challenge, Peak Expiratory Flows (PEF), exercise testing**, etc.) **exercise testing: to evaluate exercise-induced bronchospasm (EIB). This is not a cardiac stress test.		
12. Identification of Physician and/or Nurse Practitioner (NP) responsible for the interpretation of spirometry and the communication of the diagnosis to the client		
13. Spirometry is conducted by a Registered Respiratory Therapist (RRT), Registered Cardiopulmonary Technologist or another regulated health professional who has successfully completed an accredited spirometry course such as SpiroTrec™		
14. Spirometry is interpreted by qualified individuals within their scope of practice according to ATS/ERS/CTS standards		
15. The assessment for both asthma and COPD should include the explicit ruling out of alternative diagnosis		
16. All asthma and COPD clients, together with their families/caregivers (if desired) are active partners in the management of their disease		
17. All clients have a written or electronic action plan to be reviewed/revised at each appointment.		
18. There is an established plan and pathway for follow-up with every client		
19. The HCP explores barriers to adherence at every visit		
20. Asthma and COPD teaching resources and tools provided to the client and family will be evidence-based and consistent with the current CTS guidelines		

Primary Care Asthma Program (PCAP) Annual Best Practice Checklist

21. List all PCAP resources you currently use to aid in your clinical decision making		
22. The type/model of Spirometer used: Predicted values used:		
23. EMR used:		

*If spirometry is not performed on site, this may not apply. However, the spirometry that is conducted off site should adhere to ATS/ERS/CTS guidelines.

Please visit www.lungontario.ca/PCAP for all PCAP resources

☐ PCAP needs assessment survey completed
☐ The PCAP site lead keeps the team engaged and celebrates success (regular updates to ED, physician lead, program manager)

PCAP team members:
☐ Physician lead: _____
☐ Executive Director/Program Manager/site lead:_____
☐ PCAP educator lead:_____
☐ IT specialist:_____
☐ Other: _____

Reviewed by:

1. PCAP site lead:_____
2. PCAP educator lead: _____
3. PCAP physician lead:_____

Date signed: _____

Primary Care Asthma and COPD Program

Generic Program Standards

The following Asthma guideline-based and COPD guideline-based program standards are recommended in primary care sites implementing a Primary Care Asthma (12,13) and/or a COPD Program.

Program Standards:

1. **Asthma:** Paediatric and adults suspected of having asthma should be assessed, diagnosed, and managed using the Asthma Care Map (ACM) for Primary Care which is based on the recommendations in the Canadian Thoracic Society (CTS) Asthma Management Continuum Respiratory Guidelines (1). The ACM will be updated to reflect changes in the CTS guidelines.

   COPD: Adults who are suspected to have COPD should be assessed and diagnosed. Once diagnosed, clients with COPD should be managed using the COPD Care Map (CCM) for Primary Care which is based on the Canadian Thoracic Society (CTS) recommendations for the diagnosis and management of COPD (8). The CCM will be updated to reflect changes in the CTS guidelines.

2. There will be a plan for training and communication of the Health Care Professional (HCP) involved in PCAP to ensure that the site staff has a level of understanding of the generic program standards consistent with their roles and responsibilities.

3. The HCP will provide PCAP within their scope of practice as regulated in Ontario by the Regulated Health Professions Act.

4. All clients will be provided with a written action plan for Asthma or COPD as appropriate

Spirometry/Diagnosis

5. Spirometry*, pre- and post-bronchodilator, in accordance with American Thoracic Society/European Respiratory Society standards (4), will be used as the primary objective measure for the diagnosis, monitoring and management of Asthma and/or COPD.

6. **Asthma:** If spirometry is not used for diagnosis and monitoring, a notation as to the reason why the use of an alternative method of diagnosis/monitoring should be made in the client's chart (e.g. "client cannot perform spirometry"). In the absence of objective testing (such as for children < 6 years of age, whom it is not possible to routinely assess lung function) a careful history and physical examination are used to differentiate Asthma from other causes of episodic respiratory symptoms (1,2,3).

Alternative testing consistent with CTS guidelines will be initiated at the discretion of the client's primary care provider and where resources are available. Measurements of airway hyperresponsiveness to Methacholine challenge, Peak Expiratory Flow (PEF) for clients > 6 years of age, or exercise challenge testing may be useful in diagnostic dilemmas, such as individuals with persistent asthma symptoms despite normal spirometry, and to evaluate work-related asthma (1).

COPD: Diligent screening for the detection of early signs of COPD is recommended to identify the early diagnosis. Who should be screened? Please refer to the Canadian Lung Health Test (8).

According to CTS guidelines, spirometry must be used to confirm the diagnosis of COPD. Post-bronchodilator, airflow obstruction must be noted - FEV1/FVC ratio < Lower Limit of Normal (LLN)** (or < 0.70 if LLN is not available) (8).

7. The assessment for asthma or COPD should include the explicit ruling out of other possible diagnoses responsible for asthma or COPD-like symptoms (1,8)

Asthma and COPD Management/PCAP Tools and other resources

8. All asthma and COPD clients, together with their family/caregivers, will be active partners in the management of their disease and in the creation of an individual action plan. (1,8)

9. Asthma and COPD education materials provided to the client to take home will be evidence-based, consistent with the CTS guidelines, and will strive to be age, culturally appropriate and provided in a language and format understood by the client as available.

10. The PCAP site will use a variety of site and community resources to reinforce the program standards.

11. A successful asthma or COPD education program consists of a partnership between the client and the HCP regarding the goals of treatment and ongoing follow-up to achieve and maintain optimal control of the client's lung health. Follow-up should be determined by the HCP on an individual basis. The content of the education session should refer to the CTS guidelines reflected in the care maps and algorithms.

12. Both Asthma and COPD clients will receive smoking cessation counseling when appropriate. It is recommended that the HCP involved with PCAP be trained in smoking cessation counseling.

13. The PCAP resources will aid in clinical decision-making and guide the patient towards self-management of their disease. Client assessment may occur over an average of 1-4 visits. However, some clients who have severe disease or other issues that impact on

achieving control of their asthma and/or COPD may require additional visits. The PCAP resource catalogue includes:

Asthma: Asthma Care Map (ACM) for Primary Care, Asthma Action Plan, and the Asthma Diagnosis and Treatment Algorithm
COPD: COPD Care Map (CCM) for Primary Care, COPD Action Plan, and the COPD Diagnosis and Treatment Algorithm

Note: a variety of resources will be available in addition to the stated above. Refer to http://hcp.lunghealth.ca

14. The HCP should explore barriers to adherence at each visit. These may include cost of drugs, timing of administration, beliefs of non-effectiveness, concerns regarding side effects, and forgetfulness. The HCP should ensure that clients comprehend the name, purpose, duration of treatment, dosing schedule and possible adverse effects of each asthma or COPD medication prescribed (1,8)

    If a client is unable to purchase asthma or COPD medications and devices as prescribed by site staff due to financial burden, the staff of the site will try to assist the client to access these medications and devices through available programs (e.g. Trillium Drug Program, compassionate access programs).

*Spirometric values = the performance of flow-volume curves

** Lower Limit of Normal: A statistically derived level below which a value is considered to be abnormal (10). For most biological measurements, the standard assumption is that for data with a normal distribution, values within 2 SDs of the mean value represent 95% of the population and are considered to be normal. The LLN is defined as the 5th percentile (the value that marks the lower 5% of the normal population) (11).

Please note:

Permission & Proper acknowledgement is required in any modification of the PCAP Tools as per PCAP process.

Approvals:

Approved by Design Task Force: July 11 2002

Last Amended by the Primary Care Asthma Program Advisory: June 2013

References:

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2. Kovesi T. Achieving Control of Asthma in Preschoolers. CMAJ 2010; 182(4): E172-183

3. Global Initiative for Asthma (GINA). Global Strategy for the Diagnosis and Management of Asthma in Children 5 Years and Younger, 2009 **http://www.ginasthma.org/uploads/users/files/GINA_Under5_2009_CorxAug11.pdf**

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6. Aaron SD, Vandemheen KL, Boulet LP, et al. Overdiagnosis of asthma in obese and nonobese adults. CMAJ 200818; 179:1121-31.

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8. O'Donnell DE, et al. Canadian Thoracic Society Recommendations for Management of COPD – 2008 Update Highlights for Primary Care; Can Respir J 2008; 15(Suppl A): 1A-8A.

9. Kaplan A. The COPD Action Plan; Canadian Family Physician 2009; 55: 158-59

10. Roberts, SD et al. FEV1/FVC ratio of 70% Misclassifies Patients with Obstruction at the Extremes of Age. CHEST 2006; 130 (1): 200-6

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12. To T et al. Can a Community Evidence-based Asthma Care Program Improve Clinical Outcomes? A Longitudinal Study. Med Care 2008; 46(12): 1257-126

13. To et al. How Much Do Health Care Providers Value a Community-based Asthma Care Program? – A Survey to Collect Their Opinions on the Utilities of and Barriers to its Uptake. BMC Health Services Research 2009; 9:77

PCAP Patient Process Map—A Guide For Educators

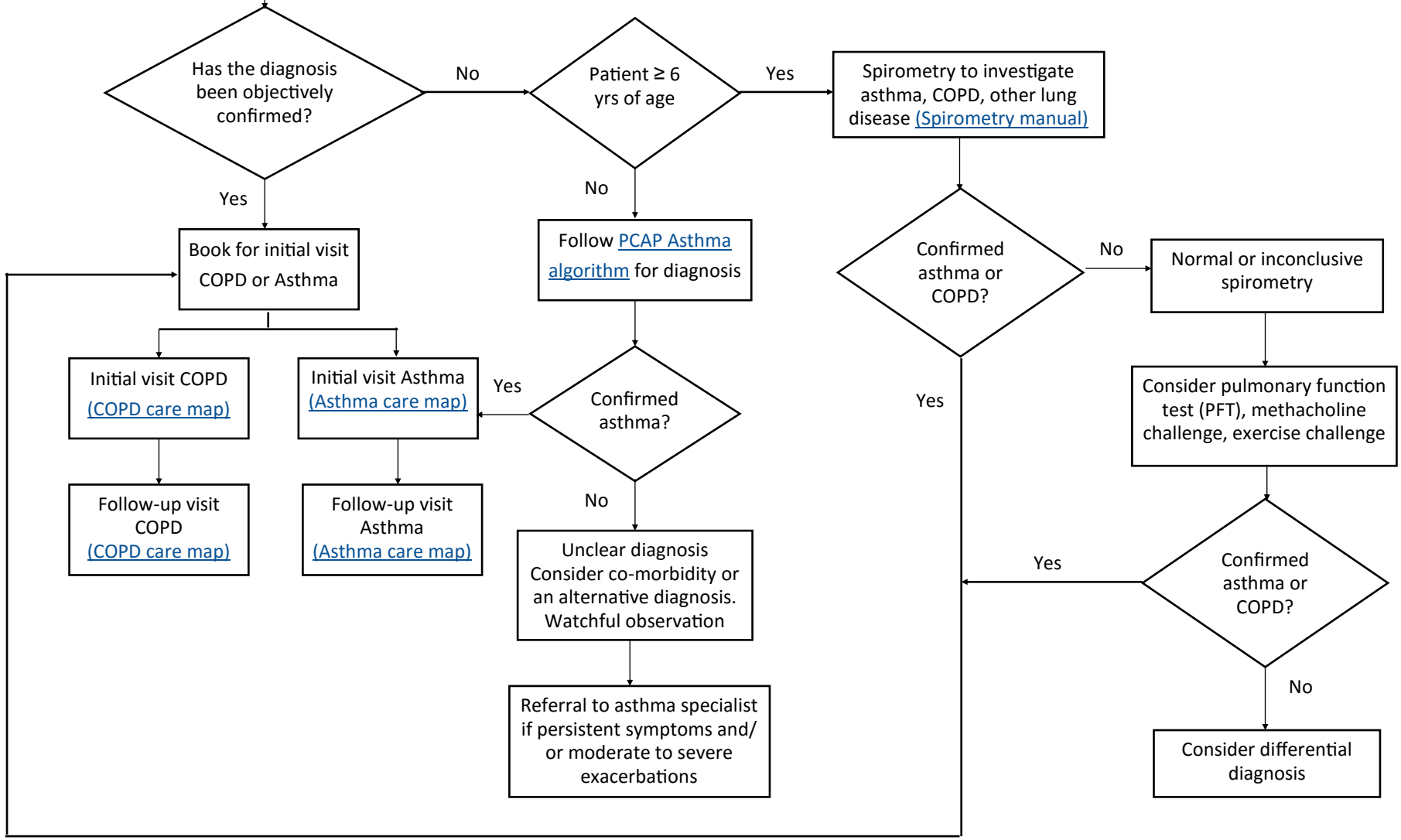
Referral to certified respiratory educator (CRE) for:

- Spirometry to support objective diagnosis of Asthma
- Spirometry to support objective diagnosis of COPD
- Symptoms of cough, wheeze, chest tightness, dyspnea, sputum production, nocturnal awakening with symptoms, exercise limitation, current/prior respiratory tract infection

Referrals could come from:

- Physician or NP
- Other site staff
- Hospital, ER
- CCAC/community care
- Self-referral

Primary Care Asthma Program



PCAP Patient Process Map—A Guide For Educators

These are elements of best practice that should be followed as much as possible over time in follow-up visits.

Primary Care Asthma Program

COPD Initial (90 minutes) - use the COPD care map and algorithm to guide you	**Asthma Initial (90 minutes) -** use the asthma care map and algorithm to guide you
• Pre and Post Spirometry • Determining patient goals • Baseline assessment (symptom assessment, MRC, CAT score, depression score, health care utilization) • Smoking history—smoking cessation if applicable • Pathophysiology • Medications (what they are, proper inhaler technique, adherence, medication access) • Importance of alleviating dyspnea (exercise, energy conservation, breathing exercise) • Triggers and occupational exposures • Importance of immunizations (Influenza, pneumococcal) • Social determinants of health (other addictions, access to care, cultural considerations, literacy) • Address co-morbidities and referrals to other team staff or community programs as necessary (pulmonary rehabilitation) • Develop a COPD action plan • Consider referral to specialists if necessary • Determine next follow-up appointment (frequency depends on client needs)	• Pre and Post Spirometry • Determine patient goals • Personal history (smoking, healthcare utilization, triggers including work-related, co-morbidities) • Smoking cessation - if applicable (assess first, second and third-hand exposure) • Family history of allergies and asthma • Pathophysiology • Environmental control • Medications (what they are, proper inhaler technique, adherence, medication access) • Importance of immunizations (influenza and pneumococcal) • Social determinants of health (other addictions, access to care, cultural considerations, literacy) • Address co-morbidities and referrals to other team staff or community programs as necessary) • Consider referral to specialists if necessary • Develop a written asthma action plan • Determine next follow-up appointment (frequency depends on client needs but follow-up recommended every 3-4 months for preschoolers)
COPD follow-up (60 minutes) - use the COPD care map and algorithm to guide you	**Asthma follow-up (60 minutes)-** use the asthma care map and algorithm to guide you
• Pre and Post Spirometry (if clinically indicated) • Reviewing patient goals • Follow-up assessment (symptom assessment, MRC, CAT score, health care utilization and exacerbations) • Smoking cessation (if applicable) • Medication and guideline review (CTS, GOLD) • Education components: nutrition, travel, sleep and sex, breathing techniques chest clearance techniques, relaxation techniques, energy conservation, exercise, medication and inhaler technique, flare-ups/exacerbations • Activities of daily living skills, coping skills • Address co-morbidities and referrals to other team staff or community programs as necessary (pulmonary rehabilitation) • If applicable: oxygen therapies, advanced directives/end-of-life care, invasive and non-invasive ventilation • Importance of immunizations (Influenza, pneumococcal) • Review or revise COPD action plan • Consider referral to specialists if necessary • Determine next follow-up appointment (frequency depends on client needs)	• Pre Spirometry (Post if indicated) - follow-up to assess relation to baseline (level of control) • Review patient goals • Follow-up assessment (review control, health care utilization and exacerbations) • Smoking cessation - if applicable (assess first, second and third-hand exposure) • Medication and guideline review (CTS) • Education components: symptom control, trigger and environmental management, medication and inhaler technique, importance of activity and exercise, coping skills, flare-ups/exacerbations • Adherence to medications (social determinants of health) • Address co-morbidities and referrals to other team staff or community programs as necessary • Importance of immunizations (Influenza, pneumococcal) • Review written action plan and revise as necessary • Consider referral to specialists if necessary • Determine next follow-up appointment (frequency depends on client needs but follow-up recommended every 3-4 months for preschoolers)

Section 3: Educator Tools

PRIMARY CARE ASTHMA PROGRAM – EDUCATOR PRACTICE SELF-ASSESSMENT (ASTHMA)

The following tool is intended to be used by the Certified Respiratory Educator (CRE) as a self-reflective practice assessment or by a peer educator for the purpose of peer assessment for inclusion in the educator's professional portfolio. There are three components of this tool: 1. Educator's knowledge of asthma, 2. Educator's knowledge of COPD and 3. Educator's skills. This tool is not intended for rapid assessment and may require more than one session. This tool should be used to evaluate the educator's skills and abilities and be used for quality improvement. Please continue to refer to the latest CNRC learning objectives (www.cnrchome.net)

Educator Principles	Competencies	Needs Improvement	Meets competency	Comments
Educator's Knowledge and ability to teach asthma	Application of the latest CTS guidelines to supplement history with spirometry for diagnosis	○	○	
	Asthma pathophysiology (hyper-responsiveness, inflammation, obstruction)	○	○	
	Asthma control/signs and symptoms	○	○	
	Triggers (allergens and irritants)	○	○	
	Asthma exacerbation/flare-up	○	○	
	Special considerations (Adherence to medications and strategies, pregnancy, premenstrual period, certain medications [e.g., NSAID and beta-blocker interaction])	○	○	
	Asthma action plan knowledge (knowing how to complete the actions for the green and yellow-zones)	○	○	
	Asthma action plan teaching (indications, components, peak flows)	○	○	
	Recognition of comorbidities as it relates to asthma (e.g., GERD, sinusitis, rhinitis, obesity)	○	○	

Educator Principles	Competencies	Needs Improvement	Meets competency	Comments
Educator's Knowledge and ability to teach asthma	Asthma diary (indications, tracking symptoms/peak flows, triggers)	◯	◯	
	Medications (controller/reliever, indication (CTS), mechanism of action, side effects, dosages, inhaler device technique and financial coverage options)	◯	◯	
	Asthma considerations in school	◯	◯	
	Work-related asthma (Differentiate between Work-exacerbated asthma and Occupation asthma) – definitions, risk factors, recognition, triggers, diagnosis, treatment	◯	◯	
	Air quality and asthma (Air quality health index – AQHI)	◯	◯	
	Smoking cessation minimal intervention/counselling/knowledge of Nicotine Replacement Therapies (NRT) and other smoking cessation options	◯	◯	
	Availability of asthma resources that align with the patient's learning style (e.g., technology) and is evidence-based, current and accessible	◯	◯	
	Indication for when to refer to a specialist	◯	◯	

Learning Objectives:

PRIMARY CARE ASTHMA PROGRAM – EDUCATOR PRACTICE SELF-ASSESSMENT (COPD)

The following tool is intended to be used by the Certified Respiratory Educator (CRE) as a self-reflective practice assessment or by a peer educator for the purpose of peer assessment for inclusion in the educator's professional portfolio. There are three components of this tool: 1. Educator's knowledge of asthma, 2. Educator's knowledge of COPD and 3. Educator's skills. This tool is not intended for rapid assessment and may require more than one session. This tool should be used to evaluate the educator's skills and abilities and be used for quality improvement. Please continue to refer to the latest CNRC learning objectives (www.cnrchome.net)

