Shortness of breath

Resident with acute onset of shortness of breath (see Practice point 1)

1. Isolate resident and place under standard and transmission-based precautions until GP review.
2. Sit resident upright in a comfortable position and reassure.
3. Check vital signs - review Recognition of the deteriorating resident.
4. Maintain oxygen saturations at 92 to 96 per cent (where there is a history of Chronic Obstructive Pulmonary Disease or COPD, aim for 88 to 92 per cent).
5. If not immediately life-threatening, review Checklist for contact and contact GP*.

STABLE VITALS → Identify and escalate Red flags for deterioration (see Practice point 2)

RED FLAGS PRESENT → Review advance care plan and refer to Management of residents with unstable vital signs

RED FLAGS ABSENT → With GP, perform a structured assessment to identify likely underlying cause of shortness of breath (see Practice point 3)

UNSTABLE VITALS → Review advance care plan and refer to Management of residents with unstable vital signs

NO CAUSE IDENTIFIED OR NO SPECIFIC MANAGEMENT PATHWAY EXISTS → Treat underlying cause/s where identified - where the resident has an existing management plan for exacerbations of chronic disease (e.g. COPD management plan) refer to the plan.

1. Treat underlying cause/s where identified - where the resident has an existing management plan for exacerbations of chronic disease (e.g. COPD management plan) refer to the plan.
2. Institute supportive cares (see Practice point 4).
3. Monitor vital signs including oxygen saturations regularly - individualise interval to severity of illness and goals of care.
4. Notify substitute health decision maker or the resident's nominated decision support person.

DEVELOPS RED FLAGS → Review advance care plan and refer to Management of residents with unstable vital signs

IMPROVES →

1. Review resident's chronic disease management plan where the shortness of breath is due to an exacerbation of chronic disease.
2. Proactively prevent future exacerbations (see Practice point 5).
3. Where a resident has recurrent exacerbations of chronic disease with shortness of breath, consider geriatrician / RaSS review at GP discretion.

FAILS TO IMPROVE AND NO RED FLAGS PRESENT → Refer to HHS RaSS at GP discretion

CAUSE IDENTIFIED AND SPECIFIC MANAGEMENT PATHWAY EXISTS OR RESIDENT IDENTIFIED TO BE NEARING END OF LIFE →

Refer to resident's documented management plan and to the clinical pathway for relevant condition:

- Chronic obstructive pulmonary disease (COPD)
- Congestive cardiac failure (CCF)
- Acute respiratory infection
- Pneumonia
- Hyperglycaemia
- End of life care

ESCALATION CRITERIA PRESENT → Refer to HHS RaSS at GP discretion

*Where timely, arrange telehealth or face-to-face GP review

Shortness of breath practice points

1) Acute onset of shortness of breath

Shortness of breath or dyspnoea is a significant predictor of mortality. Shortness of breath is "a subjective experience of breathing discomfort that consists of qualitatively distinct sensations such as work/effort of breathing, tightness and air hunger or unsatisfied inspiration" (Parshall et al, 2012).

It is important to note that dyspnoea or shortness of breath is a symptom and as such, can only be perceived by the person experiencing it and is not always accompanied by changes to vital signs or signs of respiratory distress. As shortness of breath may warn of a critical underlying illness, it is important to prioritise assessment of the person with shortness of breath for the underlying cause to allow institution of treatments aligned to a resident's goals of care.

2) Red flags for deterioration of the resident with shortness of breath 🚩

If any of the following red flags are identified in residents with acute onset (or acute worsening of baseline) shortness of breath, review the resident's advance care plan, consult resident or substitute health decision maker (or nominated decision support person) and refer to Management of residents with unstable vital signs pathway:

- Vital signs in the red or danger zone including new severe pain - refer to Recognition of the deteriorating resident
- New altered level of consciousness (e.g. drop in Glasgow Coma Scale or difficult to rouse) relative to baseline
- New inability to speak or only able to speak in single words
- Stridor present (snoring noise on in-breath)
- Cyanosis (blue discolouration to tongue, skin, lips or digits)
- Physical exhaustion related to work of breathing or inability to maintain respiratory effort
- Use of accessory muscles of breathing (breathing associated with contraction of the sternocleidomastoid or scalene muscles in the neck, contraction of abdominal muscles)
- Retraction of supra-clavicular or suprasternal fossae or of lower ribs during inspiration
- Inability to lie supine
- Profound sweating
- Fall with chest pain
- New agitation with shortness of breath
- Sitting forwards leaning on arms with respiratory distress (tripod position)

Note: a decision to transfer a resident to hospital should always consider resident goals of care and be respectful of informed choice by the resident (or substitute decision maker).

