Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table of Contents</td>
<td>2</td>
</tr>
<tr>
<td>Checklist for Ordering</td>
<td>4</td>
</tr>
<tr>
<td>Overview of the ED Protocol Initiative</td>
<td>8</td>
</tr>
<tr>
<td>Setting up a Team</td>
<td>9</td>
</tr>
<tr>
<td>Environmental Readiness Assessment</td>
<td>10</td>
</tr>
<tr>
<td>APPENDIX 1 - (The following relevant forms are available)</td>
<td></td>
</tr>
<tr>
<td>i. Environmental Readiness Assessment Worksheet</td>
<td>11</td>
</tr>
<tr>
<td>Stakeholder Engagement</td>
<td>14</td>
</tr>
<tr>
<td>APPENDIX 2 - (The following relevant forms are available)</td>
<td></td>
</tr>
<tr>
<td>i. Memo</td>
<td>15</td>
</tr>
<tr>
<td>ii. Sample Letter to Physicians and Other Stakeholders</td>
<td>16</td>
</tr>
<tr>
<td>iii. Sample Newsletter Article</td>
<td>18</td>
</tr>
<tr>
<td>iv. Sample Poster</td>
<td>19</td>
</tr>
<tr>
<td>v. Key Messages</td>
<td>20</td>
</tr>
<tr>
<td>vi. ED Protocol Initiative Fact Sheet</td>
<td>21</td>
</tr>
<tr>
<td>vii. ED Protocol Initiative Pilot Site and Health Authority Contact List</td>
<td>22</td>
</tr>
<tr>
<td>viii. ED Protocol Initiative Defining Terminology</td>
<td>24</td>
</tr>
<tr>
<td>APPENDIX 2 - (The following relevant forms are available)</td>
<td></td>
</tr>
<tr>
<td>iii. Sample Letter to Physicians and Other Stakeholders</td>
<td></td>
</tr>
<tr>
<td>iv. Sample Poster</td>
<td></td>
</tr>
<tr>
<td>v. Key Messages</td>
<td></td>
</tr>
<tr>
<td>vi. ED Protocol Initiative Fact Sheet</td>
<td></td>
</tr>
<tr>
<td>vii. ED Protocol Initiative Pilot Site and Health Authority Contact List</td>
<td></td>
</tr>
<tr>
<td>viii. ED Protocol Initiative Defining Terminology</td>
<td></td>
</tr>
<tr>
<td>APPENDIX 3 - (The following are available)</td>
<td></td>
</tr>
<tr>
<td>i. Peak Flow Meters, Posters</td>
<td>28</td>
</tr>
<tr>
<td>ii. Space Chamber, Placebo Puffers, Puffer Chart, and Related “How To” Materials</td>
<td>29</td>
</tr>
<tr>
<td>iii. ED Display Tools, 30 Second Asthma Test Tear-Away Sheets, and Posters</td>
<td>30</td>
</tr>
<tr>
<td>iv. Oral Steroids Teaching Sheet</td>
<td>31</td>
</tr>
<tr>
<td>v. Children and Adult Peak Flow Nomogram -</td>
<td>32</td>
</tr>
<tr>
<td>Order Sets</td>
<td>34</td>
</tr>
<tr>
<td>APPENDIX 4 - (The following relevant forms are available)</td>
<td></td>
</tr>
<tr>
<td>i. Asthma Triage Algorithm</td>
<td>35</td>
</tr>
<tr>
<td>ii. Adult Asthma Guidelines</td>
<td>36</td>
</tr>
<tr>
<td>iii. Pediatric Asthma Guidelines</td>
<td>37</td>
</tr>
<tr>
<td>iv. Emergency Asthma Documentation Tool</td>
<td>38</td>
</tr>
<tr>
<td>v. Order Set – CTAS Level 1 – (Page 1 of 2) – double sided</td>
<td>39</td>
</tr>
<tr>
<td>vi. Order Set – CTAS Level 2 &amp; 3 (Page 1 of 2) – double sided</td>
<td>40</td>
</tr>
<tr>
<td>vii. Asthma Statement of Standards Sheet</td>
<td>41</td>
</tr>
<tr>
<td>Patient Education Materials</td>
<td>46</td>
</tr>
<tr>
<td>APPENDIX 5 - (The following resources are available)</td>
<td></td>
</tr>
<tr>
<td>i. Adult Asthma Education Materials</td>
<td>47</td>
</tr>
<tr>
<td>ii. Youth Asthma Education Materials</td>
<td>48</td>
</tr>
<tr>
<td>iii. A Patient's Asthma Primer</td>
<td>49</td>
</tr>
<tr>
<td>iv. Take Charge Take Control</td>
<td>50</td>
</tr>
</tbody>
</table>
## Table of Contents

**Discharge Tools**
- APPENDIX 6 - (The following relevant forms are available) .................................................................52
  - i. Delivery Devices and Dosing for Respiratory Medication - Page 1 of 2 (double sided) ..................54
  - ii. Asthma Diary/Instructions for Using the Peak Flow Meter - ..........................................................56
  - iii. How to Use a Metered Dose Inhaler (Puffer, MDI) Page 1 of 2 (double sided) .............................58
  - iv. How to Use Turbuhaler Page 1 of 2 (double sided) .....................................................................60
  - v. Acute Adult Asthma Management/Oral Steroid Fact Sheet - Patient Information Sheet Page 1 of 2 (double sided) ..............................................................62
  - vi. Acute Pediatric Asthma Management/Oral Steroid Fact Sheet - Patient Information Sheet Page 1 of 2 (double sided) ..............................................................64
  - vii. Community Asthma Care Centre – Helping You Help Yourself - Page 1 of 2 (double sided) ........66
  - viii. Using an Inhaler (coloured poster from Respironics) .................................................................68
  - ix: Respiratory Services Referral Requisition – SAMPLE ..................................................................69

**Training** ........................................................................................................................................70

**Launch** ........................................................................................................................................71

**Data Collection** ............................................................................................................................72
- APPENDIX 7 - (The following relevant forms are available) .................................................................73
  - Data Collection Sheet - Asthma Protocol ...............................................................................................74

**Evaluation** ......................................................................................................................................76
- APPENDIX 8 - (The following relevant forms are available) .................................................................77
  - i. Asthma Toolkit Evaluation for Frontline Staff ....................................................................................78
  - ii. Asthma Toolkit Evaluation for Physicians .........................................................................................80
# Checklist for Ordering

## Stakeholder Engagement

<table>
<thead>
<tr>
<th>Item</th>
<th>Request Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample Letter to Physicians and Other Stakeholders</td>
<td>Request electronic version from <a href="mailto:shelly.koochin@interiorhealth.ca">mailto:shelly.koochin@interiorhealth.ca</a></td>
</tr>
<tr>
<td>Sample Newsletter Article</td>
<td>Request electronic version from <a href="mailto:shelly.koochin@interiorhealth.ca">mailto:shelly.koochin@interiorhealth.ca</a></td>
</tr>
<tr>
<td>Sample Poster</td>
<td>Request electronic version from <a href="mailto:shelly.koochin@interiorhealth.ca">mailto:shelly.koochin@interiorhealth.ca</a></td>
</tr>
</tbody>
</table>

## Triage Teaching

<table>
<thead>
<tr>
<th>Item</th>
<th>Supplier Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED Display Tools, 30 Second Asthma Test Tear-Away Sheets (#92956) and Posters (One pad provided in toolkit)</td>
<td>GlaxoSmithKline Customer Service PHONE: 1 – 800 – 387 – 7374</td>
</tr>
</tbody>
</table>

## ED Department Supplies to Order

<table>
<thead>
<tr>
<th>Item</th>
<th>Availability Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak Flow Meters</td>
<td>Available in IH from eRex (see attached page for models available)</td>
</tr>
<tr>
<td>Space Chambers</td>
<td>Decision to be made at site level – use local RT resource or the nearest Community Asthma Care Centre</td>
</tr>
</tbody>
</table>

## Order Sets

<table>
<thead>
<tr>
<th>Item</th>
<th>Supplier Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency Asthma Documentation Tool CTAS Level 2 and 3</td>
<td>Document Services: <strong>Order #826402</strong></td>
</tr>
<tr>
<td>Physician Order Template for CTAS Level 1 Asthma</td>
<td>Document Services: <strong>Order #826401</strong></td>
</tr>
<tr>
<td>Physician Order Template for CTAS Level 2 or 3 Asthma</td>
<td>Document Services: <strong>Order #826403</strong></td>
</tr>
</tbody>
</table>

## Patient Education Materials

### Yellow Folders – Adult Asthma Education Materials

<table>
<thead>
<tr>
<th>Item</th>
<th>Supplier Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medications – Use as Prescribed</td>
<td></td>
</tr>
<tr>
<td>Do you Have Asthma? Get the answers</td>
<td></td>
</tr>
<tr>
<td>Take Charge Take Control</td>
<td>AstraZeneca John Saunders PHONE: 1– 800-565-5877 Ext. 1111 <a href="http://www.astrazeneca.ca">www.astrazeneca.ca</a></td>
</tr>
<tr>
<td>Pink Folders - Youth Asthma Education Materials</td>
<td></td>
</tr>
<tr>
<td>---------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>☐ Kids - Be a Secret Asthma Agent</td>
<td></td>
</tr>
<tr>
<td>☐ Action Asthma</td>
<td></td>
</tr>
<tr>
<td>Asthma Society of Canada</td>
<td></td>
</tr>
<tr>
<td>PHONE: 1– 866-787-4050, ext 101 (Asthma Educators)</td>
<td></td>
</tr>
<tr>
<td>WEBSITE: <a href="http://www.asthma.ca/corp/services/pdf/AsthmaResourceOrderForm.pdf">http://www.asthma.ca/corp/services/pdf/AsthmaResourceOrderForm.pdf</a></td>
<td></td>
</tr>
<tr>
<td>☐ Asthma in Children</td>
<td></td>
</tr>
<tr>
<td>BC Lung Association</td>
<td></td>
</tr>
<tr>
<td>Kelly Ablog-Morrant</td>
<td></td>
</tr>
<tr>
<td>Director of Health Education and Program Services</td>
<td></td>
</tr>
<tr>
<td>PHONE: 604 – 731 – 5864</td>
<td></td>
</tr>
<tr>
<td>FAX: 604 – 731 – 5810</td>
<td></td>
</tr>
<tr>
<td>EMAIL: <a href="mailto:ablog@bc.lung.ca">ablog@bc.lung.ca</a></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3 Blue Folders Have Been Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sites must order and assemble subsequent folders</td>
</tr>
<tr>
<td>Blue Folders - Patient Discharge Information Packages - to be given to every patient on discharge</td>
</tr>
<tr>
<td>☐ Blue Pocket folders</td>
</tr>
<tr>
<td>Corporate Express: Order # ESS51743</td>
</tr>
<tr>
<td>☐ Delivery Devices and Dosing for Respiratory Medication</td>
</tr>
<tr>
<td>Document Services: Order #828120</td>
</tr>
<tr>
<td>☐ Asthma Diary/Instructions for Using the Peak Flow Meter</td>
</tr>
<tr>
<td>Document Services: Order #828117</td>
</tr>
<tr>
<td>☐ How to Use a Metered Dose Inhaler (Puffer, MDI)</td>
</tr>
<tr>
<td>Document Services: Order #801524</td>
</tr>
<tr>
<td>☐ How to use a Turbuhaler</td>
</tr>
<tr>
<td>Document Services: Order #801557</td>
</tr>
<tr>
<td>Patient Information Acute Asthma Handout Sheets</td>
</tr>
<tr>
<td>☐ Acute Adult Asthma Management/Oral Steroid Fact Sheet</td>
</tr>
<tr>
<td>Document Services: Order #828096</td>
</tr>
<tr>
<td>☐ Acute Pediatric Asthma Management/Oral Steroid Fact Sheet</td>
</tr>
<tr>
<td>Document Services: Order #828095</td>
</tr>
<tr>
<td>☐ Community Asthma Centre Pamphlet - Helping You Help Yourself</td>
</tr>
<tr>
<td>Document Services: Order #828099</td>
</tr>
<tr>
<td>☐ Using an Inhaler - coloured poster - Respirationics Order</td>
</tr>
<tr>
<td>Respirationics - Order #101134 1-800-345-6443 Select International</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Data Collection Sheet</td>
</tr>
<tr>
<td>Request electronic version from <a href="mailto:valerie.davis@interiorhealth.ca">mailto:valerie.davis@interiorhealth.ca</a></td>
</tr>
<tr>
<td>☐ Asthma Toolkit Evaluation for Frontline Staff</td>
</tr>
<tr>
<td>Request electronic version from <a href="mailto:shelly.koochin@interiorhealth.ca">mailto:shelly.koochin@interiorhealth.ca</a></td>
</tr>
<tr>
<td>☐ Asthma Toolkit Evaluation for Physicians</td>
</tr>
<tr>
<td>Request electronic version from <a href="mailto:shelly.koochin@interiorhealth.ca">mailto:shelly.koochin@interiorhealth.ca</a></td>
</tr>
<tr>
<td>Item Number</td>
</tr>
<tr>
<td>-------------</td>
</tr>
<tr>
<td>086246</td>
</tr>
<tr>
<td>086720</td>
</tr>
<tr>
<td>092656</td>
</tr>
<tr>
<td>131757</td>
</tr>
<tr>
<td>117535</td>
</tr>
<tr>
<td>420150</td>
</tr>
<tr>
<td>415852</td>
</tr>
<tr>
<td>420153</td>
</tr>
<tr>
<td>000721</td>
</tr>
<tr>
<td>Item</td>
</tr>
<tr>
<td>------</td>
</tr>
<tr>
<td>104489</td>
</tr>
<tr>
<td>054438</td>
</tr>
<tr>
<td>000766</td>
</tr>
<tr>
<td>014443</td>
</tr>
<tr>
<td>036525</td>
</tr>
</tbody>
</table>
Overview of the ED Protocol Initiative

Protocols and guidelines1 are being published for Emergency Department (ED) clinical conditions at an increasing rate. As all ED staff know, clinical guidelines/protocols make good sense, ensuring that the best care possible is provided for the patient. However, there is no standardized effective process in BC by which guidelines can be screened, reviewed, and adopted into ED clinical practice. Nor are there support mechanisms for ED teams to develop the necessary materials, educational programs, and order sets.