Educator Principles	Competencies	Needs Improvement	Meets competency	Comments
Educator's Knowledge and ability to teach COPD	Application of the latest CTS guidelines to supplement history with spirometry for diagnosis	○	○	
	Awareness of the Canadian Lung Health test	○	○	
	COPD pathophysiology (chronic bronchitis, emphysema)	○	○	
	COPD signs and symptoms	○	○	
	COPD exacerbation/flare-up (purulent vs. non-purulent)	○	○	
	Severity assessment (using spirometry values and MRC scale)	○	○	
	COPD action plan knowledge (knowing how to complete the actions for the green and yellow-zones)	○	○	
	COPD action plan teaching (indications, components, signs and symptoms to look for an exacerbation)	○	○	
	Knowledge of other tests (e.g., CBC to rule out polycythemia, ABG, AAT blood test, etc.)	○	○	
	Medications (controller/reliever, indication (CTS), mechanism of action, side effects, dosages, inhaler device technique and financial coverage options)	○	○	

Educator Principles	Competencies	Needs Improvement	Meets competency	Comments
Educator's Knowledge and ability to teach COPD	Identification of risk factors	◯	◯	
	Client education on management strategies of dyspnea (e.g., energy conservation, various breathing techniques, etc.)	◯	◯	
	Air quality and COPD (Air quality health index – AQHI)	◯	◯	
	Smoking cessation minimal intervention/counselling/knowledge of Nicotine Replacement Therapies (NRT)	◯	◯	
	Awareness of patient resources on advanced care directives and end-of-life care when appropriate	◯	◯	
	Recommendation of pulmonary rehabilitation program when appropriate	◯	◯	
	Education on vaccinations (influenza and pneumococcal)	◯	◯	
	Recognition of patient's co-morbidities as it relates to COPD	◯	◯	
	Addresses sexuality and relevance to managing dyspnea (appropriate referral to other staff when necessary)	◯	◯	
	Understanding of the various delivery forms of long term oxygen	◯	◯	
	Awareness of the role of non-invasive and invasive mechanical ventilation	◯	◯	
	Knowledge of the surgical options for COPD	◯	◯	
	Indications for when to refer to a specialist	◯	◯	
	Availability of COPD resources that align with the patient's learning style (e.g., technology) and is evidence-based, current and accessible	◯	◯	

Learning Objectives:

PRIMARY CARE ASTHMA PROGRAM EDUCATOR PRACTICE SELF-ASSESSMENT (EDUCATION)

The following tool is intended to be used by the Certified Respiratory Educator (CRE) as a self-reflective practice assessment or by a peer educator for the purpose of peer assessment for inclusion in the educator's professional portfolio. There are three components of this tool: 1. Educator's knowledge of asthma, 2. Educator's knowledge of COPD and 3. Educator's skills. This tool is not intended for rapid assessment and may require more than one session. This tool should be used to evaluate the educator's skills and abilities and be used for quality improvement. Please continue to refer to the latest CNRC learning objectives (www.cnrchome.net)

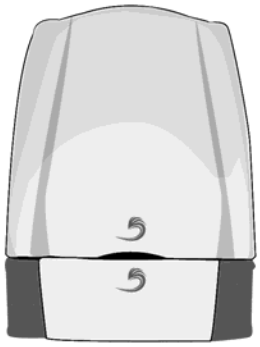
Educator Principles	Competencies	Needs Improvement	Meets competency	Comments
Educator's skills in teaching	Interaction with patients in an ethical manner (beneficence, non-maleficence, autonomy, justice, confidentiality, and respect for value of others)	○	○	
	Interpersonal skills – greets, active listening, provide empathy and support	○	○	
	Information gathering skills – open vs. close-ended questions, uses silence, clarifies patient expectations, sequencing events, and summarizes information	○	○	
	Information giving skills – puts important things first, clear and simple information, repetition, problem solving skills, categorizes information	○	○	
	Conflict resolution and negotiation – reflects internally, organizes the meeting, starts on a positive note, and facilitates the heart of the meeting	○	○	
	Skills for motivating patient adherence – provides rationale for change, sets realistic and short term objectives, seeks mutual agreement, allows opportunity for rehearsal of plan, feedback, tailors the plan to the patient's lifestyle	○	○	
	Appropriate eye contact, facial expressions, proximity, handshake, posture, gesture, silence and personal mannerisms	○	○	
	Assessment patient's stage of change: pre-contemplation-contemplation-preparation-action-maintenance	○	○	

Educator Principles	Competencies	Needs Improvement	Meets competency	Comments
Educator's skills in teaching	Integration of Motivation Interviewing (MI) skills in practice	◯	◯	
	Identification predisposing, enabling and reinforcing factors	◯	◯	
	Ability to maintain objectivity	◯	◯	
	Provision of appropriate learning environment	◯	◯	
	Collaboration with the patient to assess characteristics and needs relevant to learning (health literacy, determinants of health, motivation and readiness to learn, etc.)	◯	◯	
	Engagement of the patient to practice mastery and promote self-efficacy	◯	◯	
	Linkage of the patient's new learning to existing knowledge	◯	◯	
	Collaboration with the client to determine health goals that are SMART (specific, measurable, achievable, relevant and time-bound)	◯	◯	
	Integration theoretical frameworks of health promotion and care into practice (expanded chronic care model, PRECEDE/PROCEED model, social support)	◯	◯	
	Selection of an instructional method (e.g., questioning, role play, gaming) based on assessment results	◯	◯	
	Application of technology to benefit patient's learning	◯	◯	
	Inter-professional and inter-sectoral collaboration	◯	◯	
	Consideration and application of social determinants of health when teaching (cultural issues, financial barriers, lack of support, language barrier, etc.)	◯	◯	

Learning Objectives:

Medications available:

- **Onbrez**® (indacaterol maleate)
- **Seebri**® (glycopyrronium bromide)
- **Ultibro**® (glycopyrronium bromide/ (indacaterol maleate)



BREEZHALER®

Please date and initial after you have directly observed the patient demonstrate the skill and if the patient has mastered each step. Instructions with diagrams are included on the back of this sheet.

GOAL: Mastery of skill	**Date and Initial**	**Date and Initial**	**Date and Initial**	**Date and Initial**
1. Pull cap off				
2. Tilt mouthpiece to open inhaler				
3. Place capsule in chamber				
4. Close inhaler until you hear a “click”				
5. Press both buttons ONCE & release				
6. Breathe out away from mouthpiece				
7. Place mouthpiece between lips				
8. Breathe in **rapidly** but **steadily**				
9. Hold breath for 5-10 seconds				
10. Breathe out				
11. Open to see clear capsule. If not all clear, repeat steps 6-10				
12. Discard empty capsule				
13. Wash hands				
14. Rinse mouth (if using an inhaled steroid)				

Breezhaler®

Pull cap off

Open. Place capsule in chamber. Close (click).

Press buttons once and release

Breathe out

Breathe in rapidly and steadily. Hold. Breathe out.

6

Open to see clear capsule.

If not all clear repeat steps 4-5

Discard capsule and close. Wash hands.

How do I use my Breezhaler®?

1. Pull cap off.
2. Hold base of inhaler and tilt mouthpiece to open inhaler. Place capsule in centre chamber. Close inhaler until you hear a “click”.
3. Hold Breezhaler® upright and press both buttons ONCE and release.
4. Breathe out fully away from the mouthpiece
5. Place mouthpiece between lips and breathe in **rapidly** but **steadily** (whirring sound should be heard). Hold breath for 5-10 seconds. Breathe out.
6. Open to see clear capsule. If not all clear, repeat steps 4-5.
7. Discard empty capsule. Close Breezhaler®. Wash hands.

Care of my Breezhaler®

1. Wipe the mouthpiece with a dry cloth or tissue.
2. Never wash the Breezhaler®.

For video instruction:
www.sk.lung.ca/devices

BREATHE
the lung association

RESPTREC®

Medications available:

- **Advair®** (fluticasone/salmeterol)
- **Flovent®** (fluticasone propionate)
- **Serevent®** (salmeterol xinafoate**)**
- **Ventolin®** (salbutamol sulphate**)**

DISKUS®

Please date and initial after you have directly observed the patient demonstrate the skill and if the patient has mastered each step. Instructions with diagrams are included on the back of this sheet.

GOAL: Mastery of skill	**Date & Initial**	**Date & Initial**	**Date & Initial**	**Date & Initial**	**Date & Initial**
1. Check the dose counter					
2. Push the thumb grip open					
3. Slide the lever until a “click” is heard					
4. Breathe out away from mouthpiece					
5. Place mouthpiece between lips					
6. Breathe in **quickly** and **deeply**					
7. Hold breath for 5 - 10 seconds					
8. Breathe out					
9. Push thumb grip to close the Diskus					

Diskus®

Closed

Push thumb grip to open

Slide until a click is heard

Breathe out

Breathe in quickly and deeply. Hold. Breathe out.

Push thumb grip to close

How do I use my Diskus®?

1. Closed.
2. To open: hold the outer case in one hand and put the thumb of the other hand on the thumb grip. Push the thumb as far as it will go until a click is heard.
3. Slide the lever as far as it will go until a click is heard.
4. Hold the Diskus® inhaler away from the mouth in a horizontal position and breathe out.
5. With the mouthpiece to the lips, breathe in **quickly** and **deeply**. Remove the Diskus® inhaler. Hold your breath for up to 10 seconds, then breathe out slowly.
6. Close: push the thumb grip as far as it will go until it snaps shut.

Care of a Diskus®

1. Wipe mouth piece with a dry tissue or cloth.
2. Store the device in a dry place, not in a damp environment i.e. bathroom.
3. Diskus®is to be closed when not in use; only slide open when ready to take dose.
4. Diskus® is to be kept away from direct frost, heat or sunlight and from high temperatures (above 30°C).
5. Check the number in the dose window counter to see how many doses are left. The indicator in the window will turn red when there are 5 doses left in the inhaler.

For video instruction:
www.sk.lung.ca/devices

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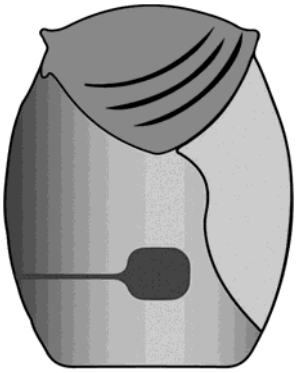
RESPTREC®

Medications available:

- **Anoro™** (umeclidinium bromide/vilanterol trifenatate)
- **Arnuity™** (fluticasone furoate)
- **Breo™** (fluticasone furoate/vilanterol trifenatate)
- **Incruse™** (umeclidinium bromide)



ELLIPTA®

Please date and initial after you have directly observed the patient demonstrate the skill and if the patient has mastered each step. Instructions with diagrams are included on the back of this sheet.

GOAL: Mastery of skill	**Date & Initial**	**Date & Initial**	**Date & Initial**	**Date & Initial**	**Date & Initial**
1. Check the dose counter					
2. Open cover of inhaler					
3. Breathe out away from the mouthpiece					
4. Place mouthpiece between lips					
5. Breathe in a **long, steady** and **deep** breath					
6. Remove inhaler and hold breath for 5-10 seconds					
7. Breathe out					
8. Close the inhaler					
9. Rinse mouth (if using an inhaled steroid)					

Ellipta™

Closed

Open the cover

Breathe out away from the mouthpiece

Breathe in long, steady, and deep

Hold breath. Breathe out.

Close the inhaler

How do I use my Ellipta™?

1. Closed.
2. Open the cover of the inhaler. Slide the cover down to expose the mouthpiece. You should hear a “click”.
3. Breathe out away from the mouthpiece.
4. Put the mouthpiece between lips, and close lips firmly around it. Breathe in a **long**, **steady**, and **deep** breath (do not block air vent on inhaler with hands).
5. Remove inhaler from mouth and hold breath 5-10 seconds or as long as comfortable. Breathe out.
6. Close the inhaler (slide cover up and over the mouthpiece). Rinse mouth.

Care of an Ellipta™

1. The Ellipta™ comes in a foil tray. When ready to use, peel back the lid to open the tray.
2. The tray contains a desicant to reduce moisture. Throw it away.
3. WRITE the “Tray Opened” and “Discard” dates ON the inhaler. The “Discard” date is 6 WEEKS from the date the tray is opened.
4. The mouthpiece may be cleaned after use, if needed, using a dry tissue before the cover is closed. Routine cleaning is not required.
5. When there are less than 10 doses remaining in the inhaler, the left half of the counter shows RED. This is a reminder to get a refill. After the last dose has been inhaled, the counter will show “0” and be empty. Discard the empty inhaler.

For video instruction:
www.sk.lung.ca/devices

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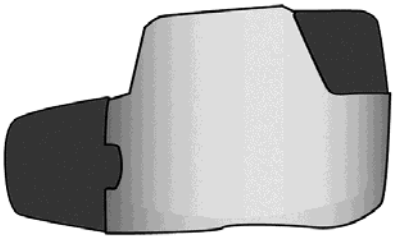
RESPTREC®

Medications available:

- **Duaklir**™ (formoterol fumarate dehydrate/ aclidinium bromide)
- **Tudorza**™ (aclidinium bromide)



GENUAIR®

Please date and initial after you have directly observed the patient demonstrate the skill and if the patient has mastered each step. Instructions with diagrams are included on the back of this sheet.

GOAL: Mastery of skill	**Date and Initial**	**Date and Initial**	**Date and Initial**	**Date and Initial**
1. Check the dose counter				
2. Remove cap				
3. Press green button ONCE and release				
4. Check color control window is green				
5. Breathe out away from mouthpiece				
6. Place mouthpiece between lips				
7. Breathe in **strongly** and **deeply** (keep breathing even after "click" is heard)				
8. Hold breath for 5 - 10 seconds				
9. Breathe out				
10. Check color control window is red (if not red, repeat steps 5-7).				
11. Replace cap				

Genuair®

Remove cap

Press ONCE and release green button

Check button for green color

Breathe out away from the mouthpiece

Breathe in strongly and deeply. Hold. Breathe out.

Check window for red color

7 **If the window has not turned red**

Repeat steps 4-6

Replace cap

How do I use my Genuair®?

1. Remove the cap (lightly squeeze the arrows).
2. Press the green button all the way down ONCE and release.
3. Check that the color control window is green. Green means ready.
4. Breathe out away from the mouthpiece.
5. Place your lips around the mouthpiece. Breathe in **strongly** and **deeply** through the mouthpiece. Keep breathing in even after you hear the inhaler “click”. Hold breath for 5-10 seconds. Breathe out.
6. Check that the color control window has turned to red.
7. If the window has not turned red repeat steps 4-6.
8. Replace cap.

Note: When a red band begins to appear in the dose counter this means you are nearing your last dose. The Genuair® locks after the last dose.

Care of a Genuair®

1. Wipe the mouthpiece with a dry tissue or cloth.

For video instruction:
www.sk.lung.ca/devices

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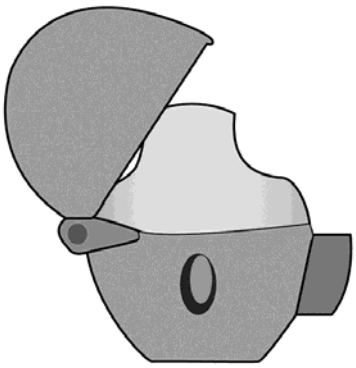
RESPTREC®

Medications available:

Medications available:

- **Spiriva**® (tiotropium bromide)



HANDIHALER®

Please date and initial after you have directly observed the patient demonstrate the skill and if the patient has mastered each step. Instructions with diagrams are included on the back of this sheet.

GOAL: Mastery of skill	**Date and Initial**	**Date and Initial**	**Date and Initial**	**Date and Initial**
1. Open lid				
2. Open mouthpiece				
3. Place capsule in centre chamber				
4. Close mouthpiece until you hear it click				
5. Hold Handihaler® upright and press green button ONCE and release				
6. Breathe out away from mouthpiece				
7. Close lips around mouthpiece				
8. Breathe in **slowly** and **deeply**				
9. Hold breath for 5 – 10 seconds or as long as possible				
10. Breathe out				
11. Repeat: steps 6-10				
12. Open mouthpiece and empty the used capsule				
13. Close mouthpiece and lid				
14. Wash hands				

Handihaler®

Open lid

Open mouth piece

Place capsule in centre chamber

Close mouthpiece (click)

Press button ONCE and release

Breathe out

Breathe in slowly and deeply. Hold. Breathe out.

8 **Repeat steps 6-7**

For second breath in

Open mouthpiece. Discard capsule. Close HandiHaler®

10 **Wash Hands**

For video instruction:
www.sk.lung.ca/devices

How do I use my HandiHaler®?

Fold and separate the two blister strips. Tear down the middle. Peel back foil on flat side, exposing only one capsule. Flip the blister strip over and let the capsule drop out. Remember: the capsules are sensitive to light and moisture.

1. Open lid by pulling upwards.
2. Open mouthpiece by pulling upwards.
3. Place one capsule in the capsule chamber right before use.
4. Close the mouthpiece firmly until you hear a click, leaving the lid open.
5. Hold the HandiHaler® with the mouthpiece upright and press the piercing button ONCE and release.
6. Breathe out away from the mouthpiece.
7. Close lips around mouthpiece. Breathe in **slowly** and **deeply** until lungs are full. Remove the HandiHaler® from your mouth while still holding your breath for a count of up to 10.
8. Repeat steps 6-7 for a second breath in.
9. Open the mouthpiece and tip the used capsule into the garbage. Close the mouthpiece and lid.
10. Wash Hands.

Care of a HandiHaler®

The HandiHaler needs to be cleaned once a month or as needed.

1. Open the lid and lift up the mouthpiece. Then lift up the piercing button to open the base.
2. Rinse the HandiHaler® with warm water to remove any powder. Do not use soap.
3. Dry the HandiHaler® completely by leaving the lid, mouthpiece & base open to air-dry.

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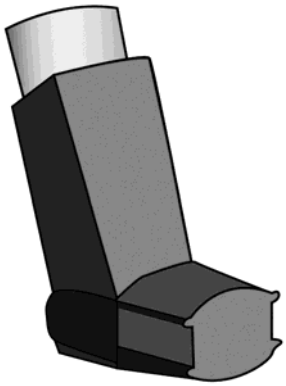
RESPTREC®

Medications available (not inclusive):

- **Advair®** (fluticasone propionate/ salmeterol xinafoate)
- **Airomir™** (salbutamol sulphate)
- **Alvesco®** (ciclesonide)
- **Atrovent®** (ipratropium bromide)
- **Flovent®** (fluticasone propionate)
- **Qvar™** (beclomethasone dipropionate)
- **Ventolin®** (salbutamol sulphate)
- **Zenhale™** (mometasone furoate/formoterol)



METERED-DOSE INHALER (MDI)

(Whenever possible use a holding chamber with the MDI)

Please date and initial after you have directly observed the patient demonstrate the skill and if the patient has mastered each step. Instructions with diagrams are included on the back of this sheet.

GOAL: Mastery of skill	**Date and Initial**	**Date and Initial**	**Date and Initial**	**Date and Initial**
1. Check dose counter (if available)				
2. Remove cap				
3. Shake inhaler				
4. Breathe normally and slowly				
5. Breathe out				
6. Place mouthpiece between lips				
7. Breathe in and depress canister ONCE				
8. Breathe in **slowly** and **deeply** breath				
9. Hold breath for 5-10 seconds or as long as possible				
10. Breathe out slowly				
11. Wait for 30 seconds if second dose is required. Repeat steps 2-9.				
12. Replace cap.				
13. Rinse mouth (if using an inhaled steroid)				

Metered-Dose Inhaler

Remove cap

Shake inhaler

Breathe out

Breathe in, press down ONCE, complete slow deep breath

Hold breath. Breathe out slowly.

