ASTHMA PLAN OF ACTION

Navigating Care Maps for Chronic Respiratory Disease Management

AFHTO Conference- Toronto

Tuesday, October 16, 2012

Carole Madeley, Director, Respiratory Health Programs, OLA

Ana MacPherson, Provincial Coordinator, PCAP

THE LUNG ASSOCIATION™

Ontario

Burden of Asthma in Ontario

ASTHMA PLAN OF ACTION

- Asthma affects up to 1 in 5 children aged 0-9 y/o
- Approximately 1.7 million Ontarians live with asthma today
- Asthma is the leading cause of childhood:
  - Hospital admissions
  - School absences
- Although it starts to develop in childhood, it can develop at any age
- Total Health Care Costs in 2011 is 1.8 Billion

THE LUNG ASSOCIATION™

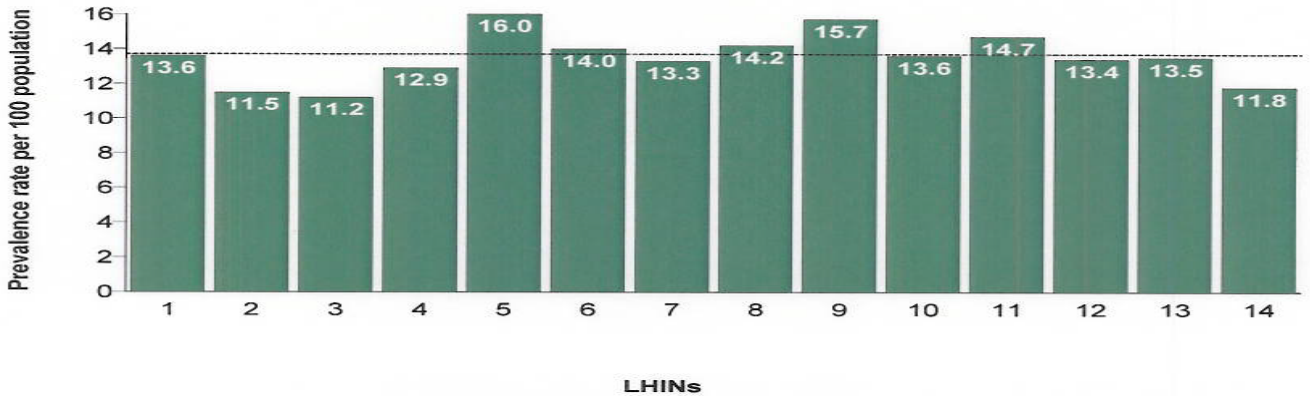
ASTHMA Prevalence

ASTHMA PLAN OF ACTION

Age- and sex-adjusted prevalence rates of asthma per 100 population aged 0 to 99 years, 2006/07

by Local Health Integration Network (LHIN) in Ontario

Ontario rate = 13.7



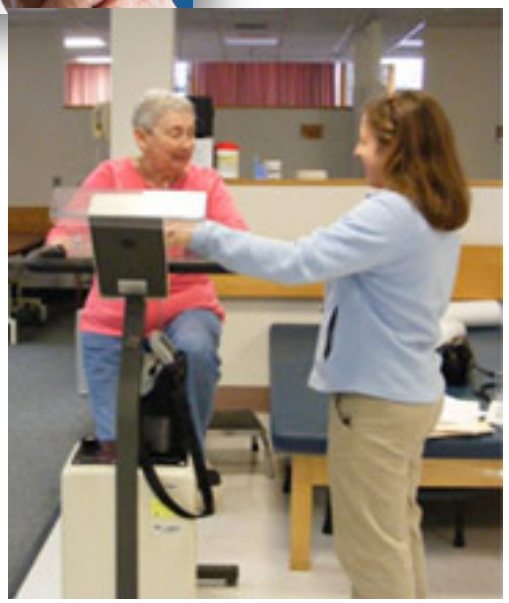
1. Erie St. Clair
2. South West
3. Waterloo Wellington
4. Hamilton Niagara Haldimand Brant
5. Central West
6. Mississauga Halton
7. Toronto Central
8. Central
9. Central East
10. South East
11. Champlain
12. North Simcoe Muskoka
13. North East
14. North West

In 2006/07, the prevalence rates for all asthma varied across LHINs: from 11.2 per 100 population (Waterloo Wellington) to 16.0 per 100 population (Central West). Five out of 14 LHINs had prevalence rates that were above the Ontario rate (13.7 per 100 population).

THE LUNG ASSOCIATION™

Burden of COPD in Ontario

- Nearly 780,000 people have physician diagnosed COPD
- Third leading cause of death by 2020
- COPD is a major cause of death and disability
- COPD is the leading cause of hospitalization rate
- Higher readmission rate than other chronic illnesses
- Total Health Care Costs in 2011 for COPD was 3.9 billion

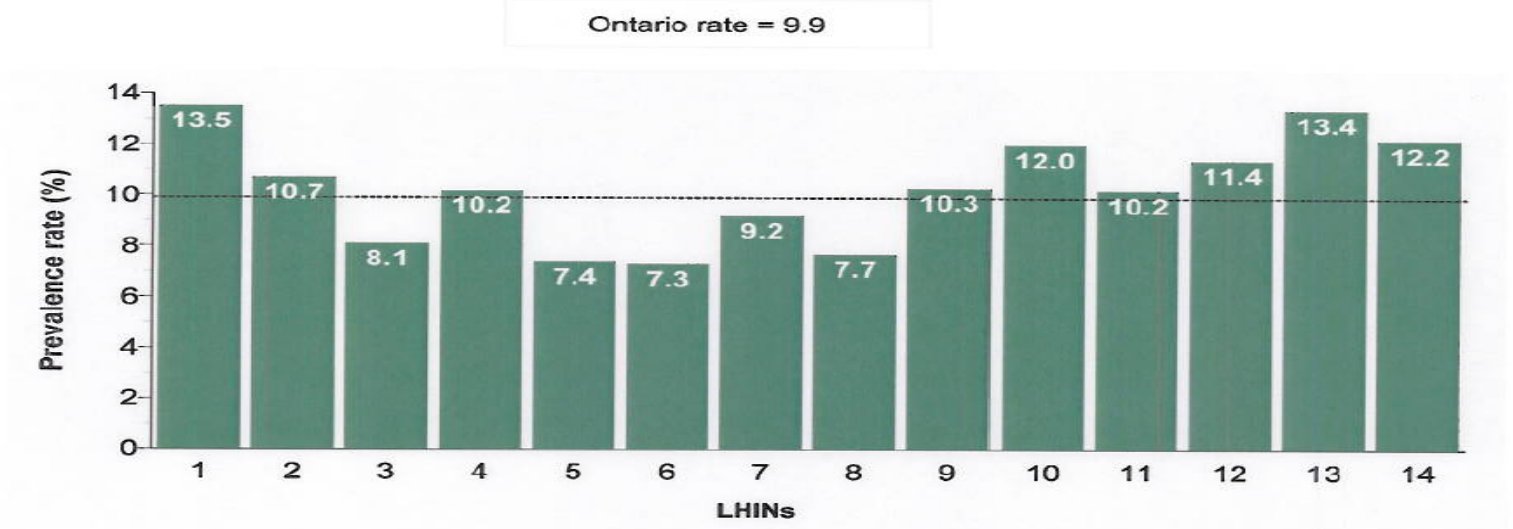


THE LUNG ASSOCIATION™

COPD Prevalence

Figure 3. Age- and sex-adjusted prevalence rates (%) of chronic obstructive pulmonary disease (COPD) in Ontarians aged 35 years and older, 2009/10

by Local Health Integration Network (LHIN) in Ontario

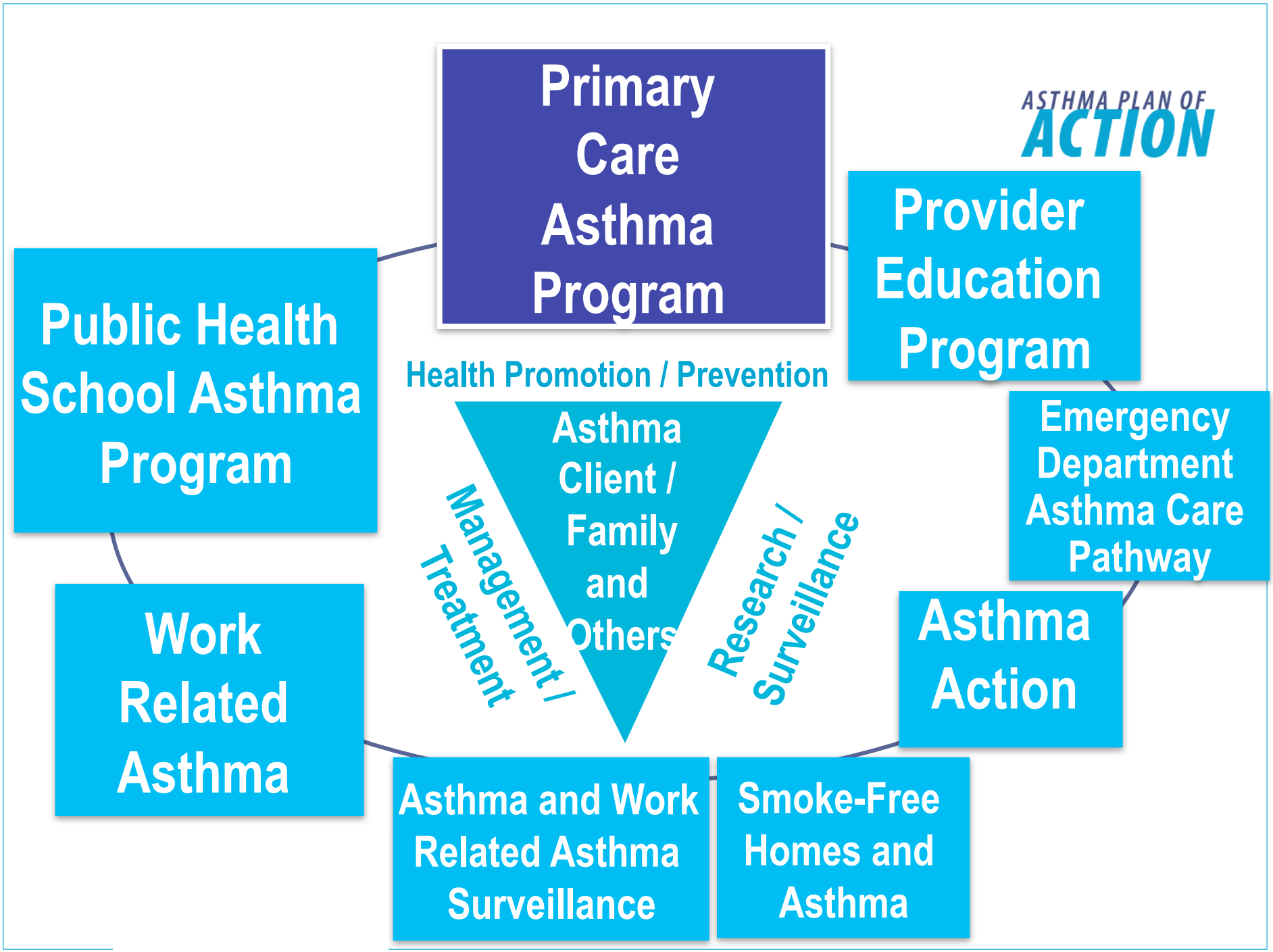


1. Erie St. Clair
2. South West
3. Waterloo Wellington
4. Hamilton Niagara Haldimand Brant
5. Central West
6. Mississauga Halton
7. Toronto Central
8. Central
9. Central East
10. South East
11. Champlain
12. North Simcoe Muskoka
13. North East
14. North West

