

## COUGH

### Rationale

This guideline is adapted for inter-professional primary care providers working in various settings in VIHA and any other clinical practice setting in which a user may see the guidelines as applicable.

Of patients living with and dying from advanced life threatening illness up to 86% experience the symptom of cough.<sup>(1, 2)</sup>

### Scope

This guideline provides recommendations for the assessment and symptom management of adult patients (age 19 years and older) living with advanced life threatening illness and experiencing the symptom of cough. This guideline does not address disease specific approaches in the management of cough. When cough becomes chronic it can be the source of sleep disturbance, agitation or anxiety and becomes exhausting. Cough is both an objective and subjective experience and has been reported that cough is multifactorial in origin in 42% to 62% of cases. It is experienced by 23 to 86% of cancer patients and up to 59% of non-malignant patients.<sup>(1-10)</sup>

### Definition of Terms

**Cough** has two functions: to prevent foreign material entering the lower respiratory tract and to clear secretions from the lungs and bronchial tree.<sup>(3)</sup>

### Standard of Care

1. Assessment
2. Diagnosis
3. Education
4. Treatment: Non-pharmacological
5. Treatment: Pharmacological

#### Recommendation 1

#### Assessment of Cough

Ongoing comprehensive assessment is the foundation of effective cough management, including interview, physical assessment, medication review, medical and surgical review, psychosocial and physical environment review (including past and present occupation) and appropriate diagnostics (*see Table 1*). Cough assessment must determine the cause, effectiveness and impact on quality of life.<sup>(1-3, 6-8, 10-12)</sup>

Table 1: Cough Assessment using Acronym O, P, Q, R, S, T, U and V <sup>(8, 12)</sup> \*

|   |  |
|---|--|
| <b>O</b><br>Onset                           | When did it begin? How long does it last? How often does it occur?   |
| <b>P</b><br>Provoking /<br>Palliating       | What brings it on? What makes it better? What makes it worse?  |
| <b>Q</b><br>Quality                         | What does it feel like? Can you describe it? Is it positional?   |
| <b>R</b><br>Region /<br>Radiation           | What areas are involved in your cough? Throat? Chest?  |
| <b>S</b><br>Severity                        | What is the intensity of this symptom (On a scale of 0 to 10, with 0 being none and 10 being worst possible)? Right Now? At Best? At Worst? On Average? Are there any other symptom(s) that accompany this symptom?  |
| <b>T</b><br>Treatment                       | What medications and treatments are you currently using? How effective are these? Do you have any side effects from the medications and treatments? What medications and treatments have you used in the past?   |
| <b>U</b><br>Understanding/<br>Impact on You | What do you believe is causing this symptom?<br>How is this symptom affecting you and / or your family?  |
| <b>V</b><br>Values                          | What is your goal for this symptom? What is your comfort goal or acceptable level for this symptom (On a scale of 0 to 10 with 0 being none and 10 being worst possible)? Are there any other views or feelings about this symptom that are important to you or your family? |

**\* also include a Physical Assessment (as appropriate for symptom)**

Recommendation 2

Diagnosis

Management should include treating reversible causes where possible and desirable according to the goals of care. The most significant intervention in the management of cough is identifying underlying cause(s) and treating as appropriate. While underlying cause(s) may be evident, treatment may not be indicated, depending on the stage of the disease.

Whether or not the underlying cause(s) can be relieved or treated, all patients will benefit from management of the symptom using education or medications.

## VIHA EOL Symptom Guidelines

Identifying the underlying etiology of the cough is essential in determining the treatment required (*see Table 2*).<sup>(1-3, 7-9, 11-13)</sup>

*Table 2: Underlying Causes of Cough & Treatment of Choice*

| <b>Underlying Cause</b>  | <b>Treatment of Choice</b>   |
|--|--|
| Amyotrophic Lateral Sclerosis (ALS)  | <b>Scopolamine, atropine or glycopyrrolate to reduce secretions to normal and comfortable moisture levels</b>                                |
| Bronchospasm/Bronchiectasis  | <b>Bronchodilators, antibiotics</b>  |
| Chronic Obstructive Pulmonary Disease (COPD) / Asthma                          | <b>Conventional inhalers, nebulized drugs or saline, steroids to suppress inflammation</b>   |
| Congestive Heart Failure   | <b>Conventional medications to decrease excess fluid<br/>ie.) diuretics</b>  |
| End stage weakness   | <b>Suppress and settle with suppressant, anxiolytic, scopolamine or atropine</b>   |
| Gastroesophageal reflux  | <b>H2 inhibitors, proton pump inhibitor, motility agents, elevate head of bed, drain contributing ascites</b>                                |
| Infection - Pneumonia  | <b>Prevention of aspiration. Oral antibiotics may help decrease productive cough that is disturbing sleep, or causing pain or hemoptysis</b> |
| Malignant pleural effusion   | <b>Thoracentesis or pleurodesis; lying on the same side can decrease related cough</b>   |
| Medications  | <b>Stop offending ACE inhibitor</b>  |
| Post radiation lung damage   | <b>Steroids</b>  |
| Superior Vena Cava (SVC) Obstruction   | <b>Radiotherapy, steroids</b>  |
| Tumour related airway irritation   | <b>Radiotherapy/brachytherapy, laser treatment, self expandable stents or steroids</b>   |
| Upper airway cough syndrome (Postnasal drip) – allergies, infection, sinusitis | <b>Nasal steroids or ipratropium. Oral antibiotics for sinusitis, expectorants (guaifenesin) or anti-histamine</b>                           |