6

If another dose is prescribed

Wait 30 seconds repeat steps 2-5

Close cap and rinse mouth

How do I use my Metered-Dose Inhaler (MDI)?

1. Remove the cap from the inhaler.
2. Shake the inhaler.
3. Breathe out away from the inhaler.
4. Place the mouthpiece in your mouth between your teeth and close your mouth around it. Begin to breathe in slowly and press the top of the inhaler ONCE. Continue to breathe in slowly and deeply through the mouth until the breath is complete.
5. Hold your breath for 5-10 seconds and breathe out slowly.
6. If an additional inhalation is prescribed, wait 30 seconds before taking it, then repeat steps 2-5 for the prescribed number of inhalations.
7. Close the cap and rinse your mouth.

Note: using an inhaler without a spacer is not recommended.

Note: Always check the instructions included with your MDI for directions on priming and proper use

Care of an MDI

1. Once a week, remove the medication canister from the plastic casing and wash the casing in warm, soapy water. Let the parts dry in the air. When the casing is dry, replace the medication canister in the casing and put the cap on the mouthpiece.
2. Ensure the hole is clear.

For video instruction:
www.sk.lung.ca/devices

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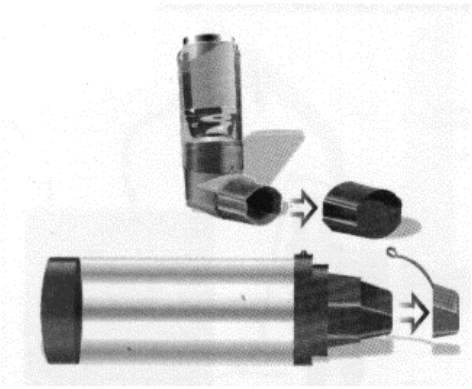
Medications available in an MDI (not inclusive):

- **Advair®** (fluticasone propionate/salmeterol xinafoate)
- **Airomir™** (salbutamol sulphate)
- **Alvesco®** (ciclesonide)
- **Atrovent®** (ipratropium bromide)
- **Flovent®** (fluticasone propionate)
- **Qvar™** (beclomethasone dipropionate)
- **Ventolin®** (salbutamol sulphate)
- **Zenhale™** (mometasone furoate/formoterol)



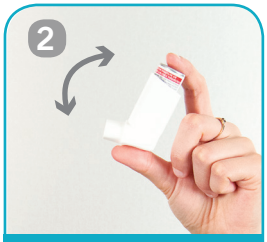
METERED-DOSE INHALER – MDI WITH SPACER

Please date and initial after you have directly observed the patient demonstrate the skill and if the patient has mastered each step. Instructions with diagrams are included on the back of this sheet.

GOAL: Mastery of skill	**Date and Initial**	**Date and Initial**	**Date and Initial**	**Date and Initial**
1. Check dose counter on the inhaler (if available)				
2. Remove the caps				
3. Shake the inhaler				
4. Assemble the inhaler mouthpiece in the spacer				
5. Seal lips around the spacer device mouthpiece				
6. Breathe out				
7. Depress inhaler into spacer ONCE				
8. Breathe in **slowly** and **deeply**				
9. Hold breath for 5-10 seconds or as long as possible				
10. Breathe out				
11. Wait 30 seconds if second dose is required; repeat steps 3-10.				
12. Replace caps				
13. Rinse mouth (if using an inhaled steroid)				

Metered-Dose Inhaler with a Spacer Device

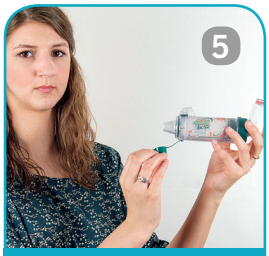
Remove cap



Shake inhaler

Remove spacer cap. Insert inhaler into spacer

Breathe out, press down ONCE and complete slow deep breath in.



Hold breath. Breathe out.

6

If another dose is prescribed

Wait 30 seconds repeat steps 2-5

Close cap and rinse mouth

For video instruction:
www.sk.lung.ca/devices

How do I use my Metered-Dose Inhaler (MDI) with a spacer device?

1. Remove the cap from the inhaler.
2. Shake the inhaler.
3. Remove the cap on the spacer and insert the mouthpiece of the inhaler into the opening at the end of the spacer.
4. Place the spacer mouthpiece in mouth between your teeth and close your lips around the mouthpiece, making sure there are no air leaks. Breathe out. Press down on the MDI canister ONCE to allow the medication to enter the spacer. Breathe in **slowly** and **deeply** for about 3-5 seconds.
5. After the inhalation, hold your breath for as long as possible, up to a count of ten and breathe out. Note: If you hear a whistle, you are breathing in too fast. Note: If you have trouble breathing deeply and holding your breath, breathe in and out more normally into the spacer 3 or 4 times.
6. If you need more than one dose, repeat steps 2-5 each time, waiting 30 seconds between inhalations.
7. Close the cap on the spacer and on the inhaler. Rinse your mouth.

Note: using an inhaler without a spacer is not recommended.

Note: Always check the instructions included with your inhaler for directions on priming and proper use.

Care of a Spacer

1. Clean the spacer about once a week. Immerse the spacer in warm, mildly soapy water and agitate.
2. Shake off excess water and leave to dry overnight.

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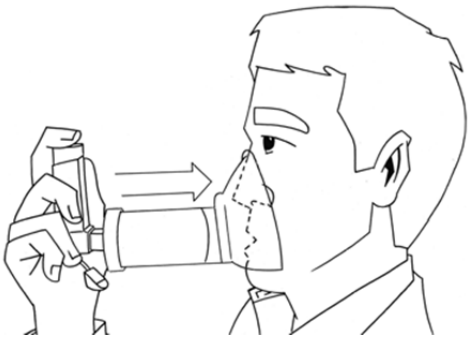
Medications available in an MDI (not inclusive):

- **Advair®** (fluticasone propionate/salmeterol xinafoate)
- **Airomir™** (salbutamol sulphate)
- **Alvesco®** (ciclesonide)
- **Atrovent®** (ipratropium bromide)
- **Flovent®** (fluticasone propionate)
- **Qvar™** (beclomethasone dipropionate)
- **Ventolin®** (salbutamol sulphate)
- **Zenhale™** (mometasone furoate/formoterol)



METERED-DOSE INHALER – MDI WITH SPACER AND MASK

Please date and initial after you have directly observed the patient demonstrate the skill and if the patient has mastered each step. Instructions with diagrams are included on the back of this sheet.

GOAL: Mastery of skill	**Date and Initial**	**Date and Initial**	**Date and Initial**	**Date and Initial**
1. Check dose counter on the inhaler (if available)				
2. Remove the inhaler cap				
3. Shake the inhaler				
4. Assemble the inhaler mouthpiece in the spacer				
5. Apply the mask to the face.				
6. Breathe out				
7. Depress inhaler ONCE				
8. Breathe in **slowly** and **deeply**				
9. Hold breath for 5-10 seconds or as long as possible; or if not possible breathe in and out ~5 times.				
10. Breathe out				
11. Wait 30 seconds if second dose is required; repeat steps 3-10.				
12. Replace inhaler cap				
13. Rinse mouth (if using an inhaled steroid)				
14. Wash face (if using an inhaled steroid)				

Metered-Dose Inhaler with Spacer and Mask

Remove cap

Shake inhaler

Insert into spacer

Press inhaler down ONCE

Breathe in. Hold breath or breathe in and out 5 times.

6

If another dose is prescribed

Wait 30 seconds repeat steps 2-5

Close caps and Drink/brush teeth

How do I use my Metered-Dose Inhaler (MDI) with a spacer and mask?

1. Remove the cap from the inhaler.
2. Shake the inhaler.
3. Insert the mouthpiece of the inhaler into the opening at the end of the spacer.
4. Apply the mask to face so there are no leaks between face and mask. The valve should open with breathing. Depress the canister ONCE to allow medication to enter the spacer.
5. Encourage a slow deep breath and hold for up to 10 seconds. If not possible (infants and young children) have them breathe normally into the device 5-6 times.
6. If you need more than one dose, repeat steps 2-5, waiting 30 seconds between inhalations.
7. Close caps and rinse your mouth/drink/or brush your teeth.

Note: using an inhaler without a spacer is not recommended.

Note: Always check the instructions included with your inhaler for directions on priming and proper use.

Care of a Spacer

1. Clean the spacer about once a week. Immerse the spacer in warm, mildly soapy water and agitate.
2. Shake off excess water and leave to dry in the air overnight.

For video instruction:
www.sk.lung.ca/devices

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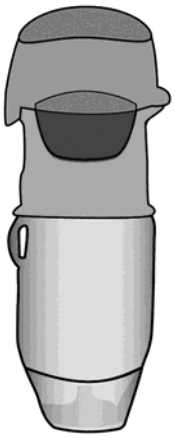
Medications available:

- **Combivent®** (salbutamol sulphate and ipratropium bromide)
- **Inspiolto™** (tiotropium bromide monohydrate/ olodaterol hydrochloride)
- **Spiriva®** (tiotropium bromide monohydrate)



RESPIMAT®

Please date and initial after you have directly observed the patient demonstrate the skill and if the patient has mastered each step. Instructions with diagrams are included on the back of this sheet.

Goal: Mastery of skills	**Date and Initial**	**Date and Initial**	**Date and Initial**	**Date and Initial**
1. Check dose indicator				
2. Hold the inhaler upright with cap closed				
3. Turn the base a half turn in the direction of black arrows until it “clicks”				
4. Open the cap until it snaps				
5. Breathe out slowly and fully				
6. Close lips around the mouthpiece				
7. Start breathing in and press the dose release button ONCE				
8. Breathe in **slowly** for as long as you can				
9. Hold breath for 5-10 seconds or as long as possible				
10. Breathe out				
11. Close the cap				

Can use acronym **TOP** to teach skill: **T**urn **O**pen and **P**ress

Respimat®

Hold inhaler upright

TURN base until it “clicks”

OPEN cap until it snaps fully open

Breathe out slowly and fully

While breathing slow and deep PRESS dose release button

Hold breath. Breathe out.

Close cap

How do I use my Respimat®?

1. Hold the inhaler upright with cap closed.
2. **TURN** the clear base in the direction of arrows on the label until it “clicks” (half turn).
3. Flip the cap **OPEN** until it snaps fully open.
4. Breathe out slowly and fully.
5. Put the mouthpiece between lips. Close lips around the mouthpiece without covering the air vents. Point the inhaler towards the back of throat. While taking a **slow**, **deep** breath, **PRESS** the dose release button and continue to breathe in slowly.
6. Remove inhaler from mouth and hold breath for 10 seconds or as long as you can. Breathe out.
7. Close the cap.

Note: The acronym **TOP** – **T**urn **O**pen **P**ress is a quick reference for device instruction.

Care of a Respimat®

1. All that is required to keep the inhaler clean is to wipe the mouthpiece inside and out once a week with a damp cloth. Any slight discoloration of the mouthpiece will not affect the performance of the inhaler.
2. Once assembled, the inhaler must NOT be taken apart.
3. Check the dose indicator to see approximately how many doses are left. When the pointer enters the red area of the scale a new prescription is needed. When the arrow reaches the end of the scale the inhaler locks automatically.

For video instruction:
www.sk.lung.ca/devices

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RESPTREC®

Respimat®

Two pieces

Remove clear base

Push cartridge into inhaler

Push firmly down on the inhaler

Put clear base back into place

How do I use my Respimat®?

Assembly:

1. The Respimat® comes in two pieces. An inhaler, and a medication cartridge.
2. With cap closed, press safety catch to remove clear base of the inhaler.
3. Push the narrow end of the cartridge into the inhaler as far as it will go.
4. Place inhaler upright on a firm surface and push firmly down on inhaler to ensure cartridge has gone all the way in.
5. Put the clear base back into place.

Note: Once assembled, the inhaler must NOT be taken apart.

Hold upright. TURN base until it “clicks”.

OPEN cap until it snaps fully open

Point down. PRESS dose release button.

Repeat steps 1-3

3 more times

Priming:

1. Hold the inhaler upright with cap closed. **TURN** the base in the direction of the arrows on label until it “clicks” (half turn).
2. Flip the cap **OPEN** until it snaps fully open.
3. Point the inhaler towards the ground. **PRESS** the dose release button. A soft mist will appear. Close the cap.
4. Repeat steps 1-3, 3 more times to ensure inhaler is prepared for use.

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RESPTREC®

- **Bricanyl**® (terbutaline sulphate)
- **Oxeze**® (formoterol fumarate)
- **Pulmicort**® (budesonide)
- **Symbicort**® (budesonide/formoterol fumarate)

TURBUHALER®

Please date and initial after you have directly observed the patient demonstrate the skill and if the patient has mastered each step. Instructions with diagrams are included on the back of this sheet.

Goal: Mastery of skills	**Date and Initial**	**Date and Initial**	**Date and Initial**	**Date and Initial**
1. Check dose counter				
2. Hold inhaler upright				
3. Twist and remove cap				
4. Turn the base until a click is heard				
5. Breathe out away from the mouthpiece				
6. Place mouthpiece between lips				
7. Breathe in **quickly** and **deeply**				
8. Breath hold for 5 - 10 seconds or as long as possible				
9. Breathe out				
10. Repeat steps 3-10 if second dose is required				
11. Twist to close cap.				
12. Rinse mouth (if using an inhaled steroid)				

- **Asmanex**® (mometasone furoate)
  (remember to gargle and spit following use of an inhaled steroid)

Turbuhaler®

Hold upright

Twist open.
Remove cap.

Turn base until a click is heard

Breathe out

Breathe in quickly. Hold. Breath out.

6

If another dose is prescribed

Repeat steps 3-5.

Close and rinse mouth

For video instruction:
www.sk.lung.ca/devices

How do I use my Turbuhaler®?

1. Hold upright.
2. Hold the colored base and twist the cap counter-clockwise to remove cap.
3. Hold the colored base and turn as far as possible in one direction, then turn back until a “click” is heard. Note: Do not shake or blow into the device.
4. Breathe out away from the mouthpiece.
5. Bring the inhaler up to your mouth in a horizontal position. Place the mouthpiece between your teeth and close your lips around it. Breathe in **quickly** and **deeply** through the mouthpiece. Remove Turbuhaler® from mouth and hold breath for 5-10 seconds. Breathe out.
6. Repeat steps 3-5 for the prescribed number of inhalations.
7. Twist cap to close and rinse mouth.

Care of a Turbuhaler®

1. Clean mouthpiece using a dry tissue or cloth, gently wiping away any particles which have collected inside the mouthpiece.

   Never wash the Turbuhaler®.
2. Check the number in the dose window to see how many doses are left.
3. Some Turbuhalers® may not have a window counter. When a red mark appears in the window underneath the mouthpiece, the Turbuhaler® has approximately 20 doses left. When the red mark reaches the bottom edge of the window the Turbuhaler® is empty.

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TWISTHALER®

Please date and initial after you have directly observed the patient demonstrate the skill and if the patient has mastered each step. Instructions with diagrams are included on the back of this sheet.

Goal: Mastery of skills	**Date and Initial**	**Date and Initial**	**Date and Initial**	**Date and Initial**
1. Check dose counter				
2. Hold inhaler upright.				
3. Twist and remove cap				
4. Breathe out				
5. Place mouthpiece between lips				
6. Breathe in **fast** and **deep**				
7. Hold breath for 5 – 10 seconds				
8. Breathe out				
9. Twist to close cap				
10. Rinse mouth (if using an inhaled steroid)				

Medications available (not inclusive):

- **Atrovent®** (ipratropium bromide)
- **Combivent®** (salbutamol sulphate/ipratropium bromide)
- **Pulmicort®** (budesonide)
- **Ventolin®** (salbutamol sulphate)

Twisthaler®

Closed.
Hold upright

Twist cap off
and remove

Breathe out

Breathe in fast
and deep. Hold.
Breathe out.

Twist cap on
to close

6

Rinse Mouth

How do I use my Twisthaler®?

1. Hold the inhaler upright with the colored portion (or base) down.
2. Hold the colored base and twist the cap counter clockwise to remove it. As you lift off the cap, the dose counter on the base will count down by one.
3. Breathe out fully away from the mouthpiece.
4. Bring the inhaler up to your mouth in a horizontal position, close your lips around the mouthpiece and take in a **fast**, **deep** breath. Remove the inhaler from your mouth and hold your breath for up to 10 seconds, or for as long as is comfortable. Breathe out.
5. Replace the cap by twisting it clockwise while gently pressing the cap down until a click sound is heard. Firmly closing the inhaler right away after use loads the dose for your next inhalation.
6. Rinse your mouth.

Care of a Twisthaler®

1. Wipe the mouthpiece with a dry cloth or tissue.
2. Never wash the Twisthaler®.
3. When the dose counter reads “01”, this indicates the last remaining dose. After “01”, the counter will read “00” and the cap will lock. Discard the unit.

For video instruction:
www.sk.lung.ca/devices

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NEBULIZER

Please date and initial after you have directly observed the patient demonstrate the skill and if the patient has mastered each step. Instructions with diagrams are included on the back of this sheet.

GOAL: Mastery of skill	**Date and Initial**	**Date and Initial**	**Date and Initial**	**Date and Initial**
1. Attach tubing to air outlet.				
2. Unscrew the top of the medicine cup.				
3. Fill the cup with the medication dose.				
4. Screw on the top.				
5. Turn on the compressor				
6. Place either mask on face *or* mouthpiece in mouth.				
7. Attach nebulizer tubing to compressor				
8. Turn the compressor on				
9. **Breathe in and out slowly** through mouth.				
10. Complete treatment.				
11. Turn the compressor off.				
12. Rinse mouth (if using an inhaled steroid)				
13. Wash face (if using a mask with a steroid inhaler)				

Nebulizer®

How do I use my Nebulizer®?

1. Ensure nebulizer is plugged in & functioning.
2. Attach tubing to compressor air outlet.
3. Unscrew the top of the medicine cup.
4. Add the medication dose to the cup.
5. Screw on the top.
6. Turn on the compressor; ensure medication is misting.
7. Place either a mask on face or mouthpiece in mouth.
8. Complete the treatment.
9. Turn off the compressor.

Care of a Nebulizer®

1. Wash mask and nebulizer medication chamber in warm, soapy water.
2. Rinse well and allow them to air-dry before reuse.

For video instruction:
www.sk.lung.ca/devices

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RESPTREC®

Primary Care Asthma Program

Space and Design Checklist

The following section has been developed for this Manual by the Standards Working Group. It outlines the overall design considerations, special requirements for all patients, considerations for the location, and room requirements.