THE LUNG ASSOCIATION™

Objectives

- Introduce an evidence based model for the management of asthma in primary care
- Tools to improve outcomes for Asthma and COPD
- Performance Measures
  - Asthma Performance Indicators
  - COPD Performance Measures


Primary Care Asthma Program
ASTHMA PLAN OF ACTION
Provider Education Program
Public Health School Asthma Program
Health Promotion / Prevention
Asthma Client / Family and Others
Management / Treatment
Research / Surveillance
Emergency Department Asthma Care Pathway
Work Related Asthma
Asthma Action
Asthma and Work Related Asthma Surveillance
Smoke-Free Homes and Asthma

Overall Positive Results Achieved
>1400 recruits

ASTHMA PLAN OF ACTION

Patient Outcomes

Nighttime awakening symptoms ***Decreased (45%)***

Asthma attacks ***Decreased (30%)***

School/work days missed ***Decreased (49%)***

Symptoms upon wakening ***Decreased (45%)***

Acute care Use

ED visits ***Decreased (*****50%)**

Asthma management

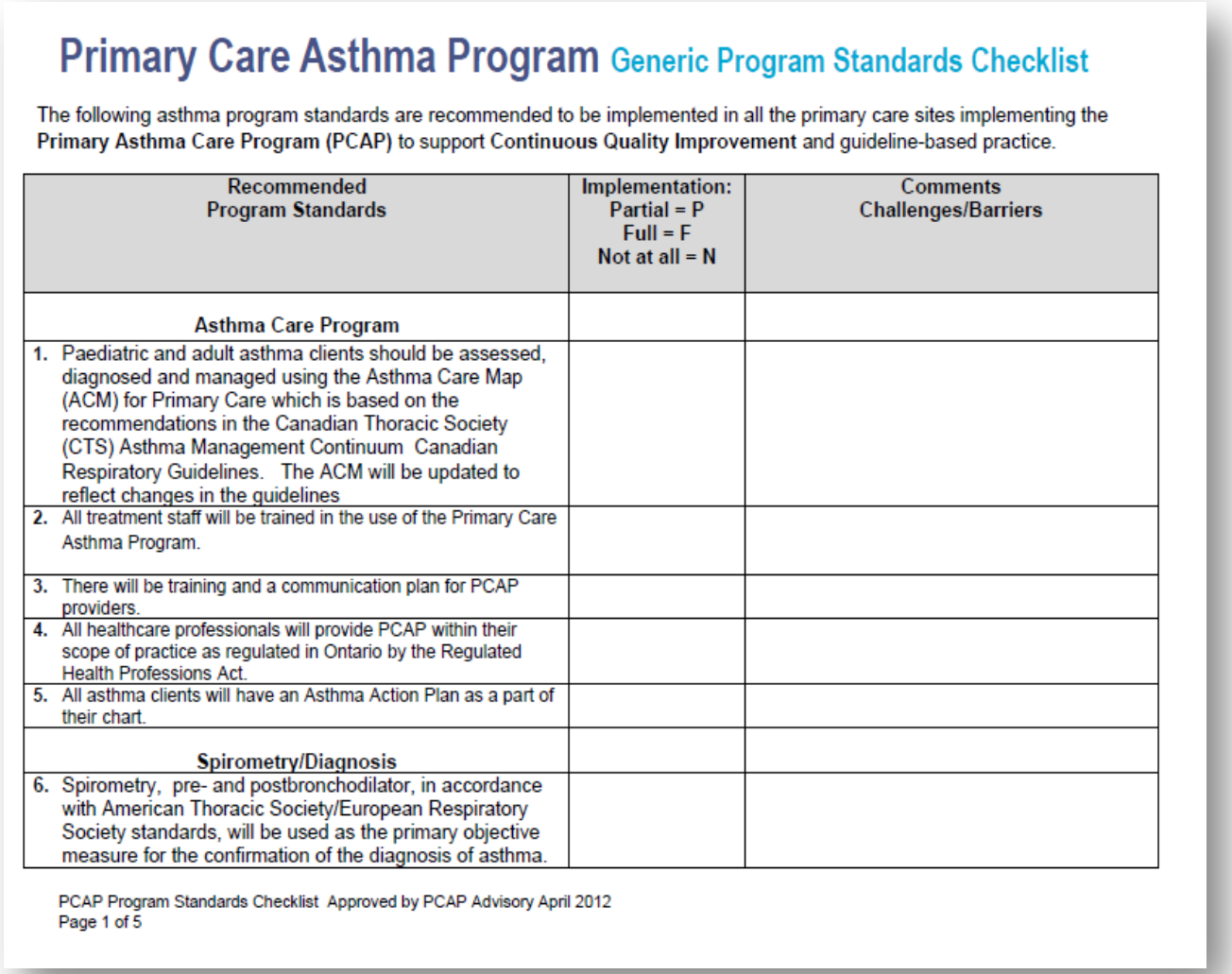
# of spirometry test completed ***Increased*** **(38% to 67%)**

THE LUNG ASSOCIATION™

ASTHMA PLAN OF ACTION

TOOLS & RESOURCES

THE LUNG ASSOCIATION™



Primary Care Asthma Program Generic Program Standards Checklist

The following asthma program standards are recommended to be implemented in all the primary care sites implementing the **Primary Asthma Care Program (PCAP)** to support **Continuous Quality Improvement** and guideline-based practice.

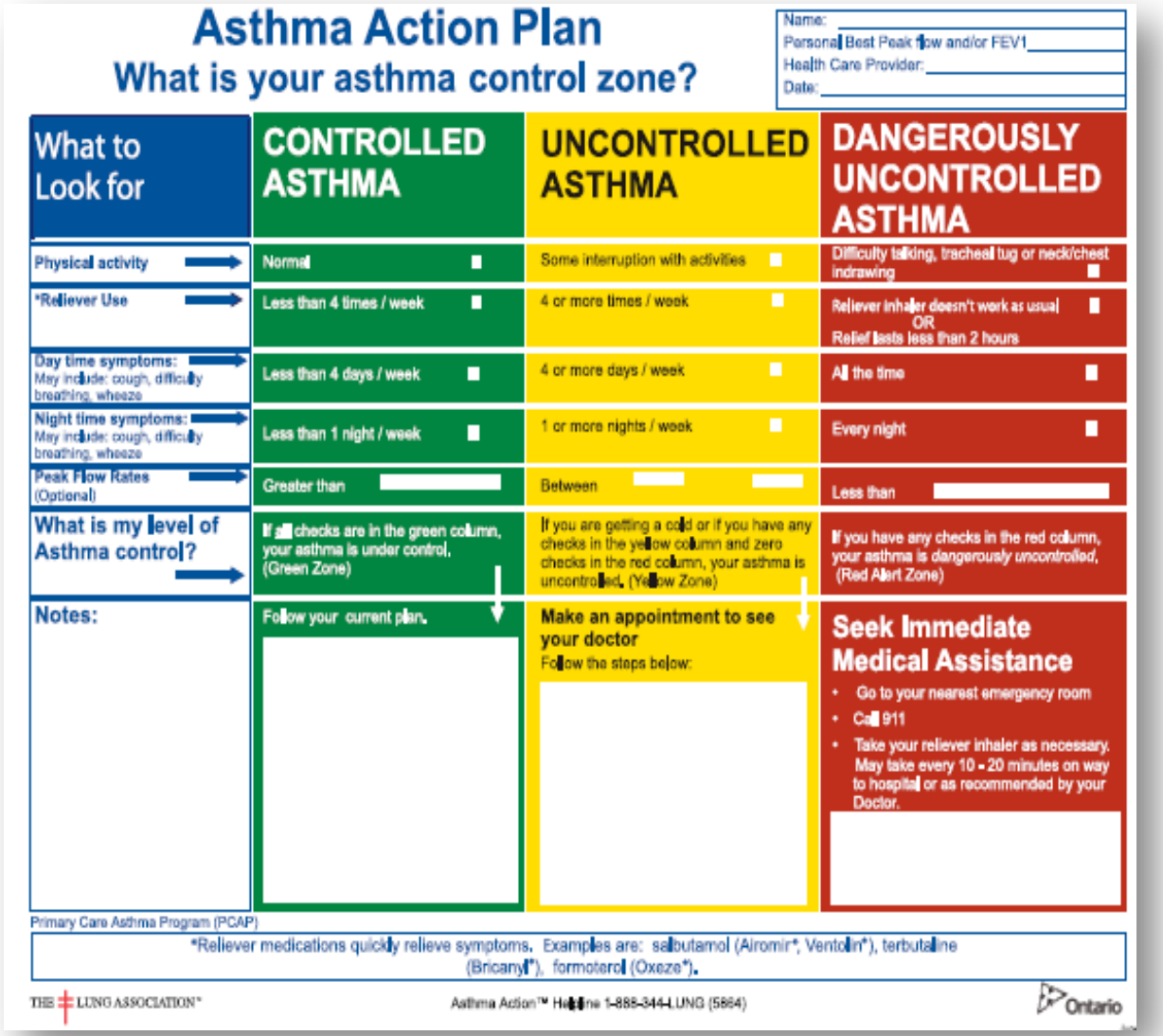
Recommended Program Standards	Implementation: Partial = P Full = F Not at all = N	Comments Challenges/Barriers
Asthma Care Program		
1. Paediatric and adult asthma clients should be assessed, diagnosed and managed using the Asthma Care Map (ACM) for Primary Care which is based on the recommendations in the Canadian Thoracic Society (CTS) Asthma Management Continuum Canadian Respiratory Guidelines. The ACM will be updated to reflect changes in the guidelines		
2. All treatment staff will be trained in the use of the Primary Care Asthma Program.		
3. There will be training and a communication plan for PCAP providers.		
4. All healthcare professionals will provide PCAP within their scope of practice as regulated in Ontario by the Regulated Health Professions Act.		
5. All asthma clients will have an Asthma Action Plan as a part of their chart.		
Spirometry/Diagnosis		
6. Spirometry, pre- and postbronchodilator, in accordance with American Thoracic Society/European Respiratory Society standards, will be used as the primary objective measure for the confirmation of the diagnosis of asthma.		

PCAP Program Standards Checklist Approved by PCAP Advisory April 2012
Page 1 of 5

ASTHMA PLAN OF ACTION

Generic Program Standards-based on Guidelines – CTS/GINA

THE LUNG ASSOCIATION™



Asthma Action Plan

What is your asthma control zone?

Name:
Personal Best Peak Flow and/or FEV1
Health Care Provider:
Date:

What to Look for	CONTROLLED ASTHMA	UNCONTROLLED ASTHMA	DANGEROUSLY UNCONTROLLED ASTHMA
Physical activity	Normal	Some interruption with activities	Difficulty talking, tracheal tug or neck/chest indrawing
*Reliever Use	Less than 4 times / week	4 or more times / week	Reliever inhaler doesn't work as usual OR Relief lasts less than 2 hours
Day time symptoms: May include: cough, difficulty breathing, wheeze	Less than 4 days / week	4 or more days / week	All the time
Night time symptoms: May include: cough, difficulty breathing, wheeze	Less than 1 night / week	1 or more nights / week	Every night
Peak Flow Rates (Optional)	Greater than	Between	Less than
What is my level of Asthma control?	If all checks are in the green column, your asthma is under control. (Green Zone)	If you are getting a cold or if you have any checks in the yellow column and zero checks in the red column, your asthma is uncontrolled. (Yellow Zone)	If you have any checks in the red column, your asthma is *dangerously uncontrolled*. (Red Alert Zone)
Notes:	Follow your current plan.	Make an appointment to see your doctor. Follow the steps below:	Seek Immediate Medical Assistance • Go to your nearest emergency room • Call 911 • Take your reliever inhaler as necessary. May take every 10 - 20 minutes on way to hospital or as recommended by your Doctor.

Primary Care Asthma Program (PCAP)

*Reliever medications quickly relieve symptoms. Examples are: salbutamol (Airomir®, Ventolin®), terbutaline (Bricanyl®), formoterol (Oxeze®).

