COPD Programme
Care Pathways Research Brief

Prepared for Collins Hospital¹
February 2014

¹ pseudonym
LEGAL CAVEAT

The Advisory Board Company has made efforts to verify the accuracy of the information it provides to members. This report relies on data obtained from many sources, however, and The Advisory Board Company cannot guarantee the accuracy of the information provided or any analysis based thereon. In addition, The Advisory Board Company is not in the business of giving legal, medical, accounting, or other professional advice, and its reports should not be construed as professional advice. In particular, members should not rely on any legal commentary in this report as a basis for action, or assume that any tactics described herein would be permitted by applicable law or appropriate for a given member’s situation. Members are advised to consult with appropriate professionals concerning legal, medical, tax, or accounting issues, before implementing any of these tactics. Neither The Advisory Board Company nor its officers, directors, trustees, employees and agents shall be liable for any claims, liabilities, or expenses relating to (a) any errors or omissions in this report, whether caused by The Advisory Board Company or any of its employees or agents, or sources or other third parties, (b) any recommendation or graded ranking by The Advisory Board Company, or (c) failure of member and its employees and agents to abide by the terms set forth herein. The Advisory Board is a registered trademark of The Advisory Board Company in the United States and other countries. Members are not permitted to use this trademark, or any other Advisory Board trademark, product name, service name, trade name, and logo, without the prior written consent of The Advisory Board Company. All other trademarks, product names, service names, trade names, and logos used within these pages are the property of their respective holders. Use of other company trademarks, product names, service names, trade names and logos or images of the same does not necessarily constitute (a) an endorsement by such company of The Advisory Board Company and its products and services, or (b) an endorsement of the company or its products or services by The Advisory Board Company. The Advisory Board Company is not affiliated with any such company.

IMPORTANT: Please read the following.

The Advisory Board Company has prepared this report for the exclusive use of its members. Each member acknowledges and agrees that this report and the information contained herein (collectively, the “Report”) are confidential and proprietary to The Advisory Board Company. By accepting delivery of this Report, each member agrees to abide by the terms as stated herein, including the following:

1. The Advisory Board Company owns all right, title and interest in and to this Report. Except as stated herein, no right, license, permission or interest of any kind in this Report is intended to be given, transferred to or acquired by a member. Each member is authorized to use this Report only to the extent expressly authorized herein.

2. Each member shall not sell, license, or republish this Report. Each member shall not disseminate or permit the use of, and shall take reasonable precautions to prevent such dissemination or use of, this Report by (a) any of its employees and agents (except as stated below), or (b) any third party.

3. Each member may make this Report available solely to those of its employees and agents who (a) are registered for the workshop or membership program of which this Report is a part, (b) require access to this Report in order to learn from the information described herein, and (c) agree not to disclose this Report to other employees or agents or any third party. Each member shall, and shall ensure that its employees and agents use, this Report for its internal use only. Each member may make a limited number of copies, solely as adequate for use by its employees and agents in accordance with the terms herein.

4. Each member shall not remove from this Report any confidential markings, copyright notices, and other similar indicia herein.

5. Each member is responsible for any breach of its obligations as stated herein by any of its employees or agents.

6. If a member is unwilling to abide by any of the foregoing obligations, then such member shall promptly return this Report and all copies thereof to The Advisory Board Company.
# Table of Contents

Project Scope and Research Methodology .............................................................. 4  
Background and Introduction .............................................................................. 5  
COPD Care Pathway  
   1. COPD Diagnosis.................................................................................. 7  
   2. Stable COPD Management .................................................................... 9  
   3. Acute Exacerbation Treatment & Support ............................................ 14  
   4. Palliative Care ..................................................................................... 16  
   5. Community Engagement ...................................................................... 17  
COPD Programme Profiles  
   1. Western Health ................................................................................. 21  
   2. Cabrini Health ................................................................................... 23  
   3. Royal Brompton Hospital .................................................................... 25  
   4. Indiana University Health .................................................................... 26  
   5. University of Pittsburgh Medical Center ............................................. 28  
Appendix: Additional Resources ..................................................................... 30
Project Scope and Research Methodology

This report details clinical strategies for COPD patient care management. It provides an international perspective on the different care pathways that progressive institutions utilise to provide effective, comprehensive COPD care. With a specific focus on Australia, the report also addresses regional challenges for COPD care delivery such as treating Australian’s aboriginal communities and developing a multidisciplinary COPD programme that treats patients across the care continuum.