Overall considerations for Delivering a Respiratory Program

The following design features should be considered in the planning of the Respiratory Education Centre in the primary care setting:

- Accessibility/wheelchair access/clinical setting
- Office/room well ventilated (window optional)
- Ergonomically designed environment
- Sufficient space for patient and family/care givers
- Access to Computer/phone/fax and or space to lock up/keep secure patient records
- Access to educational materials
- Efficient patient flow
- Flexibility for different activities
- Multidisciplinary environment (access to referral process)
- Safe learning environment for both staff and client

Section 4: Program Tools

Asthma Care Map for Primary Care

Initial Assessment

☐ N/A

Date	Visit
YYYY/MM/DD	☐ Scheduled ☐ Unscheduled

Referring health care provider

Healthcare Professional Role Type
e.g respirologist

Provider identifier assigning authority
e.g Regulatory body for physicians & surgeons

Provider Identifier Type
e.g provider billing number

Reason for referral

- ☐ New Asthma Diagnosis
- ☐ Suspected Asthma
- ☐ Severe Asthma
- ☐ Suboptimal Asthma Control
- ☐ Other

Asthma and COPD overlap

☐ Yes ☐ No

Anthropometric Vitals ☐ N/A

Height cm

BMI

Weight kg

Demographics ☐ N/A

Client Name (please print)

Client Identifier Type	Client Identifier Assigning Authority
e.g Jurisdictional Health Number	e.g OHIP
Date of Birth	Self Reported Ethnic Group
YYYY/MM/DD	
Postal / Zip Code	Sex Assigned at Birth

Lived Gender

☐ Female gender ☐ Male gender ☐ Gender diverse

Highest level of education

☐ < High school ☐ High school ☐ Post secondary< Bachelor's degree
☐ Bachelor's degree ☐ Post secondary > Bachelor's degree

Living With

☐ Partner ☐ Caregiver ☐ Lives alone ☐ Other _____

Asthma Diagnosis ☐ N/A

☐ Unknown ☐ Confirmed YYYY/MM/DD Date Confirmed/Excluded (If uncertain indicate "unknown" in the provided field) ☐ Spirometry or PEF attached

☐ Suspected ☐ Excluded # Age asthma was confirmed

Method used to confirm Asthma Diagnosis
(for individuals 6 years and older and younger individuals able to do spirometry)

	Pulmonary Function Measurement	Children (6 years and older)	Adult
	PREFERRED: Spirometry showing reversible airway obstruction		
☐	Reduced FEV_1/FVC **AND** Increased in FEV_1 after a bronchodilator or after course of controller therapy	Less than lower limit of normal* (<0.8-0.9)** **AND** ≥12%	Less than lower limit of normal* (<0.75-0.8)** **AND** ≥12% (and a minimum > 200ml)
	ALTERNATIVE: Peak Expiratory Flow (PEF) variabilty		
☐	Increase after a bronchodilator or after course of controller therapy **OR** Diurnal variation	≥20% **OR** Not recommended	60 L/min (minimum ≥20%) **OR** >8% based upon twice daily readings; >20% based upon multiple daily readings
	ALTERNATIVE: Positive Challenge Test		
☐	a) Methacholine Challange **OR** b) Exercise Challenge	PC_{20} <4 mg/mL (4-16 mg/mL is borderline; >16 mg/mL is negative) **OR** ≥10-15% decrease in FEV_1 post-exercise	

* Based on age, sex, height and ethnicity. ** Approximate lower limits of normal ratios for children and adults.

This information was orginally published in CAN Respir J2012;19(2);127-164

Method used to confirm Asthma Diagnosis
(for individuals 1-5 years of age NOT able to do spirometry)

☐	Recurrent Asthma Like Symptoms of Excerbation	
AND	Documentation of airflow obstruction	☐ Preferred: Documented wheezing or other signs of airflow observed by a health care provider ☐ Alternative: Convincing parental report of wheezing or other symptoms
AND	Documentation of reversibility of airflow obstruction	☐ Preferred: Response to bronchodilator within 30min confirmed by a health care provider ☐ Alternative 1: Gradual but clear response to an anti-inflammatory therapy: after ≥ 4 hours of oral cortical steroids (OCS), within 3 months of moderate dose inhaled cortical steroids (ICS), expect decreased symptoms and exacerbation frequency and severity. ☐ Alternative 2: Response to bronchodilator within 30 min by parental history
AND	No clinical evidence of an alternative diagnosis	

This information was orginally published in CAN Resp J2015;22(3);135-143

Medications ☐ N/A

Respiratory Medications	Drug Name	Strength	Unit of Measure	Dose	Route	Rx Date	Adherence issues known or suspected? Y/N
Reliever							
Inhaled Corticosteriod (ICS)							
ICS/LABA combination							
Long Acting Beta-Agonists (LABA)*							
Leukotriene receptor antagonist (LTRA)							
Reliever/Controller							
Prednisone							
Biologics							
Nicotine product							
Medications prescribed at this visit							
Long acting muscarinic antagonists (LAMA)							
Other							

* Should not be used as a standalone

	Yes	No
Patient has a spacing device	☐	☐
Does at least one prescribed medication allow for a spacing device to be used?	☐	☐
Unfilled prescriptions. In the last 6 months has the patient been prescribed any asthma medications he/she has not obtained.	☐	☐

Past Medications

Yellow Zone Medications

Client Name _____ Jurisdictional Health Number _____

Family History of Lung Disease ☐ N/A

Family History of Asthma, Allergy and/or COPD ☐ Yes ☐ No ☐ Unknown

(If yes select allergic conditions from a list and indicate which relative)

Asthma	☐ Parent	☐ Sibling	☐ Both	☐ None	☐ Unknown
Allergy	☐ Parent	☐ Sibling	☐ Both	☐ None	☐ Unknown
Allergy drug	☐ Parent	☐ Sibling	☐ Both	☐ None	☐ Unknown
Allergy food	☐ Parent	☐ Sibling	☐ Both	☐ None	☐ Unknown
Eczema	☐ Parent	☐ Sibling	☐ Both	☐ None	☐ Unknown
Environmental allergies	☐ Parent	☐ Sibling	☐ Both	☐ None	☐ Unknown

Risk Factors for Exacerbations ☐ N/A

Risk Factors ☐ Yes ☐ No (If yes select from a list below)

Exposure to Second-Hand Smoke ☐ Yes ☐ No ☐ Unknown

Smoking ☐ N/A

Smoking Status ☐ Non-Smoker ☐ Ex-Smoker ☐ Current Smoker

Quit Date YYYY/MM/DD

Quit Duration

When was the last time you smoked a cigarette, even a puff?

☐ > 6 months ☐ 1-6 months ☐ < 1 month

Pack Years

Cig Smoked/day ____ / 20 X Years smoked ____ = Pack years ____

Passive Smoking Risk ☐ Yes ☐ No

Other

☐ e-cigarette/vaping ☐ Cannabis use ☐ Use of other tobacco

☐ Inhalation vapor use ☐ Other inhaled substances

Stages of Change Addressed

☐ pre-contemplation ☐ contemplation ☐ preparation ☐ action ☐ maintenance

Smoking Cessation Addressed

☐ Ask ☐ Advise ☐ Arrange

Smoking Cessation Quit Intentions

Are you planning to quit smoking?

☐ within a month ☐ within 6 months ☐ beyond 6 months ☐ not planning to quit

SABA Overuse ☐ < 1 canister/month ☐ > 2 canisters/month ☐ 1-2 canisters/month

Current Symptoms ☐ N/A

	Yes	No
Breathlessness	☐	☐
Chest tightness	☐	☐
Wheeze	☐	☐
Cough	☐	☐
Sputum	☐	☐
Frequent colds	☐	☐
If yes frequency	☐ 0-3/year	☐ 4-7/year ☐ ≥8/year
Colds that last longer than 7 days	☐	☐
Symptoms worse at morning (including cough)	☐	☐
Symptoms worse at night (including cough)	☐	☐
Chest pain	☐	☐

Asthma Severity ☐ N/A

Visit(s) to family physician in the last 12 months for asthma symptoms

If Yes, indicate the number of primary care visits for asthma in the last 12 months

Routine primary care visits _____ Urgent primary care visits _____

Visit(s) to a specialist for asthma

	Yes	No	Unknown	Last 12 Months
Respirologist	☐	☐	☐	☐
General Internist	☐	☐	☐	☐
Allergist	☐	☐	☐	☐
Pediatrician	☐	☐	☐	☐

	Yes	No	Unknown	Recent < 1yr	Total # ever
ED visits ever for asthma	☐	☐	☐	☐	
Hospitalized ever for asthma	☐	☐	☐	☐	
Near fatal asthma episode (coma/intubated/icu/CO2)	☐	☐	☐	☐	
Recent best FEV_1 or PEF < 60% predicted #	☐	☐	☐		
ICU admissions in the last 12 months	☐	☐	☐	# ICU admissions	# intubations
Systemic steroid use ever	☐	☐	☐	Date last used	Total # ever

Barriers ☐ N/A

Barriers ☐ Yes ☐ No (If yes select from the list below)

	Yes	No
Adherence	☐	☐
Cultural issue	☐	☐
Effect of substances abuse	☐	☐
Financial issue	☐	☐
Lack of private drug plan	☐	☐
Language	☐	☐
Literacy	☐	☐
Medication side effects	☐	☐
Pregnancy	☐	☐
Social/Family issues	☐	☐
Other _____	☐	☐

Breath Sounds ☐ N/A

☐ Normal ☐ Abnormal

If abnormal, select auscultory finding

☐ Wheezes ☐ Crackles ☐ Reduced

☐ Bronchial (harsh and prolonged inspiration and expiration)

Additional Notes

Client Name _____ Jurisdictional Health Number _____

Allergy History ☐ N/A

Allergic Condition ☐ Yes ☐ No ☐ Unknown

If yes, select from the list of possible allergic conditions (Self/Parent report)

	Yes	No	Unknown
Anaphylaxis	☐	☐	☐
Bronchospasm	☐	☐	☐
Conjunctivitis	☐	☐	☐
Eczema	☐	☐	☐
Rhinitis	☐	☐	☐

Allergic Skin Prick Test

☐ Negative ☐ Positive ☐ Not done ☐ Self/Parent-report

Date DD / MM / YYYY

If positive identify positive response to possible allergens listed

	Yes	No
Cat	☐	☐
Cockroaches	☐	☐
Dog	☐	☐
Dust/Dust mites	☐	☐
Feathers	☐	☐
Fungi/Mould	☐	☐
Grasses	☐	☐
Pollen	☐	☐
Ragweed	☐	☐
Trees	☐	☐
Occupational sensitizers	☐	☐

Other pets _____

Other _____

Occupational History ☐ N/A

Current Employment Status: Check all the apply.
Note - This includes self-employment and working from home:

☐ Full-Time ☐ Part-Time ☐ Shift work ☐ Retired

☐ Modified duties ☐ Off work due to respiratory health

☐ Other _____

Current Employment_____

Did your Asthma symptoms start at work? ☐ Yes ☐ No

Do/ did your Asthma symptoms worsen at work? ☐ Yes ☐ No

If the response options are YES consider completing the WRASQ(L) questionnaire

Complete WRASQ(L)© today? ☐ Yes ☐ No

Triggers and Exposures ☐ N/A

Category If yes select patient reported triggers & exposures from list.	Triggers ☐ Yes ☐ No ☐ Unknown			Exposures ☐ Yes ☐ No ☐ Unknown		
	Yes	No	Unknown	Yes	No	Unknown
Birds	☐	☐	☐	☐	☐	☐
Cats	☐	☐	☐	☐	☐	☐
Chemicals	☐	☐	☐	☐	☐	☐
Cockroaches	☐	☐	☐	☐	☐	☐
Cold air	☐	☐	☐	☐	☐	☐
Dogs	☐	☐	☐	☐	☐	☐
Dust/Dust mites	☐	☐	☐	☐	☐	☐
Emotion/Stress	☐	☐	☐	☐	☐	☐
Exercise	☐	☐	☐	☐	☐	☐
Feather bedding/Pillows	☐	☐	☐	☐	☐	☐
Fireplace/Woodstove	☐	☐	☐	☐	☐	☐
Food allergy nut	☐	☐	☐	☐	☐	☐
Food allergy seafood	☐	☐	☐	☐	☐	☐
Fumes	☐	☐	☐	☐	☐	☐
Fungi/Mould	☐	☐	☐	☐	☐	☐
Gas stove	☐	☐	☐	☐	☐	☐
Grasses	☐	☐	☐	☐	☐	☐
High humidity	☐	☐	☐	☐	☐	☐
Medications	☐	☐	☐	☐	☐	☐
Outdoor pollution	☐	☐	☐	☐	☐	☐
Perfume/Air fresheners	☐	☐	☐	☐	☐	☐
Pollen	☐	☐	☐	☐	☐	☐
Ragweed	☐	☐	☐	☐	☐	☐
Respiratory Infections	☐	☐	☐	☐	☐	☐
Second hand smoke	☐	☐	☐	☐	☐	☐
Trees	☐	☐	☐	☐	☐	☐
Other _____	☐	☐	☐	☐	☐	☐

Environmental Controls ☐ N/A

Environmental Control Measures in Place ☐ Yes ☐ No (If Yes, Select patient-reported, control measures in place. Optional: repeat questions for individuals with a secondary home.)

	Yes	No	Suggested
Air conditioning in summer	☐	☐	☐
Central or hepa-filter vacuum	☐	☐	☐
Dehumidifier (desired target < 50%)	☐	☐	☐
Dust mite mattress cover	☐	☐	☐
Dust mite pillow cover	☐	☐	☐
Removed carpets	☐	☐	☐
Heat exchanger	☐	☐	☐
Heating gas/Oil	☐	☐	☐
Heating electric/Radiator	☐	☐	☐
Alternative to wood heat (fireplaces, wood stoves, furnaces) or mitigation strategies	☐	☐	☐

	Yes	No	Suggested
Humidifier in winter (desired target < 50%)	☐	☐	☐
Humidifier all year round (desired target < 50%)	☐	☐	☐
Non-feather blanket	☐	☐	☐
Pets kept out of bedrooms	☐	☐	☐
Regular furnace filter change	☐	☐	☐
Remove pets from home	☐	☐	☐
Wash linens in hot water	☐	☐	☐
Wash pets once a week	☐	☐	☐
Wear mask or respirator as needed	☐	☐	☐
Other _____	☐	☐	☐

Client Name _____ Jurisdictional Health Number _____

Comorbidities ☐ N/A

Comorbid Conditions ☐ Yes ☐ No (If yes select relevant asthma comorbid diagnosis from a list)

	Yes	No	Unknown
A-1 Antitrypsin deficiency	☐	☐	☐
Adenoid hypertrophy	☐	☐	☐
Allergic bronchoplumonary aspergillosis	☐	☐	☐
Allergic rhinoconjunctivitis	☐	☐	☐
Anaphylaxis	☐	☐	☐
ASA sensitivity	☐	☐	☐
Cancer	☐	☐	☐
COPD	☐	☐	☐
Cor Pulmonale/ heart failure	☐	☐	☐
Cerebrovascular accident (CVA)	☐	☐	☐
Eczema/ Hives/ Urticaria	☐	☐	☐
Eosinophilia	☐	☐	☐
Eosinophilic granulomatosis with polyangiitis (EGPA) (Churg-Strauss Syndrome)	☐	☐	☐
Gastroesophageal reflux disease (GERD)	☐	☐	☐
Glaucoma/Cataracts	☐	☐	☐
Immune deficiency	☐	☐	☐
Dysfunctional breathing (Laryngeal Dysfunction and/or Hyperventilation Syndrome)	☐	☐	☐
MI	☐	☐	☐
Osteopenia/ Osteoporosis	☐	☐	☐
Panic disorders	☐	☐	☐
Respiratory failure	☐	☐	☐
Rhinitis/ Nasal polyposis/ Sinusitis	☐	☐	☐
Sleep apnea	☐	☐	☐
Swallowing dysfunction/Dysphagia	☐	☐	☐
Other cardiovascular disease	☐	☐	☐
Other	☐	☐	☐

Asthma Control ☐ N/A

(Note time interval for capturing asthma control data is the last four weeks)

Daytime Symptoms (Average number of day/week in the last 4 weeks with dyspnea, cough, wheeze and/or chest tightness)	# of Days/Week	Control=<4 (control <2 for preschoolers 1-5 years if age)
Nighttime Symptoms (Average number of night/weeks in the last 4 weeks with dyspnea, cough, wheeze and/or chest tightness)	# of Nights/Week	Control=<1
Physical activity limited (Due to asthma in the last 4 weeks)	☐ Yes ☐ No	
Exacerbations since last visit (Hospital admission, ED visit, Walk-in-Clinic)	☐ Yes ☐ No	# of Exacerbations
Dates of Exacerbations (Hospital admission, ED visit, Walk-in-Clinic)	YYYY/MM/DD	YYYY/MM/DD
School/Work/Social activity absences due to asthma (Average number of days/week in the last 4 weeks)	☐ Yes ☐ No	# of Days/Week
Needs Reliever (Average number of day/week in the last 4 weeks)	# of Doses/Week	Control=<4
Sputum Eosinophils (Measured Yes/No: if yes, %)	☐ Yes ☐ No	% Control=<2-3%
FEV_1 or PEF ≥90% predicted or personal best	☐ Yes ☐ No	
PEF diurnal variation <15% over a 2 week period	☐ Yes ☐ No	
Asthma Controlled	☐ Yes ☐ No	

Based on control criteria from the Canadian Thoraicic Society 2012 Asthma Guidelines and 2017 Position Paper.
Any ONE element NOT in control- OVERALL NOT in control.

Pulmonary Function Test ☐ N/A

Spirometry	LLN	PRE		POST	
	Actual	Actual	% Pred	Actual	% Pred
FEV_1	L/Min	L/Min	%	L/Min	%
FVC	L/Min	L/Min	%	L/Min	%
PEF	L/Min	L/Min	%	L/Min	%
FEV_1 / FVC					

Peak Flow Meter	Actual
Predicted PEF	L/Min
Personal Best PEF	L/Min
Actual PEF	L/Min
PEF % pred	% pred
PEF % Personal Best	% PB

Methacholine	Actual
PC_{20} or PD_{20}	mg/mL or mcg

Additional Notes

Asthma Action Plan ☐ N/A

	Yes	No	
Written asthma action plan provided	☐	☐	YYYY/MM/DD
Written asthma action plan revised	☐	☐	YYYY/MM/DD
Asthma action plan reviewed & not changed	☐	☐	YYYY/MM/DD
Yellow or red zone of action plan followed, since last vist	☐	☐	# of Times

Asthma Control Zone ☐ N/A

(Provider assessment based upon prior Asthma Control parameter responses)

If Asthma controlled option answer is Green ☐ Green

If Asthma uncontrolled option is yellow or red ☐ Yellow ☐ Red

Client Name | Jurisdictional Health Number

Immunizations ☐ N/A

	Yes	No	Unknown
Immunizations discussed	☐	☐	☐
Influenza vaccination received	☐	☐	☐

Date of last influenza vaccination: YYYY/MM/DD

Investigations ☐ N/A

Chest CT
Date of last: YYYY/MM/DD Results:

Bone Mineral Density Test (BMD Test)
Date of last: YYYY/MM/DD Results: g/cm²

IgE
Date of last: YYYY/MM/DD Results: Iu/ml

Blood Eosinophil Levels
10*3 /uL

Education Interventions ☐ N/A

Education provided at this visit ☐ Yes ☐ No
(User will be asked to identify education provided at this visit by selecting items from a list)

	Yes	No
Adherence to medications	☐	☐
Barriers addressed	☐	☐
Coping strategies addressed	☐	☐
Definition of asthma	☐	☐
Device technique optimal	☐	☐
Early recognition & treatment of exacerbations	☐	☐
Environmental tobacco smoke exposure	☐	☐
Epinephrine auto injector	☐	☐
Exercise	☐	☐
Immunotherapy	☐	☐
Inhaler technique	☐	☐
Medications	☐	☐
Provide patient education materials	☐	☐
Self management goal	☐	☐
Smoking cessation	☐	☐
Triggers & environmental controls	☐	☐
Other	☐	☐

Patient understanding of education/Information provided at this visit: ☐ Poor ☐ Fair ☐ Good ☐ Excellent

Referrals ☐ N/A

	Yes	No	Suggested
Allergist	☐	☐	☐
Asthma Education Program/ CRE	☐	☐	☐
Respirologist	☐	☐	☐
Smoking Cessation Program	☐	☐	☐
Pediatrician	☐	☐	☐
Internal Medicine Specialist	☐	☐	☐
ENT physician	☐	☐	☐
Occupational Medication Specialist	☐	☐	☐
Speech Therapist	☐	☐	☐
Gastroenterologist	☐	☐	☐
Other specialist	☐	☐	☐