THE LUNG ASSOCIATION™ Asthma Action™ Hotline 1-888-344-LUNG (5864) Ontario

ASTHMA PLAN OF ACTION

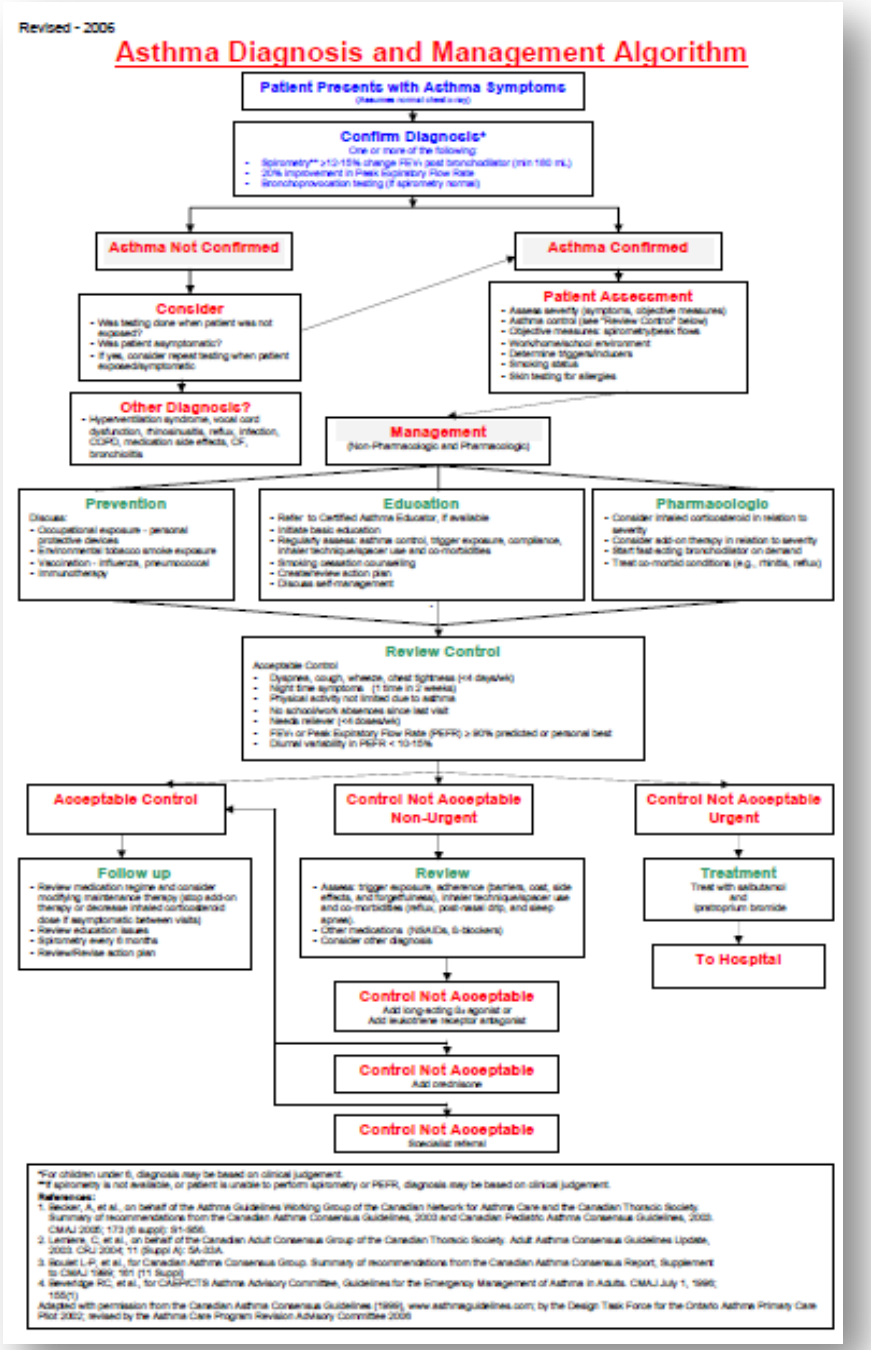
-Written Action Plans are essential component to evidence based asthma care. (Alan Becker, 2003)

- 80% of PCAP Patients have Action Plans. (Lisa Cicutto, 2010)

- LUNG INFO LINE 1-888-344-5864

THE LUNG ASSOCIATION™

Asthma Roadmap: Guidelines into practice

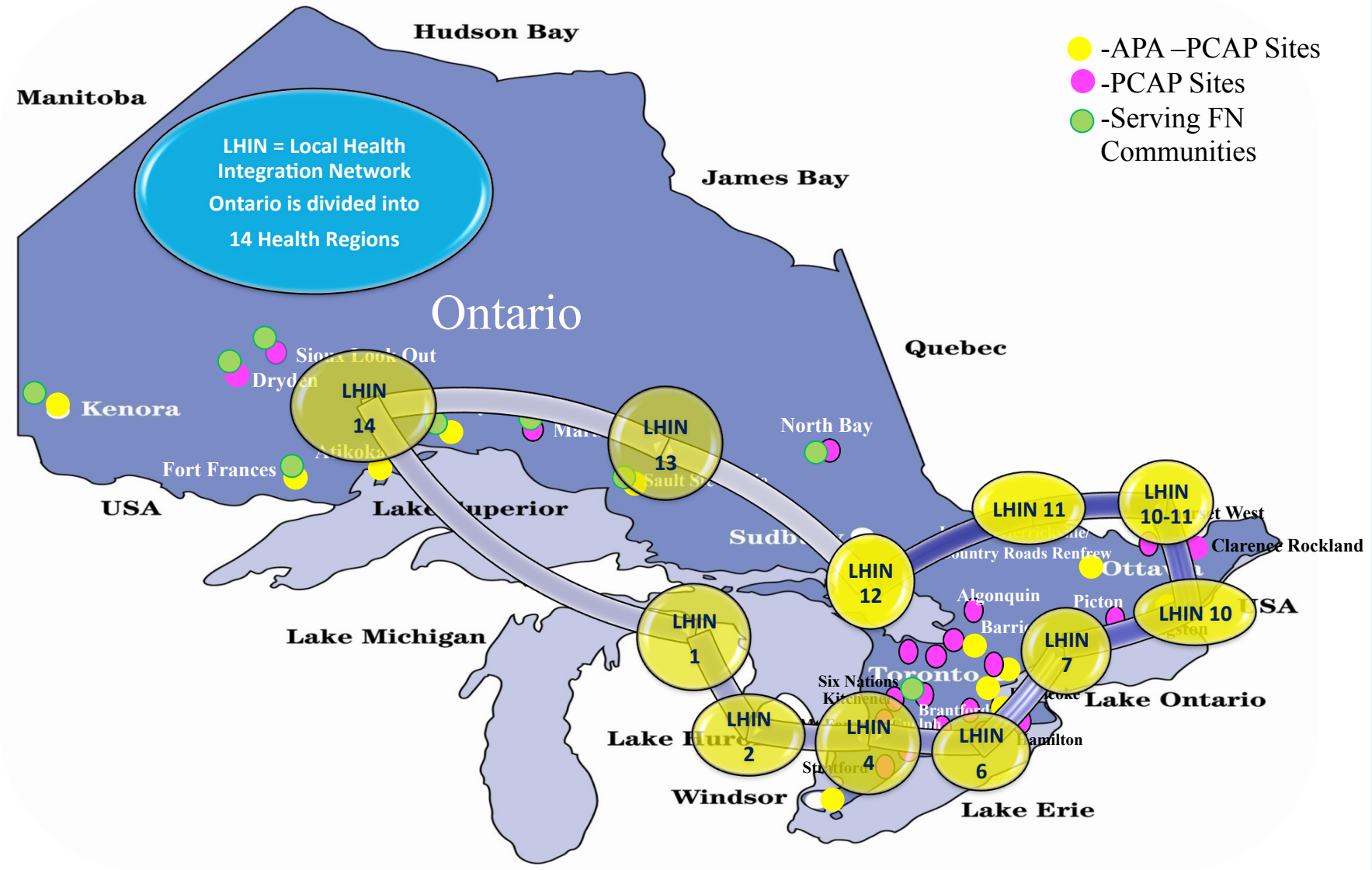


ASTHMA PLAN OF ACTION

THE LUNG ASSOCIATION™

PCAP Sites

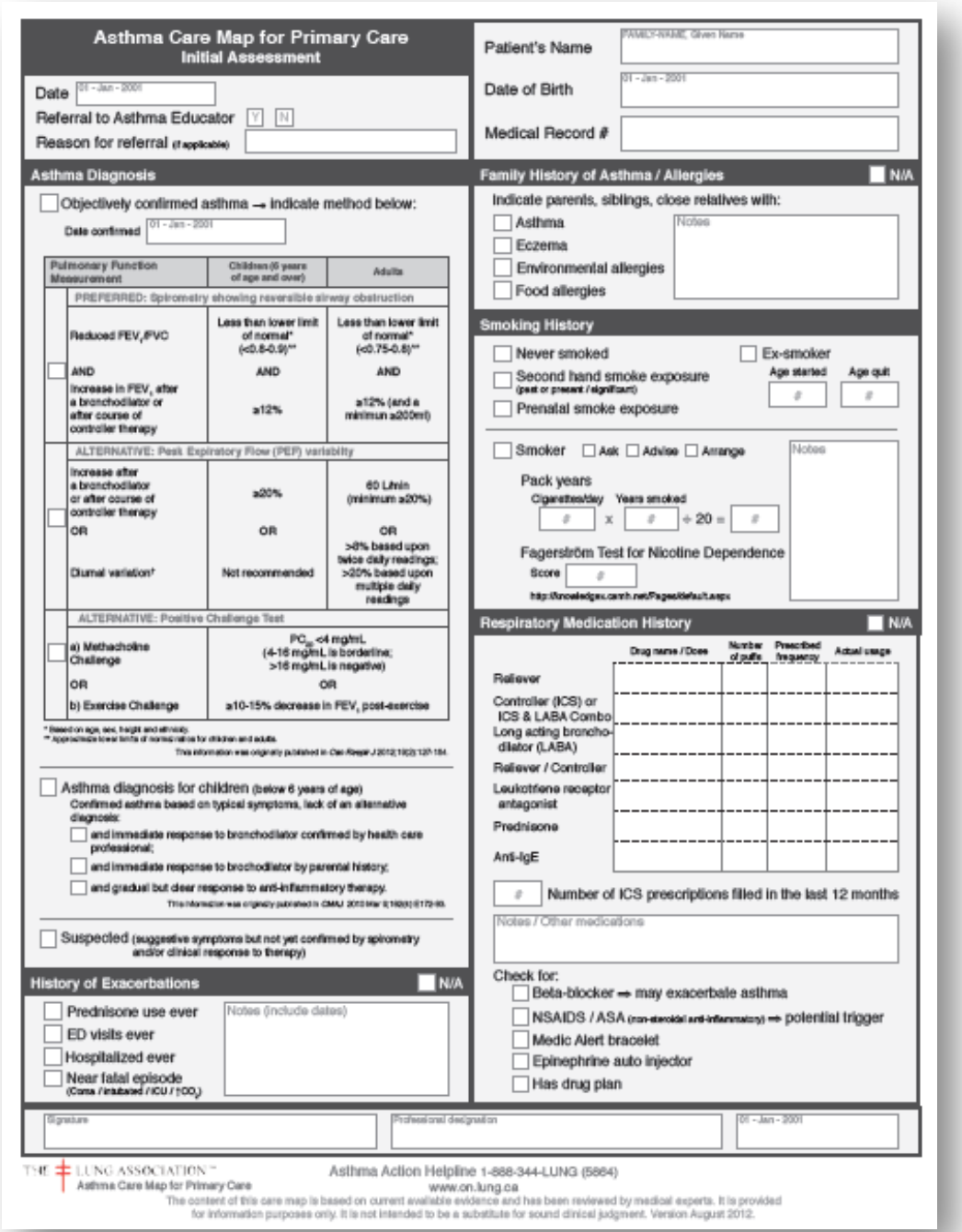
ASTHMA PLAN OF ACTION



ASTHMA PLAN OF ACTION

Asthma Care Map

THE LUNG ASSOCIATION™



Asthma Care Map for Primary Care
Initial Assessment

Date 01 - Jan - 2001
Referral to Asthma Educator [Y] [N]
Reason for referral (if applicable)