The report consists of two major components:

1) A thorough literature review of COPD clinical work and programmatic best practices
2) Case studies on COPD programmes in Australia, UK, and the US

The COPD patient pathway can be broken down into five major components:

1) COPD Diagnosis
2) Stable COPD Patient Management
3) Acute Exacerbation Management
4) Palliative Care
5) Community Engagement

The literature review and programme case studies follow each of these patient pathway components.
Chronic Obstructive Pulmonary Disease (COPD) is a class of breathing disorders characterised by breathing difficulties. The World Health Organisation (WHO) loosely defines COPD as chronic obstruction of lung airflow that interferes with normal breathing, and is not fully reversible.\(^1\)

In 1997, WHO partnered with the National Heart, Lung, and Blood Institute and the National Institutes of Health to create an international organisation, The Global Initiative for Chronic Lung Disease (GOLD), devoted solely to the management and prevention of COPD. GOLD has further defined COPD as a common and preventable disease “characterised by persistent airflow limitation that is usually progressive and associated with an enhanced chronic inflammatory response in the airways and lung to noxious particles or gases.”\(^2\) The most common forms of COPD are chronic bronchitis, or the inflammation of the lining the bronchial tubes, and emphysema, or damage to the lung’s alveoli (air sacs).

The inhalation of tobacco is the most common risk factor for COPD onset, and is responsible for up to 85% of all cases worldwide. Other causes include exposure to irritants in the air such as second hand smoke, biomass fuel, or air pollution. Additionally, a genetic predisposition causing an Alpha 1-antitrypsin deficiency, a molecule that protects tissues from enzymes released during an inflammatory response, also puts people at high risk of developing COPD.

Affecting over 300 million people as well as the 4\(^{th}\) leading cause of death worldwide in 2011, COPD’s debilitating symptoms have been felt on an international scale.\(^2\) According to WHO, the number of total deaths from COPD are projected to increase another 30% in the next decade. Within Australia and New Zealand specifically, approximately 14% of all residents older than 40 years old have some level of COPD. Smoking is a strong indicator for COPD prevalence, and 18.2% of Australian adult men and 14.4% of Australian adult women smoked daily in 2012.\(^3\)

As a chronic disease in which patient behavior primarily dictates disease onset and progression, COPD is an especially challenging illness to manage from a provider perspective. Additionally, without a formalised clinical pathway for COPD patients, they find themselves perpetually admitted into the Emergency Department (ED) with acute exacerbation episodes. In Australia, GPs manage less than 1% of COPD patients, pointing to a gap in the COPD treatment pathway as well as frequent ED utilisation.\(^4\) The development of COPD programmes and robust chronic care pathways can reduce hospital readmission, disability, and premature death for this difficult patient population.

---

**COPD by the Numbers**

<table>
<thead>
<tr>
<th>300 Million</th>
<th>6(^{th})</th>
<th>14%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of people affected by COPD Worldwide</td>
<td>Most common cause of death among Australian men and women</td>
<td>Percentage of Australians and New Zealand residents older than 40 with COPD</td>
</tr>
</tbody>
</table>
COPD Care Pathway
COPD Diagnosis

COPD Diagnosis Begins Care Pathway

Firm COPD Diagnosis Relies on Spirometry

The most common COPD symptoms are dyspnea (shortness of breath), wheezing, sputum production, and chest tightness. A physical examination can often suggest a COPD diagnosis, but the most objective and widely accepted diagnostic tool is a spirometer. A spirometry test pinpoints airflow limitation that is not fully reversible through bronchodilation, the distinguishing factor between COPD and asthma.

After use of a bronchodilator, patients inhale the maximal amount of air possible, and blow into the spirometry device until all the air has been expelled. The spirometer calculates the forced expiratory volume after one second ($FEV_1$) as well as the forced vital capacity (FVC), or total volume of air expelled. The GOLD criteria for a COPD diagnosis is a $FEV_1/FVC$ ratio that is less than 0.70.

Other diagnostic tools include complex lung function tests, exercise testing, sleep studies, and CT scans. However, these assessments do not replace spirometry for diagnostic purposes; instead, they provide additional detail about the patients’ health that may be needed for a specialist referral.