Assessment Tools ☐ N/A

	Yes	No
Quality of Life assessment completed	☐	☐
Mini Asthma Quality of Life questionnaire score	#	

Follow-up Visit Scheduled in (time frame from current visit) ☐ N/A

☐ 1 Week ☐ 1 Month ☐ 4-6 Months
☐ 2 Weeks ☐ 2 Months ☐ 6-12 Months
☐ 3 Weeks ☐ 3 Months ☐ "Wait and see"

Other

Additional Notes / Plan

Please see appendix for abbreviations listed in this algorithm

Asthma Diagnosis and Management Algorithm for Primary Care

Patient Presents with Asthma Symptoms

(cough, dyspnea, chest tightness, wheezing, sputum production, nocturnal symptoms/awakenings)

Objectively Confirm Diagnosis: 2012 Asthma Guidelines and 2015 Preschool asthma guidelines: http://www.respiratoryguidelines.ca/

Preschoolers - Children 1-5 yrs of age (Spirometry not possible) (2)*
Diagnosis of asthma considered in children one to five years with frequent (≥8 days/month) asthma-like symptoms or recurrent (≥2) exacerbations showing all of the following:

1. Airflow Obstruction:
A) Wheezing documented by a trained HCP using stethoscope (preferred)
B) Parents report 'wheezing' (alternative)

2. Reversibility of airflow obstruction
A) documented response to SABA (+/- oral steroids) by a trained physician or HCP during acute exacerbation (preferred)
B) Parental report of symptomatic response to a 3 month therapeutic trial of medium dose ICS with SABA as needed (alternative)

3. No clinical suspicion of alternate diagnosis

Children ≥ 6 yrs to 11yrs:
1. Preferred: Spirometry showing reversible airway obstruction:
- FEV_1/FVC ratio < LLN (approx. < 0.80-0.90) based on age, sex, height and ethnicity
- And ≥12% change in FEV_1 post bronchodilator or after course of controller therapy

2. Alternative: Improvement in PEF:** ≥20% post bronchodilator or after course of controller therapy (diurnal variation not recommended)
3. Alternative: Positive Challenge Test (if spirometry inconclusive): Methacholine challenge testing or Exercise challenge

Adults (≥ 12 yrs):

1. Preferred: Spirometry showing reversible airway obstruction:
- FEV_1/FVC ratio < LLN (approx. < 0.75-0.80) based on age, sex, height and ethnicity
- And ≥12% and min ≥200 mL change in FEV_1 post bronchodilator or after course of controller therapy

2. Alternative: Improvement in PEF:** 60L/min (min ≥20%) (post bronchodilator or after course of controller therapy) or diurnal variation >8% (based on 2 times/day reading), >20% (based on multiple daily readings)

3. Alternative: Positive Challenge Test (if spirometry inconclusive): Methacholine challenge testing or Exercise challenge

Asthma Not Confirmed

Consider

- Was testing done when patient was not exposed to any triggers or asymptomatic? (If yes, consider repeat testing when patient exposed/symptomatic or consider methacholine and/or exercise challenge test) or allergy testing
- Differential diagnosis: examples include COPD, CF, IPF, VCD, GERD, CHF, primary ciliary dyskinesia, infectious/allergic rhinosinusitis, upper airway narrowing, bronchiectasis, pertussis, foreign-body inhalation, aspiration, pneumonia, atelectasis, tuberculosis, eosinophilic esophagitis, immune dysfunction, swallowing problem, pulmonary edema (2)

Asthma Confirmed

Patient Assessment

Discuss:
- History of exacerbations
- Family history of asthma/allergies
- Smoking history (and exposure to smoke)
- Respiratory medication history (check for β-blocker, NSAID/ASA use, medic alert bracelet, epinephrine auto injector) and client's drug plan
- History of triggers (skin testing may be indicated)
- irritant triggers (especially colds in children)
- Relevant co-morbidities (i.e., sinusitis, rhinitis, GERD, obesity)
- Work-related triggers
- Special considerations (i.e., adherence, cultural issues, financial issues, lack of support)

Management

Pharmacological (Baseline Maintenance Therapy):

Based on the CTS 2012 Asthma Management continuum (3) and the CTS 2015 Asthma guideline for pre-schoolers (2), to determine medication needed to achieve control (baseline maintenance therapy)

Adjust therapy to achieve and maintain control and prevent future risk:

1. All should be on a reliever on demand: SABA***
2. **Still Uncontrolled (refer to "Review Control" table):** Add regular controller therapy (ICSs are the first-line controller therapy for all ages)
3. **Still Uncontrolled:**
   Children (1-5 yrs and 6-11yrs): increase low dose ICS to medium dose ICS
   Adults and children ≥12 yrs : add LABA if on ICS (ideally in the same inhaler device)
4. **Still Uncontrolled:**
   Children (1-5 yrs): referral to asthma specialist
   Children (6-11yrs): add LABA or LTRA
   Adults and children ≥12 yrs : Add LTRA
5. **Still Uncontrolled:**
   Refer to specialist, consider adding prednisone

Pharmacological (Asthma Exacerbation):

CTS 2012 recommended controller step-up therapy when patient has acute loss of control on their baseline maintenance therapy (yellow zone of ASTHMA ACTION PLAN)

Children (1-5 yrs and 6-11yrs) Step-up
If the patient has no baseline maintenance medication: consider starting regular controller therapy
If baseline maintenance medication is ICS: add prednisone 1mg/kg x 3-5 days

Adults (≥12 years) Step-up
If the patient has no baseline maintenance medication: consider starting regular controller therapy
If baseline maintenance medication is ICS: 1st choice: Trial ≥ 4-fold ↑ in ICS (dosing should not exceed manufacturer's recommended maximum daily dose) for 7-14 days. 2nd choice: Add prednisone 30-50mg for for at least 5 days
If baseline maintenance medication is ICS/LABA (BUD/FORM): 1st choice: ↑ to max 4 puffs BID for 7-14 days (Max 8 puffs/day). 2nd choice: Add prednisone 30-50mg for at least 5 days
If baseline maintenance medication is ICS/LABA (FP/SALM or MOM/FORM):
1st choice: Trial ≥ 4-fold ↑ in ICS for 7-14 days. 2nd choice: Add prednisone 30-50mg for at least 5 days

Note: Post-exacerbation, diligent follow-up should be done to consider stepping down add-on therapy

Non-Pharmacological (Education)

- Refer to Certified Asthma/Respiratory Educator, if available
- Discuss asthma pathophysiology, triggers, comorbidities, inhaler technique, reliever vs. controller, medication safety and side effects, adherence, asthma control
- Smoking cessation counselling when appropriate
- Create and review written ASTHMA ACTION PLAN (instruction for when there is loss of control) Note: If, after reviewing control, it is determined that the patient is uncontrolled on their baseline maintenance therapy, they are in the yellow zone and the CTS 2012 recommended controller step-up therapy should be started
- Prevention of exacerbations: environmental control (i.e. work, home and school environment), tobacco smoke exposure, environmental triggers, irritant triggers, vaccination (influenza), immunotherapy

Review Control

(Reassess at each visit)ϕ

Resources: Asthma Action Plan (hcp.lunghealth.ca/clinical-tools)

Control indicates all of the following criteria are met

Daytime symptoms (dyspnea, cough, wheeze, chest tightness): < 4 days/week	Need for a reliever: < 4 doses/week (pre-exercise doses should be included in weekly limit)
Night time symptoms: < 1 night/week	FEV_1 or PEF: ≥ 90% of personal best
Physical activity: normal	Diurnal variability in PEF < 10%-15% over a 2 week period (readings morning and night)
Asthma exacerbations within the last 12 months: mild, infrequent	**Formula =** $\frac{\text{Highest PEF - Lowest PEF}}{\text{Highest PEF}} \times 100$
No absence from school/work due to asthma	Sputum eosinophils† < 2-3%

† Consider as an additional measure of asthma control in individuals ≥ 18 years with moderate to severe asthma who are assessed in specialized centres. ϕpreschoolers with ≥8 days/month of asthma symptoms or ≥2 severe exacerbations should be considered poorly controlled and should have ICS therapy initiated

Consider Referral to a Specialist:

- Not certain of diagnosis
- Sputum eosinophil monitoring
- Difficulty in determining baseline medication regimen
- Severe asthma requiring alternate therapy
- Recent ER/hospital admission or recurring exacerbations (≥2 for preschoolers [2])

Follow-Up

- Regularly reassess control (every 3-4 months for preschoolers[2]), inhaler technique, adherence, triggers, comorbidities, spirometry or PEF****
- Review medication regime and consider modifying maintenance therapy (consider stepping down add-on therapy or de-crease ICS dose if asthma is well-controlled between visits)
- Review/Revise written ASTHMA ACTION PLAN

***CTS guidelines for Preschoolers (2):** Please refer to latest CTS guidelines for detailed diagnosis algorithm for preschoolers
**Spirometry is the preferred method of documenting airflow limitation (12)
***ICS/LABA, in a formulation approved for use as a reliever for 12 years of age and older (BUD/FORM), may be considered as a reliever in individuals with mod. asthma and poor control despite fixed-dose maintenance ICS/LABA combination or for exacerbation prone individuals with uncontrolled asthma despite high maintenance dose of ICS or ICS/LABA
**** Spirometry is the preferred objective measure to help objectively assess asthma control (9).

Appendix:
Acronym:
BUD: Budesonide
COPD: Chronic Obstructive Pulmonary Disease
CF: Cystic Fibrosis
CHF: Congestive Heart Failure
ER: Emergency room
FORM: Formoterol
GERD: Gastroesophageal Reflux Disorder
HCP: Health care professional
ICS: Inhaled Corticosteroid
IPF: Idiopathic Pulmonary Fibrosis
LABA: Long-Acting $Beta_2$-Agonist
LTRA: Leukotriene-Receptor Antagonist
MOM: Mometasone
PEF: Peak Expiratory Flow
SABA: Short Acting $Beta_2$-Agonist
SALM: Salmeterol
VCD: Vocal Cord Dysfunction

Definitions:
FEV_1: volume of air expired in the first second of the FVC (used to assess flow resistive properties of airway)
FVC: Maximum volume of air that can be expired forcefully and completely after complete inspiration
FEV_1/FVC: used for the assessment of airflow obstruction
LLN (Lower Limit of Normal): the value below the 5th percentile for the normal population (8)

This document has been modified with permission by the Ontario Lung Association from the original version developed by Dr Itamar Tamari, Primary Care Asthma Program (PCAP)
The content of this algorithm is based on current available evidence and has been reviewed by medical experts. It is provided for information purposes only. It is not intended to be a substitute for sound clinical judgement.

Endorsed by: lung health foundation — ONTARIO THORACIC SOCIETY; lung health foundation — ONTARIO RESPIRATORY CARE SOCIETY

hcp.lunghealth.ca
1-888-344-LUNG (5864)

Algorithm and reference available at: hcp.lunghealth.ca/clinical-tools

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Adult Asthma Action Plan (16yrs+)

lung health starts now — lung health foundation

NAME: _____ **DATE:** _____

Review your action plan with your healthcare provider at every visit.

EMERGENCY CONTACT: _____ **PHONE:** _____

PHYSICIAN NAME: _____ **PHONE:** _____

PERSONAL BEST PEAK FLOW _____ litres per minute.

The goal of asthma treatment is to live a healthy, active life. It is very important to remain on your maintenance medication, even if you are not having any asthma symptoms.

Go: Maintain Therapy

DESCRIPTION:

You have **ALL** of the following:

- Use your reliever **no more than** 3 times per week
- Cough, wheezing, shortness of breath or chest tightening **no more than** 3 days per week
- Can do physical activities and sports without difficulty
- Night asthma symptoms less than 1 night per week
- No missed regular activities or school/work

Peak flow: > 80% personal best, or > _____.

Other:

INSTRUCTIONS:

MEDICATION	PUFFER COLOUR	DOSE	PUFFS	TIMES PER DAY
CONTROLLER				
RELIEVER				

Other:

Caution: Step Up Therapy

DESCRIPTION:

You have **ANY** of the following:

- Use your reliever **more than** 3 times per week
- Have daytime cough, wheezing, shortness of breath or chest tightening **more than** 3 days per week
- Physical activity is limited due to symptoms
- Asthma symptoms at night or in early AM 1 or more nights per week

Peak flow: 60-80% personal best, or _____ to _____.

Other:

INSTRUCTIONS:

☐ Increase _____ (colour) controller (_____ (medication)) to:
____ puffs ____ times per day for ____ days.

☐ Add _____ (colour) controller (_____ (medication)):
____ puffs ____ times per day for ____ days

☐ Take _____ (colour) reliever (_____ (medication)) 1-2 puffs every 4 to 6 hours as needed.

☐ If no improvement in your symptoms and/or peak flows in 2-3 days, or your reliever only lasts for 2-3 hours, go to the red zone.

Other:

Stop: Get Help Now

DESCRIPTION:

You have **ANY** of the following:

- Reliever lasts for 2-3 hours or less
- Continuous asthma symptoms
- Continuous cough
- Wheezing all the time
- Severe shortness of breath
- Sudden severe attack of asthma

Peak flow: <60% personal best, or < _____.

Other:

INSTRUCTIONS:

Take _____ (colour) reliever (_____ (medication)) ____ puffs every 10-30 minutes as needed.

Asthma symptoms can get worse quickly. When in doubt, seek medical help.

Asthma can be life-threatening - DO NOT WAIT!

If you cannot contact your doctor:
Call 911 for an ambulance, or go directly to the Emergency Department!

Bring this asthma action plan with you to the emergency room or hospital.

Stay calm.

Other:

Controller - has a lasting effect, treats inflammation, prevents asthma attacks, may take time to act.
Reliever - rapidly relieves symptoms of cough, wheeze, lasts 4 hours.

Allergies may be triggering your asthma - avoid the things that you are allergic to and have allergy skin testing if you are unsure.

Adapted from Gupta S, et al. Respiration 2012;84(5):406-15.

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Pediatric Asthma Action Plan (1-15years)

lung health starts now — lung health foundation

Always remain on your green zone medication, even if you are having no symptoms of asthma.

NAME: _____ **DATE:** _____

HEALTHCARE PROVIDER: _____ **PHONE:** _____

Review your action plan with your healthcare provider at every visit.

Go: Maintain Therapy

DESCRIPTION

You/your child has **ALL** of the following:

- Use of reliever puffer **no more than** 3 times per week*
- Daytime symptoms (cough, wheeze or breathing problems) **no more than** 3 times per week*
- Ability to do physical activity (playing, running, or sports) without difficulty
- No nighttime asthma symptoms
- Not missing regular activities or school
- No symptoms of a cold

***1 time a week if 1 to 5 years old.**

Other:

INSTRUCTIONS

MEDICATION	PUFFER COLOUR	DOSE	PUFFS	TIMES A DAY
CONTROLLER				
RELIEVER				
				every 4 hrs as needed

☐ Use reliever before exercise

Other:

Caution: Step Up Therapy

DESCRIPTION

You/your child has **ANY** of the following:

- Use your reliever puffer **more than** 3 times per week*
- Daytime symptoms (cough, wheeze or breathing problems) **more than** 3 times per week*
- Difficultly with physical activity (playing, running) or sports
- Asthma symptoms for 1 or more nights per week
- Missing regular activities or school
- Symptoms of a cold

***1 time a week if 1 to 5 years old.**

Other:

INSTRUCTIONS

☐ Take _____ (colour) reliever ____ puffs every 4 hours as needed, and:

☐ Continue to take your green zone medication

☐ If reliever puffer is needed consistently every 4 hours, or if there is no improvement in your symptoms in 2-3 days, contact your healthcare provider

Other:

Stop: Get Help Now

DESCRIPTION

You/your child has **ANY** of the following:

- Reliever puffer lasts **less than** 3 hours
- "Pulling in" of skin in the neck or between or below ribs
- Feeling very short of breath
- Difficulty talking
- Continuous wheeze or cough

Other:

INSTRUCTIONS

Take _____ (colour) reliever 4-6 puffs every 15-20 minutes, and

Call 911 or go directly to the emergency department

Asthma symptoms can get worse quickly

Asthma can be a life-threatening illness **- DO NOT WAIT!**

Bring this asthma action plan with you to the emergency department

Stay calm

Other:

Use a spacer device (holding chamber) with all metered dose inhalers.

Lung Health Line 1-888-344-LUNG (5864) or lunghealth.ca

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Pediatric Asthma Action Plan (1-15 years)

The goal of asthma treatment is to live a healthy, active life

This Asthma Action Plan outlines steps for you to self-manage asthma when you start having more symptoms. Your healthcare provider might also change your usual asthma treatment according to the level of asthma control over time. Review all symptoms and this plan regularly with your healthcare provider.

Asthma Triggers

Colds are the most common trigger
- wash hands often

Smoking or being in a house
or a car where someone smokes

Fumes, chemicals
and strong scents

Check the Air Quality Health Index before you leave home: **airhealth.ca.**

Allergies may be triggering your asthma

Follow the instructions below if you are allergic to any of these:
(have allergy skin testing if you are unsure)

Pets with fur or feathers - If you have pets, wash them regularly and keep them out of bedrooms.

Pollen (eg. flowers, grass, trees) - Try to stay inside on high pollen days and avoid freshly cut grass.

Dust and dust mites - Wash bedsheets in hot water and vacuum with a HEPA filter or central vacuum regularly; consider mattress and pillow covers.

Mould - Keep bathroom and basement dry, clean visible mould, avoid decomposing leaves in the fall.

Simple ways to take care of your asthma:

- ✓ Avoid triggers.
- ✓ Know your medications and how and when to take them. Take controller medications regularly.
- ✓ Follow your action plan.
- ✓ After any emergency room visit, schedule a follow-up appointment with your healthcare provider in the next 2 weeks.
- ✓ Always have your reliever medication with you.
- ✓ Use appropriate spacer (holding chamber) with metered dose inhaler.

For Healthcare Providers

At every visit, re-assess adherence to therapy, inhaler technique, asthma control criteria and environmental control.

For children 1-5 years, refer to the figure provided and the 2015 Diagnosis and Management of Asthma in Preschoolers position statement** to determine treatment and medication doses required to maintain ongoing asthma control. For children 6 years and over, refer to the CTS 2012 Asthma guideline update†.

An exacerbation requiring rescue systemic corticosteroids or hospitalization is an indication of suboptimal control and should prompt reassessment.