Patient's Name FAMILY-NAME, Given Name
Date of Birth 01 - Jan - 2001
Medical Record #

Asthma Diagnosis

[ ] Objectively confirmed asthma → indicate method below:

Date confirmed 01 - Jan - 2001

Pulmonary Function Measurement	Children (6 years of age and over)	Adults
PREFERRED: Spirometry showing reversible airway obstruction		
Reduced FEV_1/FVC	Less than lower limit of normal* (<0.8-0.9)**	Less than lower limit of normal* (<0.75-0.8)**
AND	AND	AND
Increase in FEV_1 after a bronchodilator or after course of controller therapy	≥12%	≥12% (and a minimum ≥200ml)
ALTERNATIVE: Peak Expiratory Flow (PEF) variability		
Increase after a bronchodilator or after course of controller therapy	≥20%	60 L/min (minimum ≥20%)
OR	OR	OR
Diurnal variation†	Not recommended	>8% based upon twice daily readings; >20% based upon multiple daily readings
ALTERNATIVE: Positive Challenge Test		
a) Methacholine Challenge	PC_{20} <4 mg/mL (4-16 mg/mL is borderline; >16 mg/mL is negative)	
OR	OR	
b) Exercise Challenge	≥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 originally published in Can Respir J 2012;19(2):127-134.

[ ] Asthma diagnosis for children (below 6 years of age)
Confirmed asthma based on typical symptoms, lack of an alternative diagnosis:
- [ ] and immediate response to bronchodilator confirmed by health care professional;
- [ ] and immediate response to brochodilator by parental history;
- [ ] and gradual but clear response to anti-inflammatory therapy.

This information was originally published in CMAJ 2013 Mar 5;185(3):E172-80.

[ ] Suspected (suggestive symptoms but not yet confirmed by spirometry and/or clinical response to therapy)

History of Exacerbations [ ] N/A

- [ ] Prednisone use ever
- [ ] ED visits ever
- [ ] Hospitalized ever
- [ ] Near fatal episode (Coma / intubated / ICU / $\uparrow CO_2$)

Notes (include dates)

Family History of Asthma / Allergies [ ] N/A

Indicate parents, siblings, close relatives with:
- [ ] Asthma
- [ ] Eczema
- [ ] Environmental allergies
- [ ] Food allergies

Notes

Smoking History

- [ ] Never smoked
- [ ] Ex-smoker
- [ ] Second hand smoke exposure (past or present / significant)
- [ ] Prenatal smoke exposure

Age started # Age quit #

[ ] Smoker [ ] Ask [ ] Advise [ ] Arrange

Pack years
Cigarettes/day # x Years smoked # ÷ 20 = #

Fagerström Test for Nicotine Dependence
Score #
http://knowledgex.camh.net/Pages/default.aspx

Notes

Respiratory Medication History [ ] N/A

	Drug name / Dose	Number of puffs	Prescribed frequency	Actual usage
Reliever				
Controller (ICS) or ICS & LABA Combo				
Long acting broncho-dilator (LABA)				
Reliever / Controller				
Leukotriene receptor antagonist				
Prednisone				
Anti-IgE				

Number of ICS prescriptions filled in the last 12 months

Notes / Other medications

Check for:
- [ ] Beta-blocker → may exacerbate asthma
- [ ] NSAIDS / ASA (non-steroidal anti-inflammatory) → potential trigger
- [ ] Medic Alert bracelet
- [ ] Epinephrine auto injector
- [ ] Has drug plan

Signature | Professional designation | 01 - Jan - 2001

THE LUNG ASSOCIATION™
Asthma Care Map for Primary Care

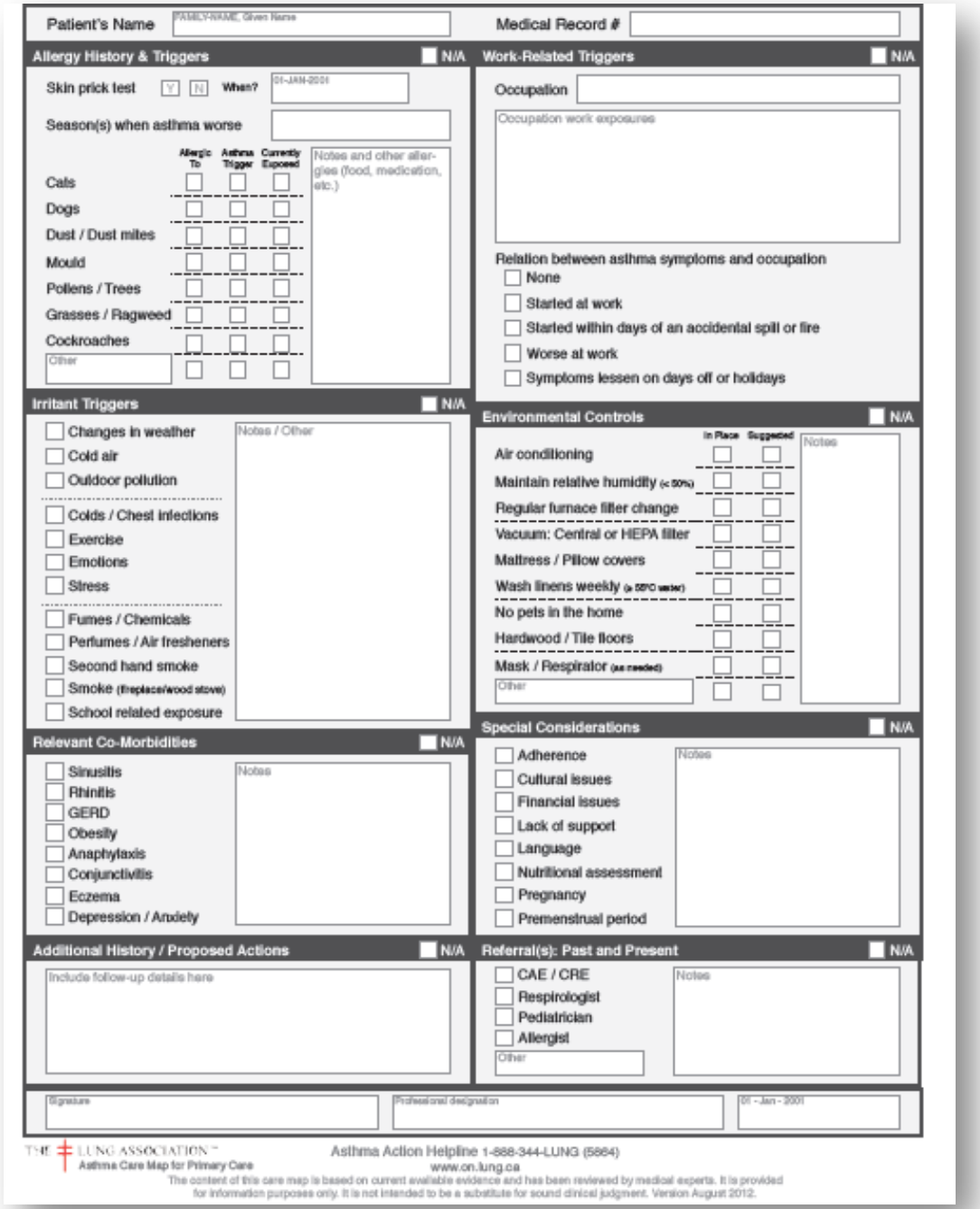
Asthma Action Helpline 1-888-344-LUNG (5864)
www.on.lung.ca

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 judgment. Version August 2012.

ASTHMA PLAN OF ACTION

Asthma Care Map –blueprint for putting evidence into practice

ASTHMA PLAN OF ACTION



Patient's Name [PATIENT-NAME, Given Name] Medical Record #

Allergy History & Triggers N/A

Skin prick test Y N When? [01-JAN-2001]

Season(s) when asthma worse

	Allergic To	Asthma Trigger	Currently Exposed
Cats	☐	☐	☐
Dogs	☐	☐	☐
Dust / Dust mites	☐	☐	☐
Mould	☐	☐	☐
Pollens / Trees	☐	☐	☐
Grasses / Ragweed	☐	☐	☐
Cockroaches	☐	☐	☐
Other	☐	☐	☐

Notes and other allergies (food, medication, etc.)

Irritant Triggers N/A

- ☐ Changes in weather
- ☐ Cold air
- ☐ Outdoor pollution
- ☐ Colds / Chest infections
- ☐ Exercise
- ☐ Emotions
- ☐ Stress
- ☐ Fumes / Chemicals
- ☐ Perfumes / Air fresheners
- ☐ Second hand smoke
- ☐ Smoke (fireplace/wood stove)
- ☐ School related exposure

Notes / Other

Relevant Co-Morbidities N/A

- ☐ Sinusitis
- ☐ Rhinitis
- ☐ GERD
- ☐ Obesity
- ☐ Anaphylaxis
- ☐ Conjunctivitis
- ☐ Eczema
- ☐ Depression / Anxiety

Notes

Additional History / Proposed Actions N/A

Include follow-up details here

Work-Related Triggers N/A

Occupation

Occupation work exposures

Relation between asthma symptoms and occupation

- ☐ None
- ☐ Started at work
- ☐ Started within days of an accidental spill or fire
- ☐ Worse at work
- ☐ Symptoms lessen on days off or holidays

Environmental Controls N/A

	In Place	Suggested
Air conditioning	☐	☐
Maintain relative humidity (< 50%)	☐	☐
Regular furnace filter change	☐	☐
Vacuum: Central or HEPA filter	☐	☐
Mattress / Pillow covers	☐	☐
Wash linens weekly (≥ 55°C water)	☐	☐
No pets in the home	☐	☐
Hardwood / Tile floors	☐	☐
Mask / Respirator (as needed)	☐	☐
Other	☐	☐

Notes

Special Considerations N/A

- ☐ Adherence
- ☐ Cultural issues
- ☐ Financial issues
- ☐ Lack of support
- ☐ Language
- ☐ Nutritional assessment
- ☐ Pregnancy
- ☐ Premenstrual period