The ED Protocol Initiative will provide these kinds of support. An ED Protocol Working Group (EDPWG) whose membership includes physicians, nurses, respiratory therapists and guideline implementation experts has developed a toolkit to streamline the management of asthma. Its goal is to create an easy-to-use implementation process that will allow EDs to incorporate the latest clinical guidelines into day-to-day patient care management. Initially, six sites were involved in piloting the asthma protocol process2. After the pilot site evaluation, the implementation process and toolkit was revised based on the feedback from key stakeholders. This updated toolkit has been provided to assist health authorities to spread the asthma protocol throughout all EDs in British Columbia. This toolkit is NOT meant to be prescriptive but instead provides user-friendly tools, which can be used to streamline the implementation process.

The ED Protocol Initiative is a key project within the larger Provincial Emergency Services Project (PESP), a collaborative, province-wide project aimed at making system-wide improvements to BC’s emergency services system.

---

1 See Appendix Two, Defining Terminology for a discussion on “protocols” and related terms (located under Stakeholder Engagement– Appendix viii)

2 See Appendix Two, Pilot Site and Health Authority Contact Information (located under Stakeholder Engagement– Appendix vii)
## Setting up a Team

Experience has shown that involving staff responsible for hands-on delivery of care is central to successful development and use of protocols. You will want your team to represent all clinical and non-clinical staff involved in care delivery to ensure the process reflects a broad range of experience and opinions. Although there are no hard and fast rules about team size, large groups can be difficult to get together – the optimal number may be two or three for rural sites between six and ten for urban sites.

In setting up the team, consider including the following roles, bearing in mind some people may fill more than one role. The EDPWG has attempted to streamline the process as much as possible to save you time. The time commitments provided are estimates only and will vary substantially from site to site depending on the size and complexity of the site and the structures and systems that are in place.

<table>
<thead>
<tr>
<th>Role:</th>
<th>Responsibilities:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurse Project Leader</td>
<td>− Take a leadership role in the project&lt;br&gt;- Maintain momentum for the project&lt;br&gt;- Liaise with the physician project leader regarding overall implementation.&lt;br&gt;- Lead project communications</td>
</tr>
<tr>
<td></td>
<td>− Present information to clinical ED staff&lt;br&gt;- Collate informal feedback on prep and toolkits&lt;br&gt;- Present updates on the status of the program to the Corporate Emergency Services Group.&lt;br&gt;- Ensure integration with clinical audit</td>
</tr>
<tr>
<td>Physician Project Leader</td>
<td>− Take a leadership role in the project&lt;br&gt;- Maintain project momentum&lt;br&gt;- Liaise with the nurse project leader on overall implementation&lt;br&gt;- Assist with project communications to physician group</td>
</tr>
<tr>
<td></td>
<td>− Coordinate the delivery of a pre-packaged education program&lt;br&gt;- Collate informal feedback from the physician group on the toolkit&lt;br&gt;- Present information to MAC as required</td>
</tr>
<tr>
<td>Other clinical users of the protocol (respiratory therapists, GPs, pediatricians and respirologists)</td>
<td>− Evaluate and provide constructive feedback of the toolkit</td>
</tr>
<tr>
<td>Nurse educator (nurse manager or CNE)</td>
<td>− Work with Project Leader for dissemination of education materials as required.</td>
</tr>
<tr>
<td>Data collection (medical records)</td>
<td>− Present information to clinical ED staff&lt;br&gt;- Collate informal feedback on prep and toolkits&lt;br&gt;- Present updates on the status of the program to the Corporate Emergency Services Group.</td>
</tr>
</tbody>
</table>

| Other clinical users of the protocol (respiratory therapists, GPs, pediatricians and respirologists) | − Evaluate the rollout of the Asthma Protocol from an Education perspective. |

| Data collection (medical records) | − Collate data and initially provide monthly (or as determined) to nurse and physician project leads |
Environmental Readiness Assessment

The organizational context of the ED has a significant effect on the implementation of protocols. Prior to implementing the asthma protocol, we recommend that you perform an environmental readiness assessment at your site. An environmental readiness assessment is important to evaluate the following areas: structure, leadership, culture, quality management and availability of resources because it facilitates the identification of barriers and enabling factors for each of these areas. An easy to follow template is provided in Appendix 1 (next page). Once the assessment is complete, use the information to identify further potential barriers and facilitators, and to develop strategies to overcome the barriers and capitalize on the facilitators to ensure a successful project. Completion of the Environmental Readiness Assessment Worksheet will be expected to be completed within one-week following the orientation to the toolkit.

**Faxed copies can be sent to Brenda Gilroy @ 250-545-5602**

If you prefer an electronic version, please contact shelley.koochin@interiorhealth.ca.
APPENDIX 1 – (The following relevant forms are available)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>i. Environmental Readiness Assessment Worksheet</td>
<td>12</td>
</tr>
</tbody>
</table>

...
i. Environmental Readiness Assessment Worksheet

Implementation of Clinical Practice Guidelines in the Emergency Department
Environmental Readiness Assessment

We are in the process of planning for the roll out of the provincial Emergency department Asthma Protocol and would like to complete a brief site assessment to determine your sites readiness to participate. When implementing change context has a significant effect on the success of the implementation. When assessing environmental readiness it is important to evaluate the following areas: structure, leadership, culture, quality management and availability of resources. We would like to, with your help, begin looking at factors that will facilitate the process and enable it or act as barriers to the implementation.

Would you please complete the following questions for the implementation team and forward the completed table to Brenda Gilroy at Brenda.Gilroy@interiorhealth.ca or fax to 250-545-5602

<table>
<thead>
<tr>
<th>Element/Leader</th>
<th>Questions/Area of Discussion</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physician Champion</strong></td>
<td>□ Who will be your physician lead for this project?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ Related to the implementation and initiation of this protocol what do you see as barriers for physicians?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ What do you see as key “buy-in” elements?</td>
<td></td>
</tr>
<tr>
<td><strong>Departmental Manager</strong></td>
<td>□ Who is the departmental Manager (nurse leader)?</td>
<td></td>
</tr>
<tr>
<td>Element/Leader</td>
<td>Questions/Area of Discussion</td>
<td>Responses</td>
</tr>
<tr>
<td>----------------</td>
<td>------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td><strong>Element/Leader</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ Is the nurse leader committed to change?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ What are the potential constraints?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ What strengths do you see from your team related to protocol implementation?</td>
<td></td>
</tr>
<tr>
<td><strong>Staff</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ Can you identify an individual who will be responsible for collection of a few key data elements for the purpose of evaluation?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ Do you have an on site clinical educator or a staff member identified to provide assistance to or in- service staff?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ Who is your clinical onsite contact for implementation of this protocol?</td>
<td></td>
</tr>
<tr>
<td><strong>Site Characteristics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ What do you see as barriers for implementation?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ Have you experienced significant and ongoing external or internal change?</td>
<td></td>
</tr>
</tbody>
</table>
Stakeholder Engagement

Stakeholder engagement is an important determinant of the success of your protocol implementation. Stakeholders are those individuals, groups or organizations that have a vested interest in the implementation of the asthma protocol, and who can positively or negatively influence the implementation process. The purpose of engaging stakeholders is to maximize association with “champion” stakeholders and to minimize the influence of stakeholders who may not be onside. The purpose of your communication with some stakeholders may go beyond getting or keeping them onside. For example your Quality Improvement Committee and Medical Advisory Committee may need to approve the order sets, and/or your medical records department may need to adapt them to fit their system. This will vary from site to site.

The EDPWG is undertaking stakeholder engagement at a provincial level (for instance contacting professional associations and committees, the Ministry of Health, the BC Lung Association, the BCMA-MoH Guideline and Protocol Advisory Committee, etc.)

In terms of local stakeholder engagement, we recommend you provide information to the following groups and individuals – please add to the list as necessary. A number of sample communications pieces, which were found to work well for the pilot sites are provided for you in Appendix 2 (next page). These pieces include a sample letter, memo, newsletter, and key messages that you can adapt to suit your sites needs. Your communications department may also have existing communications strategies or tools in place that will aid you in engaging stakeholders.

<table>
<thead>
<tr>
<th>Stakeholders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality Improvement Committee</td>
</tr>
<tr>
<td>Medical Advisory Committee</td>
</tr>
<tr>
<td>ED physicians, nurses and other staff</td>
</tr>
<tr>
<td>Specialists (e.g. respirologists, pediatricians)</td>
</tr>
<tr>
<td>ED admitting clerks</td>
</tr>
<tr>
<td>Nurse educators</td>
</tr>
</tbody>
</table>
### APPENDIX 2 – (The following relevant forms are available)

<table>
<thead>
<tr>
<th>Appendix</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>i.</td>
<td>Memo</td>
<td>15</td>
</tr>
<tr>
<td>ii.</td>
<td>Sample Letter to Physicians and Other Stakeholders</td>
<td>16</td>
</tr>
<tr>
<td>iii.</td>
<td>Sample Newsletter Article</td>
<td>18</td>
</tr>
<tr>
<td>iv.</td>
<td>Sample Poster</td>
<td>19</td>
</tr>
<tr>
<td>v.</td>
<td>Key Messages</td>
<td>20</td>
</tr>
<tr>
<td>vi.</td>
<td>ED Protocol Initiative Fact Sheet</td>
<td>21</td>
</tr>
<tr>
<td>vii.</td>
<td>ED Protocol Initiative Pilot Site and Health Authority Contact List</td>
<td>22</td>
</tr>
<tr>
<td>viii.</td>
<td>ED Protocol Initiative Defining Terminology</td>
<td>24</td>
</tr>
</tbody>
</table>

The following relevant forms are available:

- Memo
- Sample Letter to Physicians and Other Stakeholders
- Sample Newsletter Article
- Sample Poster
- Key Messages
- ED Protocol Initiative Fact Sheet
- ED Protocol Initiative Pilot Site and Health Authority Contact List
- ED Protocol Initiative Defining Terminology
i. Memo

Interior Health

MEMORANDUM

Bus: (250) 851-7383  Corporate Director, Emergency Services
Fax: (250) 851-7339  Interior Health Authority
Email: sue.carpenter@interiorhealth.ca  519 A Columbia St.
Web: interiorhealth.ca  Kamloops, BC    V2C 2T8

To:  Community Administrators
cc:  Chief Operating Officers
     Medical Directors

From:  Sue Carpenter, Corporate Director, IHA Emergency Services

Date:  September 21, 2005

RE:  ACUTE ASTHMA ED PROTOCOL INITIATIVE

As part of the performance agreement between the MOH and Interior Health, included in the Provincial Emergency Services Project (PESP) Charter, we are required to implement a Provincial Asthma Protocol in all sites across Interior Health this fiscal year. We have been involved in the development of this Asthma Protocol from the beginning and two sites were involved in the initial pilot and evaluation of this protocol including Nakusp and Kelowna.

To accomplish this implementation we are requesting your support while the Emergency Services Team introduce and commence the roll out or spread of this information across IH. We would like each site to identify a clinical lead that will act as a primary contact for this project. The contact will be required to provide ongoing clinical leadership related to the dissemination of site-specific information and processes. The clinical leads will be required to spend some additional time to provide some training, data collection and support to staff. Initial information and orientation sessions will be held for physicians, nurses and respiratory techs by Emergency Services and a “tool kit” will be provided to assist in the roll-out process. Emergency Services staff will be available to support this initiative.

In addition to the clinical lead, a physician lead or contact is requested to assist the implementation. Would you please provide the name of your clinical and physician leader to Brenda Gilroy, Clinical Leader of Emergency Education, by September 30th, 2005.

Thank you.

(please see attached background information)
Background Information

Protocols are being published at an increasing rate. In the past, there has not been a coordinated approach by which these guidelines could be screened, reviewed and adopted into practice. As part of its mandate to improve access, utilization and effectiveness of the emergency system in B.C., the Provincial Emergency Services Group (PESP) is committed to developing a consistent and standard approach to patient care in emergency departments across British Columbia.

To facilitate the introduction of protocols on a province-wide basis, an Emergency Department Protocol Working Group (EDPWG) was established with a mandate to identify two high volume and high risk clinical protocols, to develop tool kits for their implementation and to develop a province-wide implementation strategy. The EDPWG identified the acute asthma management as the first protocol initiative which was piloted at 6 ED’s throughout BC during the winter of 2005.

The goal of the protocol initiative is to allow emergency departments to incorporate the latest clinical guidelines into day-to-day patient care management in an effective, coordinated, and efficient way. Benefits include improving consistency of best practice and introducing performance indicators into everyday clinical practice.

As a result of the success of the pilot project, this protocol will now be implemented throughout the 92 sites across BC. In Interior Health, the Corporate Emergency Services team is taking the lead in assisting your facility to roll-out this protocol.

If you have any questions or require further information please call either:

Brenda Gilroy, Clinical Leader, Emergency Education @ 250-558-1259
Sue Carpenter, Corporate Director, Emergency Services @ 250-851-7383

Thank you.

Sue Carpenter
ii. Sample Letter to Physicians and Other Stakeholders

Project lead to revise as appropriate.

Dear (personalize as appropriate):

Along with all ninety-two emergency departments in BC, the (specific hospital) emergency department is participating in a provincial project – the *ED Protocol Initiative* – to introduce an acute asthma protocol into ED practice.

I am leading a team of health professionals who will oversee the project in our hospital with the assistance of a provincial ED Protocol Working Group, comprised of reps from all health authorities. The Working Group has developed a toolkit of resources to assist in the implementation of the protocol, which was evaluated in the spring of 2005 and is now being spread to all EDs in the province.