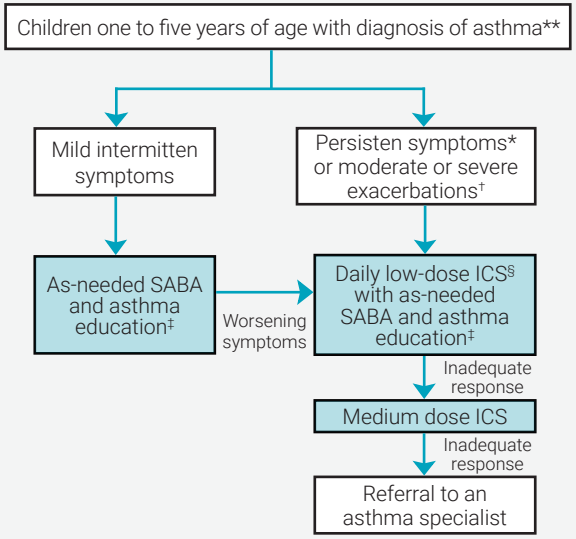

Figure 2) Treatment algorithm for preschoolers with asthma.*Symptoms occurring ≥8 days/month, ≥8 days/month with use of inhaled short-acting β2-agonists (SABA), ≥1 night awakening due to symptoms/month, any exercise limitation/month or any absence from usual activities to asthma symptoms; †Episodes requiring rescue oral corticosteroids or hospital admission; ‡Asthma education including environmental control and a written self-management plan; §Inhaled corticosteroids (ICS) are more effective than leukotriene receptor antagonists (LTRA)

This asthma action plan was adapted from Gupta S., et al. Respiration 2012; 84(5):406-15. Pictograms in the asthma action plan were adapted from Tulloch J., et. al. Can Respir J. 2012 Jan-Feb;19(1):26-31 Instructions were designed to align with: **Ducharme FM, Dell SD, Radhakrishnan D, et al. Diagnosis and management of asthma in preschoolers: A Canadian Thoracic Society and Canadian Paediatric Society position paper. Can Respir J 2015; 22(3):135-143 and †Lougheed MD, Lemiere C, Ducharme F, et al. Canadian Thoracic Society 2012 guideline update: Diagnosis and management of asthma in preschoolers, children and adults. Can Respir J 2012: Vol 19(2), 127-64.

For information on how this action plan was developed, or to download a copy of this action plan and/or for associated resources, please visit https://hcp.lunghealth.ca/programs-tools/clinical-tools/

lung health starts now — lung health foundation

COPD Care Map for Primary Care
Initial Assessment

☐ N/A

Date YYYY/MM/DD | Visit ☐ Scheduled ☐ Unscheduled

Referring health care provider | Healthcare Professional Role Type e.g respirologist

Provider identifier assigning authority e.g Regulatory body for physicians & surgeons | Provider Identifier Type e.g provider billing number

Reason for referral
- ☐ New COPD Diagnosis
- ☐ Suspected COPD
- ☐ Other

Anthropometric Vitals ☐ N/A

Height cm | BMI

Weight kg

Sp02 _____ L/min

Demographics ☐ N/A

Clients Name (please print)

Client Identifier Type e.g Jurisdictional Health Number	Client Identifier Assigning Authority e.g OHIP
Date of Birth YYYY/MM/DD	Self Reported Ethnic Group
Postal / Zip Code	Sex Assigned at Birth

Lived Gender
☐ Female gender ☐ Male gender ☐ Gender diverse

Highest level of education
☐ < High school ☐ High school ☐ Post secondary< Bachelor's degree
☐ Bachelor's degree ☐ Post secondary > Bachelor's degree

Living With
☐ Partner ☐ Caregiver ☐ Lives alone ☐ Other

COPD Diagnosis* ☐ N/A

☐ Unknown ☐ Confirmed YYYY/MM/DD Date Confirmed/Excluded (If uncertain indicate "unknown" in the provided field) ☐ Asthma COPD Overlap

☐ Suspected # Age COPD was confirmed ☐ Spirometry attached

*ensure a diagnosis of COPD is made with post-bronchodilator spirometry testing to meet the Canadian Thoracic Society criteria
Post-bronchodilator FEV_1/FVC ratio < LLN or < 0.70

Appointment Type

☐ Scheduled ☐ Yes ☐ No ☐ Post ED Visit ☐ Yes ☐ No

☐ Post Hospital Visit ☐ Yes ☐ No

If yes: ☐ Within 7 days post-hospital visit ☐ Within 14 days post-hospital visit ☐ More than 14 days post-hospital visit

Medications ☐ N/A

Respiratory Medications	Drug Name	Strength (Unit of Measure)	Dose form (device type)	Route	Rx Date	Adherence issues known or suspected? Y/N
Short acting β-agonist (SABA)						
Short acting muscarinic antagonist (SAMA)						
Long acting β-agonist (LABA)						
Long Acting Muscarinic Antagonist (LAMA)						
Inhaled Corticosteroid (ICS)						
LAMA/LABA						
ICS/LABA						
ICS/LABA/LAMA						
Antibiotics						
Macrolide						
Prednisone						
Other						
Other						
Other						

	Yes	No
Patient has a spacing device	☐	☐
Does at least one prescribed medication allow for a spacing device to be used?	☐	☐
Unfilled prescriptions. In the last 6 months has the patient been prescribed any COPD medications he/she has not obtained.	☐	☐

Past Medications

Yellow Zone Medications

Oxygen Therapy: _____ L/ min at rest _____L/min on exertion _____ L / min during sleep

SABA use ☐ < 1 canister/ month ☐ 1-2 canister/ month ☐ > 1 canister/ month

Client Name _____ Jurisdictional Health Number _____

Family History of Lung Disease ☐ N/A

Family History of COPD, Allergy and/or Asthma ☐ Yes ☐ No ☐ Unknown

(If yes select conditions from a list and indicate which relative)

COPD	☐ Parent	☐ Sibling
Allergy	☐ Parent	☐ Sibling
Alpha-1 Antitrypsin	☐ Parent	☐ Sibling
Asthma	☐ Parent	☐ Sibling

Physicial Exam ☐ N/A

☐ Normal breath sounds ☐ Abnormal breath sounds

If abnormal, select auscultory finding

☐ Wheezes ☐ Crackles ☐ Reduced Breath Sounds ☐ Bronchial (harsh and prolonged inspiration and expiration)

☐ Barrel chested ☐ Clubbing ☐ Cachectic (skinny)

Vitals: HR _____ RR _____ BP _____

Current Symptoms ☐ N/A

	Yes	No
Breathlessness ☐ at rest ☐ on exertion	☐	☐
Chest tightness	☐	☐
Wheeze	☐	☐
Cough	☐	☐
Sputum production	☐	☐
Sputum colour _____		
Sputum consistency _____ Sputum volume _____		
Hemoptysis	☐	☐
Frequent colds	☐	☐
If yes frequency ☐ 0-3/year ☐ 4-7/year ☐ ≥8/year		
Colds that last longer than 7 days	☐	☐
Symptoms worse at night (including cough)	☐	☐
Chest pain	☐	☐
Limitation of activities at home	☐	☐
Sleep soundly	☐	☐
Decreased energy level	☐	☐

Smoking ☐ N/A

Smoking Status ☐ Non-Smoker ☐ Ex-Smoker ☐ Smoker (# of cigarettes per day ____)

Quit Date YYYY/MM/DD

Quit Duration

When was the last time you smoked a cigarette, even a puff?

☐ > 6 months ☐ 1-6 months ☐ < 1 month

Passive Smoking Risk

☐ Yes ☐ No

Pack Years

Cig Smoked/day ____ / 20 x Years smoked ____ = Pack years ____

Smoke Type

☐ non-traditional tobacco (e.g. cigarettes/ cigarillo/ cigar)

☐ Cannabis use ☐ e-cigarette user

☐ traditional tobacco (e.g. smudging ceremonies)

☐ Inhalation vapor user ☐ hooka ☐ shisha

Smoking Cessation Quit Intentions

Are you planning to quit smoking?

☐ within a month ☐ within 6 months

☐ beyond 6 months ☐ not planning to quit

Stages of Change Addressed

☐ pre-contemplation ☐ contemplation ☐ preparation

☐ action ☐ maintenance

Smoking Cessation Addressed

☐ Ask ☐ Advise ☐ Arrange

Smoking Cessation Aids

☐ Nicotine Replacement Therapy (NRT)

COPD Healthcare Utilization ☐ N/A

Visit(s) to primary care physician in the last 12 months for COPD symptoms

☐ Yes ☐ No ☐ Unknown

If Yes, indicate the number of primary care visits for COPD in the last 12 months

Routine primary care visits ____ Urgent primary care visits ____

Visit(s) to a specialist for COPD

	Yes	No	Unknown	Last 12 Months
Respirologist	☐	☐	☐	☐
General Internist	☐	☐	☐	☐
Allergist	☐	☐	☐	☐

	Yes	No	Unknown	Recent < 1yr	Total # ever
ED visits ever for COPD	☐	☐	☐	☐	
Hospitalized ever for COPD	☐	☐	☐	☐	

			# ICU admissions	# intubations
ICU admissions in the last 12 months	☐	☐	☐	

			Date last used	Total # ever
Systemic steroid use ever	☐	☐	☐	

Barriers ☐ N/A

Barriers ☐ Yes ☐ No (If yes select from the list below)

	Yes	No
Adherence	☐	☐
Cultural issue	☐	☐
Financial issue	☐	☐
Lack of private drug plan	☐	☐
Language	☐	☐
Literacy	☐	☐
Medication side effects	☐	☐
Other ____	☐	☐

Effect of substances addiction ☐ Yes ☐ No

Social/Family issue ☐ Yes ☐ No

Client Name _____ Jurisdictional Health Number _____

Modified Medical Research Council Classification ☐ N/A

- ☐ mMRC 0: I only get breathless with strenuous exertion
- ☐ mMRC 1: I get SOB when hurrying on the level or walking up a slight hill
- ☐ mMRC 2: I walk slower than other people of the same age on the level, or stop for breath when walking at my own pace
- ☐ mMRC 3: I stop for breath after walking 100 meters or after a few minutes
- ☐ mMRC 4: I am too breathless to leave the house or I am breathless when dressing or undressing

CAT Score (https://www.catestonline.org) ☐ N/A

CAT Score	Impact level
5	Upper limit of normal in healthy non-smokers
< 10	Low
10 - 20	Medium
> 20	High
> 30	Very High

CAT Score _____

CTS severity score (symptom burden and the risk of future exacerbations) ☐ N/A

- ☐ Mild: CAT < 10, mMRC 1, No AECOPD*
- ☐ Moderate: CAT ≥ 10, mMRC ≥ 2, Low Risk of AECOPD*
- ☐ Severe: CAT ≥ 10, mMRC ≥ 2, High Risk of AECOPD*

*Patients are considered at **Low Risk of AECOPD** with ≤ 1 moderate AECOPD in the last year (moderate AECOPD is an event with prescribed antibiotic and/or oral corticosteroids), and did not require hospital admission/ ED visit; or at **High Risk of AECOPD** with ≥ 2 moderate AECOPD or ≥ 1 severe exacerbation in the last year (severe AECOPD is an event requiring hospitalization or ED visit).

Triggers and Exposures ☐ N/A

Category If yes select patient reported triggers & exposures from list.	Triggers ☐ Yes ☐ No ☐ Unknown	Exposures ☐ Yes ☐ No ☐ Unknown
	Yes No Unknown	Yes No Unknown
Beta Blockers	☐ ☐ ☐	☐ ☐ ☐
Cats	☐ ☐ ☐	☐ ☐ ☐
Chemicals	☐ ☐ ☐	☐ ☐ ☐
Cockroaches	☐ ☐ ☐	☐ ☐ ☐
Cold air/ Windy day	☐ ☐ ☐	☐ ☐ ☐
Dogs	☐ ☐ ☐	☐ ☐ ☐
Dust/Dust mites	☐ ☐ ☐	☐ ☐ ☐
Emotion/ Stress	☐ ☐ ☐	☐ ☐ ☐
Exercise	☐ ☐ ☐	☐ ☐ ☐
Fireplace/Woodstove	☐ ☐ ☐	☐ ☐ ☐
Food allergy	☐ ☐ ☐	☐ ☐ ☐
Fumes	☐ ☐ ☐	☐ ☐ ☐
Fungi/Mould	☐ ☐ ☐	☐ ☐ ☐
Grasses	☐ ☐ ☐	☐ ☐ ☐
High humidity	☐ ☐ ☐	☐ ☐ ☐
Medications	☐ ☐ ☐	☐ ☐ ☐
Outdoor pollution	☐ ☐ ☐	☐ ☐ ☐
Perfume/Air fresheners	☐ ☐ ☐	☐ ☐ ☐
Pollen	☐ ☐ ☐	☐ ☐ ☐
Ragweed	☐ ☐ ☐	☐ ☐ ☐
Respiratory Infections	☐ ☐ ☐	☐ ☐ ☐
Second hand smoke	☐ ☐ ☐	☐ ☐ ☐
Other _____	☐ ☐ ☐	☐ ☐ ☐

Occupational History ☐ N/A

Current Employment Status: Check all the apply.
Note - This includes self-employment and working from home:

☐ Full-Time ☐ Part-Time ☐ Shift work ☐ Modified duties ☐ Off work due to respiratory health ☐ Retired

☐ Other _____ Current Employment_____

Significant work exposure _____

Environmental Controls ☐ N/A

Environmental Control Measures in Place ☐ Yes ☐ No (If Yes, Select patient-reported, control measures in place. Optional: repeat questions for individuals with a secondary home.)

	Yes	No	Suggested
Air conditioning in summer	☐	☐	☐
Central or hepa-filter vacuum	☐	☐	☐
Dehumidifier (desired target < 50%)	☐	☐	☐
Dust mite mattress cover	☐	☐	☐
Dust mite pillow cover	☐	☐	☐
Removed carpets	☐	☐	☐
Heat exchanger	☐	☐	☐
Heating gas/Oil	☐	☐	☐
Heating electric/Radiator	☐	☐	☐
Alternative to wood heat (fireplaces, wood stoves, furnaces) or mitigation strategies	☐	☐	☐

	Yes	No	Suggested
Humidifier in winter (desired target < 50%)	☐	☐	☐
Humidifier all year round (desired target < 50%)	☐	☐	☐
Non-feather blanket	☐	☐	☐
Pets kept out of bedrooms	☐	☐	☐
Regular furnace filter change	☐	☐	☐
Remove pets from home	☐	☐	☐
Wash linens in hot water	☐	☐	☐
Wash pets once a week	☐	☐	☐
Wear mask or respirator as needed	☐	☐	☐
Other	☐	☐	☐

Client Name _____ Jurisdictional Health Number _____

Comorbidities ☐ N/A

Comorbid Conditions ☐ Yes ☐ No (If yes, select relevant comorbid diagnosis from the list provided)

Respiratory	Yes	No	Unknown
A-1 Antitrypsin deficiency	☐	☐	☐
ASA Reaction	☐	☐	☐
Eczema	☐	☐	☐
Emphysema	☐	☐	☐
Lung Cancer	☐	☐	☐
Chronic Bronchitis	☐	☐	☐
Other Lung Disease	☐	☐	☐
Pleurisy	☐	☐	☐
Pneumonia	☐	☐	☐
Pneumothorax	☐	☐	☐
Pulmonary Edema	☐	☐	☐
Pulmonary Effusion	☐	☐	☐
Pulmonary Embolism	☐	☐	☐
Pulmonary Hypertension	☐	☐	☐

Mental Health			
Anxiety	☐	☐	☐
Dementia/Alzheimer	☐	☐	☐
Depression	☐	☐	☐
Panic Disorder	☐	☐	☐

Metabolic			
Diabetes	☐	☐	☐
Hypothyriodism	☐	☐	☐
Metabolic Syndromes	☐	☐	☐

Cardiovascular	Yes	No	Unknown
Aneurysms	☐	☐	☐
Angina	☐	☐	☐
Aortic Stenosis	☐	☐	☐
Aortic Valve Regurgitation	☐	☐	☐
Arrhythmias	☐	☐	☐
Atrial Fibrillation	☐	☐	☐
Cardiomyopathy	☐	☐	☐
Cerebral Vascular Accident	☐	☐	☐
Coronary Artery Disease	☐	☐	☐
Congestive Heart Failure	☐	☐	☐
Cor Pulmonale	☐	☐	☐
Coronary Artery Bypass Surgery	☐	☐	☐
Deep vein thrombosis	☐	☐	☐
Defibrillator	☐	☐	☐
Heart Disease	☐	☐	☐
High Blood Pressure	☐	☐	☐
Hyperlipidemia	☐	☐	☐
Hypertension	☐	☐	☐
Implantable Cardioverter	☐	☐	☐
Mitral Valve Regurgitation	☐	☐	☐
Myocardial Infarction	☐	☐	☐
Myocarditis	☐	☐	☐
Pacemaker	☐	☐	☐
Pedal Swelling	☐	☐	☐
Peripheral Vascular Disease	☐	☐	☐
Syncope	☐	☐	☐
Transient Ischemic Attack	☐	☐	☐

Upper Airways	Yes	No	Unknown
Anaphylaxis	☐	☐	☐
Nasal Polyps	☐	☐	☐
Oral Thrush	☐	☐	☐
Rhinitis/ Sinusitis	☐	☐	☐
Sleep Apnea	☐	☐	☐
Upper Respiratory Tract Infection	☐	☐	☐

Other			
Arthritis	☐	☐	☐
Cancer	☐	☐	☐
Cataracts/Glaucoma	☐	☐	☐
Frequent Colds	☐	☐	☐
GERD	☐	☐	☐
Heartburn	☐	☐	☐
Kidney Disease	☐	☐	☐
Liver Disease	☐	☐	☐
Osteopenia/ Osteoporosis	☐	☐	☐
Rheumatoid Arthritis	☐	☐	☐

Other

COPD Action Plan ☐ N/A

	Yes	No	
Written COPD action plan provided	☐	☐	YYYY/MM/DD
Written COPD action plan revised	☐	☐	YYYY/MM/DD
COPD action plan reviewed & not changed	☐	☐	YYYY/MM/DD
Yellow or red zone of action plan followed,	☐	☐	# of Times

Pulmonary Function Test ☐ N/A

Spirometry	LLN	PRE		POST	
	Actual	Actual	% Pred	Actual	% Pred
FVC	L/Min	L/Min	%	L/Min	%
FEV1	L/Min	L/Min	%	L/Min	%
FEV_1 / FVC	L/Min	L/Min	%	L/Min	%
PEF					

DLCO ☐ Yes ☐ No ☐ N/A Results _____

Additional Notes/ Plans

Client Name _____ Jurisdictional Health Number _____

Immunizations ☐ N/A

	Yes	No	Unknown
Immunizations discussed	☐	☐	☐
Influenza vaccination received	☐	☐	☐

Date of last influenza vaccination YYYY/MM/DD

Conjugated vaccine (PNEU-C-13) YYYY/MM/DD

Polyvalent Pneumococcal vaccine YYYY/MM/DD

https://www.canada.ca/en/public-health/services/immunization/national-advisory-committee-on-immunization-naci.html

Investigations ☐ N/A

Chest CT ☐ Yes ☐ No Results _____

Bone Mineral Density Test (BMD Test)

Date of last YYYY/MM/DD Results g/cm²

Other (past disgnostics)

Alpha-1 Antitrypsin blood work done ☐ Yes ☐ No ☐ N/A

Results _____

ABG on room air done and date (consider when FEV_1 < 40% or resting Sp02 < 90%) ☐ Yes ☐ No ☐ N/A Date of last YYYY/MM/DD

Results: pH ____ PO2 ____ PC02 ____ HC03 ____ Sa02 ____

6 minute walk test ☐ Yes ☐ No ☐ N/A Results _____

Referrals ☐ N/A

	Yes	No	Suggested
Allergist	☐	☐	☐
COPD Education Program/ CRE	☐	☐	☐
Respirologist	☐	☐	☐
Smoking cessation counselling/support	☐	☐	☐
Dietitian	☐	☐	☐
Mental health counselling	☐	☐	☐
Sleep testing	☐	☐	☐
Allergy testing	☐	☐	☐
Home O2 assessment	☐	☐	☐
ABGs	☐	☐	☐
Social Worker	☐	☐	☐
Pharmacist	☐	☐	☐
Full PFT testing	☐	☐	☐
Pulmonary Rehabilitation	☐	☐	☐
OTN tele-monitoring program (if available)	☐	☐	☐
Other specialist _____	☐	☐	☐

Follow-up Visit Scheduled in (time frame from current visit) ☐ N/A

☐ 1 Week ☐ 1 Month ☐ 4-6 Months Other _____

☐ 2 Weeks ☐ 2 Months ☐ 6-12 Months

☐ 3 Weeks ☐ 3 Months ☐ "Wait and see"

Education Interventions ☐ N/A

Education provided at this visit ☐ Yes ☐ No

(Identify education provided by selecting from the list below)

	Yes	No		Yes	No
Adherence to medications	☐	☐	Immunotherapy	☐	☐
Barriers addressed	☐	☐	Inhaler technique	☐	☐
COPD Action Plan	☐	☐	Medications	☐	☐
COPD pathophysiology	☐	☐	Provide patient education materials	☐	☐
Coping strategies addressed	☐	☐	Self management goal	☐	☐
Device technique optimal	☐	☐	Smoking cessation	☐	☐
Early recognition & treatment of exacerbations	☐	☐	Triggers & environmental controls	☐	☐
Environmental tobacco smoke exposure	☐	☐	Other _____	☐	☐
Exercise	☐	☐			

Patient understanding of education/Information provided at this visit ☐ Poor ☐ Fair ☐ Good ☐ Excellent

Additional Notes/ Plans

Healthcare Professional Role Type _____ Signature _____

COPD Diagnosis and Management Algorithm for Primary Care[1]

If a patient presents with respiratory symptoms or you suspect respiratory disease ask patient about the following:

- Shortness of breath at rest or on exertion,
- activity limitation,
- cough,
- sputum production,
- frequent respiratory tract infections
- smoker (current or past)

Screen smokers or ex-smokers over 40 years old who answer "YES" to any question below[2]:

1. Do you cough regularly?
2. Do you cough up phlegm regularly?
3. Do even simple chores make you short of breath?
4. Do you wheeze when you exert yourself or at night?
5. Do you get frequent colds that persist longer than those of other people?

