

Global Improvement Guide

Reducing Hospitalisation for COPD Through a Multidimensional Community-Based Management Programme

Improvement Imperative

Chronic obstructive pulmonary disease (COPD) is prevalent in the developed world and hospitalisation due to its acute exacerbations (AECOPD) puts a significant economic burden on health services.

Using This Guide

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- The prevalence and severity of COPD increases with age and will therefore grow significantly in ageing populations.
- AECOPD frequently results in emergency care and inpatient admission: 1 in 8 emergency admissions in UK are due to AECOPD and AECOPD is the 7th most common reason for admission among Canadian men.
- Hospitalisation due to AECOPD is currently the single-largest contributor to the total direct health care costs of COPD worldwide. COPD accounts for the second-highest number of total bed days in the UK.
- At present, COPD care is primarily reactive, focusing on treating AECOPD rather than preempting the decompensation which results in AECOPD. A majority of AECOPD episodes could avoid inpatient care with improved disease management.
- Health services will fail to manage the increasing demand for COPD care under the current reactive model; the focus of care delivery must shift to proactive management.

Country	Estimated Prevalence of COPD Stage II+*	Annual Direct Cost of COPD Care	Average Cost of a Hospitalisation due to AECOPD	% of Total Direct Costs of COPD Care due to Hospitalisation
UK	12.0%	£490m ⁶	£400–£1,500 ⁶	54.3% ⁶
Australia	18.9%	AUS\$900m ¹	AUS\$400 ¹	55.2% ¹
Canada	9.3%	CDN\$467m ²	CDN\$9,953 ³	52% ⁴
US	12.7%	US\$6.6bn ⁵	US\$2,737 ⁵	30% ⁵

*Standardised estimate from a single-site random sample of persons >40 years old. COPD diagnosed according to GOLD guidelines. *BOLD Initiative*, 2007. ¹Australian Lung Foundation, 2008; ²Canadian Thoracic Society, 2003; ³Mittmann N et al. 2008; ⁴Wouters EF. 2003; ⁵Ward MM et al. 2000; ⁶NICE COPD Guidelines, 2010.

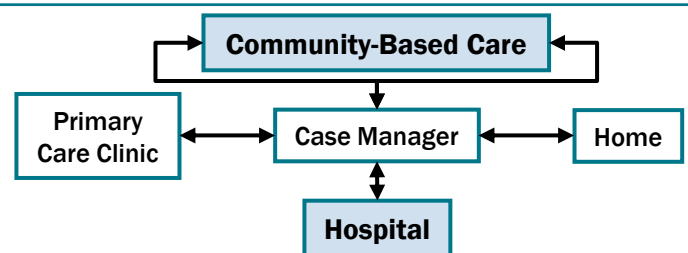
Improvement Plan

Community-based, multidimensional disease management programmes integrated with ongoing clinical care have been shown to decrease COPD secondary care utilisation across accident & emergency (A&E) attendance, hospitalisation and average inpatient length of stay (LOS).

- Pulmonary rehabilitation (PR) is currently the only widely recognised community intervention for COPD.
- Although PR improves a patient's quality of life, isolated COPD management initiatives have not proved to have significant impact on hospitalisation for AECOPD. A multi-component approach is needed.
- The number, type and intensity of community-based programme components can be tailored to local needs and should be aligned with existing and future strategies for COPD management, across the continuum of care.

Care Continuum Connections

Leading COPD programmes shift care from a primarily hospital-based setting to a primarily community-based setting, integrated within the continuum of care. A point-of-contact individual, or case manager, who may be a respiratory nurse or other suitably trained clinical professional, will be needed to coordinate this multidimensional system.



Improvement Options

Integrating Community Interventions into a Multidimensional COPD Management Programme

Component	Overview	Implementation Indicators
Develop Personalised Action Plans	<p>Rationale: Written instructions empower patients to manage their own conditions, reducing the emphasis on direct clinical supervision.</p> <p>Actions:</p> <ul style="list-style-type: none"> Develop an action plan for each COPD patient including a personalised decision map for AECOPD and personal lifestyle goals 	<p>Cost: ■</p> <p>Time: ■</p> <p>Culture: ■</p> <p>Impact: ■■■</p>
Improve Patient Education	<p>Rationale: Patients who understand their condition and medications are more likely to utilise health services appropriately.</p> <p>Actions:</p> <ul style="list-style-type: none"> Implement a COPD education programme which is flexible to the needs and capabilities of each patient Integrate education across the continuum of care 	<p>Cost: ■</p> <p>Time: ■■</p> <p>Culture: ■</p> <p>Impact: ■■■</p>
Set up Access to Health Care Advice	<p>Rationale: Patients readily able to access medical advice are less likely to seek hospital emergency care in clinically unnecessary circumstances.</p> <p>Actions:</p> <ul style="list-style-type: none"> Set up easy and reliable patient access to suitable case managers. 	<p>Cost: ■</p> <p>Time: ■</p> <p>Culture: ■■</p> <p>Impact: ■■■</p>
Leverage Technology Platforms	<p>Rationale: Technology systems provide a portal for information sharing across time and space.</p> <p>Actions:</p> <ul style="list-style-type: none"> Use technology to ensure seamless communication and data transfer between components of an integrated multidimensional programme. 	<p>Cost: ■■■</p> <p>Time: ■■</p> <p>Culture: ■■</p> <p>Impact: ■■■</p>