Within Australia, access to spirometry is a top priority, especially in the GP setting. Current diagnoses are predominately made in the specialised or emergency care setting. Future models of COPD care in Western Australia designate secondary and tertiary settings only for unstable patients already diagnosed with COPD, whilst GPs diagnose and manage the majority of stable COPD cases.

COPD-Related Diagnostic Tools

- Imaging
  - Chest X-ray cannot result in COPD diagnosis, but can provide additional information about potential comorbidities such as cardiac or skeletal disease
  - CT scanning is used for lung volume reduction (LVR) surgery assessment and lung cancer screening

- Oximetry
  - Evaluates patient’s oxygen saturation in the blood
  - A peripheral saturation of < 92% could signify need for supplemental oxygen therapy
  - All stable patients with a $FEV_1 < 35\%$ predicted $FEV_1$ should be tested

- Exercise Testing
  - Provides detailed information about the lung function during cardiopulmonary stress
  - Includes 6-minute walk test, incremental shuttle walk, or peak VO₂ during cardiopulmonary exercise
  - Strongly associated with COPD severity and mortality risk

- Genetic Testing
  - Alpha-1 antitrypsin deficiency is highly correlated with COPD onset
  - Early screening for people with family history of COPD can identify high-risk patients

1. A bronchodilator is medication that increases airflow to the lungs.

Source: Clinical Investment Insights research and analysis
COPD Diagnosis

Assessing Patient Severity Key to Appropriate Disease Mgmt

COPD Patient Stratification Uses Several Indexes

The stratification of COPD severity is often determined by a comparison of the FEV₁ with a predicted FEV₁ that is based on gender, race, age, and height. This lung function assessment, along with physical symptoms, allows doctors to classify the extent of COPD severity.

COPD Severity Classification

*Patients with FEV₁/FVC < .70*

<table>
<thead>
<tr>
<th>GOLD Stage</th>
<th>GOLD 1</th>
<th>GOLD 2</th>
<th>GOLD 3</th>
<th>GOLD 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Classification</strong></td>
<td>Mild</td>
<td>Moderate</td>
<td>Severe</td>
<td>Very Severe</td>
</tr>
<tr>
<td><strong>Lung Function</strong></td>
<td>FEV₁ ≥ 80% predicted</td>
<td>50% ≤ FEV₁ &lt; 80% predicted</td>
<td>30% ≤ FEV₁ &lt; 50% predicted</td>
<td>FEV₁ &lt; 30%</td>
</tr>
<tr>
<td><strong>Associated Symptoms</strong></td>
<td>Chronic cough, Excess mucus production</td>
<td>Chronic cough with mucus, Exercise induced dyspnea, Occasional exacerbation</td>
<td>Chronic cough with mucus, Dyspnea, Fatigue, Repeated exacerbations</td>
<td>Chronic cough with mucus, Severe dyspnea, Cyanosis, Peripheral Edema, Weight Loss, Severe exacerbations</td>
</tr>
</tbody>
</table>

Accompanying a spirometry-based classification are a host of other patient severity assessments that can inform subsequent referrals and treatment. Three commonly used surveys are the Modified British Medical Research Council Questionnaire (mMRC), the COPD Assessment Test (CAT), and the BODE index. While the mMRC survey measures patients’ levels of dyspnea, the CAT score quantifies the impact of COPD on patients’ daily life. Finally, BODE index uses the mMRC survey to predict the life expectancy of a COPD patient.

COPD Patient Severity Assessments

**mMRC**
- 5 Question survey
- Level of dyspnea (breathlessness) in a patient assessed
- Scale of 0-4, with a higher score correlating to increased dyspnea
- Survey universally available online

**CAT**
- 8 question survey
- Impact of COPD on a patient’s quality of life assessed
- Scale of 0-4, with a higher score correlating to COPD’s impact on daily life
- Survey available at http://www.catestonline.org/

**BODE Index**
- Relative risk of mortality from COPD assessed
- Scale of 0-12, with a higher score correlating to increased risk of mortality
- Calculated using FEV₁, 6-minute walk test, MMRC score, and body mass index
- Calculator available online at http://www.qxmd.com/calculate-online/respirology/bode-index

Source: Clinical Investment Insights research and analysis
Stable COPD Management Facilitated in Primary Care Setting