Attached for your information are the order sets we are using, as well as a fact sheet about the initiative. If after reviewing the documents you have any questions or comments, please feel free to call me at (contact information)

(Sign-off)
***Sample Newsletter Article***

The following template article can be adapted as necessary and submitted to your communications department for production in appropriate materials.

**(Name of hosp)** to Participate in Emergency Department Project

The emergency department is joining all ninety-two EDs across BC taking part in a provincial project starting this **(month protocol to start)** to implement guidelines for the treatment of acute asthma.

The ED Protocol Initiative, overseen by a working group of representatives from all health authorities, is aimed at improving patient care by providing an easy-to-use process that will allow EDs to incorporate the latest clinical protocols into day-to-day practice. (A “protocol” is a standard and accepted guidelines for handling various conditions in an emergency care setting).

“Protocols and guidelines are being published for ED clinical conditions at an increasing rate, but there is no standardized effective process in BC to screen, review and adopt them into practice,” says (revise quote as appropriate and attribute to physician or nurse project lead), who is leading the team involved in implementing the protocol. The **ED Protocol Initiative** addresses the gap by providing a protocol-specific toolkit containing educational and clinical resources and offering support to a site team throughout the project.

The acute asthma management protocol, which was chosen after consultation with emergency physicians about which protocols will provide the greatest opportunity for improvements in patient care, is the first of such protocols to be rolled out across BC. The asthma protocol and toolkit were assessed in the Spring of 2005 during an eight-week pilot process implemented at six sites across the province including Fort St. Johns, Kelowna, Peace Arch (White Rock), Nanaimo, Nakusp, and Squamish.

The **ED Protocol Initiative** falls under the Provincial Emergency Services Project, a project involving all health authorities, which is aimed at making system-wide improvements to BC’s emergency services system.
iv. Sample Poster

Interior Health

ED PROTOCOL INITIATIVE
AT (insert local information) HOSPITAL

The (name of hospital) emergency department is participating in a provincial project to introduce an acute asthma management protocol into ED practice. The project kicks off on (project start date).

All the hospitals in this province are putting into practice a protocol “toolkit” containing educational and clinical resources to assist in the implementation of the asthma protocol. A provincial working group including reps from all health authorities designed the kit.

Please join us for an education session about the project: (date and details for one to three sessions).

Team leaders for the project are (physician and nurse names). Please contact either of us for more information. (Contact info).


v. Key Messages

You can use the following key messages when talking about or publicizing the *ED Protocol Initiative* within your organization. Feel free to tailor the messages to the specific situation and audience.

1. Protocols are standard and accepted guidelines for handling various conditions in an emergency care setting that are being published for ED clinical conditions at an increasing rate. However, there is no standardized effective process in BC by which these guidelines can be screened, reviewed and adopted into practice; the *ED Protocol Initiative* aims to streamline this process by providing each site with a tool kit of resources.

2. The *ED Protocol Initiative* involves the acute asthma management protocol, which was chosen after consultation with emergency physicians about which protocols will provide the greatest opportunity for improvements in patient care; the protocol was piloted in six EDs in 2005, and is now being implemented throughout the province.

3. The overall goal is to improve patient care as well as outcomes of care by providing an easy-to-use process that will allow EDs to incorporate the latest clinical protocols into day-to-day practice.

4. An *ED Protocol Initiative* working group with representatives from all health authorities is overseeing the initiative; the PWG reports to the steering committee that also oversees the Provincial Emergency Services Project.

5. Throughout the pilot process, the original toolkit and implementation process, originally developed by the ED Protocol Working group, were evaluated and modified incorporating the suggestions of the six pilot site project leaders. A plan was then developed by the working group to implement the protocol throughout the province.
vi. ED Protocol Initiative Fact Sheet

What is the ED Protocol Initiative?
The goal of the ED Protocol Initiative is to assist in the implementation of practice protocols in BC's emergency departments (EDs). A working group has created an easy-to-use implementation process for a high-risk, high volume protocol that will allow EDs to incorporate the latest clinical guidelines into day-to-day patient care management. The process involves a number of communication pieces, educational programs and reminders systems that will significantly reduce the effort and resource requirements at the local level while maintaining the necessary flexibility for adaptation to local needs.

The process was implemented in early 2005 in six BC emergency department “pilot sites” before being evaluated, and revised as appropriate. It is now ready for provincial rollout in all BC EDs.

The ED Protocol Initiative is part of the Provincial Emergency Services Project (PESP), whose purpose is to make system-wide improvements to BC’s emergency services system through building a provincial network of emergency services providers and developing and disseminating “better practice” resources that can be implemented locally.

Why do we need an ED Protocol Initiative?
Protocols and guidelines are being published for ED clinical conditions at an increasing rate. As physicians and ED staff know, clinical guidelines/protocols make good sense, ensuring the best care possible is provided for the patient. However, there is no standardized effective process in British Columbia by which protocols and guidelines can be screened, reviewed and adopted into ED clinical practice – and no support for ED teams to develop the necessary materials, educational programs and template order sets. The ED Protocol Initiative will provide these supports.

Which protocols have been chosen?
The asthma protocol has been chosen for this project after consultation with EDs throughout the province as to the protocol that would provide the greatest opportunity for improvement in patient care.

What were the pilot sites and what were they required to do?
The following hospitals participated in the January 2005 pilot projects:

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fort St. John</td>
<td>Nanaimo</td>
</tr>
<tr>
<td>Kelowna</td>
<td>Peace Arch (White Rock)</td>
</tr>
<tr>
<td>Nakusp</td>
<td>Squamish</td>
</tr>
</tbody>
</table>
The ED Protocol Initiative working group worked with a physician leader and a nurse leader at each site. The working group developed a protocol-specific prep kit and toolkits to assist in the implementation. The project leaders:

- Oversaw the project
- Presented information regarding the project to specific groups such as other physicians and ED staff
- Coordinated the delivery of a pre-packaged education program
- Presented status updates to the ED Protocol Initiative working group
- Collated informal and formal feedback from groups on the toolkit

**What is my site required to do?**

First of all, it is necessary to appoint a physician leader, a nurse leader, and if applicable, and RT leader at your site. These project leaders will:

- Oversee the project
- Review the toolkit contents and arrange them to meet the needs of their site
- Present information regarding the project to specific groups such as physicians, RTs, nurses and any other ED staff
- Coordinate the delivery of an education program tailored to meet the needs of their site

**What is the Provincial Emergency Services Project?**

The Provincial Emergency Services Project (PESP), under which the ED Protocol Initiative falls, was launched in November 2002 as a collaborative, province-wide approach to improve access, utilization, and effectiveness of emergency services throughout BC. The Provincial Health Services Authority – which as one of BC’s six health authorities plans, manages, and evaluates specialty and province-wide health care services – coordinates the PESP on behalf of the health authorities. The Provincial Emergency Services Project is led by the Provincial Critical Services Steering Committee, which is comprised of executive representatives from the health authorities, Ministry of Health Services and other key stakeholders who provide emergency services in BC.

**FOR MORE INFORMATION**

Please contact Brenda Gilroy, Clinical Leader, Emergency Education @ 250-558-1259
## vii. ED Protocol Initiative Pilot Site and Health Authority Contact List

<table>
<thead>
<tr>
<th>Health Authority</th>
<th>Pilot Site</th>
<th>EDPWG Contact</th>
<th>Contact at Pilot Site</th>
</tr>
</thead>
</table>
| Vancouver Island Health Authority | Nanaimo Regional General Hospital | Dr. William Cunningham  
250-709-3000 Local: 4163  
wjcunningham@shaw.ca | Diane Maitland R.N.  
(250) 755-7691 Ext. 2077  
diane.maitland@cvihr.bc.ca  
Dr. Mike Flesher  
250-755-7691 Ext. 2110  
send to Debbie.jones@cvihr.bc.ca |
| Vancouver Coastal Health Authority| Squamish General Hospital         | Dr. Joe Finkler  
604-222-0999  
604-680-3813 (Pager)  
jfinkler@interchange.ubc.ca  
Dr. Grant Innes  
604-806-8480  
ginnes2@providencehealth.bc.ca | Nancy Haffey R.N.  
(604) 892-5211 Ext. 309  
Nancy.Haffey@stschi.org  
Dr. Richard Cudmore  
604-892-3544 or 604-689-9916  
docrc@shaw.ca |
| Fraser Health Authority           | Peace Arch Hospital                | Martha Grypma  
604-535-4500 local 7671  
martha.grypma@fraserhealth.ca  
Karen Thompson  
604-469-3175  
karen.thompson@fraserhealth.ca | Jennifer McDuff R.N.  
(604) 535-4500 ext. 7586  
Jennifer.McDuff@fraserhealth.ca  
Dr. Kerry Yoshitomi  
604-541-7133  
kerry.yoshitomi@fraserhealth.ca |
| Northern Health Authority         | Fort St. John General Hospital     | Dr. John Ryan  
250-564-8982  
John.ryan@northernhealth.ca | Val Lamb R.N.  
1 (250) 262-5231  
vlamb@telus.net  
Claire Musselman  
250-262-5200  
claire.musselman@northernhealth.ca |
| Interior Health Authority         | Kelowna General Hospital           | Donna Mendel  
250-863-4300 ext. 4188  
donna.mendel@interiorhealth.ca | Donna Mendel R.N.  
(contact info same)  
Dr. Wes Woychuk  
(contact n/a) |
| Interior Health Authority         | Arrow Lakes Hospital (Nakusp)       | Donna Mendel  
250-863-4300 ext. 4188  
donna.mendel@interiorhealth.ca | Deborah Austin R.N.  
250-265-3622 Ext. 234  
Deborah.Austin@interiorhealth.ca  
Dr. Norman Lea  
250-265-3694 or 604-265-3622 Ext. 231  
Norm.lea@interiorhealth.ca |
| Provincial Health Services Authority | N/a                                 | Dr. Brian Schmidt  
(604) 675-7457 Phone  
bschmidt@phsa.ca  
Dr. Allan Holmes (consultant)  
604-685-4747  
a.holmes@global-medical.ca | Bev Holmes (consultant)  
604-873-1353  
bevkev@telus.net |
viii. ED Protocol Initiative Defining Terminology

There is some confusion about the terms involved in protocol implementation, and the need for greater clarity has become apparent. At the same time, it is also clear that it is futile to attempt final definitions for such terms. Our intent here is to define the terms that *ED Protocol Initiative* working group is using, and what we mean by them.

The terms we will define here are *guidelines, protocols, care pathways, and procedures*.

Guidelines and protocols are similar in that they are agreed-upon statements of what constitutes best practice to be followed in a particular area of care. Guidelines are usually developed by an expert panel, often at a consensus meeting, and typically focus on clinical content such as diagnostic tests, treatment options or medications. The two key distinctions between *guidelines* and *protocols* are:

Protocols include specific information on *who* carries out key parts of the care/treatment process, and *where* it is carried out (i.e. in what sort of facility); and therefore

Protocols must be developed locally, in order to reflect local service patterns and local staffing/skills arrangements.

In order to be clinically valid, protocols should be based on guidelines that have been through a process to ensure that they represent best clinical practice, based on research evidence. Protocols are in effect the local application – tailored to the local healthcare context – of the guidelines. The essential clinical content (critical questions, decision points and treatment options) of any protocol based on a guideline should be the same.

*Operationalizing* the protocol – or a sequence of protocols – is referred to as the *care pathway*. This is a document used in the delivery of care, forming the clinical record, presenting prompts and questions to be filled in by all relevant healthcare staff, and recording the treatment given (including variations from the “expected” pathway), allowing for review and audit.

Underpinning these terms are *procedures*, which describe detailed steps on how to carry out a particular task, whether clinical or administrative. Procedures may sometimes be incorporated into protocols or care pathways.

The terms that will be employed in the *ED Protocol Initiative* are *protocols* – a “local statement of how things are done” (indexed in a computer database, pinned on the wall, or kept in a ring-binder) and *care pathways* – the photocopied or printed document that gets pulled out of the file and has the individual patient’s name and details written on the front.
Asthma Reference Materials

One key task that must be accomplished in order to successfully implement the asthma management protocol is to create buy-in among all staff members. In order to create buy-in, the pilot sites found it was useful to have easily accessible material demonstrating that this protocol was grounded in best practice. Therefore, we have provided each of the sites with a broad base of reference material for staff wishing access to the original reference materials. The following is a list and brief description of each reference used in the development of the asthma protocol. The complete version of each resource is provided in the Asthma Reference Binder.

**Canadian Asthma Consensus Report (1999):** This is the 64 page, complete Canadian Consensus Report for the diagnosis and optimal management of asthma in adults and children.

**Summary of Report of Recommendations (1999):** This is a 14-page, executive summary of the Canadian Consensus Report recommendations for the diagnosis and optimal management of asthma in adults and children.

**Canadian Guideline Update (2003):** This 20-page guide updates the 1999 Canadian Asthma Consensus Guidelines.

**British Guideline on the Management of Asthma (2004):** This 95 page guideline outlines the diagnosis and optimal management of asthma in adults and children.

**British Guideline on the Management of Asthma- PowerPoint Presentation (2004):** Teaching tool summarizing the British Guidelines

**Position Statement from BC Children’s Hospital:** This document is a summary of the rational for Ventolin and Steroid use in pediatric patient population.

**Sedation and Anxiolysis Guide:** This document contains guidelines for sedating an intubated asthmatic patient.

**See Asthma Reference BINDER**
Triage Teaching Tools

One of the aspects of the asthma management toolkit that pilot sites found very helpful were the availability of triage nurse patient education tools. The following is a list and brief description of each triage-teaching tool provided to the pilot sites. The complete version of each resource is provided in Appendix 3 (next page).

**Lung Display for 30 Second Test** – This resource is a visual model of normal and inflamed lungs. In addition, a take home 30-second asthma test was made available.