COPD SUSPECTED

Confirm Diagnosis with Spirometry*

Air flow limitation:

Post-bronchodilator FEV_1 / FVC < LLN or < 0.70
FEV_1 = forced expiratory volume in 1 second FVC = forced vital capacity LLN = Lower Limit of Normal

History/Risk Factors:

- History: smoking, occupational, medical, family
- Second-hand smoke exposure
- Assess for orthopnea
- Allergies
- Indoor/outdoor air pollution
- Symptoms: shortness of breath at rest or on exertion, activity limitation, cough, sputum production (amount, colour, consistency), wheezing, chest tightness

Physical Examination:

- Auscultation
- Signs of lung hyperinflation, accessory muscle use
- Signs of generalized muscle wasting
- Ankle swelling (heart failure)
- Cachexia, malnutrition: body mass index [underweight < 18.5 kg/m2; overweight ≥ 25 kg/m2; obese ≥ 30 kg/m2]

*Testing should be done when patient is stable

COPD NOT CONFIRMED

Differential Diagnosis

- Asthma
- Cardiovascular or pulmonary vascular disease
- Obesity
- Severe deconditioning
- Anemia
- Interstitial lung disease
- Neuromuscular disease
- Bronchiectasis
- Tuberculosis

Patient Assessment & Monitoring

Assess Severity (Refer to Pharmacological Management figure below for definitions):

Modified Medical Research Council (mMRC) dyspnea scale:

mMRC 0: I only get breathless with strenuous exertion
mMRC 1: I get SOB when hurrying on the level or walking up a slight hill
mMRC 2: I walk slower than other people of the same age on the level, or stop for breath when walking at my own pace
mMRC 3: I stop for breath after walking 100 meters or after a few minutes

CTS severity score (symptom burden and the risk of future exacerbations)

Mild: CAT < 10, mMRC 1, No AECOPD*
Moderate: CAT ≥ 10, mMRC ≥ 2, Low Risk of AECOPD*
Severe: CAT ≥ 10, mMRC ≥ 2, High Risk of AECOPD*

*Patients are considered at **Low Risk of AECOPD** with ≤ 1 moderate AECOPD in the last year (moderate AECOPD is an event with prescribed antibiotic and/or oral corticosteroids), and did not require hospital admission/ ED visit; or at **High Risk of AECOPD** with ≥ 2 moderate AECOPD or ≥ 1 severe exacerbation in the last year (severe AECOPD is an event requiring hospitalization or ED visit).

COPD Assessment Test (CAT): www.catestonline.org

Tests (Do not test pulmonary function during acute exacerbation):

- Repeat spirometry as clinically indicated and additional PFTs as indicated
- CBC PRN to rule out polycythemia
- Consider blood gas if FEV_1 < 40% predicted (if resting SpO2 < 90%)
- Chest x-ray if clinically indicated
- Alpha-1-Antitrypsin (AAT):
  - If atypical features (early onset, family history of COPD, disabled in early 40s or 50s), send for AAT testing:

Assess for and Manage Comorbidities: heart failure, ischemic heart disease, hypertension, cancer, diabetes, sleep apnea, glaucoma/cataracts, anemia, anxiety/depression, metabolic syndrome, osteopenia, osteoporosis, peripheral muscle dysfunction, malnutrition

Acute Exacerbation of COPD (AECOPD):

- Frequency, severity, purulent/non-purulent
- Hospitalizations, emergency department visits, systemic corticosteroid use
- Sputum gram stain & culture when purulent AECOPD if: very poor lung function, AECOPD ≥ 2/year, or has been on antibiotics in last 3 months

Consider Referral to Specialist

- Not certain of the diagnosis
- Symptoms not proportional to level of airway obstruction
- Accelerated decline of lung function (FEV_1 declines 80 ml or more per year over a two year period)
- Symptom onset at a young age (< 40 years)
- Suspect alpha-1-antitrypsin deficiency
- Not responding to therapy
- Severe or recurring acute exacerbations
- Moderate to severe disease

Non-Pharmacologic Management

COPD Education - provide or refer to program/Certified Respiratory Educator (CRE):

- Smoking cessation (https://lunghealth.ca/wp-content/uploads/2020/04/lhf_journeytoquit_digital.pdf)
- Pathophysiology and treatment rationale
- Inhaler technique (https://lunghealth.ca/lung-disease/a-to-z/asthma/how-to-use-an-inhaler/)
- Self-management education with written action plan (https://cts-sct.ca/action-plans/)
- Identify and reduce/remove risk factors
- Acute exacerbation recognition and treatment
- Managing dyspnea, energy conservation
- Barriers to management or special considerations such as medication adherence, cultural barriers, financial issues, lack of support, language, nutritional assessment

Exercise/ Pulmonary Rehabilitation:

- Refer patients for pulmonary rehabilitation within 1 month of hospital discharge for acute exacerbation of COPD
- Encourage all COPD patients to be active
- Consider community-based exercise programs
- COPD patient information (https://lunghealth.ca/rwhesource-library/)

Follow-Up Care:

- Follow-up post discharge from hospital
- Schedule regular follow-up care

End of Life Care

- Advanced Care Planning (http://www.advancecareplanning.ca/resource/ontario/)

Pharmacologic Management

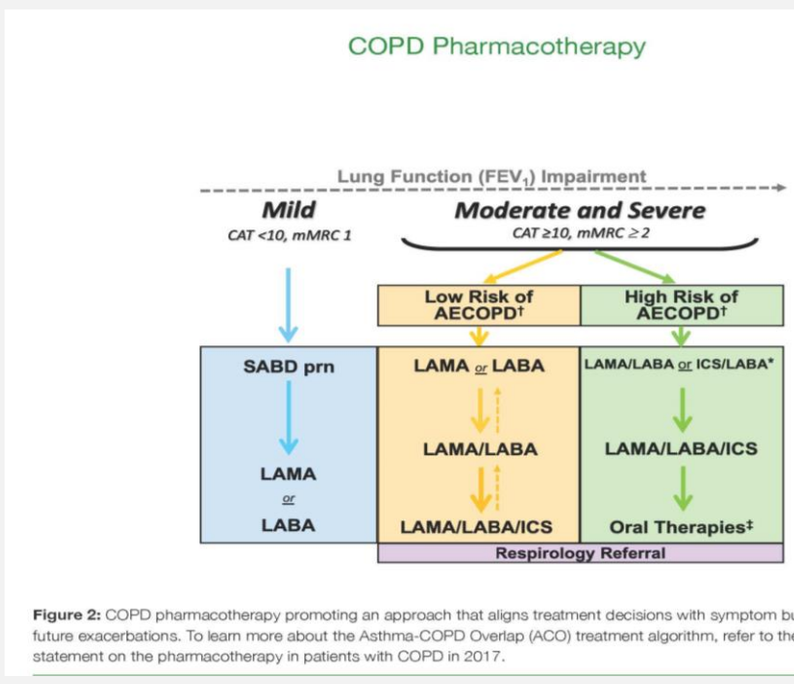

Figure 2: COPD pharmacotherapy promoting an approach that aligns treatment decisions with symptom burden and risk of future exacerbations. To learn more about the Asthma-COPD Overlap (ACO) treatment algorithm, refer to the CTS position statement on the pharmacotherapy in patients with COPD in 2017.

SABD = short-acting bronchodilator
LAMA = long-acting muscarinic antagonist,
LABA = long-acting beta agonist,
SABA = short-acting beta agonist,
ICA/LABA = inhaled corticosteroid/LABA

3. *Bourbeau, J., Bhutani, M., et al, "Canadian Thoracic Society Clinical Practice Guideline on pharmacotherapy in patients with COPD – 2019 update of evidence", Canadian Journal of Respiratory, Critical Care, and Sleep Medicine, 3:4, 210-232, DOI: 10.1080/24745332.2019.1668652*

Influenza (annually) & Pneumococcal Vaccinations (https://bit.ly/2Y0RvrR)

Long-Term Oxygen Therapy can improve survival and function in appropriately chosen, stable COPD patients with chronic hypoxemia (PaO2 of 55 mm Hg or lower), or when PaO2 is less than 60 mm Hg in the presence of bilateral ankle edema, right heart failure or hematocrit > 56%.

Acute Exacerbation of COPD Treatment:

- Oral/parenteral steroids (moderate – severe AECOPD)
- Antibiotics in patients with purulent exacerbations
- Increased short-acting bronchodilator (SABD)
- Oxygen therapy to maintain oxygen saturation at 88% - 92%

Resources: Primary Care COPD Program: https://hcp.lunghealth.ca/clinical-programs/

References:
1. O'Donnell, DE et al. Canadian thoracic society recommendations for management of chronic obstructive pulmonary disease – 2008 update - highlights for primary care. Can Respir J 2008 January/February; 15 (suppl A): p.2A.
2. Global Strategy for the Diagnosis, Management, and Prevention of Chronic Obstructive Lung Disease (2018 Report)

The content of this care map is based on current available evidence and has been reviewed by medical experts. It is provided for information purposes only. It is not intended to be a substitute for sound clinical judgement.

Version 3
November 2020

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Lung Health Foundation

COPD Action Plan Instructions

The **goal of a COPD Action Plan** is to help those with COPD prevent and manage exacerbations in conjunction with the healthcare professional team (the physician*, the certified respiratory educator and the pharmacist), i.e., **collaborative self-management**. The healthcare professional team should complete/review the following information with the patient:

- a list of persons to contact when he/she needs help
- a list of baseline symptoms and the actions to be taken to stay well (green zone)
- the symptoms indicating worsening COPD and the actions to be taken to manage the exacerbation (yellow zone)
- the symptoms which require urgent treatment (red zone)

Early and appropriate intervention may help to prevent or minimize the impact of an exacerbation.

REMEMBER: The **COPD Action Plan** is a tool to facilitate communication between the COPD patient and his/her healthcare professional team. Once completed, the Action Plan should be brought to **each** follow-up visit, **reviewed** regularly and modified as necessary. Follow up should include a discussion on past exacerbations and how the patient used their Action Plan and managed flare-ups.

A certified respiratory educator or other qualified member of the healthcare professional team should discuss and review the document with the COPD patient to ensure he/she:

- has a clear understanding of how to recognize worsening COPD symptoms; and
- is confident in knowing when and what actions are to be taken based on the severity of symptoms, including when to fill the prescription for additional medications and when to seek urgent/emergent medical attention.

CAUTION: To be successful, the COPD patient must achieve behavioral change through collaborative self-management, although this is not without risk. Recently, it has been shown in a large clinical trial that patients engaged in a collaborative self-management program, which included the use of an Action Plan, could have unexpected negative outcomes, including increased risk of death.

The COPD Action Plan consists of two parts:

Part I includes written instructions on what actions should be taken by the person with COPD based on symptoms (sputum and shortness of breath) in the green, yellow and red zones. It includes three copies, a copy for the patient, the physician and the respiratory educator. Any member of the healthcare professional team can begin the process for completing the Action Plan.

Part II includes a prescription for medications to be initiated in the case of sustained worsening symptoms. It is completed by a physician. It also includes three copies, a copy for the patient, the physician and the pharmacist.

WARNING: 1) Separate both parts of the Action Plan before completing. Since both parts are carbon copied, ensure that when part I is being completed, part II is not directly underneath, as the information will be transferred. **2)** Please ensure the physician signs the pharmacist's copy of the Action Plan. In order for the prescription to be accepted by the pharmacist, an original signature from the physician is required on the pharmacist's copy of the Action Plan.

*or nurse practitioner

My COPD Action Plan

Patient's Copy

_____ (Patient's Name) Date _____

Canadian Respiratory Guidelines

COPD
Treatable. Preventable.

This is to tell me how I will take care of myself when I have a COPD flare-up.

My goals are _____

_____

My support contacts are _____ (Name & Phone Number) and _____ (Name & Phone Number)

My Symptoms	I Feel Well	I Feel Worse	I Feel Much Worse URGENT
I have sputum.	My usual sputum colour is: _____	Changes in my sputum, for **at least** 2 days. *Yes* ☐ *No* ☐	My symptoms are not better after taking my flare-up medicine for 48 hours.
I feel short of breath.	When I do this: _____ _____	OR More short of breath than usual for **at least** 2 days. *Yes* ☐ *No* ☐	I am very short of breath, nervous, confused and/or drowsy, and/or I have chest pain.

My Actions	Stay Well	Take Action	Call For Help
	I use my daily puffers as directed.	If I checked 'Yes' to one or both of the above, I use my **prescriptions** for COPD flare-ups.	I will call my support contact and/or see my doctor and/or go to the nearest emergency department.
	If I am on oxygen, I use _____L/min.	I use my daily puffers as usual. If I am **more** short of breath than usual, I will take ____ puffs of _____ up to a **maximum** of ____ times per day.	**I will dial 911.**
		I use my breathing and relaxation methods as taught to me. I pace myself to save energy.	**Important information:** I will tell my doctor, respiratory educator, or case manager **within 2 days** if I had to use any of my flare-up prescriptions. I will also make follow-up appointments to review my COPD Action Plan twice a year.
		If I am on oxygen, I will increase it from ___ L/min to ___ L/min.	

Notes:

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Canadian Respiratory Guidelines

COPD ACTION PLAN (Patient's copy)

Why do I need this COPD Action Plan?

- Your Action Plan is a written contract between you and your health care team. It will tell you how to manage your COPD flare-ups. Use it along with any other information you get from your health care team about managing your COPD every day.
- Your Action Plan will help you and your caregivers to quickly recognize and act to treat your flare-ups. This will keep your lungs and you as healthy as possible.

How will I know that I am having a COPD "flare-up"?

- You will often see a change in your amount or colour of sputum and/or you may find that you are more short of breath than usual. Other symptoms can include coughing and wheezing more.
- Your flare-up Action Plan is to be used only for COPD flare-ups. Remember that there are other reasons you may get short of breath, such as when you have pneumonia, are anxious, or have heart problems.
- Before or during a flare-up you may notice changes in your mood, such as feeling down or anxious. Some people have low energy or feel tired before and during a COPD flare-up.

What triggers a "COPD flare-up"?

- A COPD flare-up can sometimes happen after you get a cold or flu, or when you are stressed and run down.
- Being exposed to air pollution and changes in the weather can also cause COPD flare-ups. To learn about the daily air quality in your area, visit Environment Canada's Air Quality Health Index (AQHI) website at www.ec.gc.ca/cas-aqhi/ and click on 'Your Local AQHI Conditions'. Ask your health care team about ways to avoid all possible triggers.

When should I use this COPD Action Plan?

- Your COPD Action Plan is used only for COPD flare-ups.
- Remember that there are other reasons you may get short of breath, such as when you have pneumonia, are anxious, or have heart problems. If you become more short of breath but don't have symptoms of COPD flare-up, see a doctor as soon as possible.

REMEMBER:

- Learn about your COPD from a respiratory educator, credible websites, such as www.lung.ca, and education programs.
- Take your regular daily medicine as prescribed.
- Don't wait more than 48 hours after the start of a COPD flare-up to take your antibiotic and/or prednisone medicines. See your pharmacist quickly to get your prescriptions for COPD flare-up.
- When you start an antibiotic, make sure that you finish the entire treatment.
- Quitting smoking and making sure that your vaccinations are up-to-date (for flu every year and for pneumonia at least once) will help prevent flare-ups.
- Be as active as possible. Inactivity leads to weakness, which may cause more flare-ups or flare-ups that are worse than usual. Ask your doctor about pulmonary rehabilitation and strategies to help reduce your shortness of breath and improve your quality of life.
- Follow up with your doctor within 2 days after using any of your prescriptions for a COPD flare-up.

MY NOTES AND QUESTIONS:

My COPD Action Plan

Physician's Copy

_____ Date _____
(Patient's Name)

Canadian Respiratory Guidelines

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My Actions	Stay Well	Take Action	Call For Help
	I use my daily puffers as directed.	If I checked 'Yes' to one or both of the above, I use my **prescriptions** for COPD flare-ups.	I will call my support contact and/or see my doctor and/or go to the nearest emergency department.
	If I am on oxygen, I use _____L/min.	I use my daily puffers as usual. If I am **more** short of breath than usual, I will take ____ puffs of _____ up to a **maximum** of ____ times per day.	**I will dial 911.**
		I use my breathing and relaxation methods as taught to me. I pace myself to save energy.	**Important information:** I will tell my doctor, respiratory educator, or case manager **within 2 days** if I had to use any of my flare-up prescriptions. I will also make follow-up appointments to review my COPD Action Plan twice a year.
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Canadian Respiratory Guidelines

COPD ACTION PLAN (Physician's copy)

Pharmacological Treatment

1. Short-acting (beta$_2$-agonists and anticholinergic) bronchodilators to treat wheeze and dyspnea. Continue all of your long acting bronchodilators or inhaled steroids as prescribed.
2. Prednisone (oral) → 30-50 mg once daily for 5-10 days for patients with moderate to severe COPD.
3. Antibiotic choice is prescribed based upon the presence of risk factors as below.
4. Severe AECOPD complicated by acute respiratory failure is a medical emergency. Consider consultation with an emergency specialist or respirologist.

Antibiotic Treatment Recommendations for Acute COPD Exacerbations[1, 2]

Group	Probable Pathogens	First Choice	Alternatives for Treatment Failure
I, Simple Smokers FEV1 > 50% ≤ 3 exacerbations per year	H. influenzae M. catarrhalis S. pneumoniae	Amoxicillin, 2nd or 3rd generation cephalosporin, doxycycline, extended spectrum macrolide, trimethoprimsulfamethoxazole (in alphabetical order).	Fluoroquinolone β-lact/ β-lactamase inhibitor.
II, Complicated, as per I, plus at least one of the following should be present: FEV1<50% predicted; ≥4 exacerbations/ year; ischemic heart disease; use home oxygen or chronic oral steroids; antibiotic use in the past 3 months.	As in group I, plus: Klebsiella spp. and other Gram-negative bacteria Increased probability of β-lactam resistance.	Fluoroquinolone β-lact/ β-lactamase inhibitor (in order of preference).	May require parenteral therapy. Consider referral to a specialist or hospital.
III, Chronic Suppurative II, plus: Constant purulent sputum; some have bronchiectasis; FEV1 usually <35% predicted; chronic oral steroid use; multiple risk factors.	As in group II, plus: P. Aeruginosa and multi-resistant Enterobacteriaceae.	Ambulatory - tailor treatment to airway pathogen; P. Aeruginosa is common (ciprofloxacin) Hospitalized - parenteral therapy usually required.	