3) Structured assessment of the resident with shortness of breath

Structured assessment of the resident with shortness of breath should be undertaken with appropriate standard and transmission-based precautions until an infectious cause is ruled out (clinically or with appropriate investigations).

The assessment aims to:

1. Identify red flags as described in Practice point 1.
2. Identify the underlying cause of shortness of breath.
3. Determine whether the resident is approaching end of life.

Some of the key components of history and examination are outlined in the below table. All residents with acute onset of shortness of breath should be isolated and tested for COVID-19.

Shortness of breath is common in aged care residents and prevalence increases as residents approach end of life. It is important to recognise whether a resident with shortness of breath is approaching end of life as this may influence the resident's choice of treatment setting and may change the approach taken in managing shortness of breath. Guidance on recognising a resident approaching end of life is found here.

Shortness of breath practice points (cont'd)

3) Structured assessment of the resident with shortness of breath (cont'd)

Examples of some of the causes of shortness of breath and their associated features on history and examination are outlined below:

Level	Condition	History	Examination
Upper airway obstruction	Angioedema	• Exposure to allergen • Recent commencement of new medication • ACE inhibitor	• Swelling of lips / tongue /throat • Hoarse voice • Stridor • Wheeze • Altered level of consciousness
	Inhalation foreign body	• Sudden onset during eating • Missing dentures	• Stridor • Coughing (may be absent in those without a cough reflex e.g. advanced dementia or after stroke)
Lower respiratory tract	COPD / asthma	• History of COPD / asthma • Smoking history • +/- Change to sputum	• Bilateral polyphonic wheeze • Beware the silent chest or residents sitting forwards in "tripod" position
	Pulmonary oedema	• Orthopnoea • +/- Dull, central chest pain or heaviness +/- radiation to jaw or arms preceding or concurrent with shortness of breath	• Sweating • Pallor • Bilateral basal crackles • Cardiac wheeze • Signs of right heart failure may or may not be present (peripheral oedema, jugular venous distension)
	Pneumonia or infection (e.g. COVID-19)	• Cough • Pleuritic chest pain • Fever	• Elevated temperature • Focal crackles or bronchial breathing
	Pulmonary Embolism (PE)	• Hemoptysis • Pleuritic chest pain • Risk factors for PE (e.g. recent surgery, DVT, cancer or immobilisation)	• Tachypnoea (can be isolated) • Unilateral calf tenderness or swelling (may be absent) • Often have a clear chest
Pleura	Pneumothorax and / or rib fracture	• Recent trauma / fall with rib pain • Recent medical procedure near chest • History of previous pneumothorax	• Pleuritic chest pain • Reduced breath sounds on same side • Focal tenderness ribs if fractured
Metabolic	Anaemia	• History of anemia • Gastrointestinal blood loss (Hematemesis / melaena) • Malnutrition • Lethargy / fatigue	• Pallor conjunctivae • +/- hypotension if acute blood loss • PR - melaena
	Diabetic ketoacidosis	• History diabetes • More common in type I or insulin-dependent diabetes	• Tachypnoea (can be isolated)

Shortness of breath practice points (cont'd)

4) Supportive cares for the resident with shortness of breath

Supportive cares for the resident with shortness of breath should be tailored to the individual resident in the context of their specific needs. Residents with shortness of breath should, in addition to treatment of underlying cause, have consideration of the need for:

1. Supplemental oxygen prescription, individualised and titrated to oxygen saturations of 92 to 96 per cent (where there is a history of Chronic Obstructive Pulmonary Disease or COPD, aim for 88 to 92 per cent); oxygen may not be of benefit in improving symptoms of dyspnoea - in general, a therapeutic trial of oxygen may be considered if there is hypoxia. Use of oxygen should not delay treatment of the underlying cause, where this is reversible and clinically appropriate.
2. Fluid supplementation - an individualised approach to fluid supplementation is indicated: tachypnoea is associated with increased insensible fluid loss; however, fluid supplementation will risk worsening shortness of breath where the underlying cause is pulmonary oedema. There is little evidence to support IV or subcutaneous fluid administration in the last days of life.
3. Falls risk management plan - residents with increased shortness of breath are at increased risk of falls, particularly where management of shortness of breath includes steroids (e.g. in COPD or asthma).
4. Symptom relief - where goals of care are active, symptom relief should be primarily achieved by treating the underlying cause, where this is clinically appropriate; it is important to reiterate that shortness of breath is a subjective symptom with treatment of the underlying cause indicated even where vital signs remain within normal limits. Where symptoms persist despite maximal therapy, consider consultation with the local HHS RaSS team at GP discretion or transition to a palliative approach, as guided by informed choice of the resident or their substitute decision maker. In a person with palliative goals of care, treatment of the underlying cause (where this is reversible) may still be clinically appropriate where this aligns with the resident's wishes. Guidance for strategies (drug and non-drug) to relieve breathlessness or dyspnoea with a palliative approach to care is found here - non-drug strategies may include increasing cool air movement around the resident such as with use of a fan (exclude COVID-19 / influenza prior to use of a fan), optimising resident positioning to assist breathing (usually improved in an upright sitting position), adjusting activities to accommodate shortness of breath and implementing distraction /relaxation techniques.

5) Prevention of exacerbations of shortness of breath

Where shortness of breath is due to an underlying chronic or relapsing condition such as asthma / COPD, heart failure, or recurrent aspiration, an individualised chronic disease management plan should be developed and implemented in collaboration with the resident, their substitute decision maker and a multidisciplinary team.

Residents with a history of chronic lung disorders may benefit from attention to:

1. Prevention of infection through immunisation for COVID-19, influenza and pneumococcus.
2. A tailored exercise program.
3. Cessation of smoking.
4. Falls risk management - this is particularly important in those with steroid use.
5. Ensuring a texture-appropriate diet / fluids as guided by speech pathology, where indicated.

Shortness of breath references

1. Johnson MJ, Bland JM, Gahbauer EA, Ekstrom M, Sinnarajah A, Gill TM, et al. Breathlessness in Elderly Adults During the Last Year of Life Sufficient to Restrict Activity: Prevalence, Pattern, and Associated Factors. J Am Geriatr Soc. 2016;64(1):73-80.
2. DeVos E, Jacobson L. Approach to Adult Patients with Acute Dyspnea. Emerg Med Clin North Am. 2016;34(1):129-49.
3. Hendriks SA, Smalbrugge M, Galindo-Garre F, Hertogh CM, van der Steen JT. From admission to death: prevalence and course of pain, agitation, and shortness of breath, and treatment of these symptoms in nursing home residents with dementia. J Am Med Dir Assoc. 2015;16(6):475-81.
4. Woollard M, Greaves I. 4 shortness of breath. Emerg Med J. 2004;21(3):341-50.
5. Gallagher R, Roberts D. A systematic review of oxygen and airflow effect on relief of dyspnea at rest in patients with advanced disease of any cause. J Pain Palliat Care Pharmacother. 2004;18(4):3-15.
6. Collis SP. Literature review of clinical benefits and reasons to prescribe palliative oxygen therapy in non-hypoxaemic patients. Br J Nurs. 2018;27(21):1255-60.
7. Dabscheck E, George J, Hermann K, McDonald CF, McDonald VM, McNamara R, et al. COPD-X Australian guidelines for the diagnosis and management of chronic obstructive pulmonary disease: 2022 update. Med J Aust. 2022;217(8):415-23.
8. Parshall MB, Schwartzstein RM, Adams L, Banzett RB, Manning HL, Bourbeau J, et al. An official American Thoracic Society statement: update on the mechanisms, assessment, and management of dyspnea. Am J Respir Crit Care Med. 2012;185(4):435-52.
9. Palliative care: respiratory symptoms in palliative care. 2016. Melbourne: Therapeutic guidelines.
10. Respiratory guidelines: oxygen therapy. 2020. Melbourne: Therapeutic guidelines.

Shortness of breath version control

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