**Thirty-Second Asthma Test Tear-Away Sheets** – A small pad bearing sheets displaying the 30-second asthma tests, to be mounted on the 30-second asthma poster.

**Peak Flow Meter** – A peak flow meter was used to demonstrate its use.

**Peak Flow Meter Instruction Poster** – A Poster containing a detailed explanation on how to use a peak flow meter.

**Peak Flow Adult Child Nomogram** (laminated copy provided)

**Placebo Puffers/Diskus Demonstrator** – Allows the triage nurse to demonstrate the proper use of a puffer.

**Respiratory Inhaler Quick Reference Guide** – A visual guide to various types of asthma puffers.

**Space Chamber** - Allows the triage nurse to demonstrate the proper use of the space chamber.

In some cases, these triage-teaching tools have been provided for you. In other cases, the resources have been provided by organizations such as the BC Lung Association and you will need to contact them directly for additional copies, Appendix 6 contains the necessary contact information.

See Appendix 3 Triage Teaching Tools
See Appendix 6 Contact Information to Access Triage Teaching Tools

One set provided for toolkit. Free additional copies can be ordered through the contacts listed below:

- Placebo Puffers, Puffer Chart, and Related “How To” Materials
- ED Display Tools, 20 Second Asthma Test Tear-Away Sheets, and Posters (One pad provided in toolkit)

**GlaxoSmithKline**
Subjit Dhdenshaw
Industry Sponsor Representative
PHONE: 1 – 800 – 461 – 7096, ext. 9340
EMAIL: subjit.k.dhdenshaw@gsk.com
**APPENDIX 3 – (The following are available)**

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>i.</td>
<td>Peak Flow Meters, Posters</td>
<td>29</td>
</tr>
<tr>
<td>ii.</td>
<td>Space Chamber, Placebo Puffers, Puffer Chart, and Related “How To” Materials</td>
<td>30</td>
</tr>
<tr>
<td>iii.</td>
<td>ED Display Tools, 20 Second Asthma Test Tear-Away Sheets, and Posters</td>
<td>31</td>
</tr>
<tr>
<td>iv.</td>
<td>Oral Steroids Teaching Sheet</td>
<td>32</td>
</tr>
<tr>
<td>v.</td>
<td>Children and Adult Peak Flow Nomogram -</td>
<td>33</td>
</tr>
</tbody>
</table>
i. Peak Flow Meters, Posters
ii. Space Chamber, Placebo Puffers, Puffer Chart, and Related “How To” Materials
iii. **ED Display Tools, 30 Second Asthma Test Tear-Away Sheets, and Posters**
**iv. Oral Steroids Teaching Sheet**

| Oral Steroids  
| Prednisone and Prednisolone |

**How they work:**
- Used to treat severe asthma attacks
- Reduce swelling and mucous build-up in the airways

**Common Side Effects:**
- Side effects are dependant on the dose and length of time taking the medication:
  - Short Term may cause mood changes, water retention, increased blood sugar, increased appetite, heartburn or indigestion
  - Long Term (months) may cause loss of bone density, skin bruising or cataracts

Use only as prescribed

Oral steroid teaching sheet has been incorporated onto page 2 of:
- Adult Acute Asthma Management
- Pediatric Acute Asthma Management Patient Information Discharge Handouts.
# Children and Adult Peak Flow Nomogram

(For Children 6 years and older)

<table>
<thead>
<tr>
<th>MALE</th>
<th>AGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height (inches)</td>
<td>40</td>
</tr>
<tr>
<td>40</td>
<td>410</td>
</tr>
<tr>
<td>41</td>
<td>410</td>
</tr>
<tr>
<td>42</td>
<td>410</td>
</tr>
<tr>
<td>43</td>
<td>410</td>
</tr>
<tr>
<td>44</td>
<td>410</td>
</tr>
<tr>
<td>45</td>
<td>410</td>
</tr>
<tr>
<td>46</td>
<td>410</td>
</tr>
<tr>
<td>47</td>
<td>410</td>
</tr>
<tr>
<td>48</td>
<td>410</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FEMALE</th>
<th>AGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height (inches)</td>
<td>40</td>
</tr>
<tr>
<td>40</td>
<td>414</td>
</tr>
<tr>
<td>41</td>
<td>414</td>
</tr>
<tr>
<td>42</td>
<td>414</td>
</tr>
<tr>
<td>43</td>
<td>414</td>
</tr>
<tr>
<td>44</td>
<td>414</td>
</tr>
<tr>
<td>45</td>
<td>414</td>
</tr>
<tr>
<td>46</td>
<td>414</td>
</tr>
<tr>
<td>47</td>
<td>414</td>
</tr>
<tr>
<td>48</td>
<td>414</td>
</tr>
</tbody>
</table>

**Children and Adult Peak Flow Nomogram**

A laminated copy has been provided in the Asthma toolkit.

---

**V. Children and Adult Peak Flow Nomogram**

A laminated copy has been provided in the Asthma toolkit.

---

**Godfrey ET A**

BRIT. J. DIS. CHEST 64,5 (1979)**
**Order Sets**

The order sets and documentation tool form the core of the asthma protocol. An example of each is provided in Appendix 4 (next page).

- Asthma Triage Algorithm
- Adult Asthma Guidelines
- Pediatric Asthma Guidelines
- Emergency Asthma Documentation Tool
- Order Set - CTAS Level 1
- Order Set - CTAS Level 2 and 3
- Asthma Statement of Standards Sheet

In IH we have chosen to use a standardized order set format which is based on current best practice to ensure a standardized approach and evaluation of the key data elements determined for this protocol.

You will need to identify and obtain the appropriate approvals/sign-off of the full order sets within your organization before proceeding with the project. Each organization has its own system for delegated authority for such approval. In many cases, this is the Medical Advisory Committee (MAC) or site Emergency Services Committee.

You will also need to work with medical records on the production and incorporation of the order sets into the ED “paper flow.” The plan will be to have the asthma protocol reviewed by the EDPWG within the next two years. Thus, it is recommended that the order set profile its “effective until” date (e.g. December 2007)
APPENDIX 4 – (The following relevant forms are available)

| i. Asthma Triage Algorithm | ...................................................................................................................36 |
| ii. Adult Asthma Guidelines | ....................................................................................................................37 |
| iii. Pediatric Asthma Guidelines | .............................................................................................................38 |
| iv. Emergency Asthma Documentation Tool | ........................................................................................................39 |
| v. Order Set – CTAS Level 1 – (Page 1 of 2) – double sided | .................................................................................................40 |
| vi. Order Set – CTAS Level 2 & 3 (Page 1 of 2) – double sided | .................................................................................................41 |
| vii. Asthma Statement of Standards Sheet | ...........................................................................................................44 |
i. Asthma Triage Algorithm
(Laminated copy provided in toolkit).

Algorithm for patient presenting with shortness of breath/wheezing with a probable diagnosis of asthma

Determine initial treatment algorithm by assigning CTAS level using symptoms, signs and peak flow.

<table>
<thead>
<tr>
<th>SYMPTOMS</th>
<th>MILD</th>
<th>MODERATE</th>
<th>SEVERE</th>
<th>NEAR DEATH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breathless</td>
<td>While walking</td>
<td>While talking(infant – softer, shorter cry, difficulty feeding)</td>
<td>While at rest</td>
<td>Decreasing respiratory effort</td>
</tr>
<tr>
<td>Talking</td>
<td>In sentences</td>
<td>In phrases</td>
<td>In words</td>
<td>Unable to speak</td>
</tr>
<tr>
<td>Alertness</td>
<td>May be agitated</td>
<td>Usually agitated</td>
<td>Usually agitated</td>
<td>Confused or lethargic</td>
</tr>
</tbody>
</table>

**SYMPTOMS**

- **MILD**: While walking
- **MODERATE**: While talking (infant – softer, shorter cry, difficulty feeding)
- **SEVERE**: While at rest
- **NEAR DEATH**: Decreasing respiratory effort

**FUNCTIONAL ASSESSMENT**

- **Sp02 on room air**: > 95%
- **PEFR% predicted or % personal best**: > 200 lpm
- **Time to Nurse Assessment**: 30 minutes
- **Time to Physician Assessment**: 30 minutes
- **Initial Treatment Algorithm**: CTAS Level 3

**SIGNS**

- **Respiratory Rate**: Increased
- **Use of Accessory Muscles**: Usually not
- **Wheeze**: Moderate
- **Pulse/min( Adult )**: < 100

**FUNCTIONAL ASSESSMENT**

- **Sp02 on room air**: > 95%
- **PEFR% predicted or % personal best**: > 200 lpm
- **Time to Nurse Assessment**: 30 minutes
- **Time to Physician Assessment**: 30 minutes
- **Initial Treatment Algorithm**: CTAS Level 3

**FUNCTIONAL ASSESSMENT**

- **Sp02 on room air**: > 95%
- **PEFR% predicted or % personal best**: > 200 lpm
- **Time to Nurse Assessment**: 30 minutes
- **Time to Physician Assessment**: 30 minutes
- **Initial Treatment Algorithm**: CTAS Level 3

CTAS Level 1 - Near death asthma – unable to speak, cyanosis, lethargic/confused, tachycardia or bradycardia, 02 sat < 90%

CTAS Level 2 - Severe asthma is best defined with a combination of objective measures (FEV1, PEFR, O2 saturation) and clinical factors which relate to the severity of symptoms, vital signs and history of previous severe episode. 02 saturation < 90% (02 Saturation <92% child), PEFR < 40% of predicted or previous best, the patient is considered severe and requires prompt treatment and close observation until signs of improvement. In children who are unable to do spirometry, particularly those under age 6, clinical features and 02 saturation are used to estimate severity.

CTAS Level 3 - Mild/moderate SOBOE, frequent cough or night awakening (unable to lie down flat without symptoms) and PEFR 40 – 60 % predicted or previous best and 02 sat > 92-94%. Mild asthma is PEFR > 60% and 02 saturation > 95%. Mild asthmatics can have severe attacks and severe asthmatics can have mild attacks. Some documentation of meds and previous attack patterns (intubated, ICU, frequent admits) can help to identify high-risk individuals. These patients should be placed in an area where they can be observed and re-evaluated, and the patient or family should be advised to report deterioration to the emergency staff.
ii. Adult Asthma Guidelines

Guidelines for Emergency Management of Adult Asthma

**Patient Triage / Initial Assessment**
- RR, HR, use of accessory muscles, auscultation, Shortness of Breath, PEFR, SpO2 (algorithm)
- Add Oxygen to maintain SpO2 > 92%

**CTAS Level 2 (Severe) or 3 (Mild/Moderate)**
- Notify EP/RT (if applicable)
  - **Salbutamol 5.0mg + Ipratropium Bromide 500mcg**
    - Nebulized Rx delivered in 3-5 min
    - Deliver by 12 at 8-8 pm, if SpO2 < 92%
  - OR **Salbutamol 6-8 puffs + Ipratropium Bromide 6 puffs MDI via spacer device**

- Prednisone 50 mg PO (provide info sheet)
- In IH, Prednisone requires a Physician Order

**CTAS Level 1 (Near Death)**
- Place patient in resuscitation room
- Notify the physician and RT (if applicable)
- Follow physician orders and algorithm for CTAS level 1
- Adult Asthma

**Reassess in 20 minutes**
- RR, HR, use of accessory muscles, auscultation, shortness of breath, PEFR, SpO2

**GOOD RESPONSE**
- PEFR > 60% of patient’s normal/predicted
- SpO2 > 92%
- Response sustained 60 minutes post Rx?

- **Yes**
  - Physician to assess patient
  - Prescription given + education/pamphlets given to patient
  - Patient Discharged
    - Referral and follow up with Asthma clinic/educator where available

- **No**
  - INCOMPLETE RESPONSE
    - PEFR 40 - 60% of patient’s normal/predicted
    - SpO2 not improving
    - **Salbutamol 5.0mg OR Salbutamol 6-8 puffs MDI with spacer device Q2H minutes PRN**
    - Up to 3 additional Rx’s
    - **Assess after last required Rx**
    - RR, HR, use of accessory muscle, auscultation, shortness of breath, PEFR, SpO2

**Good Response**
- PEFR 40 - 60% of patient’s normal/predicted
- SpO2 not improving

- **Yes**
  - Continue **Salbutamol 5.0mg OR Salbutamol 6-8 puffs MDI with spacer device Q4H + PRN**
  - **Ipratropium Bromide 500mcg OR Ipratropium Bromide 4 puffs MDI with spacer device Q4H**

- **Assess after 4-6 hours**
- **Patient improved?**
  - **Yes**
  - Discharge
  - **No**
  - Admit

**Draft**
iii. Pediatric Asthma Guidelines

**Guideline for Emergency Management of Pediatric Asthma (Years 2-17)**

**Patient Triage/Initial Assessment**
- RR, HR, use of accessory muscles, auscultation, shortness of breath, PEFR, SpO2
- Add Oxygen to maintain SpO2 > 95%

**CTAS 2 (Severe) or 3 (Mild/Moderate)**
- Notify EP/RT (if applicable)
- **Salbutamol 5.0mg nebulized Rx**
  Delivered with 02 at 6-8 lpm
- OR **Salbutamol 6-8 puffs MDI with spacer device**

**Reassess in 10 minutes**
- RR, HR, use of accessory muscles, shortness of breath, PEFR, SpO2
- Prednisolone 1 mg/kg PO unless contraindicated (to a max of 50 mg) OR if elixir available Dexamethasone 0.2mg/kg OD

**GOOD RESPONSE**
- PEFR > 60% patients normal/predicted
- SpO2 > 95%, colour good
- Respirations regular, unlaboured, Minimal wheezing

Response sustained 60 minutes post Rx?