After COPD diagnosis, whether through an acute episode (an ED visit) or via GP consultation, the chronic care pathway for stable COPD management is activated. Effective COPD management should predominately take place in the primary care setting, with GPs and nurses taking the lead in patient care. This allows secondary and tertiary centres to provide more specialised, advanced care for more severe COPD patients. Currently within Australia, the tertiary hospital setting manages most COPD patients. As a result, many secondary and community health facilities lack the equipment for and experience in managing COPD\(^1\). From a clinical standpoint, COPD patient management primarily involves regular patient monitoring and ensuring the patient has access to the appropriate treatment pathways. In annual visits, primary health care providers should complete the following\(^1\):

1. Provide annual spirometry for patients to record any changes in lung function
2. Note the number and frequency of acute exacerbations and hospital admissions
3. Review medications prescribed and make any adjustments to dosage or type if necessary
4. Assess proper inhaler technique if applicable
5. Monitor weight and BMI, providing dietary advice or referring to dietitian if necessary
6. Monitor bone density for patients on a long term steroid therapy regimen
7. Ensure patients are up to date on vaccinations, especially respiratory infections such as influenza and pneumonia
8. Refer to a specialist if necessary

Common Resources and Strategies for Stable COPD Management
Stable COPD Management

Patient Behavior Dictates Disease Progression

Self-Management Essential Pillar in Controlling Disease

Critical parts of stable COPD management include empowering patients to take ownership of their own health, accurately monitor day-to-day symptoms, and allowing patients to self-administer medication as needed. From a provider perspective, proper self-management allows GPs and specialists to devote more time to patients in need of face-to-face consultation. This prevents a bottleneck in the care pathway caused by potentially unnecessary appointments.

At a basic level, self-management means providing patients with the knowledge to triage themselves to the appropriate COPD care facility upon symptom manifestation. More complex self-management includes doctors providing patients with varying medication regimens to follow depending on their symptoms.

The delivery of self-management advice and techniques should occur to some degree at all five COPD pathway components, beginning either in the acute pathway with ED discharge, or through discussions with GPs and specialists. Australia specific programmes such as the Self-Management Strategic Framework by the Western Australia Department of Health provides great detail on how providers should discuss self-management with their patients.¹

Smoking Cessation is First Step to Symptom Alleviation

Smoking, the biggest contributor to COPD, is one of the main drivers for rapid health deterioration for patients worldwide. The first step in managing COPD is smoking cessation.

Studies show that smoking cessation programmes are cost-effective, both for verbal counseling and pharmacotherapy.² Brief counseling at every point of contact with a healthcare professional is also effective in increasing the likelihood of smoking cessation. These encounters should include:

1. Ask: Identify all tobacco users at every visit, and document patient responses
2. Advice: Urge users to quit in a personalised and meaningful manner by discussing the potential consequences of smoking and the benefits cessation
3. Assess: Determine the level of nicotine dependence and willingness to quit
4. Assist: Provide advice regarding possible pharmacological interventions or referral to a formal smoking cessation programme
5. Arrange: Confirm follow-up appointment to reinforce message.³

An often overlooked aspect of smoking cessation is the notion that smoking is a chemical addiction, and may require formalised treatment to help people quit. The Western Australian Department of Health has created a Framework for the Treatment of Nicotine Addiction, which thoroughly discusses Australia-specific best practices for smoking cessation programmes provided by clinics and Medicare locals¹.
Stable COPD Management

Holistic Programs Target All Aspects of COPD Management

Pulmonary Rehabilitation An Effective Therapeutic Treatment

Pulmonary rehabilitation is an internationally utilised treatment for COPD patients. These programmes strive to limit disease progression by providing patients with symptom management tools. Pulmonary rehabilitation programmes operate in both the inpatient and outpatient setting, and can look very different depending in terms of programme structure. Comprehensive programmes include:

- Initial patient assessment
- Exercise training
- Self-management training
- Psychological support
- Disease education

These programmes have shown to reduce breathlessness and fatigue, improve exercise ability and quality of life, and lower health care utilisation.¹

Programmes range from eight weeks to six months in duration. The educational components cover a wide variety of topics including disease education, coping mechanisms for symptom onset, symptom management, recognition of symptoms that require emergent care versus self-management, anxiety and depression counseling, inhaler technique, and medication monitoring.