Indicators Key

Cost (facility, technology, staff): ■ ≤ £100K; ■■ = £100K–£500K; ■■■ = £500K+

Time: ■ = 0–6 months; ■■ = 6–18 months; ■■■ = 18+ months

Culture (organisation-wide change management): ■ = limited; ■■ = moderate; ■■■ = significant

Impact: ■ = limited; ■■ = moderate; ■■■ = significant

Options: In-Depth

Develop Personalised Action Plans

Solution	Implementation Steps	Metrics
<p>Develop a Patient-Centred Plan</p> <p>Owner: Case manager, GP</p>	<ul style="list-style-type: none"> Outline the metrics a patient should use to monitor his or her condition and define the patient's "normal" state. Leverage available tools such as The Clinical COPD Questionnaire (CCQ). List details of whom to contact and what medication to take at each stage of symptom deterioration. Set realistic goals in areas such as activity levels, exercises, household tasks. Leverage available tools such as the COPD Assessment Test (CAT) to simply and accurately measure the impact of COPD and adjust goals appropriately. Regularly update according to clinical/personal needs, ideally as part of a regular clinical review. 	<ul style="list-style-type: none"> % patients with an action plan (P) Frequency at which action plans are updated (P) % AECOPD requiring A&E/inpatient care (O)
<p>Integrate the Action Plan</p> <p>Owner: Programme Manager</p>	<ul style="list-style-type: none"> Share the plan with all involved in providing care, including family, carers and GPs. Align the plan with patient education programmes. 	

P = process metric; O = outcome metric.

Options: In-Depth, cont'd

Improve Patient Education

Solution	Implementation Steps	Metrics
Design a Flexible Education Curriculum Owner: Clinical Advisor	<ul style="list-style-type: none"> Provide teaching to all patients on core topics such as the pathophysiology of COPD, use of medications, lifestyle options, smoking cessation, exacerbation management. For capable patients, consider instruction on the self-medication of corticosteroids and antibiotics. Successful education programmes range from weekly sessions over a period of months to just a few hours of education prior to discharge. 	<ul style="list-style-type: none"> % patients enrolled in education (P) Increase in patient knowledge over time (eg, % patients able to use their inhalers correctly) (O) % AECOPD requiring A&E/inpatient care (O)
Integrate Education into All Aspects of Care Owner: Programme Manager	<ul style="list-style-type: none"> Consider running patient education parallel to the teaching of exercises and fitness techniques used in PR. Incorporate patient action plans into the curriculum. Reinforce lessons learned through ongoing support from case managers and voluntary organisations, such as smoking cessation groups and the British Lung Foundation. 	

Set up Access to Health Care Advice

Solution	Implementation Steps	Metrics
Aim for Continuous Patient Access Owner: Programme Manager	<ul style="list-style-type: none"> Provide access to case managers, preferably 24/7. If continuous access proves impossible, ensure patients are well-informed of whom to contact/where to go when case managers are unavailable to reduce inappropriate burden on emergency services. 	<ul style="list-style-type: none"> % AECOPD requiring A&E/inpatient care (O)
Create a Supportive Environment Owner: Case Manager	<ul style="list-style-type: none"> Ensure the patient is aware of the access service and its purpose. Encourage regular use to engender a guilt-free environment in which patients are comfortable asking for health advice. Foster relationships between patients and case managers through regular phone calls and/or patient visits. 	<ul style="list-style-type: none"> % and frequency of patients contacting case managers (P)

Leverage Technology Platforms

Solution	Implementation Steps	Metrics
Enable Communication Throughout the Programme Owner: Programme Manager	<ul style="list-style-type: none"> Identify the essential lines of communication between the programme elements (eg, patient to case manager, case manager to discharge team, GP to education team). Set up reliable communication along these lines, via convenient means (eg, phone, pager, email). Consider remote patient monitoring, eg, online peak flow reports, home pulse oximetry and video-conferencing from the patient's home. Learn from forward-thinking organisations such as NHS South East Essex who have pilots in this area. 	<ul style="list-style-type: none"> % health professionals and patients utilising the communication systems (P)
Ensure timely access to accurate patient records Owner: Programme Manager	<ul style="list-style-type: none"> Assess the viability (speed, capacity, location, reliability) of medical record systems and improve as necessary. Ideally make records universally available via a web-based platform. 	<ul style="list-style-type: none"> Frequency of instances appropriate information is not available (P)

P = process metric; O = outcome metric.