- **YES**
- Physician to assess patient
  - Prescription given
  - Education/ pamphlets given to family
  - Patient discharged
    - Referral and follow up with Asthma clinic/educator where available

- **NO**
  - Incomplete Response

**INCOMPLETE RESPONSE**
- PEFR 40 - 60% patient's normal/predicted
- SpO2 not improving

Salbutamol 5.0 mg OR Salbutamol 6-8 puffs MDI with spacer device Q20 minutes PRN
- Up to 3 Rx's

Reassess after last required Rx
- RR, HR, use of accessory muscles, auscultation, shortness of breath, PEFR, SpO2

- **NO**
  - Admit
- **YES**
  - Continue Salbutamol 5.0 mg OR Salbutamol 6-8 puffs MDI with spacer device Q2H+PRN
  - Ipratropium Bromide 250mcg OR ipratropium Bromide 2 puffs MDI with spacer device Q4H

Assess after 4-6 hours
- Patient improved?

- **NO**
  - Admit
iv. Emergency Asthma Documentation Tool

**Emergency Asthma Documentation Tool**
CTAS Level 2 and 3

- **Date:**
- **Arrival Time:**

### Triage:
- CTAS Level 2 (Moderate/Severe)  
  Short of breath while talking, SpO2 92-94%, PEFR 40-60% Normal/Predicted
- CTAS Level 3 (Mild)  
  Talking in sentences, SpO2 >95%, PEFR 60% Normal/Predicted

### PEFR on Admission
- [ ] lpm / PEFR Normal / predicted
- [ ] lpm / 60% of PEFR

### Treatment in ED

<table>
<thead>
<tr>
<th>Time</th>
<th>Medication</th>
<th>Dose</th>
<th>Route</th>
<th>Given by</th>
<th>Post-PEFR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Assessment:</td>
<td>RR</td>
<td>HR</td>
<td>SpO2</td>
<td>on work of breathing: ↑ or ↓</td>
<td></td>
</tr>
<tr>
<td>Auscultation:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reassessment:</td>
<td>RR</td>
<td>HR</td>
<td>SpO2</td>
<td>on work of breathing: ↑ or ↓ or unchanged</td>
<td></td>
</tr>
<tr>
<td>Auscultation:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nebulization / Ipratropium Bromide</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nebulization / Ipratropium Bromide</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nebulization / Ipratropium Bromide</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nebulization / Ipratropium Bromide</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### DISCHARGE PLAN

- **Patient Admitted:**  
  - [ ] Y  
  - [ ] N

- **Referral to Asthma Clinic Done:**  
  - [ ] Y  
  - [ ] N

- **If No, Discharge Time:**

### PRESCRIPTION GIVEN ON DISCHARGE

<table>
<thead>
<tr>
<th>Medication</th>
<th>Device</th>
<th>Dose/Frequency</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Salbutamol</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>2. Ipratropium Bromide</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>3. Steroid</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>4. Other</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### TEACHING

- **Discharge pamphlet given:**  
  - [ ] Y  
  - [ ] N

- **Discharge instructions done:**  
  - [ ] Y  
  - [ ] N

- **Device Teaching done:**  
  - [ ] Y  
  - [ ] N

- **Spacer Device Pt. Already has one:**  
  - [ ] Y  
  - [ ] N

---

*826402 Sep 05 effective until Dec 07*
v. Order Set – CTAS Level 1 – (Page 1 of 2) – double sided

Interior Health

Physician Order Template for CTAS Level 1 Asthma

☐ Adult  ☐ Pediatric  (>2 year olds and < 17 years old, with pre-existing diagnosis of asthma)

Date: ___________________  Arrival time: ___________________

Site: ___________________

Diagnosis: Exacerbation of Asthma  Stat Orders (CTAS Level 1)

Allergies: ___________________  ☐ None

Unboxed orders are initiated by default — Boxed order (☐) require physician check to be initiated.

1. Place patient in resuscitation area immediately. Notify physician and RT if available.

2. Oxygen to maintain SpO2
   - Adult > 92%  Peds > 95%

3. Adult – Continuous 5.0 mg Salbutamol / 0.5mg Ipratropium Bronmide by neb until improvement
   - Peds – 5.0 mg Salbutamol, then continuous 5.0 mg Salbutamol / 0.25 mg Ipratropium Bronmide until improvement (Ipratropium max 4 doses)

4. Initiate IV Normal Saline

5. Cardiac Monitor

6. Pulse oximetry

7. Assess for intubation need (suggested medications and ventilation parameters on back of this page); call anesthesia if unfamiliar

8. ☐ Adult – Methylprednisolone 125 mg IV
   ☐ Peds – Methylprednisolone 2 mg/kg IV

9. Portable chest x-ray to rule out pneumothorax/alternate diagnosis

10. If severe exacerbation and poor or no response:
    - ☐ Adult - Magnesium 1-2 g IV over 20 minutes
    - ☐ Peds – Magnesium 25 mg/kg IV over 20 minutes

11. CBC, electrolytes, BUN, CR, glucose

12. Adult - 12 lead ECG

13. ABG after intubation and PRN

14. Referral to Asthma Clinic/Educator

Physician Signature: ___________________

02/24/07  Sep 05 effective until Dec 07

January 23, 2006  IHA Asthma Toolkit  Page 40 of 80


### APPENDIX 4  ORDER SETS

January 23, 2006 IHA Asthma Toolkit Page 41 of 80

---

<table>
<thead>
<tr>
<th>If intubation required:</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. □ Ketamine 1-2 mg/kg IV</td>
</tr>
<tr>
<td>b. □ Succinylcholine 1.5 mg/kg IV or Rocuronium 1 mg/kg IV</td>
</tr>
<tr>
<td>c. □ Adult - Pretreatment with Lidocaine 1.5 mg/kg IV</td>
</tr>
<tr>
<td>□ Peds – Add Midazolam 0.1 mg/kg IV and Atropine 0.02 mg/kg IV</td>
</tr>
</tbody>
</table>

### SUGGESTED INITIAL VENTILATION SETTINGS:

- **I:E**: Optimize with goal of 1:5
- **Mode**: Assist Control (A/C)
- **RR**: < 10
  - To ensure patients are not inappropriately hyperventilated resulting in increased lung hyperinflation.
- **VTeff**: 6-8 mls/kg
  - (Effective Tidal Volume)
  - To minimize VILI (Ventilation-induced Lung Injury) and avoid air trapping. Lower VTeff if patient will tolerate.
- **FiO₂**: 50
  - Adjusted to maintain SaO₂ > 92% (optimally 92-94%)
- **PEEP**: 0 cmH₂O
  - Minimize end expiratory volume. The patient will be paralyzed or heavily sedated, therefore extrinsic PEEP is not required to enable the patient to trigger the ventilator.
- **Inspiratory Flowrate**: 80-120 lpm
  - To allow for maximum exhalation time and minimal autopeep.
- **Waveform**: Optically, square
  - To minimize Paw, maximize expiratory time, and to allow Raw calculations to be accurately trended.
- **Pplat**: < 30-35 cmH₂O
  - To minimize VILI.
- **ABG's**: pH > 7.15 (seek to maintain > 7.20)
  - SaO₂ > 92% (seek to maintain 92-94%)

### NOTES:

1. Consultation with an intensivist/respirologist should be sought early to direct care
2. Allow permissive hypercapnia in ventilated asthmatic patients
3. Consider Isoflurane and/or IV Ventolin in refractory patients

---
vi. Order Set – CTAS Level 2 & 3  (Page 1 of 2) – double sided

Interior Health

Physician Order Template for CTAS Level 2 or 3 Asthma

☐ Adult  ☐ Pediatric  (>2 year olds and < 17 years old, with pre-existing diagnosis of asthma)

Date: ___________________________  Arrival time: ___________________________

Site: ___________________________

Diagnosis: **Exacerbation of Asthma Orders (CTAS Level 2 or 3)**

Allergies: _____________________________________________________________ ☐ None

Unboxed orders are initiated by default — Boxed order (□) require physician check to be initiated.

1. **Adult** - Salbutamol 5.0 mg + Ipratropium Bromide 0.5 mg nebulized with air at 6-8 lpm **OR** Salbutamol 6-8 puffs + Ipratropium Bromide 4 puffs MDI with spacer device  
   **Peds** - Salbutamol 5.0 mg nebulized with O2 at 6-8 lpm **OR** Salbutamol 6-8 puffs MDI with spacer device

2. **Adult** - Nebulize on O2 at 6-8 lpm if SpO2 is < 92%

3. Oxygen to keep SpO2 > 92%

4. ☐ **Adult** - Prednisone 50 mg PO  
   ☐ **Peds** - Prednisolone 1 mg/kg PO OR Dexamethasone 0.2 mg/kg PO

5. **Adult** - Reassessment 20 minutes post-initial treatment  
   **Peds** - Reassessment after 10 minutes

6. If good response, physician to assess for discharge [(response to be sustained for 60 min) indicators listed on reverse]

7. If incomplete response or symptoms persist notify physician and give:  
   **Adult** - Salbutamol 5.0 mg Q 20 min PRN, up to 3 additional treatments **OR** Salbutamol 6-8 puffs MDI Q20 min PRN, with spacer device, up to 3 additional treatments  
   **Peds** - Salbutamol 5.0 mg Q20 min PRN, up to 3 additional treatments **OR** Salbutamol 6-8 puffs Q20 min PRN, MDI with spacer device, up to 3 additional treatments

8. After 3 additional treatments reassess response:  
   a. Good response – consider discharge  
   b. Incomplete response or some persistent symptoms notify physician and give:  
      **Adult** - Salbutamol 5.0 mg Q2H + PRN **OR** Salbutamol 6-8 puffs MDI with spacer device Q2H + PRN  
      **Adult** - Ipratropium Bromide 0.5 mg Q4H **OR** Ipratropium Bromide 4 puffs MDI with spacer device Q4H  
      **Peds** - Salbutamol 5.0 mg Q2H + PRN **OR** Salbutamol 6-8 puffs MDI with spacer device Q2H + PRN  
      **Peds** - Ipratropium Bromide 250 mcg Q4H **OR** Ipratropium Bromide 2 puffs MDI with spacer device Q4H

9. Continue timely reassessment with the decision to admit/discharge in 4-6 hours

10. All patients discharged home to receive Asthma Patient Discharge Package

11. Referral to Asthma Clinic/Educator

12. Discharge with consideration for oral steroid need

Physician Signature: ___________________________________________

826403  Sep 05 effective until Dec 07
1. Reassessment includes: PEFR, SpO2, RR, HR, accessory muscle use, work of breathing, and auscultation.

2. Good response is indicated by the following: PEFR > 60% of patient's normal/predicted, SpO2 > 92%, no distress, respirations are normal, minimal wheeze, free of retractions, colour good, and anxiety managed.

3. Incomplete response is indicated by PEFR 40-60% of patient's normal/predicted, signs, symptoms, and SpO2 not improving.
vii. Asthma Statement of Standards Sheet

STANDARD STATEMENTS FOR TREATMENT OF ADULT AND PEDIATRIC ASTHMA

1.0 INTENT
1.1 To standardize and expedite treatment of mild to severe episodes of asthma for patients in the ED
1.2 To reduce hospital visits to the ED by facilitating follow-up through an Asthma clinic or Asthma Educator
1.3 To evaluate the compliance to completing key performance indicators

2.0 GOVERNING GUIDELINES
2.1 Triage RN to categorize asthmatic patients by severity using established CTAS (Canadian Triage Acuity Scale) criteria for mild, moderate and severe episodes, corresponding to CTAS level 3, 2, 1 respectively
2.2 All pediatric patients must have a pre-existing diagnosis of asthma and be over age 2 to be eligible for the standard order set. In children who are unable to do peak flow, particularly those under age 6, clinical features and O2 saturation are used to estimate severity.
2.3 All adults who demonstrate symptoms outlined in the established CTAS criteria are eligible for the standard order set.
2.4 Patients with symptoms of severe episodes (CTAS Level I) must be moved to the resuscitation area and are to be seen by the emergency physician as soon as possible (immediately if in-house).
2.5 Physician to assess all patients prior to discharge
2.6 Referral to Asthma Clinic/Educator for all patients prior to discharge
2.7 Asthma Clinic/Educator to review referral and follow up with patients after discharge. Asthma clinic to determine means of follow up required

3.0 DEFINITIONS
3.1 CTAS Level 1 - Near death asthma – unable to speak, cyanosis, lethargic/confused, tachycardia or bradycardia, O2 sat < 90%

3.2 CTAS Level 2 - Severe asthma is best defined with a combination of objective measures (FEV1, PEFR, O2 saturation) and clinical factors which relate to the severity of symptoms, vital signs and history of previous severe episode. O2 saturation < 90% (O2 Saturation <92% child), PEFR < 40% of predicted or previous best, the patient is considered severe and requires prompt treatment and close observation until signs of improvement. In children who are unable to do spirometry, particularly those under age 6, clinical features and O2 saturation are used to estimate severity.

3.3 CTAS Level 3 - Mild/moderate SOBOE, frequent cough or night awakening (unable to lie down flat without symptoms) and PEFR 40 – 60 % predicted or previous best and O2 sat > 92-94%. Mild asthma is PEFR > 60% and O2 saturation > 95%. Mild asthmatics can have severe attacks and severe asthmatics can have mild attacks. Some documentation of meds and previous attack patterns (intubated, ICU, frequent admits) can help to identify high-risk individuals. These patients should be placed in an area where they can be observed and re-evaluated, and the patient or family should be advised to report deterioration to the emergency staff.
4.0 REFERENCES
4.1 Vancouver Island Health Authority, Guideline for Emergency Management of Pediatric Asthma.
4.4 CTAS Canadian ED Triage and Acuity Scale. CJEM/JCMC Special Supplement. October 1999.
4.8 CJEM/JCMU 2003; Volume 5, Number 3, 179-209
4.9 CJEM/JCMU 2001; Volume 3, Number 2, April
4.10 Fraser Health Authority. Respiratory Services. Pediatric Asthma Protocol 2.4.40
4.11 Fraser Health Authority. Doctors Order DO:153
4.13 Form #004739, Seven Oaks General Hospital Multidisciplinary Caremap, Asthma Caremap Emergency Department, February 1999.
Patient Education Materials

The IH Community Asthma Care Centre Educators have consensus in recommending a standardized patient discharge information package. (See Discharge Tools).