---

### Referral Criteria for Pulmonary Rehabilitation²

- COPD confirmed by spirometry
- mMRC dyspnea score of 3 or higher
- Clinically stable
- Recognition of function disability by patient
- Patient motivation to complete programme

### Contraindications to Pulmonary Rehabilitation²

- Within 6 weeks of severe exacerbation/hospitalisation or surgical procedure
- Severe pulmonary hypertension, unstable coronary syndromes, or congestive heart failure
- Bone instability/advanced arthritis
- Psychiatric instability
- Disruptive behavior/lack of motivation

---


² NW Sussex Commissioning Association, “COPD Patient Care Pathway,” November 2011

Source: Clinical Investment Insights research and analysis

©2014 The Advisory Board Company

advisory.com
Stable COPD Management

Patient Care Extends Beyond Hospital Walls

Telemedicine and Home Health Increase Facility Access

As a part of developing a robust chronic COPD care pathway, health organisations have placed a strong focus on patient services outside the hospital and clinic walls. Ambulatory care services can provide patients with the clinical attention they need, while reducing the reliance on hospitals or brick-and-mortar facilities. There are several established home health facilities in Australia such as the Healthy@Home programme, Hospital In The Home (HITH), and Rehabilitation in the Home (RITH).1 Outlined below is a study that highlights the benefits of COPD home services, as well as the common care pathway HITH patients take when admitted to the programme.

Case Study: UK vs. The Netherlands in COPD Home Services

• In both countries, majority of patients with COPD are managed by a GP network
• Major difference in care delivery between countries is the presence of Hospital-at-Home (HAH) services in England
• Nurses visit patients struggling with symptom management daily
• Approximately 30% of all COPD patients in UK were considered eligible for this service
• NHS determined that the costs associated with these visits are lower than hospital costs, with the average cost of home services totaling 877 pounds/patient versus 1753 pounds/patient in the hospital
• Whereas the Netherlands primarily utilised doctors for COPD patient management, UK leveraged nursing workforce to provide care, freeing consultant time and hospital beds
• Result: HAH is a safe alternative to hospital care for selected patients, and may be considered in the Netherlands in the future

HITH Programme Care Pathway

1) See appendix for detailed resource information.
Stable COPD Management

Comprehensive Care Orchestrated by Several Parties

Multidisciplinary COPD team Streamlines Care Coordination

Due the comorbid nature of this patient population, comprehensive care requires an interdisciplinary team of health care providers. Within the hospital or tertiary care setting, COPD programmes often include a team of doctors appointed to consult COPD patients. This team may include respiratory specialists, respiratory nurses, physiotherapists, cardiologists, dieticians, psychiatrists, and social workers. Linking these comprehensive networks with GPs through referral pathways allows doctors in the primary care setting to readily tap into specialised services that relate to the unique needs of their patients. Additionally, these established networks facilitate communication among the many different professionals treating a patient at one time, and provide highly coordinated, comprehensive care.

Care Connections for COPD Management

Common Specialist Referral Pathways for COPD Patients with Comorbidities

<table>
<thead>
<tr>
<th>Reason for Referral</th>
<th>Destination</th>
<th>Common Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment of oxygen needs</td>
<td>Respiratory Specialist</td>
<td>Blood gas measurement, long-term oxygen therapy</td>
</tr>
<tr>
<td>Hypertension, heart murmur, atrial fibrillation, edema</td>
<td>Cardiologist</td>
<td>Medical management, cardiovascular testing, device implantation, further referral</td>
</tr>
<tr>
<td>Decreased body mass index, fragility</td>
<td>Bone specialist</td>
<td>Osteoporosis diagnosis, discontinued steroid use, other treatments as necessary</td>
</tr>
<tr>
<td>Signs of depression, anxiety</td>
<td>Psychiatrist</td>
<td>Behavioral therapy, medical management, pulmonary rehabilitation</td>
</tr>
<tr>
<td>Assessment for lung transplantation or lung volume reduction surgery</td>
<td>Respiratory Surgeon</td>
<td>Referral to transplant centre, LVS surgery</td>
</tr>
</tbody>
</table>

Source: Clinical Investment Insights research and analysis
Exacerbation Management Key to Readmission Prevention

Exacerbation, by clinical definition, is a worsening of a patient’s symptoms from his or her stable state that exceeds daily variations and is acute on onset.\(^1\) Recovery from these acute events vary significantly in length, and may take up to six months. For patients with moderate or severe COPD, a subsequent exacerbation often occurs before full recovery from a previous episode, which exponentially decreases the patient’s health and quality of life. Patients experiencing two or more exacerbations per year are often referred to as “frequent exacerbators.”