General Recommendations for the Physician

- Patients need to be instructed to call or visit their treating physician if symptoms persist or worsen after 48 hrs in spite of patient-initiated treatment. Please instruct patients to notify their doctor, respiratory educator, or case manager within 2 days of filling any of their prescriptions for a COPD flare-up.
- Prescriptions for antibiotics and prednisone can be refilled twice each, as needed, for 1 year. Pharmacists may fax the doctor's office after any portion of the prescriptions for COPD flare-up has been filled.
- To reduce the risk of antibiotic resistance, if more than one treatment is required over 3 months, the class of antibiotics should be changed on subsequent courses of therapy.
- Review with your patient measures to prevent future COPD exacerbations including smoking cessation, annual influenza vaccination, pneumococcal vaccination and appropriate use of inhaled daily medications.
- Consider referral to a local respiratory educator and pulmonary rehabilitation program if available.

1 O'Donnell DE, Hernandez P, Kaplan A, Aaron S., et al. CTS recommendations for management of COPD – 2008 update – highlights for primary care. Can Resp J 2008; 15(Suppl A):1A-8A.

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With acknowledgment to:

My COPD Action Plan

Educator's Copy

_____ Date _____
(Patient's Name)

Canadian Respiratory Guidelines

COPD
Treatable. Preventable.

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My goals are _____

_____

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My Actions	Stay Well	Take Action	Call For Help
	I use my daily puffers as directed.	If I checked 'Yes' to one or both of the above, I use my **prescriptions** for COPD flare-ups.	I will call my support contact and/or see my doctor and/or go to the nearest emergency department.
	If I am on oxygen, I use _____L/min.	I use my daily puffers as usual. If I am **more** short of breath than usual, I will take ____ puffs of _____ up to a **maximum** of ____ times per day.	**I will dial 911.**
		I use my breathing and relaxation methods as taught to me. I pace myself to save energy.	**Important information:** I will tell my doctor, respiratory educator, or case manager **within 2 days** if I had to use any of my flare-up prescriptions. I will also make follow-up appointments to review my COPD Action Plan twice a year.
		If I am on oxygen, I will increase it from ___ L/min to ___ L/min.	

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Canadian Respiratory Guidelines

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Pharmacological Treatment

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General Recommendations for the Educator

- Patients need to be instructed to call or visit their treating physician if symptoms persist or worsen after 48 hrs in spite of patient-initiated treatment. Please instruct patients to notify their doctor, respiratory educator, or case manager within 2 days of filling any of their prescriptions for a COPD flare-up.
- Prescriptions for antibiotics and prednisone can be refilled twice each, as needed, for 1 year.
- To reduce the risk of antibiotic resistance, if more than one treatment is required over 3 months, the class of antibiotics should be changed on subsequent courses of therapy.
- Review with your patient some general measures to prevent future COPD exacerbations including smoking cessation, annual influenza vaccination, pneumococcal vaccination and appropriate use of inhaled daily medications.

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Patient's Copy
(Patient's Name)

Canadian Respiratory Guidelines

COPD
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This is to tell me how I will take care of myself when I have a COPD flare-up.

My goals are _____

My support contacts are _____ and _____
(Name & Phone Number) (Name & Phone Number)

Prescriptions for COPD flare-up (Patient to take to pharmacist as needed for symptoms)

These prescriptions may be refilled two times each, as needed, for 1 year, to treat COPD flare-ups. Pharmacists may fax the doctor's office once any part of this prescription has been filled.

_____ _____
Patient's Name Patient Identifier (e.g. DOB, PHN)

1. (A) If **the colour** of your sputum **CHANGES**, start antibiotic _____ Dose:_____ #pills:_____
How often_____ for #days:____

(B) If the first antibiotic was taken for a flare-up in the **last 3 months**, use this different antibiotic instead:
Start antibiotic _____ Dose:_____ #pills:_____
How often_____ for #days:____

AND / OR

2. If you are **MORE short of breath** than usual, start prednisone _____ Dose:_____ #pills:_____
How often:_____ for #days:____

Once I start any of these medicines, **I will tell** my doctor, respiratory educator, or case manager within **2 days**.

_____ _____ _____
Doctor's Name Doctor's Fax Doctor's Signature

_____ _____
License Date

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How will I know that I am having a COPD "flare-up"?

- You will often see a change in your amount or colour of sputum and/or you may find that you are more short of breath than usual. Other symptoms can include coughing and wheezing more.
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REMEMBER:

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- Don't wait more than 48 hours after the start of a COPD flare-up to take your antibiotic and/or prednisone medicines. See your pharmacist quickly to get your prescriptions for COPD flare-up.
- When you start an antibiotic, make sure that you finish the entire treatment.
- Quitting smoking and making sure that your vaccinations are up-to-date (for flu every year and for pneumonia at least once) will help prevent flare-ups.
- Be as active as possible. Inactivity leads to weakness, which may cause more flare-ups or flare-ups that are worse than usual. Ask your doctor about pulmonary rehabilitation and strategies to help reduce your shortness of breath and improve your quality of life.
- Follow up with your doctor within 2 days after using any of your prescriptions for a COPD flare-up.

MY NOTES AND QUESTIONS:

My COPD Action Plan _____ Date _____
(Patient's Name)

Physician's Copy

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This is to tell me how I will take care of myself when I have a COPD flare-up.

My goals are _____

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(Name & Phone Number) (Name & Phone Number)

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_____ _____
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Doctor's Name Doctor's Fax Doctor's Signature

_____ _____
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Pharmacist's Copy
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These prescriptions may be refilled two times each, as needed, for 1 year, to treat COPD flare-ups. Pharmacists may fax the doctor's office once any part of this prescription has been filled.

_____ _____
Patient's Name Patient Identifier (e.g. DOB, PHN)

1. (A) If **the colour** of your sputum **CHANGES**, start antibiotic _____ Dose:_____ #pills:_____
How often_____ for #days:____

(B) If the first antibiotic was taken for a flare-up in the **last 3 months**, use this different antibiotic instead:
Start antibiotic _____ Dose:_____ #pills:_____
How often_____ for #days:____

AND / OR

2. If you are **MORE short of breath** than usual, start prednisone _____ Dose:_____ #pills:_____
How often:_____ for #days:____

Once I start any of these medicines, **I will tell** my doctor, respiratory educator, or case manager within **2 days**.

_____ _____ _____
Doctor's Name Doctor's Fax Doctor's Signature

_____ _____
License Date

CANADIAN THORACIC SOCIETY

BREATHE
the lung association

Produced in collaboration with the *COPD & Asthma Network of Alberta (CANA)*.
The Canadian Thoracic Society (CTS) acknowledges the past contributions of *Living well with COPD* and the *Family Physician Airways Group of Canada*.

Canadian Respiratory Guidelines

COPD ACTION PLAN (Pharmacist's copy)

Pharmacological Treatment

1. Short-acting (beta$_2$-agonists and anticholinergic) bronchodilators to treat wheeze and dyspnea. Continue all of your long acting bronchodilators or inhaled steroids as prescribed.
2. Prednisone (oral) → 30-50 mg once daily for 5-10 days for patients with moderate to severe COPD.
3. Antibiotic choice is prescribed based upon the presence of risk factors as below.
4. Severe AECOPD complicated by acute respiratory failure is a medical emergency. Consider consultation with an emergency specialist or respirologist.

Antibiotic Treatment Recommendations for Acute COPD Exacerbations[1, 2]

Group	Probable Pathogens	First Choice	Alternatives for Treatment Failure
I, Simple Smokers FEV1 > 50% ≤ 3 exacerbations per year	H. influenzae M. catarrhalis S. pneumoniae	Amoxicillin, 2nd or 3rd generation cephalosporin, doxycycline, extended spectrum macrolide, trimethoprimsulfamethoxazole (in alphabetical order).	Fluoroquinolone β-lact/ β-lactamase inhibitor
II, Complicated, as per I, plus at least one of the following should be present: FEV1<50% predicted; ≥4 exacerbations/ year; ischemic heart disease; use home oxygen or chronic oral steroids; antibiotic use in the past 3 months.	As in group I, plus: Klebsiella spp. and other Gram-negative bacteria Increased probability of β-lactam resistance.	Fluoroquinolone β-lact/ β-lactamase inhibitor (in order of preference).	May require parenteral therapy. Consider referral to a specialist or hospital.
III, Chronic Suppurative II, plus: Constant purulent sputum; some have bronchiectasis; FEV1 usually <35% predicted; chronic oral steroid use; multiple risk factors.	As in group II, plus: P. Aeruginosa and multi-resistant Enterobacteriaceae.	Ambulatory - tailor treatment to airway pathogen; P. Aeruginosa is common (ciprofloxacin) Hospitalized - parenteral therapy usually required.	

General Recommendations for the Pharmacist

- Patients need to be instructed to call or visit their treating physician if symptoms persist or worsen after 48 hrs in spite of patient-initiated treatment. Please instruct patients to notify their doctor, respiratory educator, or case manager within 2 days of filling any of their prescriptions for a COPD flare-up.
- Prescriptions for antibiotics and prednisone can be refilled twice each, as needed, for 1 year. Even if you have any concerns to discuss with the doctor, please fill at least the minimum quantity of the appropriate prescription based on the patient's symptoms.
- To reduce the risk of antibiotic resistance, if more than one treatment is required over 3 months, the class of antibiotics should be changed on subsequent courses of therapy.
- Review with your patient some general measures to prevent future COPD exacerbations including smoking cessation, annual influenza vaccination, pneumococcal vaccination and appropriate use of inhaled daily medications.

1 O'Donnell DE, Hernandez P, Kaplan A, Aaron S., et al. CTS recommendations for management of COPD – 2008 update – highlights for primary care. Can Resp J 2008; 15(Suppl A):1A-8A.
2 Balter MS, La Forge J, Low DE, Mandell L., et al. Canadian guidelines for the management of acute exacerbation of chronic bronchitis. Can Respir J 2003; 10(Suppl B):3B-32B.

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With acknowledgment to:

Box 5-2a.Usual features of asthma, COPD and asthma-COPD overlap

Box 5-2b.Features that if present favor asthma or COPD

Feature	Asthma	COPD	Asthma-COPD overlap	More likely to be asthma if several of …*	More likely to be COPD if several of…*
Age of onset	Usually childhood onset but can commence at any age.	Usually > 40 years of age	Usually age ≥40 years, but may have had symptoms in childhood or early adulthood	☐ Onset before age 20 years	☐ Onset after age 40 years
Pattern of respiratory symptoms	Symptoms may vary over time (day to day, or over longer periods), often limiting activity. Often triggered by exercise, emotions including laughter, dust or exposure to allergens	Chronic usually continuous symptoms, particularly during exercise, with 'better' and 'worse' days	Respiratory symptoms including exertional dyspnea are persistent but variability may be prominent	☐ Variation in symptoms over minutes, hours or days ☐ Symptoms worse during the night or early morning ☐ Symptoms triggered by exercise, emotions including laughter, dust or exposure to allergens	☐ Persistence of symptoms despite treatment ☐ Good and bad days but always daily symptoms and exertional dyspnea ☐ Chronic cough and sputum preceded onset of dyspnea, unrelated to triggers
Lung function	Current and/or historical variable airflow limitation, e.g. BD reversibility, AHR	FEV_1 may be improved by therapy, but post-BD $FEV_1/FVC < 0.7$ persists	Airflow limitation not fully reversible, but often with current or historical variability	☐ Record of variable airflow limitation (spirometry, peak flow)	☐ Record of persistent airflow limitation (post-bronchodilator $FEV_1/FVC < 0.7$)
Lung function between symptoms	May be normal between symptoms	Persistent airflow limitation	Persistent airflow limitation	☐ Lung function normal between symptoms	☐ Lung function abnormal between symptoms
Past history or family history	Many patients have allergies and a personal history of asthma in childhood, and/or family history of asthma	History of exposure to noxious particles and gases (mainly tobacco smoking and biomass fuels)	Frequently a history of doctor-diagnosed asthma (current or previous), allergies and a family history of asthma, and/or a history of noxious exposures	☐ Previous doctor diagnosis of asthma ☐ Family history of asthma, and other allergic conditions (allergic rhinitis or eczema)	☐ Previous doctor diagnosis of COPD, chronic bronchitis or emphysema ☐ Heavy exposure to a risk factor: tobacco smoke, biomass fuels
Time course	Often improves spontaneously or with treatment, but may result in fixed airflow limitation	Generally, slowly progressive over years despite treatment	Symptoms are partly but significantly reduced by treatment. Progression is usual and treatment needs are high	☐ No worsening of symptoms over time. Symptoms vary either seasonally, or from year to year ☐ May improve spontaneously or have an immediate response to BD or to ICS over weeks	☐ Symptoms slowly worsening over time (progressive course over years) ☐ Rapid-acting bronchodilator treatment provides only limited relief.
Chest X-ray	Usually normal	Severe hyperinflation & other changes of COPD	Similar to COPD	☐ Normal	☐ Severe hyperinflation
Exacerbations	Exacerbations occur, but the risk of exacerbations can be considerably reduced by treatment	Exacerbations can be reduced by treatment. If present, comorbidities contribute to impairment	Exacerbations may be more common than in COPD but are reduced by treatment. Comorbidities can contribute to impairment	****Syndromic diagnosis of airways disease: how to use Box 5-2b*** *Shaded columns list features that, <u>when present</u>, best identify patients with typical asthma and COPD. For a patient, count the number of check boxes in each column. If three or more boxes are checked for either asthma or COPD, the patient is likely to have that disease. If there are similar numbers of checked boxes in each column, the diagnosis of ACO should be considered. See Step 2 for more details.*	
Airway inflammation	Eosinophils and/or neutrophils	Neutrophils ± eosinophils in sputum, lymphocytes in airways, may have systemic inflammation	Eosinophils and/or neutrophils in sputum.		

Global Initiative for Asthma. (2017). Global Strategy For Asthma Management and Prevention. Retrieved from http://ginasthma.org/2017-gina-report-global-strategy-for-asthma-management-and-prevention/. Used with permission

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Section 5: PCAP-Related Research

Primary Care Asthma Program

Related Research Articles

1. **The Burden of Asthma: Can it be Eased?**
   Andrea Gershon, Chengning Wang, Lisa Cicutto and Teresa To (Healthcare Quarterly Vol 10 No 1. 2007) ICES Reports

   http://www.longwoods.com/content/18644/print

2. **Can A Community Evidence-based Asthma Care Program Improve Clinical Outcomes? *A Longitudinal Study***
   Teresa To et al. (Medical Care • Volume 46, Number 12, December 2008)

   http://www.ncbi.nlm.nih.gov/pubmed/19300316

3. **Examining intra-rater and inter-rater response agreement: A medical chart abstraction study of a community-based asthma care program**
   Teresa To et al. (BMC Medical Research Methodology 2008, 8:29)

   http://www.biomedcentral.com/1471-2288/8/29

4. **How much do health care providers value a community-based asthma care program? – a survey to collect their opinions on the utilities of and barriers to its uptake**
   Teresa To et al. (BMC Health Services Research 2009, 9:77)

   http://www.biomedcentral.com/1472-6963/9/77

5. **Is it feasible to use indicators to collect data on asthma care performance in the primary care setting? A feasibility study**
   Teresa To et al. (The Primary Care Respiratory Journal)

   http://www.thepcrj.org/journ/view_article.php?article_id=850

6. **Moving Population and Public Health Knowledge Into Action**
   Nancy Garvey. Ontario's Asthma Plan of Action: Bridging the gap between knowledge and practice

   http://www.cihr-irsc.gc.ca/e/30751.html#a

Primary Care Asthma Program

Related Research Articles

7. **Primary care asthma program puts evidence into practice, reducing symptoms and visits to emergency departments**
   (Ontario Health Quality Council, 2009 Report on Ontario's Health System)

http://www.hqontario.ca/portals/0/Documents/pr/qmonitor-full-report-2009-en.pdf
http://www.on.lung.ca/document.doc?id=776

8. **Asthma in Ontario: Ontario's Asthma Plan of Action**

https://10012.thankyou4caring.org/document.doc?id=772

Section 6: Resource Links

Primary Care Asthma Program

Useful links and resources:

Asthma and Allergies:
1. AllerGen Canada http://www.allergen-nce.ca/
2. Allergy Asthma & Immunology Society of Ontario http://allergyasthma.on.ca/
3. Food Allergy Canada:http://www.foodallergycanada.ca
1. Asthma Society of Canada: http://www.asthma.ca
2. Canadian Asthma Consensus Guidelines: http://www.respiratoryguidelines.ca/guideline/asthma
4. Global Initiative for Asthma (GINA): http://www.ginasthma.org/
5. Ontario Physical Health and Education Association (OPHEA): http://www.ophea.net/
6. Work-Related Asthma: https://lunghealth.ca/lung-disease/a-to-z/work-related-asthma/
7. Asthma Friendly Schools (Ryan's Law)http://www.ryanslaw.ca
8. Ontario Asthma Surveillance Information System (OASIS) http://lab.research.sickkids.ca/oasis/
9. Find an asthma program in Canada https://www.lung.ca/lung-health/get-help
Air Quality:
1. Air Quality Health Index – Environment Canada http://www.ec.gc.ca/cas-aqhi/
COPD:
1. Canadian COPD Consensus Guidelines: http://www.respiratoryguidelines.ca/guideline/chronic-obstructive-pulmonary-disease
2. Find a COPD program in Canada https://www.lung.ca/lung-health/get-help
3. Global Initiative for Chronic Obstructive Lung Disease (GOLD): http://www.goldcopd.org/
4. Living Well With COPD http://www.livingwellwithcopd.com/
Spirometry:
1. American Thoracic Society https://www.thoracic.org/statements/pulmonary-function.php
Smoking Cessation:
1. CAMH STOP program: https://www.nicotinedependenceclinic.com/English/stop/Pages/Home.aspx
2. Ontario Tobacco Research Unit (OTRU) http://otru.org/

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Continuing Education:
1. CAMH TEACH program (Smoking cessation): https://www.nicotinedependenceclinic.com/English/teach/Pages/Home.aspx
2. Canadian Network For Respiratory Care (CRE certification course) http://cnrchome.net/
3. Provider Education Program (PEP) for Health Care Professionals: http://hcp.lunghealth.ca
4. RespTrec (Respiratory Education) and SpiroTrec (Spirometry training) http://www.resptrec.org
Ontario Organizations:
1. Association of Family Health Teams of Ontario (AFHTO) http://www.afhto.ca/
2. Alliance for Healthier Communities: https://www.allianceon.org/
3. Ministry of Health (MOH): http://www.health.gov.on.ca/en/
4. Ontario Health: https://www.ontariohealth.ca/
5. Lung Health Foundation: http://www.lunghealth.ca
Professional Organizations:
1. Canadian Network for Respiratory Care (CNRC) http://cnrchome.net/
2. College of Family Physicians and Surgeons: http://www.cfpc.ca/Home/
3. Ontario Respiratory Care Society: https://hcp.lunghealth.ca/respiratory-care-society/
4. Ontario Thoracic Society: https://hcp.lunghealth.ca/ontario-thoracic-society/
5. Registered Nurses Association of Ontario (RNAO): http://rnao.ca/
6. Respiratory Therapy Society of Ontario http://www.rtso.ca/