The Asthma Education Materials, listed below are an example of what your sites can order for additional adult and youth educational materials. An example of each is provided in the toolkit (See order sheet).

The adult educational materials consist of four pamphlets
- Managing Your Environment
- Medications – Use As Prescribed
- A Patient’s Asthma Primer
- Take Charge Take Control

These pamphlets were created jointly by the Asthma Society of Canada, and various industry sponsors.

The youth educational materials also consist of two pamphlets including
- Kids – Be a Secret Asthma Agent
- Action Asthma
- Asthma in Children

A Patient’s Asthma Primer has also been provided. It consists of a nineteen page document developed in association with the Canadian Consensus Guidelines, can act as an in-house resource for patients to review while waiting in the ED (found in Reference Binder).

You may choose to review the patient education materials and compare them to existing resources within your ED, and discuss the added value they provide.
- If your ED has a similar resource already in place, you may decide to continue using your existing tools
- In some instances, you have a choice among several items that serve the same function. You may choose to use all options sequentially during the project or you may want to pre-select one option prior to launch.
- If there is an asthma education centre in your area, it is recommended you discuss with them which discharge and information materials you should distribute in order to avoid duplication

One copy is provided in the toolkit. Free additional copies can be ordered through the contacts listed below:

- Managing your Environment
  - Asthma Society of Canada
    - Diane Johnson
    - PHONE: 1– 866-787-4050, ext 100
    - EMAIL: dianne@asthma.ca

- Medications – Use as Prescribed
- Kids – Be a Secret Asthma Agent
- Action Asthma

- Asthma in Children
  - BC Lung Association
    - Kelly Ablog-Morrant
    - Director of Health Education and Program Services
    - EMAIL: ablog@bc.lung.ca

- A Patient’s Asthma Primer
  - CANADIAN ASTHMA CONSENSUS GUIDELINES
    - www.asthmaguidelines.com

- Take Charge Take Control
  - AstraZeneca
    - John Saunders
    - PHONE: 1– 800-565-5877 Ext. 111
    - www.astrazeneca.ca
APPENDIX 5 – (The following resources are available)

| i. Adult Asthma Education Materials | 48 |
| ii. Youth Asthma Education Materials | 49 |
| iii. A Patient's Asthma Primer | 50 |
| iv. Take Charge Take Control | 51 |
i. Adult Asthma Education Materials
ii. Youth Asthma Education Materials
iii. A Patient’s Asthma Primer

One copy is provided in the toolkit (yellow folder) or you may download version from the address. (Note: this document is 19 pages long)
iv. Take Charge Take Control
**Discharge Tools**

Along with patient education materials, each site was provided with tools to be given to patients. Among these tools are asthma clinic references and related discharge information, adult discharge instructions, pediatric discharge instructions, and a respiratory services referral requisition.

The IH Community Asthma Care Centre Educators have consensus in recommending the following as a discharge from ED package and suggest placing in the (blue folder):

- Delivery Devices and Dosing for Respiratory Medication
- Asthma Diary/Instructions for Using the Peak Flow Meter
- How to Use a Metered Dose Inhaler (Puffer, MDI)
- How to a Turbuhaler
- Patient Information Acute Asthma Handout Sheets
  - Adults - Acute Asthma Management / Oral Steroid Fact Sheet OR
  - Pediatric – Acute Asthma Management/ Oral Steroid Fact Sheet
- Community Asthma Care Centre – Helping You Help Yourself Pamphlet
- Using an Inhaler – Coloured Poster from Respironics

**ORDER INFORMATION AVAILABLE – Page 4 – Checklist for Ordering**

Finally, the respiratory services referral requisition consists of a sample form for the referral of a patient to an asthma clinic. The process for referral to be determined as site specific.
APPENDIX 6 – *(The following relevant forms are available)*

<table>
<thead>
<tr>
<th>i.</th>
<th>Delivery Devices and Dosing for Respiratory Medication – Page 1 of 2 (double sided)</th>
<th>........................................54</th>
</tr>
</thead>
<tbody>
<tr>
<td>ii.</td>
<td>Asthma Diary/Instructions for Using the Peak Flow Meter –</td>
<td>........................................56</td>
</tr>
<tr>
<td>iii.</td>
<td>How to Use a Metered Dose Inhaler (Puffer, MDI) Page 1 of 2 (double sided)</td>
<td>........................................58</td>
</tr>
<tr>
<td>iv.</td>
<td>How to Use Turbuhaler Page 1 of 2 (double sided)</td>
<td>........................................60</td>
</tr>
<tr>
<td>v.</td>
<td>Acute Adult Asthma Management/Oral Steroid Fact Sheet – Patient Information Sheet Page 1 of 2 (double sided)</td>
<td>........................................62</td>
</tr>
<tr>
<td>vi.</td>
<td>Acute Pediatric Asthma Management/Oral Steroid Fact Sheet – Patient Information Sheet Page 1 of 2 (double sided)</td>
<td>........................................64</td>
</tr>
<tr>
<td>vii.</td>
<td>Community Asthma Care Centre – Helping You Help Yourself - Page 1 of 2 (double sided)</td>
<td>........................................66</td>
</tr>
<tr>
<td>viii.</td>
<td>Using an Inhaler (coloured poster from Respironics)</td>
<td>........................................68</td>
</tr>
<tr>
<td>ix.</td>
<td>Respiratory Services Referral Requisition – SAMPLE</td>
<td>........................................69</td>
</tr>
</tbody>
</table>
### Interior Health

#### Delivery Devices and Dosing for Respiratory Medication

<table>
<thead>
<tr>
<th>Trade Name</th>
<th>Generic Name</th>
<th>Device</th>
<th>Colour</th>
<th>Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aironir</td>
<td>Salbutamol Sulfate</td>
<td>MDI</td>
<td>Blue</td>
<td>100 mcg</td>
</tr>
<tr>
<td>Atrovent</td>
<td>Ipratropium Bromide</td>
<td>MDI</td>
<td>Green Cap</td>
<td>20 mcg</td>
</tr>
<tr>
<td></td>
<td>Solution</td>
<td>Nebules</td>
<td>250 mcg/ml</td>
<td></td>
</tr>
<tr>
<td>Berotec</td>
<td>Fenoterol</td>
<td>MDI</td>
<td>Blue Cap</td>
<td>100 mcg</td>
</tr>
<tr>
<td>Bricanyl</td>
<td>Terbutaline Sulfate</td>
<td>Turbuhaler</td>
<td>Blue Base</td>
<td>500 mcg</td>
</tr>
<tr>
<td>Oxeze</td>
<td>Formoterol Fumarate Dihydrate</td>
<td>Turbuhaler</td>
<td>Turquiose Base</td>
<td>6/12 mcg</td>
</tr>
<tr>
<td>Ventolin</td>
<td>Salbutamol Sulfate</td>
<td>MDI</td>
<td>Blue</td>
<td>100 mcg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diskhaler</td>
<td>Blue</td>
<td>200/400 mcg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diskus</td>
<td>Blue</td>
<td>200/400 mcg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Solution</td>
<td>Bottle</td>
<td>5 mg/ml</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nebule</td>
<td>1.25/2.5/5 mg/ml</td>
</tr>
<tr>
<td>Combivent</td>
<td>Ipratropium Bromide</td>
<td>Salbutamol Sulfate</td>
<td>MDI</td>
<td>Orange Cap</td>
</tr>
<tr>
<td></td>
<td>Salbutamol Sulfate</td>
<td>Solutions</td>
<td>Nebule</td>
<td>0.5 mcg</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2.5 mcg</td>
</tr>
<tr>
<td>Foradil</td>
<td>Formoterol</td>
<td>Aerolizer</td>
<td>Blue</td>
<td>12 mcg</td>
</tr>
<tr>
<td>Oxeze</td>
<td>Formoterol Fumarate Dihydrate</td>
<td>Turbuhaler</td>
<td>Turquiose Base</td>
<td>6/12 mcg</td>
</tr>
<tr>
<td>Serevent</td>
<td>Salmeterol Xinofate</td>
<td>MDI</td>
<td>Green</td>
<td>25 mcg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diskhaler</td>
<td>Green</td>
<td>50 mcg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diskus</td>
<td>Green</td>
<td>50 mcg</td>
</tr>
<tr>
<td>Spiriva</td>
<td>Tiotropium Bromide Monohydrate</td>
<td>HandiHaler (capsules)</td>
<td>Grey/Green</td>
<td>18 mcg</td>
</tr>
<tr>
<td>Controller/Anti-Inflammatories</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flovent</td>
<td>Fluticasone Propionate</td>
<td>MDI</td>
<td>Orange</td>
<td>25/50/125/250 mcg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diskus</td>
<td>Orange</td>
<td>50/100/250/500 mcg</td>
</tr>
<tr>
<td>Intal</td>
<td>Sodium Cromoglycate</td>
<td>Spincaps</td>
<td>Orange</td>
<td>20 mcg</td>
</tr>
<tr>
<td>Pulmicort</td>
<td>Budesonide</td>
<td>Turbuhaler</td>
<td>Brown Base</td>
<td>100/200 mcg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nebuamp</td>
<td>Liquid</td>
<td>125/250 mcg</td>
</tr>
<tr>
<td>Qvar</td>
<td>Beclomethasone Dipropionate</td>
<td>MDI</td>
<td>Beige</td>
<td>50 mcg</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Red</td>
<td>100 mcg</td>
</tr>
<tr>
<td>Accolate**</td>
<td>Zafirlukast</td>
<td>Tablet</td>
<td>Taken 2x Daily</td>
<td>20 mg</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Singular**</td>
<td>Montelukast</td>
<td>Tablet</td>
<td>Taken Once Daily</td>
<td>3/4/5/10 mg</td>
</tr>
</tbody>
</table>

#### Combination Inhalers (Controller plus Long Acting Reliever)

| Advair     | Fluticasone Propionate Salmeterol Xinofate | MDI | Purple | 125/250 mcg |
|           | Fluticasone Propionate Salmeterol Xinofate | Diskus | Purple | 25 mcg |
| Symbicort  | Budesonide Formoterol Fumarate Dihydrate | Turbuhaler | Red Base | 100/200 mcg |

#### Oral medications

| Phyllocontin | Aminophylline | Tablet | Bronchodilator | 225/350 mg (12 hr) |
| Uniphyll | Theophylline | Tablet | Bronchodilator | 400/600 mcg (12 hr) |
| Deltason | Prednisone | Tablet | Systemic Steroid | 1/5/50 mg |
| Pedispred | Prednisolone Sodium Phosphate | Solution | Systemic Steroid | 5 mg/5 ml |

MDI (Metered Dose Inhaler) are all CFC-Free (Chlorofluorocarbons) as of 2005.
** Does not contain a Corticosteroid Medication.
Understanding Respiratory Medications

When you breathe, the air travels through airways or breathing tubes in your lungs. These airways are called “bronchial tubes.” Three things happen to your airways because you have asthma:

1. The lining inside gets red, puffy and swollen.
2. A lot of mucus or phlegm is made which clogs the airways.
3. Muscles surrounding the outside of the airways tighten.

When this happens, the size or opening of the airway becomes narrowed and small. Symptoms such as cough, wheeze (musical, whistling sound), chest tightness or heaviness and shortness of breath with or without activity can develop. These changes are treated with the following medications:

Fast Acting Relievers/Rescue Medications:
Relaxes the muscles surrounding the bronchial tubes. By opening up the airways, symptoms are relieved quickly, within 3-5 minutes and lasting 4-6 hours.

- Works quickly to relieve symptoms or sudden attack; known as Rescue Medications.
- Can be used once daily before exercise to prevent the symptoms that occur when exercising.
- Should be kept handy to treat symptoms as they occur.
- Consult with your Physician if treatment is needed 4 or more times per week (except for the one dose daily allowed prior to exercise).

Long-Acting Relievers:
Long-lasting medications that help to keep breathing tubes relaxed and opened for up to 12 hours.

- Is used together with an inhaled corticosteroid medication.
- Taken daily, usually once in the morning and once in the evening.
- Should not be taken for relief of sudden attack.

Controller or Anti-Inflammatory Medications:
Reduces swelling and mucus buildup inside the bronchial tubes.

- Provides asthma control: no nighttime cough or wheeze, less than 4 days a week of cough, wheeze or chest tightness, normal physical activity and your quick acting reliever is required less than 4 times per week (except for one dose per day before exercise).
- Doesn’t work as quickly as the reliever medications.
- To be effective, needs to be taken regularly once in the morning and once at night.
- Used to either prevent seasonal symptoms or to treat a sudden episode/attack.

Combination Medications
Contains both an Inhaled Corticosteroid and Long-Acting Reliever:

- Taken daily, once in the morning and once in the evening
- May be required on a regular basis to keep symptoms controlled (seasonally or year round)

Helpful Hints

- **Meter Dose Inhalers (MDI):**
  - For best results, use a spacer or chamber with or without a mask.
  - Purpose: Improve the delivery of the medication and prevent possible side effects.

- **Inhaled Corticosteroid Treatment:**
  - To prevent possible side effects such as thrush (yeast infection), hoarseness or a sore throat, remember to rinse, gargle, spit out and brush your teeth.
  - Remove your dentures before using puffers and rinse before you put them back in.
ii. Asthma Diary/Instructions for Using the Peak Flow Meter – Page 1 of 2 (double sided)

Interior Health

Instructions for using the Peak Flow Meter

About the Peak Flow Meter (PFM)

- Measures how fast the air can come out of your lungs.
- As your airways or breathing tubes tighten or get smaller, it becomes more difficult to get the air out of your lungs.

Why Use the PFM?

- Warns you that asthma is not well controlled or getting worse.
- Tells you if asthma medications are working or changes are needed.
- Helps to identify triggers.