Notes

Referral(s): Past and Present N/A

- ☐ CAE / CRE
- ☐ Respirologist
- ☐ Pediatrician
- ☐ Allergist

Other

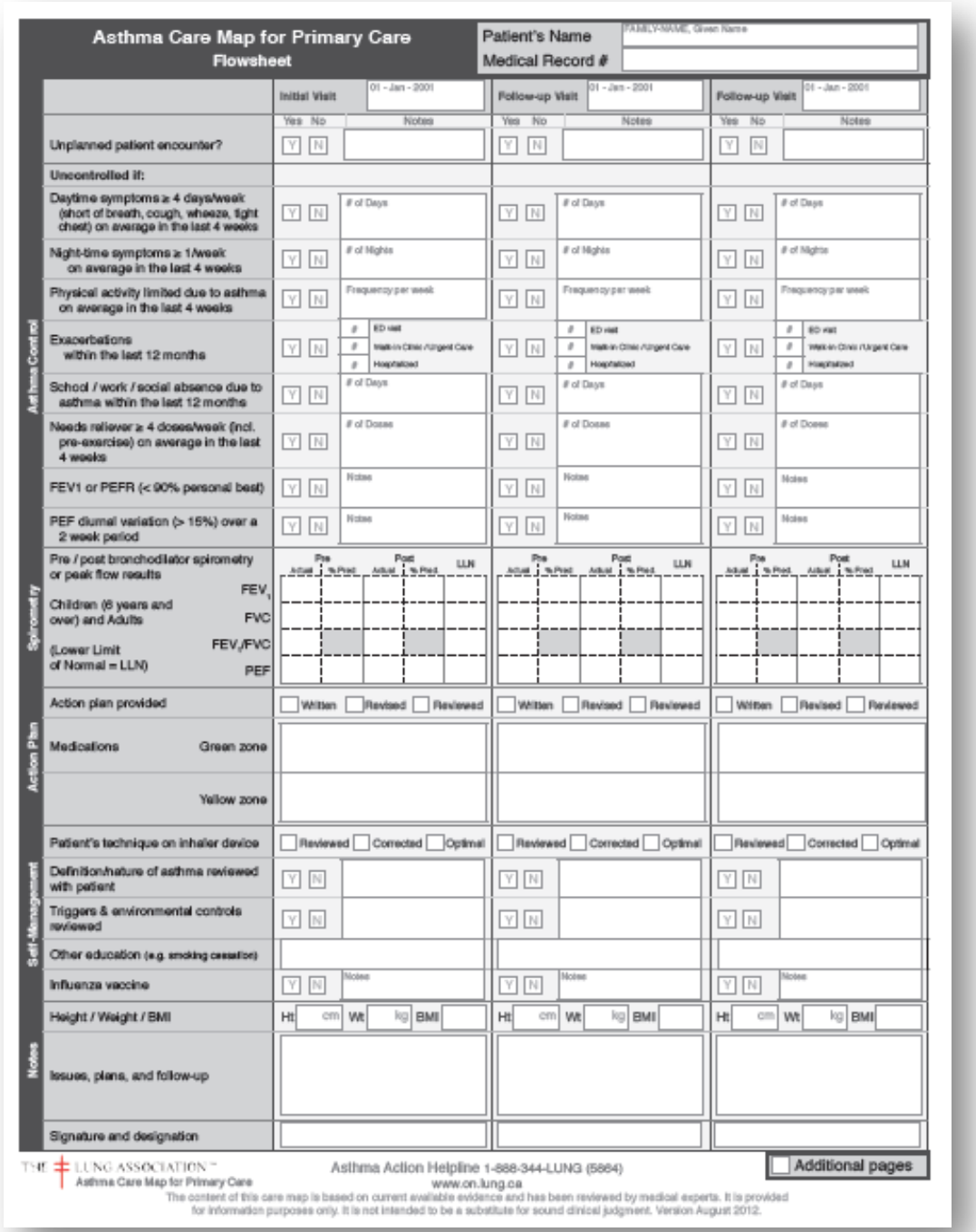
Notes

Signature Professional designation 01 - Jan - 2001

THE LUNG ASSOCIATION™
Asthma Care Map for Primary Care

Asthma Action Helpline 1-888-344-LUNG (5864)
www.on.lung.ca

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 judgment. Version August 2012.



Asthma Care Map for Primary Care
Flowsheet

Patient's Name: FAMILY-NAME, Given Name
Medical Record #:

	Initial Visit (01 - Jan - 2001)			Follow-up Visit (01 - Jan - 2001)			Follow-up Visit (01 - Jan - 2001)		
	Yes	No	Notes	Yes	No	Notes	Yes	No	Notes
Asthma Control									
Unplanned patient encounter?	Y	N		Y	N		Y	N	
Uncontrolled if:									
Daytime symptoms ≥ 4 days/week (short of breath, cough, wheeze, tight chest) on average in the last 4 weeks	Y	N	# of Days	Y	N	# of Days	Y	N	# of Days
Night-time symptoms ≥ 1/week on average in the last 4 weeks	Y	N	# of Nights	Y	N	# of Nights	Y	N	# of Nights
Physical activity limited due to asthma on average in the last 4 weeks	Y	N	Frequency per week	Y	N	Frequency per week	Y	N	Frequency per week
Exacerbations within the last 12 months	Y	N	# ED visit # Walk-in Clinic /Urgent Care # Hospitalized	Y	N	# ED visit # Walk-in Clinic /Urgent Care # Hospitalized	Y	N	# ED visit # Walk-in Clinic /Urgent Care # Hospitalized
School / work / social absence due to asthma within the last 12 months	Y	N	# of Days	Y	N	# of Days	Y	N	# of Days
Needs reliever ≥ 4 doses/week (incl. pre-exercise) on average in the last 4 weeks	Y	N	# of Doses	Y	N	# of Doses	Y	N	# of Doses
FEV1 or PEFR (< 90% personal best)	Y	N	Notes	Y	N	Notes	Y	N	Notes
PEF diurnal variation (> 15%) over a 2 week period	Y	N	Notes	Y	N	Notes	Y	N	Notes
Spirometry									
Pre / post bronchodilator spirometry or peak flow results Children (6 years and over) and Adults (Lower Limit of Normal = LLN)			Pre: Actual, % Pred. / Post: Actual, % Pred. / LLN FEV_1 FVC FEV_1/FVC PEF			Pre: Actual, % Pred. / Post: Actual, % Pred. / LLN FEV_1 FVC FEV_1/FVC PEF			Pre: Actual, % Pred. / Post: Actual, % Pred. / LLN FEV_1 FVC FEV_1/FVC PEF
Action Plan									
Action plan provided	☐ Written	☐ Revised	☐ Reviewed	☐ Written	☐ Revised	☐ Reviewed	☐ Written	☐ Revised	☐ Reviewed
Medications — Green zone									
Yellow zone									
Self-Management									
Patient's technique on inhaler device	☐ Reviewed	☐ Corrected	☐ Optimal	☐ Reviewed	☐ Corrected	☐ Optimal	☐ Reviewed	☐ Corrected	☐ Optimal
Definition/nature of asthma reviewed with patient	Y	N		Y	N		Y	N	
Triggers & environmental controls reviewed	Y	N		Y	N		Y	N	
Other education (e.g. smoking cessation)									
Influenza vaccine	Y	N	Notes	Y	N	Notes	Y	N	Notes
Notes									
Height / Weight / BMI	Ht cm	Wt kg	BMI	Ht cm	Wt kg	BMI	Ht cm	Wt kg	BMI
Issues, plans, and follow-up									
Signature and designation									

☐ Additional pages

THE LUNG ASSOCIATION™ Asthma Care Map for Primary Care

Asthma Action Helpline 1-888-344-LUNG (5864)
www.on.lung.ca

ASTHMA PLAN OF ACTION

Asthma Performance Indicators

- Asthma Control
- Asthma Quality of Life Questionnaires
- Pulmonary Function Test
- Medication Use
- Exacerbations
- Health Care Use
- Action Plan Use
- Smoking Cessation

Primary Care Asthma Performance Indicators (PC-API) Form, authored by Dr. Teresa To, © The Hospital for Sick Children, 2009, revised 2011

QUALITY IMPROVEMENT & INNOVATION PARTNERSHIP - QIIP ASTHMA CHARTER

ASTHMA PLAN OF ACTION

LEARNING COMMUNITY
Listen Share Innovate Improve

ASTHMA CHARTER – WAVE 1

What are we trying to accomplish?

THE LUNG ASSOCIATION™

The AIM

The aim of the Asthma Action Group is to improve the management of asthma for patients >/= 6 years of age in a primary healthcare setting in Ontario over a twelve month period.

Background

After cardiovascular disease (34%) and cancer (29%), chronic respiratory disease is responsible for the greatest proportion of deaths (4.3%) from chronic disease in Canada. Chronic respiratory conditions, including asthma and chronic obstructive pulmonary disease (COPD), affect over three million people in Canada.

Asthma is the most common chronic respiratory disease in Canada, accounting for approximately 80% of chronic respiratory disease and affecting 8.4% of the population. Although its prevalence is higher in children, asthma affects people of all ages.

Asthma in Canada

- Over 2.7 million Canadians have asthma[i]
- 11.8% of Canadian children aged 4-11 have asthma (374,000)[ii]
- 8.4% of Canadians aged 12 and over have asthma (2,363,000)[iii]
- 11.9% of Aboriginal people aged 12 and over living off reserve have asthma[iv]
- Children and teens have the highest asthma rates and the highest rates of hospitalization for asthma[v]

Asthma in Ontario

- 13% of Ontarians have asthma (1.6 million)[vi]
- 21% of Ontario children aged 0-14 have asthma (492,371)[vii]
- An individual born in Ontario has a 34% risk of developing asthma before they reach 80 years of age[viii]

The Burden of Illness

Asthma is a major cause of hospitalization for children in Canada. In 2004 asthma caused 10% of all hospital admissions in the 0-4 year age group and 8% in the 5-14 year age group[ix]. Asthma can be controlled, however:

Objectives

Improved management of asthma will be achieved in Ontario by:

- Improving the confirmation of the asthma diagnosis (clinical suspicion of asthma), using spirometry/methacholine challenge to 70%
- Improving the management of asthma (for patients with confirmed diagnosis) including:
  - Increased evidence of action plans and self-management goal documentation to 90%
  - Increased flu shot administration to 90%
  - Reduction in annual emergency department (ED)/urgent clinic visits ** to less than 10% of patients
  - Increased referral to smoking cessation programs, received advice and / or have received support to quit smoking to greater than 90% where appropriate

*** Urgent clinic defined as walk in clinic or unscheduled hospital visits*

How will we know that a change is an improvement?

Measures (measured & reported monthly)

1. 70% of patients will undergo spirometry or methacholine challenge to confirm the diagnosis of asthma
2. 90% of patients will have a written, reviewed or revised asthma action plan
3. 90% of patients will have identified, a minimum of one self-management goal that is documented in the EMR
4. 90% of patients will receive an annual flu shot
5. 90% of patients will be referred to smoking cessation programs
6. Decrease annual asthma-related ED or urgent care visits by 10%

THE LUNG ASSOCIATION™

Top 15 most highly rated asthma primary care performance indicators based on the final ranking by the expert panelists at the consensus meeting

ASTHMA PLAN OF ACTION

Top 15 performance indicators	Current Template	Available in ACM	2011 ACM	Extractable data
1. Asthma Education from Certified Asthma Educator	Q7	×	Pg 3	Text
2. Pulmonary Function Monitoring	Q1b	✓	Pg 1 & 3	Tick box/ numbers
3. Asthma Control Monitoring	Q3a	✓	Pg 3	Y/N, numbers
4. Controller Medication				
a. Overall use	Q2a	Assumed	Pg 1 & 3	Drug name
b. Prescriptions	Q2b	×	?	
5. Asthma Control				
a. Overall	Q3b	Derived	Pg 3	numbers
b. Symptom-free Days	Q3c	Derived	Pg 3	numbers
c. Absenteeism from Work/School for Asthma	Q3d	✓	Pg 3	numbers
6. Acute Health Services Use				
a. Emergency Department Visits for Asthma	Q5a	✓	Pg 3	numbers
b. Urgent Care Visits for Asthma	Q5b	✓	Pg 3	numbers
7. Pulmonary Function Test	Q1a	✓	Pg 1	Tick box
8. Use of Action Plan	Q6	✓	Pg 3	Tick box
9. Patient Quality of Life	Q9	×	Not directly	
10. Reliever Medication				
a. Overall use	Q2c	✓	Pg 3	Number of doses
b. Beta2-agonist-free Days	Q2d	Derived	Pg 3	Numbers
11. Smoking Cessation	Q8	Incomplete	Pg 1	3 As: tick box
12. Asthma Exacerbations	Q4	✓	Pg 3	Numbers
13. Inhaler Technique Monitoring	Q2e	✓	Pg 3	Tick box
14. Primary Care Visits for Asthma	Q5c	Derived	?	
15. Routine Care Provider	Q5d	Assumed	?	
Comparison	**20**		**11/15**	

Summary:

✓:	10/20
Derived:	4/20
Assumed:	2/20
Incomplete:	1/20
Unavailable:	3/20

Acknowledgement

- **Funding Source**: ***Government of Ontario***
- **Disclosure***:* The authors have no financial relationship with industry and declare no conflicts of interest related to the subject matter of this presentation
- **PCAP Coordinator Group**: M.Ferrone, P.Wilton, K.Jones, M. Haynes, J. Belanger, J. Woychyshyn, N. Udarchik, J. Schooley, K.Milks, L.Taylor, S. Strachan

COPD Tools and Resources

- The PCAP model is adaptable to other chronic disease management
- Tools/Resources
  - COPD Care Map
  - COPD Action Plan
  - COPD Algorithm
  - BreathWorks
  - Living Will With COPD

THE LUNG ASSOCIATION™

COPD CARE MAP

COPD Care Map for Primary Care

Patient Name: _____ DOB: _____

Year of diagnosis: _____ Co-morbid conditions: _____

Smoking history: _____ Occupational exposure: _____

Ensure diagnosis of COPD was made with post bronchodilator spirometry testing to meet the Canadian Thoracic Society criteria to **establish a diagnosis of COPD:** *Post bronchodilator FEV_1/ FVC ratio < 0.7 (or compared to the lower limit of normal)*

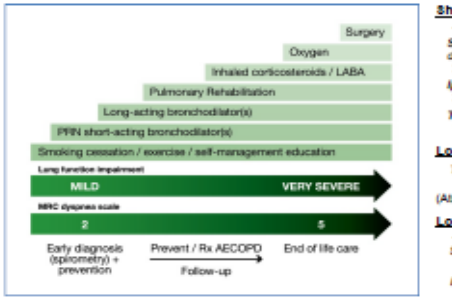
	REVIEW ITEMS	VISIT DATES		
		Date:	Date:	Date:
ASSESSMENT / SEVERITY FOR COPD	**Medical Research Council (MRC) Dyspnea Scale** (Recommended by CTS for assessment of disability from COPD)			
	Grade 1 (Very Mild): SOB only with strenuous exercise			
	Grade 2 (Mild): SOB when hurrying on a level surface or walking up slight hill			
	Grade 3 (Moderate): Walks slower than people of same age on the level, or stops for breath while walking at own pace on the level			
	Grade 4 (Moderate): Stops for breath after walking about 100 yards			
	Grade 5 (Severe): Too SOB to leave the house, or SOB when dressing			
	Consider blood gas when FEV_1 < 40% (if resting SpO_2 < 90%)			
	Signs/symptoms of right heart failure (If yes, COPD is severe) i.e. ankle edema +/- fatigue, SOB on exertion			
	BMI classification (underweight <18.5 kg/m^2; overweight ≥ 25 kg/m^2)			
	Clinical signs of depression / anxiety			
REGULAR OFFICE VISITS MANAGEMENT	Smoking cessation if smoking - 3 A's model (Ask, Advise, Arrange)			
	Cigarettes/day:			
	Cessation medications (Nicotine replacement, Zyban, Champix)			
	Short-acting bronchodilator:			
	Long-acting beta-agonist (LABA):			
	Long-acting anticholinergic:			
	LABA/inhaled corticosteroid combination:			
	Other medicines:			
	Vaccinations: • Annual influenza vaccine			
	• Pneumococcal vaccine given at least once and repeated in 5 to 10 years			
	Review proper inhaler technique with patient			
	Encourage regular exercise			
	Revise or review written action plan: www.COPDActionPlan.com			
	Acute Exacerbation COPD (AECOPD): • AECOPD Date(s):			
	• Purulent (P) / Non-Purulent (NP)	☐ P ☐ NP ☐ P ☐ NP	☐ NP ☐ P ☐ NP	☐ NP ☐ P ☐ NP
TESTS	Post bronchodilator spirometry testing – FEV1% predicted			
	Blood work: • CBC to rule out polycythemia			
	• Alpha-1-Antitrypsin (AAT): If serum blood level ≤ 1.5 g/L or below the normal limit for the testing laboratory, screen for AAT phenotype (PI Type) (do not test during acute exacerbation)			
	Sputum gram stain & culture when purulent AECOPD if: very poor lung function, AECOPD > 3/year or has been on antibiotics in last 3 months			
AS NEEDED REFERRALS	COPD education program			
	Pulmonary rehabilitation program			
	Smoking cessation			
	Sleep clinic/sleep lab if sleep disordered breathing suspected			
	Refer to specialist if:			
	• Not certain of the diagnosis			
	• Symptoms not proportional to level of airway obstruction			
	• Accelerated decline of lung function (FEV1 decline 80 ml or more per year over a two year period)			
	• Symptom onset at a young age (< 40 years)			
	• Suspect alpha-1-antitrypsin deficiency (see TESTS section)			
	• Not responding to therapy			
	• Severe or recurring acute exacerbations			
	Canadian respiratory guidelines: www.respiratoryguidelines.ca **Signature:**			

Adopted and modified with permission from Chinook Health Region.

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 judgment.

THE LUNG ASSOCIATION™ 1-888-344-5864 www.on.lung.ca November 2011

Treatment Options from the 2008 Canadian Thoracic Society Recommendations for Management of COPD



Adapted from: Can Respir J 2008;15(Suppl A):4A.

Short-Acting Bronchodilators

– For symptomatic or rescue treatment –

Salbutamol (Ventolin, Airomir) *MDI / spacer 100 mcg per dose*
2 inhalations QID prn

Ipratropium (Atrovent) *MDI / spacer 20 mcg per dose*
2 inhalations QID prn

Terbutaline (Bricanyl) *Turbuhaler 0.5 mg per dose*
1 inhalation QID prn

Long-Acting Anti-Cholinergic Bronchodilators

Tiotropium (Spiriva) *Handihaler 18 mcg per dose*
Contents of 1 capsule inhaled QD

(Atrovent is not recommended to be combined with Spiriva)

Long-Acting Beta-Agonist (LABA) Bronchodilators

– Can be used alone or in a combination product –

Salmeterol (Serevent) *Diskus 50 mcg per dose*
1 inhalation BID

Formoterol (Oxeze) *Turbuhaler 6 or 12 mcg per dose*
1 to 2 inhalations BID of 6 mcg dose
1 inhalation BID of 12 mcg dose

Long-Acting Beta Agonist / Inhaled Corticosteroid (LABA/ICS) Combinations

– For moderate to severe COPD with SOB despite optimal bronchodilator therapy, replace LABA with LABA/ICS combination –

(If < 1 **Acute Exacerbation** COPD per year use **lower dose** ICS; If ≥ 1 **Acute Exacerbation** COPD per year use **higher dose** ICS)

Symbicort *(formoterol 6 mcg / budesonide 100 or 200 mcg per dose)* ***Turbuhaler*** 2 inhalations BID

Advair *(salmeterol 25 mcg / fluticasone 125 or 250 mcg per dose)* ***MDI / spacer*** 2 inhalations BID

Advair *(salmeterol 50 mcg / fluticasone 100, 250 or 500 mcg per dose)* ***Diskus*** 1 inhalation BID

Other Medicines

Theophylline has weak bronchodilator and anti-inflammatory effects; modest potential benefits need to be weighed against the risk of severe side effects and potential drug interactions.

PDE4 inhibitor: Daxas (roflumilast) may inhibit COPD-related inflammation (a role in COPD management has not been clarified in current Canadian COPD guidelines). It is recommended that patients with recurrent exacerbations should be referred to a respirologist.

Home Oxygen Program: www.health.gov.on.ca/english/public/pub/adp/oxyphys.html

Acute Exacerbations of COPD (AECOPD)

Inhaled bronchodilators to treat dyspnea in AECOPD; consider salbutamol and ipratropium bromide initially (24-48hrs), then resume maintenance bronchodilator therapy.

No role for the initiation of theophylline during AECOPD; possible drug interactions with antibiotics.

Oral/parenteral steroids for 7-14 days in most **moderate to severe** patients with COPD; limited data on benefits in patients with mild COPD (FEV_1 > 60% of predicted); doseges of 25 to 50 mg prednisone per day are recommended.

Antibiotic therapy is recommended **only for those patients with AECOPD due to an infectious cause, i.e., purulent exacerbations; (as characterized by increased dyspnea, increased sputum and purulent sputum)**; refer to chart below (adapted from 2008 Canadian Thoracic Society Recommendations for Management of COPD):

Antibiotic treatment recommendations for purulent acute exacerbations of chronic obstructive pulmonary disease (COPD)

Group	Basic clinical state	Symptoms and risk factors	Probable pathogens	First choice
Simple exacerbation	COPD without risk factors	Increased sputum purulence and dyspnea	*Haemophilus influenzae, Haemophilus species, Moraxella catarrhalis, Streptococcus pneumoniae*	Amoxicillin, second- or third-generation cephalosporins, doxycycline, extended-spectrum macrolides, trimethoprim/sulfamethoxazole *(in alphabetical order)*
Complicated exacerbation	COPD with risk factors	As in simple plus at least one of: • FEV1<50% predicted • ≥4 exacerbations per year • Ischemic heart disease • Use of home oxygen • Chronic oral steroid use	As in simple plus: • *Klebsiella* species and other Gram-negatives • Increased probability of beta-lactam resistance • *Pseudomonas* species	Fluoroquinolone (gemifloxacin, levofloxacin, moxifloxacin), beta-lactam/beta-lactamase inhibitor (amoxicillin/clavulanic acid) *(in order of preference)* (antibiotics for simple exacerbation if combined with prednisone)

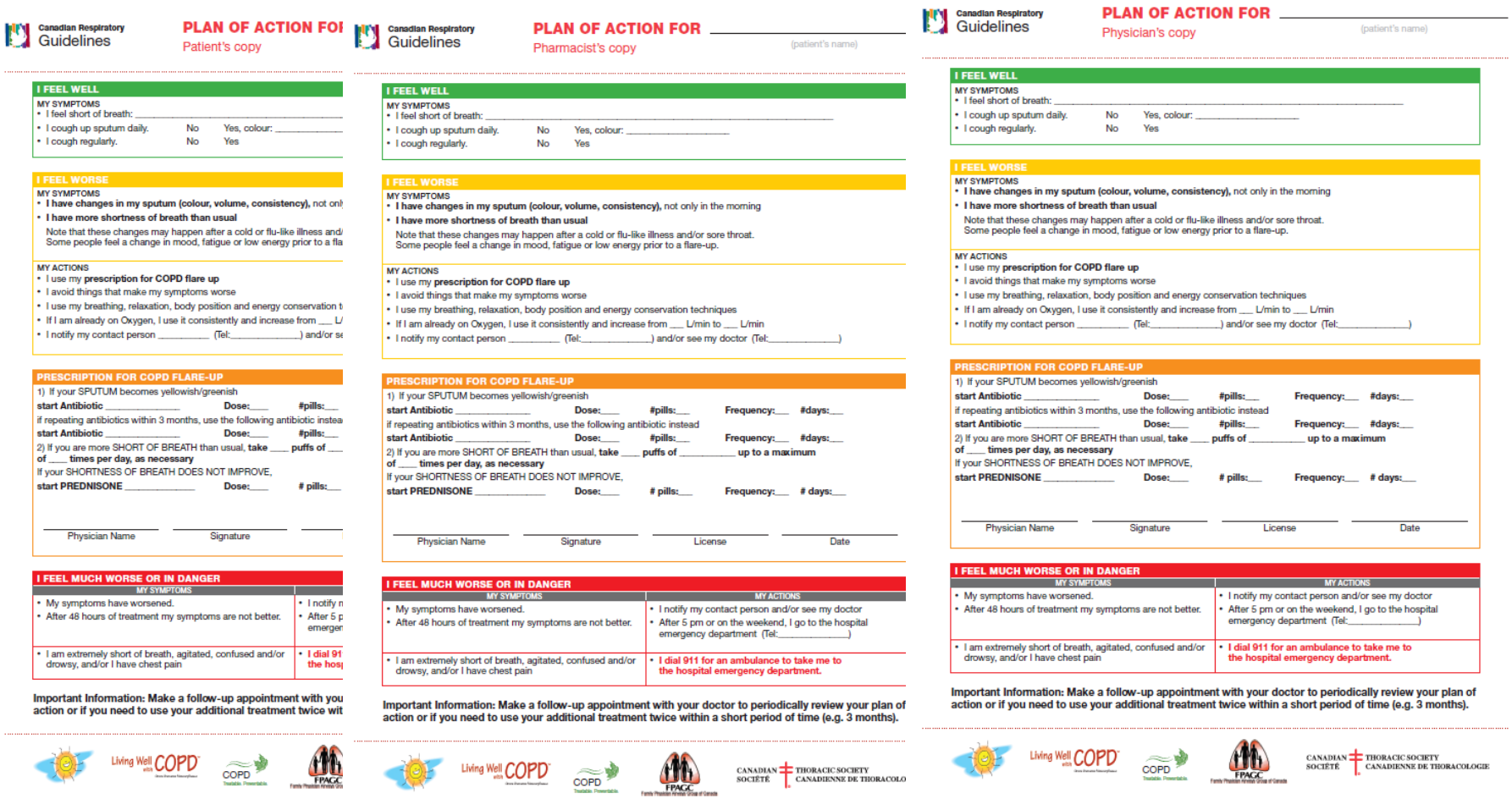
Repeat prescriptions of the same antibiotic class should be avoided within a three-month interval. FEV_1 Forced expiratory volume in 1 s

Adapted from: Can Respir J 2008;15(Suppl A):7A.

