Alberta Health Services

PROTOCOL

TITLE
ASTHMA EXACERBATION - ADULT

SCOPE
Provincial: Emergency Departments and Urgent Care Centres; Correctional Health Care

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NOTE: The first appearance of terms in bold in the body of this document (except titles) are defined terms – please refer to the Definitions section.

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OBJECTIVES

- This protocol is intended for **adult patients** who present to an Emergency Department (ED) or Urgent Care Centre (UCC) with signs and symptoms of acute asthma exacerbation.
- To assist **health care professionals** when implementing specific diagnostics, therapeutics, and interventions for patients, prior to the initial Physician or Nurse Practitioner (NP) assessment and in accordance with the patient's continuum of care.
- This protocol may be implemented when there is a delay in the initial Physician or NP assessment.

APPLICABILITY

Compliance with this document is required by all Alberta Health Services employees, members of the medical and midwifery staffs, students, volunteers, and other persons acting on behalf of Alberta Health Services (including contracted service providers as necessary).

ELEMENTS

1. Points of Emphasis

1.1 Screen patient for influenza-like illness and consider isolation precautions.

1.2 Immediately notify the Physician or NP of any patient who is in severe or life-threatening respiratory distress.

1.3 A patient-specific **order** from an **authorized prescriber** is required to implement this protocol. This order would authorize the administration of all medications within this protocol.

1.4 Where available, Respiratory Therapy should be consulted early for assessment and treatment of these patients.

1.5 Bronchodilators should be administered via a metered dose inhaler (MDI) with a spacer (mask or mouthpiece).

1.6 The patient's clinical condition and response to interventions will determine the number of subsequent treatments within the parameters of this protocol (refer to Section 5 below), that will be required.

2. Inclusion Criteria

2.1 Adult patients who:

a) have been previously diagnosed as asthmatic and are currently symptomatic; or

b) an asthmatic patient that remains symptomatic (e.g., wheezy) after a salbutamol/ipratropium treatment that has been initiated prior to arrival.

3. Exclusion Criteria

3.1 Any <u>one</u> (1) of the following are exclusion criteria for the patient:

a) severe or life-threatening respiratory distress or severe class of asthma (refer to Appendix A below);

b) less than 18 years of age;

c) not previously diagnosed with asthma and present to the ED, UCC, or Emergency Medical Services (EMS) with their first episode of wheezing;

d) known pre-existing cardiac condition;

e) known chronic hypercapnia (a carbon dioxide [CO2] retainer);

f) known congenital upper airway conditions (e.g., tracheoesophageal fistulas);

g) heart rate greater than 150 beats per minute; or

h) allergy or previous adverse reaction to salbutamol or ipratropium.

(i) If patient has an allergy to or contraindication for use of prednisone, then consult with a Physician or NP.

4. Assessment

4.1 Place the patient into the most appropriate treatment space.

4.2 A complete nursing assessment is required including Provocation, Quality, Radiation, Severity, and Time (PQRST) assessment of the pain and associated symptoms. Obtain a full set of vital signs including blood pressure, temperature, pulse, respiratory rate, and oxygen saturation (refer to the Alberta Health Services [AHS] *Assessment and Reassessment of Patients* Guideline [ESCN]).

4.3 Patient assessment should include, but is not limited to:

a) pre- and post-treatment peak expiratory flow rate (PEFR);

b) signs and symptoms of respiratory distress including, but not limited to:

(i) shortness of breath (SOB);

(ii) increased work of breathing;

(iii) accessory muscle use;

(iv) speaking one (1) to two (2) word sentences;

(v) decreased air entry and/or tight, non-productive cough; and/or

(vi) presence of wheezes on auscultation (inspiratory/expiratory); and

c) patient reassessment post treatments and/or interventions.

5. Interventions

5.1 The health care professional shall:

a) maintain the patient's peripheral oxygen saturation of 92% - 96%;

b) administer one (1) puff every 30 seconds into the spacer with mouthpiece or mask. Each treatment consists of:

(i) four (4) puffs of salbutamol; and

(ii) four (4) puffs of ipratropium;

c) consult with the Physician or NP as appropriate, for any patient who cannot tolerate MDI treatments, whose condition worsens, or if the patient's heart rate exceeds 150 beats per minute;

d) repeat the sequence of treatments in Section 5.1(b) above every 20 minutes after the first treatment is completed, for a total of three (3) treatments that should take approximately 60 minutes;

e) administer prednisone 50 milligrams (mg) orally following the initial MDI treatment, provided:

(i) the patient has not already received an oral corticosteroid from an EMS Advanced Care Paramedic or has taken their own oral corticosteroid on that day;

(ii) there is no history of allergy or other contraindication; and

(iii) consult with the Physician or NP if the patient has an allergy or contraindication for use of prednisone; and

f) notify the Physician or NP if:

(i) interventions are ineffective after the complete course of treatment; or

(ii) if the patient's symptoms worsen at any time.