Comments

- Peak flow measurements should be done before taking your medications. You may be asked to measure peak flows again following treatment.
- Peak flow measurements are usually measured in the morning and evening on a regular basis.
- For children and teens, peak flow measurements will get higher as height and age increase.
- Your Doctor or Health Care Professional will give you the expected or predicted peak flow number and will work with you to develop a personal Action Plan.
- Spitting/coughing into the meter or a poor effort will affect the accuracy of your peak flow number.

Instructions for using the Peak Flow Meter

1. Make sure the marker on the meter is set at zero.
2. Stand up or sit up straight.
3. Take a deep breath in and fill your lungs until they are completely full.
4. Hold your breath and place the mouthpiece in your mouth between your teeth and close your lips around it. Do not cover the hole with your tongue.
5. Blow out as hard and as fast as you can (explosive).
6. Repeat the process two or more times. The highest of the three numbers is your peak flow number.
7. Record your personal best peak flow number on your diary chart.
### Peak Flows:

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Predicted Peak Flow</th>
<th>Actual Peak Flow</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Symptoms/Triggers:

- **Physical Activity:**
  - 
  - 

- **Acute Exposure:**
  - 

- **Nasal Symptoms (R,S,B):**
  - 

- **Chest Tightness/Heaviness:**
  - 

- **End of Exercise:**
  - 

- **During Exercise:**
  - 

- **Contamination:**
  - 

- **Previous Peak Flow:**
  - 

### Comments:

- Note any changes in medication(s). Read back on in 4 days.  
- Review peak flows at the same time morning and night.  
- Do peak flow readings before taking medications.

---

**Asthma Diary:**

- Month: [ ]
- Name: [ ]
- Date: [ ]

**Deviations from Normal:**

- N: Symptom for reminder of day.
- D: Symptom first hour of awakening.
iii. **How to Use a Metered Dose Inhaler (Puffer, MDI)**

**Preferred Choice: With a Chamber (Spacer):**

1. **Check** that the MDI is not empty or past the expiratory date.
2. **Remove caps** from both the MDI and spacer device.
3. **Shake** the MDI at least 5 times.
4. To **Assemble** the MDI and chamber: Insert the mouthpiece of the MDI into the opening at the end of the chamber.
5. **Seal** lips around the chamber mouthpiece. Make sure there are no air leaks. Do not block the small holes on each side of the mouthpiece with the lips.
6. **Tilt chin** up slightly, exhale normally.
7. **Push down** firmly on the MDI canister once and allow medication to enter the chamber.
8. Breathe in slowly and deeply for about 3-5 seconds.
9. Hold your breath for 5-10 seconds or as long as possible.
10. Allow at least **30 seconds** for the canister to recharge before taking the next puff.
11. Repeat steps 2-8 for each puff of medication.
12. If using a **spacer with mask**, gently place the mask over the nose and mouth, making a tight seal. Breathe in and out 4-5 times for each puff of medication. The **exhalation valve** will move if you have a tight seal.

**Second Choice: Open Mouth Without A Spacer:**

1. **Check** that the MDI is not empty or past the expiratory date.
2. Remove the cap from the MDI.
3. **Shake** the MDI at least 5 times.
4. Breathe out normally (a relaxed breath).
5. Tilt chin up slightly, open your mouth wide and hold the puffer 2-5 cm or **(about a 2 finger distance)** from your mouth.
6. Begin to breathe in and firmly depress the canister once. Inhale slowly and deeply through your mouth.
7. Hold your breath for 5-10 seconds or as long as possible.
8. Wait at least **30 seconds** for the canister to recharge before taking the next puff.

**Advantages of Using A Spacer**

1. Helps to deliver more of the medication into your lungs.
2. Reduces the side effects of the medications.
3. The patient must take **slow breaths** in with the spacer. If the spacer makes a **musical or whistling sound**, you have inhaled too quickly.

---

801524 Oct 05
Cleaning Instructions For The Chamber And Inhaler

Chamber:

- Disassemble the spacer.
- Wash in warm water with mild liquid detergent.
- Rinse all the components except the long plastic tube (medication holding chamber).
- Allow to air dry on a clean towel.
- Do not use a dry cloth to wipe the spacer.
- Cleaning should be done once a week.
- Wash mask separately as needed.

Inhaler:

- Remove the metal canister from the plastic shell.
- Wash the plastic shell in warm soapy water.
- Rinse well and allow to air dry.
- Reassemble when dry.
- After cleaning release one puff into the air to make sure the inhaler works.
- Cleaning should be done once a week.
- Do not put the metal canister into the water.
- To check whether there is any medication left in your MDI, hold your canister close to your ear and shake it. You should hear the sound of the medication and feel the movement of the medication inside the canister.
**iv. How to Use Turbuhaler** Page 1 of 2 (double sided)

**Interior Health**

**How To Use A Turbuhaler**

1. Ensure that the turbuhaler is not empty or past the expiratory date.
2. Unscrew and remove the white cap from the device. Do not shake the turbuhaler.
3. To load the dose, hold the turbuhaler upright and turn the colored grip to the right as far as it will go. Then twist the grip back to the left until it clicks. Only load one dose at a time.

**Remember: 1 click = 1 dose**

4. Breathe out normally.
5. Place the mouthpiece in your mouth between your lips, tilt your head back slightly and breathe in forcefully and deeply.
6. Remove the turbuhaler from your mouth and hold your breath for 10 seconds. (Do not breathe out into the turbuhaler, you will loose your dose).
7. For each dose, repeat steps 3-6.
8. Replace the cap when you are finished. It protects the powdered medication from moisture.
9. The turbuhaler has a dose indicator. When the red mark appears in the little window underneath the mouthpiece, there are approximately 20 doses left. This would be a good time to order a refill. When the red mark has reached the bottom of the window, the turbuhaler is empty.

**Helpful Hints:**

- The turbuhaler produces a very fine powder. You may not feel or taste the medication because a lactose carrier was not added. This is normal.
- Do not store the turbuhaler in wet or humid places such as a bathroom with a shower.
- If the turbuhaler is tipped or if you blow into it after you have loaded a dose, the dose is lost; you must reload.
- Do not load the dose until you are ready to inhale it.
- To clean the turbuhaler, wipe the mouthpiece once weekly with a dry cloth. The mouthpiece can be removed and washed in warm, soapy water. The mouthpiece must be completely dry before it is replaced on the turbuhaler.
- If you shake the turbuhaler, you will hear the sound of the drying agent, not the medication.
Cleaning Instructions For The Chamber And Inhaler

Chamber:

• Disassemble the spacer.
• Wash in warm water with mild liquid detergent.
• Rinse all the components except the long plastic tube (medication holding chamber).
• Allow to air dry on a clean towel.
• Do not use a dry cloth to wipe the spacer.
• Cleaning should be done once a week.
• Wash mask separately as needed.

Inhaler:

• Remove the metal canister from the plastic shell.
• Wash the plastic shell in warm soapy water.
• Rinse well and allow to air dry.
• Reassemble when dry.
• After cleaning release one puff into the air to make sure the inhaler works.
• Cleaning should be done once a week.
• Do not put the metal canister into the water.
• To check whether there is any medication left in your MDI, hold your canister close to your ear and shake it. You should hear the sound of the medication and feel the movement of the medication inside the canister.
Acute Adult Asthma Management

Patient Information

General Information:

Asthma is a chronic condition resulting in the narrowing of the air passages in the lungs. Swelling (inflammation) is believed to be the main problem that determines how severe the asthma is. Spasm of the airway muscles and more mucus result from increasing sensitivity of the airway (they become 'twitchy') as the swelling worsens. The most common symptoms are cough, wheezing, shortness of breath and chest tightness. Symptoms may come and go or be with you all the time. Asthma is a controllable disorder and, for many people, it should not interfere with your activities.

When you are discharged home, you may be given a prescription from the Emergency doctor. Follow the instructions carefully. Before leaving the Emergency Department make sure you understand what medication to take and when to take it.

It can be hard to decide when to go to hospital for asthma treatment. If you are concerned, or have any of the warning signs listed in this brochure, have someone take you into the Emergency Department right away, or call an ambulance.

Instructions:

Even if you continue to do well on the medication prescribed, visit your family doctor within 24 to 48 hours after discharge from the Emergency Department.

If you are concerned, you should get advice early rather than waiting until an episode is severe. Seek help very early if you have had a severe asthma episode in the past.

Seek Medical Help if you experience the following:

- Shortness of breath and wheezing at rest
- Difficulty walking or talking due to shortness of breath
- PEF (peak expiratory flow) <50% of baseline and does not increase 15 minutes after bronchodilator medication
- Needing relief from a bronchodilator medication every 2 or 3 hours
- Feeling faint or frightened

Follow Up Instructions:

Make an appointment with your family doctor within 24-48 hours after discharge from the emergency department.

Call an Ambulance if you experience any of the following warning signs:

- Sudden onset of severe shortness of breath, wheezing, coughing and chest tightness.
- No relief from your reliever medication
- Difficulty speaking
- If your lips or fingers are turning blue

BC Nurse Line

1-866-215-4700 (toll free)
Talk to a Nurse 24 hours/day, 7 days/week
Pharmacist available 5pm - 9am daily
www.bchealthguide.org
Acute Adult Asthma Management

Patient Information
www.interiorhealth.ca

Steroid Fact Sheet

The latest recommendations from asthma experts is that all patients who require an emergency department visit for worsening asthma should receive an initial dose of a corticosteroid medication (steroid).

Many patients with asthma have taken an oral steroid (pill or liquid) in the past for their asthma.

The most common types of oral steroids are called Prednisone (pill) and Prednisolone or Dexamethasone (liquids).

How They Work:

- Used to treat moderate or severe asthma attacks
- Reduce swelling and mucous build-up in the airways

Side Effects:

- Side effects of a single dose are uncommon.
- Side effects are also dependent on the dose and length of time taking the medication:
  - short term (less than 2 weeks use) may cause mood changes, water retention, increased blood sugar, increased appetite, heartburn or indigestion
  - long term use (months of use) may cause loss of bone density, skin bruising or cataracts

If you have any questions regarding the use of this medication please discuss with the nurse or physician.
vi. Acute Pediatric Asthma Management/Oral Steroid Fact Sheet – Patient Information Sheet Page 1 of 2 (double sided)

Acute Pediatric Asthma Management

Patient Information

www.interiorhealth.ca

General Information:

Asthma is a chronic condition resulting in the narrowing of the air passages in the lungs. Swelling (inflammation) is believed to be the main problem that determines how severe the asthma is. Spasm of the airway muscles and more mucus result from increasing sensitivity of the airway (they become ‘twitchy’) as the swelling worsens. The most common symptoms are cough, wheezing, shortness of breath and chest tightness. Symptoms may come and go or be with you all the time. Asthma is a controllable disorder and, for many people, it should not interfere with your activities.

If your child gets relief from the medication prescribed while in Emergency, the doctor will ask you to give your child the same type of medication at home. Follow the instructions carefully. See your family doctor within 24 to 48 hours.

It can be hard for you, as a parent, to tell if your child should be taken back to the hospital. If you are concerned, or if your child has any of the warning signs listed in this brochure, bring him/her to the Emergency Department right away, or call an ambulance, rather than let the asthma get out of hand.

If you are concerned, you should get advice early rather than waiting until an episode is severe. Seek help early if your child has had a severe asthma episode in the past.

Go to Emergency or Call 911 if your child experiences the following:

• Faster than normal breathing
• Increased shortness of breath
• Tiredness caused by the hard work of breathing
• Skin around the neck and between the ribs is pulled in with breathing (indrawing)
• For children whose peak flow values are measured, watch for values which are dropping or not coming back to normal after medication
• If you hear a wheeze, bring your child back to the hospital. It could be a sign that your child’s asthma is worsening. However, do not rely on this sign alone. With severe asthma there may be no wheeze
• Other symptoms present such as fever or vomiting

If your child’s lips or fingers are turning blue and/or your child cannot speak, this is late warning sign. Call an ambulance immediately.

Follow Up Instructions:

Even if your child continues to do well on the medication prescribed, be sure you take him/her to your family doctor within 24 to 48 hours after discharge from the emergency department.

BC Nurse Line

1-866-215-4700 (toll free)
Talk to a Nurse 24 hours/day, 7 days/week
Pharmacist available 5pm – 9am daily

www.bchealthguide.org
Acute Pediatric Asthma Management

Steroid Fact Sheet

The latest recommendations from asthma experts is that all patients who require an emergency department visit for worsening asthma should receive an initial dose of a corticosteroid medication (steroid).

Many patients with asthma have taken an oral steroid (pill or liquid) in the past for their asthma.

The most common types of oral steroids are called Prednisone (pill) and Prednisolone or Dexamethasone (liquids).

How They Work:

- Used to treat moderate or severe asthma attacks
- Reduce swelling and mucus build-up in the airways

Side Effects:

- Side effects of a single dose are uncommon.

- Side effects are also dependent on the dose and length of time taking the medication:
  - short term (less than 2 weeks use) may cause mood changes, water retention, increased blood sugar, increased appetite, heartburn or indigestion
  - long term use (months of use) may cause loss of bone density, skin bruising or cataracts

If you have any questions regarding the use of this medication please discuss with the nurse or physician.
vii. Community Asthma Care Centre – Helping You Help Yourself - Page 1 of 2 (double sided)
Your Goal:

Control your asthma.

To achieve and maintain best asthma control.

Before you leave:

To provide more asthma education.

To have your asthma controlled.

To have your understanding of asthma.

Step Three - Follow-Up Visit:

To provide more asthma education.

To monitor and assess asthma control.

(if necessary)

Step Two - Check-Up Visit:

To achieve asthma control.

Additional visits may be required to achieve asthma control.

You will receive individual asthma management and education.

An appointment will be made by your physician.

A referral will be made by your physician.

Step One - Initial Visit:

Visits to the Center:

There are three steps in your asthma management.

and play an important part in your care of your asthma.

Develop the self-management skills to control and maintain control of your asthma.

We will help you:

through education.

support of your physician.