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 judgment.

THE LUNG ASSOCIATION™ 1-888-344-5864 www.on.lung.ca November 2011

THE LUNG ASSOCIATION™



Canadian Respiratory Guidelines

PLAN OF ACTION FOR

Patient's copy

I FEEL WELL

MY SYMPTOMS

- I feel short of breath: _____
- I cough up sputum daily. No Yes, colour: _____
- I cough regularly. No Yes

I FEEL WORSE

MY SYMPTOMS

- **I have changes in my sputum (colour, volume, consistency),** not onl
- **I have more shortness of breath than usual**

Note that these changes may happen after a cold or flu-like illness and/
Some people feel a change in mood, fatigue or low energy prior to a fla

MY ACTIONS

- I use my **prescription for COPD flare up**
- I avoid things that make my symptoms worse
- I use my breathing, relaxation, body position and energy conservation t
- If I am already on Oxygen, I use it consistently and increase from ___ L/
- I notify my contact person _____ (Tel:_____) and/or s

PRESCRIPTION FOR COPD FLARE-UP

1) If your SPUTUM becomes yellowish/greenish

start Antibiotic _____ **Dose:**___ **#pills:**___

if repeating antibiotics within 3 months, use the following antibiotic instea

start Antibiotic _____ **Dose:**___ **#pills:**___

2) If you are more SHORT OF BREATH than usual, **take** ___ **puffs of** ___ **of** ___ **times per day, as necessary**

If your SHORTNESS OF BREATH DOES NOT IMPROVE,

start PREDNISONE _____ **Dose:**___ **# pills:**___

Physician Name _____ Signature _____

I FEEL MUCH WORSE OR IN DANGER

MY SYMPTOMS	
• My symptoms have worsened. • After 48 hours of treatment my symptoms are not better.	• I notify m • After 5 p emergen
• I am extremely short of breath, agitated, confused and/or drowsy, and/or I have chest pain	• I dial 91 the hos

Important Information: Make a follow-up appointment with you action or if you need to use your additional treatment twice wit

Living Well with COPD | COPD | FPAGC

Canadian Respiratory Guidelines

PLAN OF ACTION FOR _____

Pharmacist's copy

(patient's name)

I FEEL WELL

MY SYMPTOMS

- I feel short of breath: _____
- I cough up sputum daily. No Yes, colour: _____
- I cough regularly. No Yes

I FEEL WORSE

MY SYMPTOMS

- **I have changes in my sputum (colour, volume, consistency),** not only in the morning
- **I have more shortness of breath than usual**

Note that these changes may happen after a cold or flu-like illness and/or sore throat.
Some people feel a change in mood, fatigue or low energy prior to a flare-up.

MY ACTIONS

- I use my **prescription for COPD flare up**
- I avoid things that make my symptoms worse
- I use my breathing, relaxation, body position and energy conservation techniques
- If I am already on Oxygen, I use it consistently and increase from ___ L/min to ___ L/min
- I notify my contact person _____ (Tel:_____) and/or see my doctor (Tel:_____)

PRESCRIPTION FOR COPD FLARE-UP

1) If your SPUTUM becomes yellowish/greenish

start Antibiotic _____ **Dose:**___ **#pills:**___ **Frequency:**___ **#days:**___

if repeating antibiotics within 3 months, use the following antibiotic instead

start Antibiotic _____ **Dose:**___ **#pills:**___ **Frequency:**___ **#days:**___

2) If you are more SHORT OF BREATH than usual, **take** ___ **puffs of** _____ **up to a maximum of** ___ **times per day, as necessary**

If your SHORTNESS OF BREATH DOES NOT IMPROVE,

start PREDNISONE _____ **Dose:**___ **# pills:**___ **Frequency:**___ **# days:**___

Physician Name _____ Signature _____ License _____ Date _____

I FEEL MUCH WORSE OR IN DANGER

MY SYMPTOMS	MY ACTIONS
• My symptoms have worsened. • After 48 hours of treatment my symptoms are not better.	• I notify my contact person and/or see my doctor • After 5 pm or on the weekend, I go to the hospital emergency department (Tel:_____)
• I am extremely short of breath, agitated, confused and/or drowsy, and/or I have chest pain	• **I dial 911 for an ambulance to take me to the hospital emergency department.**

Important Information: Make a follow-up appointment with your doctor to periodically review your plan of action or if you need to use your additional treatment twice within a short period of time (e.g. 3 months).

Living Well with COPD | COPD | FPAGC | CANADIAN SOCIÉTÉ THORACIC SOCIETY CANADIENNE DE THORACOLO

Canadian Respiratory Guidelines

PLAN OF ACTION FOR _____

Physician's copy

(patient's name)

I FEEL WELL

MY SYMPTOMS

- I feel short of breath: _____
- I cough up sputum daily. No Yes, colour: _____
- I cough regularly. No Yes

I FEEL WORSE

MY SYMPTOMS

- **I have changes in my sputum (colour, volume, consistency),** not only in the morning
- **I have more shortness of breath than usual**

Note that these changes may happen after a cold or flu-like illness and/or sore throat.
Some people feel a change in mood, fatigue or low energy prior to a flare-up.

MY ACTIONS

- I use my **prescription for COPD flare up**
- I avoid things that make my symptoms worse
- I use my breathing, relaxation, body position and energy conservation techniques
- If I am already on Oxygen, I use it consistently and increase from ___ L/min to ___ L/min
- I notify my contact person _____ (Tel:_____) and/or see my doctor (Tel:_____)

PRESCRIPTION FOR COPD FLARE-UP

1) If your SPUTUM becomes yellowish/greenish

start Antibiotic _____ **Dose:**___ **#pills:**___ **Frequency:**___ **#days:**___

if repeating antibiotics within 3 months, use the following antibiotic instead

start Antibiotic _____ **Dose:**___ **#pills:**___ **Frequency:**___ **#days:**___

2) If you are more SHORT OF BREATH than usual, **take** ___ **puffs of** _____ **up to a maximum of** ___ **times per day, as necessary**

If your SHORTNESS OF BREATH DOES NOT IMPROVE,

start PREDNISONE _____ **Dose:**___ **# pills:**___ **Frequency:**___ **# days:**___

Physician Name _____ Signature _____ License _____ Date _____

I FEEL MUCH WORSE OR IN DANGER

MY SYMPTOMS	MY ACTIONS
• My symptoms have worsened. • After 48 hours of treatment my symptoms are not better.	• I notify my contact person and/or see my doctor • After 5 pm or on the weekend, I go to the hospital emergency department (Tel:_____)
• I am extremely short of breath, agitated, confused and/or drowsy, and/or I have chest pain	• **I dial 911 for an ambulance to take me to the hospital emergency department.**

Important Information: Make a follow-up appointment with your doctor to periodically review your plan of action or if you need to use your additional treatment twice within a short period of time (e.g. 3 months).

Living Well with COPD | COPD | FPAGC | CANADIAN SOCIÉTÉ THORACIC SOCIETY CANADIENNE DE THORACOLOGIE

THE LUNG ASSOCIATION™

COPD ACTION PLAN

QIIP COPD CHARTER

Improving Lung Health for Ontarians through Improved COPD Care

Background

How many in your panel are among the 1.6 million Canadians living with undiagnosed COPD?

Chronic Obstructive Lung Disease (COPD) is a debilitating and destructive lung disease which unfortunately remains significantly under-diagnosed. It now accounts for the highest rate of hospital admission among major chronic illnesses in Canada with more patients being admitted to hospitals because of COPD than heart attacks and that figure has been increasing dramatically over the years. It is the only chronic disease in which mortality is still increasing. [i]

COPD in Canada

- *A 2007 report commissioned by The Canadian Lung Association shows that 1.5 million Canadians have been diagnosed with COPD, Canada's fourth leading cause of death. Another 1.6 million Canadians may have COPD but haven't yet been diagnosed which means up to 3 million Canadians may have COPD.* [ii]
- *The prevalence is higher in Aboriginal people (7.9% living off reserve).* [iii]

COPD in Ontario

- *It is estimated that nearly 500,000 people in Ontario have physician diagnosed COPD.*
- *In Ontario, COPD is a major cause of death and disability. 3,208 Ontarians succumbed to COPD in 2000, 4% of all deaths in Ontario.* [iv]
- *COPD hospitalization rate in Ontario is high (632 per 100,000).* [v]

Burden of Illness

COPD gradually deprives individuals of their health and quality of life. Shortness of breath, persistent cough and fatigue limit activities of daily living and may be attributed to the normal signs of aging or being "out of shape." The underlying progressive disease causing these symptoms may not be identified until later stages of the disease. Acute exacerbations of COPD or lung attacks result in accelerated decline in lung function, poorer health-related quality of life and increased mortality. Rates of recognized anxiety and depression vary from 20-50% and increase with disease severity. [vi]

The burden of uncontrolled and undiagnosed COPD is evident in escalating health care utilization and costs:

- *Exacerbations or COPD lung attacks are the principle cause of hospitalization in Canada*
- *Hospital admissions for COPD lung attacks averaged a 10 day length of stay at a cost of $10,000 per stay*
- *Total cost of COPD hospitalizations has been conservatively estimated at $1.5 billion per year*
- *It has a much higher readmission rate than other chronic illnesses:18% of COPD patients were readmitted once within the year and 14% twice within the year* [vii]

THE LUNG ASSOCIATION™

What are we trying to accomplish?

Teams will choose to work with one or both aims for this improvement effort.

1. ***AIM: to identify undiagnosed COPD in people at risk through improved screening and identification processes over a twelve month period.***

   Expected Outcomes:

   - *X% of at risk adults in the identified population will be screened for COPD*
   - *X% increase in number of cases of COPD identified*

2. ***AIM: to reduce acute exacerbations of COPD in the identified population over a twelve month period.***

   Expected Outcomes:

   - *X % reduction in number of documented acute exacerbations of COPD*
   - *X% increase in patients with COPD who report that they are not currently smoking at the most recent visit*

How will we know that change is an improvement?

A set of measures and targets will be used to monitor the impact of this primary healthcare improvement effort in COPD. Measures will be collected monthly according to selected aims.