Almost a third of all exacerbations have unknown causes. Respiratory tract infections (both viral and bacterial) are the most common known causes, highlighting the importance of vaccinations against influenza and other respiratory diseases. Additionally, pollutants in the lung (smoke from tobacco, pollution, etc.) are also highly correlated with acute exacerbations.

The severity of exacerbations are assessed using a number of different diagnostic tools. Pulse oximetry can determine a need for oxygen therapy and chest CTs can exclude the possibility of lung cancer. A change in medication regimen often including short-acting beta\(_2\)-agonists and corticosteroids/antibiotics can shorten recovery time, elevate FEV\(_1\), and reduce hospital length of stay.\(^2\)

More than 80% of exacerbations can be treated in the outpatient setting. However, two primary challenges for COPD patients are, first, understanding what exacerbations symptoms should be managed in which setting and second, addressing symptoms as they initially present themselves. As a result, patients often arrive at the ED regardless of the severity of their symptoms, or wait to seek medical attention until a life-threatening symptom suddenly manifests. This influx of patients, combined with unstandardised referral protocols to GPs or specialist services lead to frequent hospital readmission through the ED. To curb this trend, programmes across Australia are establishing strong multidisciplinary teams and COPD-specific referral networks, beginning with the GP. Strong communication between patients and GPs along with robust specialist care are the foundation to preventing ED readmission and providing comprehensive COPD care management.

<table>
<thead>
<tr>
<th>GOLD Hospital Assessment/Admission Criteria(^2)</th>
<th>GOLD Basic Discharge Criteria(^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Increased intensity of symptoms</td>
<td>✓ Use of long-acting bronchodilators without inhaled corticosteroids</td>
</tr>
<tr>
<td>✓ Severe underlying COPD</td>
<td>✓ Patient able to walk across room</td>
</tr>
<tr>
<td>✓ Onset of new physical signs (cyanosis, edema)</td>
<td>✓ Patient can eat and sleep without dyspnea awakening</td>
</tr>
<tr>
<td>✓ Exacerbation resistance to initial medical or self-management</td>
<td>✓ Clinically stable for 12-24 hours</td>
</tr>
<tr>
<td>✓ Presence of serious comorbidities (e.g heart failure)</td>
<td>✓ Arterial blood gases stable for 12-24 hours</td>
</tr>
<tr>
<td>✓ Older age, fragility</td>
<td>✓ Follow-up arrangements have been made within 14 days of discharge</td>
</tr>
</tbody>
</table>


Source: Clinical Investment Insights research and analysis
Primary Care Setting Strategies for Care Optimisation

Strong discharge planning is another important component of readmission prevention. Most institutions follow-up with patients 48 hours after discharge, as well as schedule a face-to-face appointment within two weeks, regardless of the hospital length of stay. Once patients have been transitioned from the acute care pathway to the primary care setting, GPs can utilise a number of strategies to reduce risk of future exacerbations:

1. Document every patient exacerbation
2. Ensure patient is up-to-date on vaccinations
3. Communicate with referring hospital and patient regarding medication management, changes to regimen
4. Create self-management plans for patient
5. Re-educate patient on symptom management
6. Re-emphasise smoking cessation and assess progress
7. Make appropriate referrals to pulmonary rehabilitation facilities or to other specialised services as necessary

Acute and Chronic Care Pathway Linkage

Discharge to

Communication feedback loop

ED
Hospitalisation

GP

Refers to

Multidisciplinary Specialist Network

Specialised Treatment

Acute Care Pathway

Chronic Care Pathway

Diagnosis
Stable COPD Management
Exacerbation Management
Palliative Care
Community Engagement

Source: Clinical Investment Insights research and analysis
Palliative Care

Palliative Services Completes COPD Care Continuum

Palliative Care Often Overlooked Component of Pathway

In the past, palliative care in Australia was utilised for patients suffering from cancer or facing impending death. Until recently, it was not a large focus on palliative care for chronic disease. However, as population health management gains popularity amongst healthcare providers, palliative care programmes are providing more chronic disease services. The standard clinical indication for patients in need of palliative services is having a FEV\textsubscript{1} < 25% of the predicted value.