The goal of the Community Asthma Care Centre is to help you with the care of your asthma.

CARE CENTRE
COMMUNITY
ASTHMA

Helping you

Coping with Asthma

Informing and empowering your patients.

Reports will be sent to your physician.
viii. Using an Inhaler (coloured poster from Respironics)

1. Remove the cap of the inhaler and attach the spacer.

2. Shake the inhaler and spacer at least 4-5 times.

3. Stand up tall.

4. Exhale slowly to empty your lungs.

5. Put the spacer in your mouth and seal your lips around the mouthpiece. Press down on the inhaler to spray the medicine and breathe in slowly through your mouth, not your nose.

6. Hold your breath and count to 10. This helps the medicine get deeper into your lungs.

7. Exhale.

8. Wait 1 minute before your next puff.

9. Give yourself the number of puffs your doctor ordered.

**IMPORTANT**: After using your corticosteroid inhaler, rinse your mouth with water and spit it out in a sink. You need to clean your spacer with dish soap and warm water every day. Let it air dry.
ix: Respiratory Services Referral Requisition – SAMPLE

INTERIOR HEALTH

RESPIRATORY SERVICES
REQUISITION

Clinics: Phone: Fax:

Arrow Lakes Hospital 250-265-3622 250-265-4435
Boundary Hospital 250-443-2100 250-442-8331
Castlebar & District Community Health Centre 250-365-7711 250-304-1234
Kootenay Boundary Regional Hospital 250-364-5132 250-364-3465
Kootenay Lake Hospital 250-354-2348 250-354-2349
Slocan Community Hospital & Health Care Centre 250-358-7911 250-358-7117

CLIENT DATA

Name: ____________________________ Date of Birth: (dd/mm/yy) ____________________________
Address: ________________________________ PHN: ____________________________
City/Town: ________________________________ Weight: __________ Height: __________
Postal Code: ________________________________ Doctor: (please print) ____________________________
Phone: ________________________________

Patient History / Medications:

PULMONARY FUNCTION TESTS

☐ Spirometry Pre/Post (30min)
☐ Oximetry (15 min)
☐ Nocturnal Oximetry (15 min)
☐ Medication teaching (20 min)
☐ ABG’s (15 min)
☐ ABG if SpO2 <93% (15 min)
☐ Walking Sp02 (15)
☐ Other

* Available in Trail only
☐ Volumes *
☐ Metha Choline Challenge*
☐ Diffusion *

SERVICES

☐ COPD Education – COPD information, technique/review, dyspnea management, exercise programs,
Exacerbation Action Plan (determined by physician), smoking cessation, may include initial spirometry and follow
up at 2 and 6 months (60 min)

☐ Asthma Education - Asthma information, medication technique/review, peak flow/asthma diary monitoring,
Action Plan (in consultation with physician), may include initial spirometry and follow up at 2 and 6 months (60
min)

☐ Early COPD Detection and Prevention - spirometry and smoking cessation counseling
CTS
Guideline Criteria: smokers over the age of 40 with persistent cough/sputum or dyspnea
(60 min)

☐ Home Oxygen Assessment – May include: ABG’s, exertional pulse oximetry, overnight pulse oximetry,
spirometry (45 min )

☐ Tracheostomy care/tube changes (45 min)

☐ Sleep apnea screening (OSA)- CPAP trial adjustment Includes overnight oximetry and assessment (60 min)
If spirometry is needed please check off box above.

Physician Signature: ____________________________ Date: ____________________________

PLEASE COMPLETE FORM AND FAX TO ONE OF THE CLINICS LISTED ABOVE
Training

Providing the necessary training sessions for physicians, nurses, and respiratory therapists was one of the most resource intensive components of the asthma protocol implementation. In the pilot phase a physician member of the EDPWG provided an on-site orientation to the protocol for the physician, nursing and respiratory leads. This process was found to be very helpful to address clinic and implementation process issues. Having a clinical resource person from the EDPWG or pilot sites to assist individual sites in the initial start up is recommended. Videoconferencing this clinical resource person with multiple sites in order to deliver education sessions on the protocol implementation should also be considered. This pilot site model was found to be very useful, particularly for physician buy-in.

It is recommended that the nurse and physician project leader arrange to meet before the training sessions begin to ensure consistency of the messaging. At this time, they can identify any outstanding action items that need to occur and determine readiness for project launch.

Throughout the implementation process, the EDPWG also recommends the following to assist with training and support:

Regular Conference Calls

Group conference calls with five to six sites, regularly scheduled throughout the implementation process to review project progress, consult with available experts and provide feedback on the implementation strategies and toolkit. If you wish, the EDPWG contact from your health authority may also be able to participate in these calls to assist with various concerns. The conference calls also create the opportunity for sites to share and learn from one another’s experiences.

Project Support Liaison

Brenda Gilroy, Clinical Leader, Emergency Education
Phone: 250-558-1259
Launch

Preparing for the project launch includes:

- Announcing the launch (e.g. with emails, flyers or banners, or posters such as the samples located in the communication tools in Appendix 2)

- Developing communications mechanisms for feedback (ensure that all staff, on all shifts, have an opportunity to ask questions, share concerns, or offer flow strategies that have worked for them – a communication book for this project may be beneficial)

- Ensuring that documentation, order sets and the toolkit are ready, labeled and in a high visibility location

- Providing ongoing feedback to staff, highlighting what has gone well and what changes need to be made

- Starting the project on a day/week the nurse lead for this project is on available for a few consecutive days

- Providing a trouble shooting resource for implementation strategies that may not be working or were overlooked

- Making sure that the charge nurses on each shift are well aware of the project and share implementation strategies at change of shift
Data Collection

Each site will collect data on five performance indicators:

- Door to first bronchodilator
- Whether a steroid was given
- Whether a peak flow measurement was obtained
- Whether a referral to asthma clinic/education centre was made
- Length of Stay in the Emergency Department

Baseline and post protocol implementation data collection (Data collection sheet provided)

**Action item:** Establish a baseline of current performance. This information should be collected through a chart audit before the project begins.

Recommend 3 charts – Rural sites
5 charts – larger sites

**Action item:** Post protocol implementation data collection

Recommend Larger sites: To be compiled for all patients and submitted at 1 month post implementation
Rural sites: to be compiled for all patients and submitted at 3 months post implementation
Follow up evaluation will be required at 6 months post implementation and at 1 year post implementation.

Data Collection Sheet - an excel spread sheet- to be used in manual format

The data collection of the process indicators listed above has been incorporated into the nurse documentation tool so that data is collected as a by-product of ED process flow and additional work is not created for ED staff. An example of a documentation tool with the build-in audit tool is provided in Appendix 7.

**Action Item:** Fax the completed data collection tool to Valerie Davis at fax: 250-870-4795 or mailto:valerie.davis@interiorhealth.ca for each stage of data collection. Emergency Services will collate, analyze and report the evaluation for your facility.
APPENDIX 7 – (The following relevant forms are available)

Data Collection Sheet – Asthma Protocol .................................................................74
# Data Collection Sheet – Asthma Protocol

**PROVINCIAL EMERGENCY SERVICES PROJECT: ED PROTOCOL INITIATIVE**

| HOSPITAL NAME: | REPORT PERIOD: |

<table>
<thead>
<tr>
<th>Record Number</th>
<th>Patient ID [MRN #]</th>
<th>CTAS Level</th>
<th>Arrival Date dd-mm</th>
<th>Time hh:mm</th>
<th>Time Elapsed from Registration to First Bronchodilator Treatment</th>
<th>Steroid Administration</th>
<th>Asthma Clinic/Educator Referral</th>
<th>Obtained Peak Flow Measurement</th>
<th>Length of Stay in Emergency Department</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1, 2, 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CTAS Level</th>
<th>Arrival Date dd-mm</th>
<th>Time hh:mm</th>
<th>Time Elapsed from Registration to First Bronchodilator Treatment</th>
<th>Steroid Administration</th>
<th>Asthma Clinic/Educator Referral</th>
<th>Obtained Peak Flow Measurement</th>
<th>Length of Stay in Emergency Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1,2,3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## PROVINCIAL EMERGENCY SERVICES PROJECT: ED PROTOCOL INITIATIVE

### HOSPITAL NAME:

### REPORT PERIOD:

<table>
<thead>
<tr>
<th>Record Number</th>
<th>Patient ID [MRN #]</th>
<th>CTAS Level</th>
<th>Arrival</th>
<th>Time Elapsed from Registration to First Bronchodilator Treatment</th>
<th>Steroid Administration</th>
<th>Asthma Clinic/Educator Referral</th>
<th>Obtained Peak Flow Measurement</th>
<th>Length of Stay in Emergency Department</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td></td>
<td>1,2,3</td>
<td>N/A</td>
<td>Y/N</td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>17</td>
<td></td>
<td></td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>18</td>
<td></td>
<td></td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>19</td>
<td></td>
<td></td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>20</td>
<td></td>
<td></td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>21</td>
<td></td>
<td></td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>22</td>
<td></td>
<td></td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>23</td>
<td></td>
<td></td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>24</td>
<td></td>
<td></td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>25</td>
<td></td>
<td></td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>26</td>
<td></td>
<td></td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>27</td>
<td></td>
<td></td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>28</td>
<td></td>
<td></td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>29</td>
<td></td>
<td></td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>30</td>
<td></td>
<td></td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
</tbody>
</table>
Evaluation

Staff working in Interior Health Emergency departments will be required to complete an evaluation related to the Asthma protocol rollout 3 months post implementation.

Asthma toolkit evaluation for Frontline staff

- To be completed by RN’s, RT’s, Educators

Asthma toolkit evaluation for Physicians

Evaluation data will provide valuable feedback to facility leaders and be very useful with rollout of future protocol initiatives.

Send completed evaluation forms to Valerie Davis @ fax: 250-870-4795 or mailto:valerie.davis@interiorhealth.ca

- Analysis of the data collection will be collated, analyzed and reported by Corporate Emergency Services
APPENDIX 8 – (The following relevant forms are available)

<table>
<thead>
<tr>
<th>i.</th>
<th>Asthma Toolkit Evaluation for Frontline Staff</th>
<th>78</th>
</tr>
</thead>
<tbody>
<tr>
<td>ii.</td>
<td>Asthma Toolkit Evaluation for Physicians</td>
<td>80</td>
</tr>
</tbody>
</table>
i. Asthma Toolkit Evaluation for Frontline Staff

ASTHMA TOOLKIT EVALUATION FOR FRONTLINE STAFF

Thank you for taking a few moments to evaluate the roll out of the Acute Asthma Initiative. The information collected on this form will be used by the Facility Leader in developing and refining processes for future protocol roll-out.

SITE: ________________________________

Site Start-Up/ Implementation

*Please rate the following statements on a scale of 1-5 (1 = strongly disagree and 5 = strongly agree):*

<table>
<thead>
<tr>
<th>Statement</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>I believe ED protocols allow me to provide better patient care.</td>
<td></td>
</tr>
<tr>
<td>There is a need for an asthma initiative in our department.</td>
<td></td>
</tr>
<tr>
<td>The goals and objectives of the asthma project were clear.</td>
<td></td>
</tr>
<tr>
<td>I was well informed that we were initiating the Acute Asthma Initiative</td>
<td></td>
</tr>
<tr>
<td>I received adequate education regarding the Initiative.</td>
<td></td>
</tr>
</tbody>
</table>

Implementation

*Please rate the following statements on a scale of 1-5 (1 = strongly disagree and 5 = strongly agree):*

<table>
<thead>
<tr>
<th>Statement</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>This project had clear leadership.</td>
<td></td>
</tr>
<tr>
<td>I received adequate support and information during the implementation of</td>
<td></td>
</tr>
<tr>
<td>the Initiative.</td>
<td></td>
</tr>
</tbody>
</table>

Please list any suggestions for improving orientation, education or communication.
**Resource Items**

I know where the guidelines and algorithms are located. □ Yes □ No

I know where the asthma reference material binder is located. □ Yes □ No

I know where the peak flow meters are located. □ Yes □ No

Staff know where the asthma supporting education resources are located. □ Yes □ No

**Asthma Education Materials**

*Is the distribution of applicable education materials an expectation of your role? Is yes, proceed:*

The asthma education materials were very useful. □ Yes □ No

The level of orientation provided for these materials was adequate. □ Yes □ No

This program has created better links to the asthma educator. □ Yes □ No

**General Comments**

What did you like best about this initiative rollout?

______________________________

What did you like least about this initiative protocol rollout?

______________________________

Is there anything else that would help support the rollout of future initiatives at your site?

______________________________

______________________________

Please provide any additional comments about the Asthma Protocol Initiative and its rollout.

______________________________

______________________________
ii. Asthma Toolkit Evaluation for Physicians

ASTHMA TOOLKIT EVALUATION FOR PHYSICIANS

Thank you for taking a few moments to evaluate the roll out of the Acute Asthma Initiative. The information collected on this form will be used by the Facility Leader in developing and refining processes for future initiative roll-out.

SITE: __________________________________________

Site Start-Up/ Implementation

*Please rate the following statements on a scale of 1-5 (1 = strongly disagree and 5 = strongly agree):

Clinical initiatives are useful in the ED. □ 1 □ 2 □ 3 □ 4 □ 5
This asthma initiative was useful/helpful for asthma patients. □ 1 □ 2 □ 3 □ 4 □ 5
The goals and objectives of the asthma initiative were clear. □ 1 □ 2 □ 3 □ 4 □ 5
I was well-informed that our ED was initiating the Asthma Initiative □ 1 □ 2 □ 3 □ 4 □ 5
I received adequate education & orientation to the initiative. □ 1 □ 2 □ 3 □ 4 □ 5

Please list any suggestions for improving orientation and communication.


General Comments

Was this asthma initiative useful/helpful for asthma patients?


What did you like best about this Asthma Initiative?


What did you like least about the Asthma Initiative?


Please provide any additional comments about the Asthma Initiative and its rollout at your site.