Operational Considerations

- To gain maximum impact from a COPD disease management programme, all of the improvement options should be included, though the emphasis given to each can vary depending on local requirements and facilities.
- Regardless of the specifics of programme design, it is imperative that the complete package is fully integrated throughout the continuum of COPD patient care.
- Given their foundational role, suitable case managers should be identified early in designing the programme.
- Communication among and commitment from all parties involved in the programme are crucial.
- Patient engagement in and understanding of the system are vital for success.
- Involvement of the voluntary sector in aspects of the long-term management of COPD, for example smoking cessation guidance or exercise programmes, will help sustain a community-based programme.
- Ongoing evaluation is needed to successfully sustain a COPD programme. Overall outcome metrics include annual COPD patient attendances at A&E and hospital admissions, average LOS for inpatient COPD care and the per patient annual number of days spent in a hospital bed, as opposed to at home. A well thought-through and appropriately implemented multidimensional community-based COPD management programme should lead to a reduction in all of these metrics.

Management Considerations

- A comprehensive, integrated COPD management programme is needed now, to prepare for the increasing burden of COPD on the health service. No single provider can implement such a programme; collaboration between acute care, primary care, community care and voluntary organisations is necessary.
- Development of clinical networks, as supported by NHS Improvement, should become a focus if it is not already. Continuous leverage of such networks must remain part of ongoing and future commissioning strategies.
- A potential increase in COPD inpatient care should be anticipated in the short-term due to:
 - Increased awareness of COPD in the population, leading to an increase in diagnoses
 - Increased patient understanding of the need to seek emergency care when necessary
- In the long-term, implementation of a COPD management programme will improve patient management of AECOPD, decreasing inpatient admissions.
- To optimally reduce hospital admissions due to AECOPD, COPD patients should receive annual prophylactic influenza vaccinations, to reduce the risk of decompensation following influenza infection.
- Future plans should continue to allocate resources to COPD prevention schemes, such as smoking cessation programmes and lifestyle advice for at-risk patients, to minimise the future burden of COPD.

Resources

External Resources

- Improving and Integrating Respiratory Services in the NHS
www.Impressrep.com
- National Chronic Obstructive Pulmonary Disease Audit
www.rcplondon.ac.uk/copd
- Burden of Lung Disease Initiative. www.boldstudy.org.
- Global Initiative for Chronic Obstructive Lung Disease.
www.goldcopd.com.

All Web sites accessed August 2010.

Related Sg2 Resources

- Sg2 Global Practice Summary: Holistic COPD Patient Management Service Reduces Hospital Admissions and Shortens LOS, August 2010.
- Sg2 Global Practice Summary: Implementation of a COPD Self-management Programme Reduces Hospital Utilisation, Improves Patient Care, August 2010.
- Sg2 Case Study: Integrated Model Aims to Create Seamless Care for COPD and Asthma Patients, July 2009.

Sources: Bourbeau J. *Semin Respir Crit Care Med* 2010;31(3):313–320; Jaana M et al. *Am J Manag Care* 2009;15(5):313–320; Adams SG et al. *Arch Intern Med* 2007;167(6):551–561; Murray CJ and Lopez AD. *Lancet* 1997;349(9064):1498–1504; Littlejohns P et al. *Thorax* 1991; 46(8):559–564; Bourbeau J et al. *Chest* 2006;130(6):1704–1711; Casas A et al. *Eur Respir J* 2006;28(1):123–130; Garcia-Aymerich J et al. *Respir Med* 2007;101(7):1462–1469; Bourbeau J et al. *Arch Intern Med* 2003;163(5):585–591; O'Donnell DE et al. *Can Respir J* 2003; 10(Suppl A):11A–65A; Access Economics Pty Limited for the Australian Lung Foundation. *Economic Impact of COPD and Cost Effective Solutions*. 2008; Mittmann N et al. *Respir Med* 2008;102(3):413–421; Ward MM et al. *Respir Med* 2000;94(11):1123–1129; UK Department of Health, *Consultation on a Strategy for Services for Chronic Obstructive Pulmonary Disease (COPD) in England*, February 2010; Wouters EF. *Respir Med* 2003;97(Suppl C):S3–S14; National Institute for Health and Clinical Excellence (NICE) COPD Guidelines, 2010.