The Western Australia Department of Health published a Palliative Care Model of Care booklet providing an Australia-specific, in-depth view on the different palliative care settings, as well as partnership models between specialist palliative care services and primary care providers.\(^1\)

Within Australia, there are a number of different palliative care services that primary care providers and hospitals can collaborate with to provide full-spectrum care for COPD patients\(^2\).

A significant financial and ethical question that arises for severe COPD patients and their families is the use of prolonged treatment for end-of-life care. In some cases, when a patient reaches a state that deems them unconscious or ineligible to speak on their own behalf, ambiguity exists as to when to end life-sustaining treatment. Patients without an advanced care directive, otherwise known as a living will, can be attached to life-supporting machines such as ventilators for an extended period of time after they lose consciousness.

Increased planning through the creation of advanced care directives allows COPD patients to control their outcome at this advanced stage of disease progression. This provides patients with a sense of control and dignity at the end of their life, and may also result in decreased financial and emotional burdens for family members and health facilities.

New South Wales Department of Health published a guide in 2004 titled Using Advanced Care Directives, which provides best practices for discussing this matter with patients nearing the end of their lives.\(^1\) Additionally, it explains that patients can fill out a form with their wishes, or can simply write down on a piece of paper their requests without a prepopulated format.\(^1\) There is currently no requirement to register this form with any agency or organisation within New South Wales.

1) See appendix for detailed resource information.
Verdict Still Out on COPD Screening Effectiveness

COPD screening initiatives and outreach programmes are highly controversial. Screening proponents suggest providing community screening programmes help identify high-risk COPD patients and link them to the COPD care pathway early in their disease progression. As a disease that only worsens with time, prompt treatment and monitoring allows patients to change their behavior and lifestyle while they are still relatively healthy. Additionally, screening also brings awareness to the community about the disease, its effects, and ways to prevent it.

However, screening opponents deem programmes less effective and potentially detrimental to COPD patient recruitment. In 2008, the US Preventative Task Force completed a study determining whether adults should be screened for COPD. The board ultimately decided that the benefits of screening did not outweigh potentially harmful effects such as false-positive readings, and the adverse effects of treatment.1 From a behavioral perspective, several randomised studies demonstrated that COPD diagnosis did not improve smoking cessation rates within the population.2 In addition, some doctors fear that people who are at high risk for COPD, but are screened and do not yet meet the clinical criteria for COPD will be less likely to consider smoking cessation in the future.

Nevertheless, the importance of COPD awareness within the community is indisputable. Many programmes take advantage of World COPD Day sponsored by GOLD (this year’s date is November 19th, 2014) and host COPD-related events such as community lecture series, facility tours, 5k running races, and fundraising events.

Aboriginal Population High-Risk, Challenging to Manage

COPD prevention begins with smoking cessation, which is a widespread practice among Australian aboriginal and indigenous communities. Aboriginals’ high smoking rates combined with inequitable access to health care services make the death rate of aboriginal Australians with COPD five times higher.3

Although ingrained in the indigenous culture, smoking must be discouraged in order to curb COPD’s growing rates in Australia. The best way to target this high-risk population is to provide ample resources to smoking cessation, COPD education, and GP consultation.

The North Coast New South Wales Medicare Local, a not-for-profit, independent health organisation provides aboriginal services that link indigenous communities to health resources. The group is in partnership with Gurgun Bulahnggelah health facility in Lismore, and provides basic health services and education geared towards the aboriginal culture.