6. Documentation

6.1 The health care professional shall document implementation of this protocol, all assessments, treatments, medication administration, and reassessments on the patient's **health record**.

a) All orders shall be entered on the health record as per local practices.

b) Medication administered shall include the signature and designation of the health care professional who administered the medication.

7. Special Considerations

7.1 For any patient who has received treatment and chooses to leave the ED or UCC prior to Physician or NP assessment, the health care professional should:

a) strongly encourage the patient to stay and be assessed by the Physician or NP;

b) notify the Physician/NP of the patient's choice to leave;

c) provide educational resources (e.g., asthma exacerbation handout);

d) complete appropriate documentation (e.g., AHS *Patients Leaving the Emergency Department/Urgent Care Centre without Seeing a Doctor or Against Medical Advice* Form) as per site processes; and

e) document this encounter, advice given, potential consequences of leaving against medical advice, and instructions provided to the patient on the health record.

DEFINITIONS

Adult means a person aged 18 years and older.

Authorized prescriber means a health care professional who is permitted by federal and provincial legislation, their regulatory college, Alberta Health Services, and practice setting (where applicable) to prescribe medications.

Health care professional means an individual who is a member of a regulated health discipline, as defined by the *Health Disciplines Act* (Alberta) or the *Health Professions Act* (Alberta), and who practises within scope or role.

Health record means the collection of all records documenting individually identifying health information in relation to a single person.

Order means a direction given by a regulated health care professional to carry out specific activity(-ies) as part of the diagnostic and/or therapeutic care and treatment to the benefit of a patient. An order may be written (including handwritten and/or electronic), verbal, by telephone or facsimile.

Patient means all persons, inclusive of residents and clients, who receive or have requested health care or services from Alberta Health Services and its health care providers. Patient also means, where applicable: a) a co-decision-maker with the person; or b) an alternate decision-maker on behalf of the person.

REFERENCES

- Appendix A: *Guide to Clinical Grading of Asthma Exacerbations 1*
- Alberta Health Services Governance Documents:
  - *Assessment and Reassessment of Patients* Guideline (#HCS-181- 01)
  - *Consent to Treatment/Procedure(s)* Policy (#PRR-01)
  - *Medication Administration* Policy (#HCS-244)
  - *Patients Who Leave Against Medical Advice* Protocol (#HCS-09-13)
  - *Patients Who Leave Without Being Seen by Emergency Department Physician* Protocol (#L-2)
- Alberta Health Services Forms:
  - *Patients Leaving the Emergency Department/Urgent Care Centre without Seeing a Doctor or Against Medical Advice* Form (#103599)
- Alberta Health Services Resources:
  - *Asthma, Adult – Emergency V 1.1 Clinical Knowledge Topic*
  - *Provincial Drug Formulary*
  - *Spacer Decision Support Guideline Respiratory Clinical Resource (January 2018)*
  - *Therapeutic Interchange Supplemental Information: Nebule to Metered Dose Inhaler (MDI) with Spacer (August 2018)*
  - *Who Needs an N95 Respirator?*
- Non-Alberta Health Services Documents:
  - *Lexicomp Albuterol/Salbutamol (Ventolin)*
  - *Lexicomp Ipratropium (Atrovent)*
  - *Lexicomp Prednisone*

- *Metered Dose Inhaler use* - Lippincott Procedures
- *Peak flow meter use, ambulatory care* - Lippincott Procedures

APPENDIX A

Guide to Clinical Grading of Asthma Exacerbations 1

Table 1: Guide to clinical grading of asthma exacerbations 1

Severity	Mild	Moderate	Severe	Life Threatening
Symptoms	Dyspnea with activity	Dyspnea interferes with or limits usual activity	Dyspnea at rest, interferes with conversation	Too dyspneic to speak
Physical Exam	Usually no accessory muscle use; moderate wheeze	Accessory muscle use common; loud wheezes	Accessory muscle use; loud wheezes; usually agitated	Paradoxical thoracoabdominal movement; drowsy; absent wheezes
PEFR (% predicted.)	Greater than 70%	40 to 69%	Less than 40%	Less than 25% (but typically not measured)
Heart Rate (HR)	Less than 100 bpm	100 to120 bpm	Greater than 120 bpm	Greater than 120 bpm, but may be bradycardic
O_2 Sat (room air)	Greater than 95%	90 to 95%	May be less than 90%	Less than 90%
PaCO2	Less than 42 mmHg	Less than 42 mmHg	Greater than or equal to 42 mmHg	Greater than or equal to 42 mmHg