Aim 1	Aim 2
1.1 % of identified population at risk who have screened according to Canadian Thoracic Society Guidelines in the past x days (process) *1.2 # of new cases of COPD identified via spirometry in past x days (outcome)* *1.3 Office Visit cycle time (balance)*	*2.1 % of patients with COPD with documented acute exacerbation (AECOPD) in past x days(outcome)* *2.2 % patients with COPD who reported not currently smoking at most recent visit, in past x days(outcome)* *2.3 % of patients who have had diagnosis of COPD confirmed by spirometry, or have had assessment by spirometry in the past 365 days (process)* *2.4 % of patients with COPD who are currently smoking who are offered counselling, pharmacological support or referral to cessation program in past 365 days(process)* *2.5 % of patients with COPD with completed COPD action plan, developed or reviewed in the past 6 months (and/or documented follow-up of patient self management goal in the past 184 days?)* *2.6 % of patients with COPD who are referred for pulmonary education (process or balance measure)* *2.7 % patients with COPD who have received annual influenza vaccination (and pneumovax in past 10 years(process)* *2.8 % of patients prescribed [medication class] (process)* *2.9 % of patients with COPD referred for pulmonary rehabilitation(balance)* *2.10 % of patients referred to a specialist (balance)*

COPD Performance Measures

- % of patients >40 years of age who currently smoke or have a history of smoking have been screened for spirometry, and documented.
- % of patients with a diagnosis of COPD have recorded FEV1 in the past 365 days
- % of patients with COPD who are currently smoking have been offered counselling, pharmacological support or referral to cessation program in past 365 days
- % of patients with COPD have received an influenza vaccination in the past 365 days

Heffner et al, COPD Performance Measures: Missing Opportunities for Improving Care, CHEST, 2010

THE LUNG ASSOCIATION™

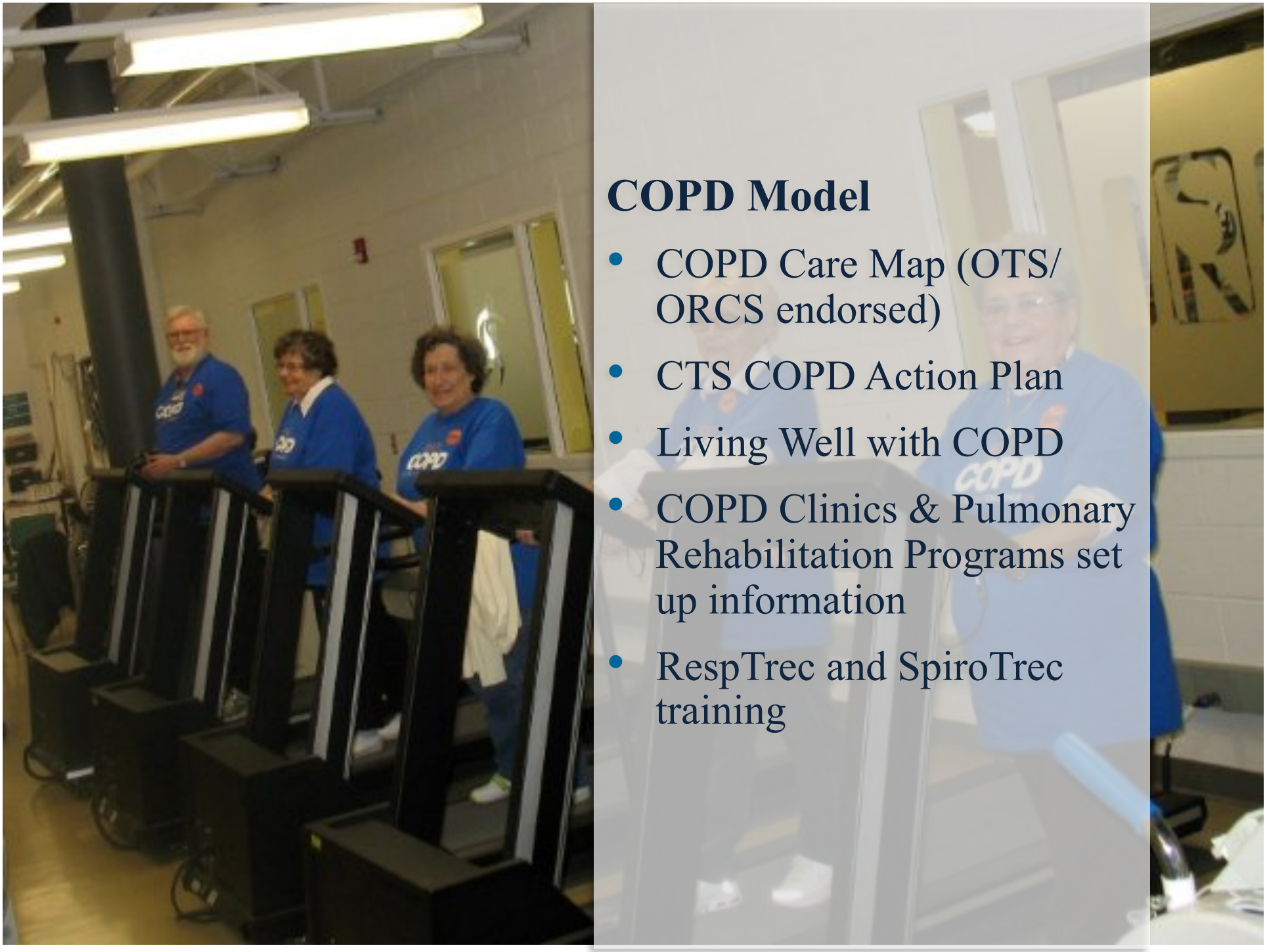
COPD Performance Measures

- % of patients with COPD assessed for pneumococcal immunization status
- % of patients with COPD who received pneumococcal immunization
- % patients with COPD have been prescribed a long acting bronchodilator in the past 365 days
- % of patients with COPD have been referred for pulmonary education in past 365 days
- Number of hospital admissions for COPD per population or time interval
- % of COPD patients discharged from hospital and referred to pulmonary rehabilitation
- % of patients with COPD and dypnea for whom exercise training was recommended
- % of patients with COPD with oxygen saturation assessed at least annually

THE LUNG ASSOCIATION™

COPD Model

- Helpline
- Educational materials: Fact sheets (home exercise module, medications, coping strategies...)
- Website on.lung.ca
- Newsletter
- Team COPD



COPD Model

- COPD Care Map (OTS/ ORCS endorsed)
- CTS COPD Action Plan
- Living Well with COPD
- COPD Clinics & Pulmonary Rehabilitation Programs set up information
- RespTrec and SpiroTrec training

RHF 2013

Respiratory Health Forum

January 30th and 31st

Toronto Marriott Downtown Eaton Centre Hotel

This year you will have the option to attend up to three free sessions.

Day One:

Jan 30th morning Session 1: How to Get Started with Your Lung Health Program

Jan 30th afternoon Session 2: Lung Health Quality Indicators

Breakout Sessions TBA (select 2 out of 3)

Day Two:

Jan 31st morning Session 3: Integrating Lung Health Tools into your Clinical Practice

Plenary Sessions include:

- Asthma Indicators
- COPD Indicators
- How to Improve Outcomes
- Evaluation and Sustainability

Register Now! *Click Here*

Call 1-888-344-LUNG (5864) for more information.

Primary Care Asthma Program

afhto association of family health teams of ontario

Ontario's Community Health Centres

THE LUNG ASSOCIATION™ Ontario

Ontario

ASTHMA PLAN OF ACTION

Contact information:

Carole Madeley

cmadeley@on.lung.ca

THE LUNG ASSOCIATION™

ASTHMA PLAN OF
ACTION

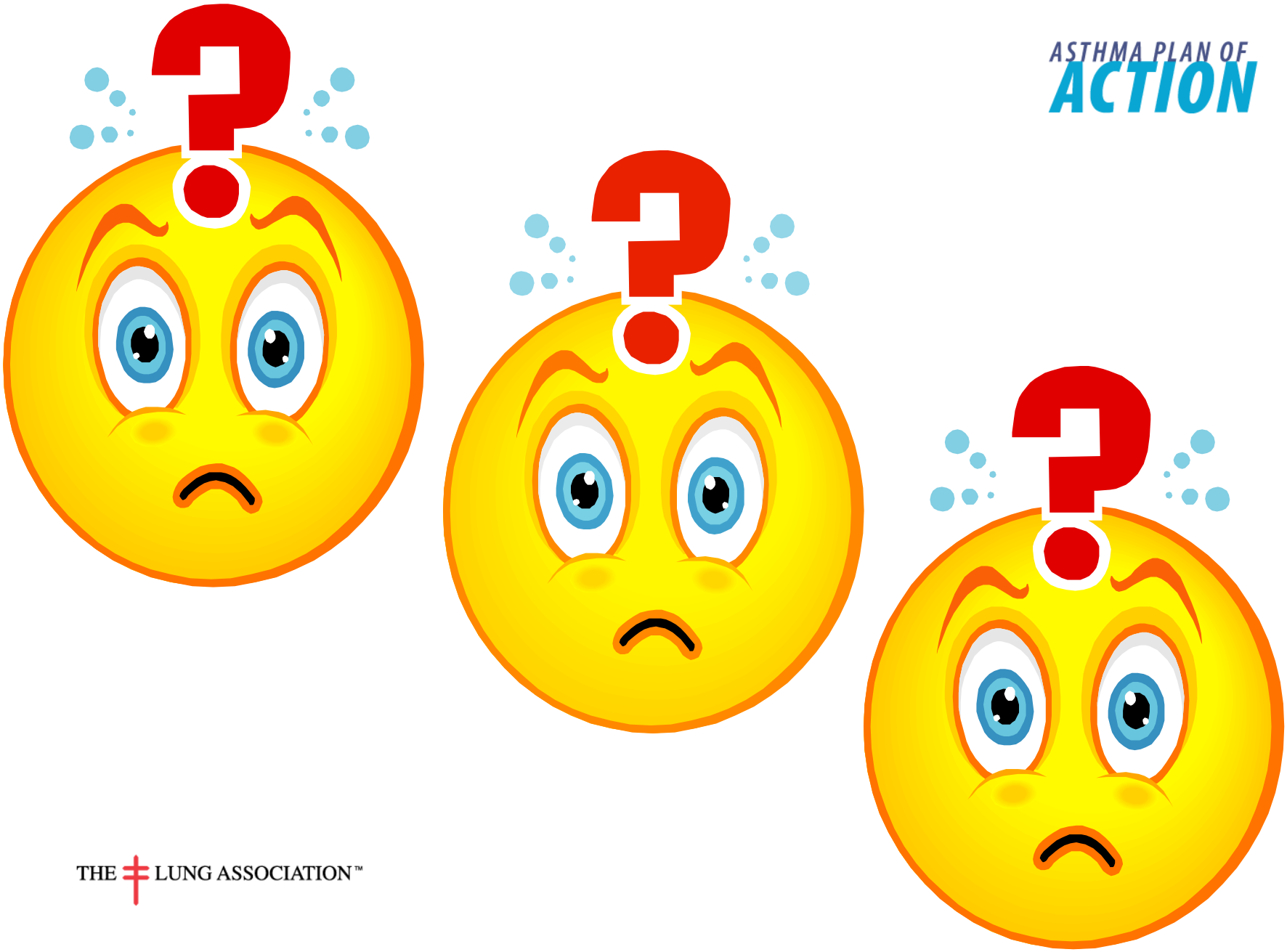
Thank you
Danke
Xie xie
Khawp khun
Yum ópiio
Mahalo
Salamat
Jospadaraña
Obrigada
Spacibo
Arigato

Thank you
Danke
Xie xie
Khawp khun
Yum ópiio
Mahalo
Salamat
Jospadaraña
Obrigada
Spacibo
Arigato

THANK YOU!

THE LUNG ASSOCIATION™

ASTHMA PLAN OF
ACTION



THE LUNG ASSOCIATION™