### Recommendation 3

#### Education

Cough can be distressing to experience and often more difficult to witness. Providing education regarding the etiology of cough and expectations of treatment is foundational to enhance the patient and family's ability to cope.<sup>(1)</sup>

- As a person weakens, the ability to raise sputum is reduced.<sup>(1)</sup> Teach the patient 'huffing or forced expiratory technique' to clear secretions with minimal effort. (8, 12, 14, 15)

### Recommendation 4

#### Treatment: Nonpharmacological

- Positioning to promote and facilitate secretion drainage (postural drainage),<sup>(1-4, 6, 8, 10, 12)</sup> but should not be used during acute exacerbation of chronic bronchitis.<sup>(8)</sup>
- Avoidance of smoking, chemical irritants or noxious fumes.<sup>(4, 8-10, 12)</sup>
- Nebulized saline, steam or cold air humidifier.<sup>(1, 3, 10-12)</sup>
- Adequate hydration.<sup>(2)</sup>
- Suction is not indicated except in the following situations: When acute fulminant pulmonary edema is present, or to clear bronchial secretions in patients with tracheostomy, or to clear saliva when full esophageal obstruction is present **or** when bleeding is present in mouth or throat.<sup>(1, 10)</sup>
- Provide instruction in anxiety reduction strategies.<sup>(8)</sup>

### Recommendation 5

#### Treatment: Pharmacological

#### **For minor or simple cough**

- Expectorants are effective.<sup>(1)</sup> Guaifenesin is a useful expectorant.

#### **For mild to moderate cough**

- Dextromethorphan (non-opioid) 15 to 30 mg PO q.i.d.<sup>(2, 3, 5, 10, 12)</sup>

#### **For advanced disease multi-factorial cough**

- Antitussive opioids include:
  - Methadone 2.5 to 10 mg PO.<sup>(16)</sup> Methadone is a powerful antitussive and has activity superior to those of morphine and codeine.<sup>(16)</sup> Taking it 2 hours before bed is recommended for troublesome night cough.<sup>(16)</sup>
  - Hydromorphone 1 to 2 mg PO Q4H.<sup>(2, 3, 5-8, 10, 17)</sup>
  - Hydrocodone 5 to 10 mg PO every 4 to 6 hours with a daily dose no higher than 60 mg.<sup>(16)</sup> It has greater antitussive activity than codeine but less than morphine.<sup>(16)</sup>
  - Morphine up to 5 mg PO every 4 hours.<sup>(16)</sup>
  - Codeine 10 to 20 mg PO every 4 to 6 hours, with a daily dose no higher than 120 mg.<sup>(16)</sup>
  - Oxycodone 5 mg every 4 hours or 10 mg PO sustained-release oxycodone every 12 hours.<sup>(16)</sup>

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- Dexamethasone 4 to 8 mg PO or I.V. or S.C. daily depending on severity and cause; taper and avoid long term use if possible (increased risk of proximal myopathy which can be very debilitating).<sup>(4)</sup>
- For intractable cough nebulized local anesthetics can be useful: <sup>(1-5, 7, 12)</sup>
  - May precipitate bronchospasm in asthmatic patients.<sup>(1-3)</sup>
  - Gag reflex is inhibited after administration, keep NPO for 1 to 2 hours afterward,<sup>(1-3)</sup> and rinse and spit after nebulization to minimize numbness of lips and tongue. Use a mouthpiece rather than a mask for inhalation.
  - Bupivacaine 0.25% 5 mL q4h.<sup>(1-3)</sup>
  - Lidocaine 2% 2 to 5 mL in 1 mL of normal saline q4h.<sup>(1-3)</sup>
- Sodium cromoglycate has been found to be a useful cough suppressant in advanced lung cancer.<sup>(8, 18)</sup>

### References

Information was compiled using the CINAHL, Medline (1996 to April 2006) and Cochrane DSR, ACP Journal Club, DARE and CCTR databases, limiting to reviews/systematic reviews, clinical trials, case studies and guidelines/protocols using respiratory/cough terms in conjunction with palliative/hospice/end of life/dying. Palliative care textbooks mentioned in generated articles were hand searched. Articles not written in English were excluded.

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