Durri Aboriginal Corporation Medical Service, NSW4

- Located in Kempsey on the traditional land of the Dunghutti people
- Includes a wide range of services including chronic disease management, maternal care, mental health services, physiotherapy, vascular health, dental care, and immunisations
- Program provides transportation for aboriginals requesting services
- Open Monday to Friday, and also offers outreach clinics and home services

Community Engagement

NSW Medicare Locals Offer Several Indigenous Services

The North Coast New South Wales Medicare Local has also recently created a new initiative titled Care Coordination and Supplementary Services (CCSS) to link aboriginal populations with chronic conditions to coordinated, multidisciplinary care. This programme includes care coordination workers who work with indigenous people to arrange services, provide transportation, and serve as a patient advocate within the health care setting. Aboriginal people eligible for the programme must have a chronic disease such as COPD, and been referred to the programme by a GP. Locale care coordinators for this programme can be contacted at these various sites:

- Tweed Heads: 07 5523 5501
- Lismore: 02 6622 4453
- Coffs Harbour: 02 6651 5774
- Kempsey: 02 6562 1055
- Port Macquarie: 02 6583 3600

One last Medicare Locale offering is known as “Closing the Gap,” which aims to rectify the inequitable medical care provided to Aboriginal communities through the use of outreach workers. The employees of this programme, who are often aboriginals, assist the indigenous population in filling out medical forms, keeping track of appointment dates and referrals, and serving as a liaison for indigenous patient needs.

Building a strong partnership with this Medicare Locale and these distinct programmes can provide enhanced access for aboriginal patients to Collins Hospital services, and link the indigenous community to a larger network of multidisciplinary, comprehensive services.


Source: Clinical Investment Insights research and analysis
COPD Programme Profiles
Clinical Investment Insights researchers have profiled five institutions with comprehensive COPD programmes to identify strategies for streamlining patient care and optimising transitions across the care continuum. These profiles examine patient pathways used by five different institutions, comparing processes for diagnosis, stable COPD management, exacerbation management, palliative care, and community engagement.

<table>
<thead>
<tr>
<th>Institution</th>
<th>Location</th>
<th>Hospital Type</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Western Health</strong></td>
<td>Victoria, Australia</td>
<td>• Public health system&lt;br&gt;• 3 acute care hospitals&lt;br&gt;• Catchment population of 800,000 Australians&lt;br&gt;• Strong partnerships with community services</td>
</tr>
<tr>
<td><strong>Cabrini Health</strong></td>
<td>Victoria, Australia</td>
<td>• 800+ bed health system&lt;br&gt;• Private, not-for-profit health system&lt;br&gt;• Religiously affiliated organisation</td>
</tr>
<tr>
<td><strong>Royal Brompton Hospital</strong></td>
<td>London, United Kingdom</td>
<td>• 300+ bed hospital&lt;br&gt;• Public, specialist centre&lt;br&gt;• Largest heart and lung centre in the UK</td>
</tr>
<tr>
<td><strong>Indiana University Health</strong></td>
<td>Indiana, The United States</td>
<td>• 3,000+ bed system&lt;br&gt;• Public, not-for-profit academic medical centre&lt;br&gt;• #11 Pulmonology Programme in the US</td>
</tr>
<tr>
<td><strong>University of Pittsburgh Medical Center</strong></td>
<td>Pennsylvania, The United States</td>
<td>• 4,000+ bed system&lt;br&gt;• Private, not-for-profit academic medical centre&lt;br&gt;• #7 Pulmonology Programme in the US&lt;br&gt;• Largest lung transplant centre in the US</td>
</tr>
</tbody>
</table>
Western Health

Efficiency, Standardised Protocols Necessary in Public Setting

Pulmonology Programme Overview

Western Health has two inpatient facilities, with one serving COPD patients. The pulmonology unit sees approximately 150 inpatient cases per month, with 60% comprised of COPD patients. In the two outpatient clinics, there are 2-3 specialist doctors, 2 registrars, a general nurse coordinator, and a COPD educator. Outpatient programmes housed within the health system are pulmonology rehabilitation, smoking cessation, and the Hospital Admission Risk Programme (HARP) for frequent users of Western Health’s COPD acute services.

Key Takeaways

• The HARP programme is extremely effective in providing extra resources to frequent exacerbators, guiding them from frequent use of acute care to chronic disease management services
• Western Health uses several strategies for improving efficiency at all parts of the COPD pathway, such as pre-booking spirometry testing for outpatient consultations, and hiring nurse navigators to direct patients to the appropriate sites of service
• Having different inpatient wards for COPD patients and comorbid patients can aid in providing the appropriate level of COPD care

Patient Pre-Consultation Review Expedites Diagnostic Process

Western Health’s main access point to outpatient services is through GP referral. However, virtually all inpatient admits arrive through the Emergency Department. The COPD programme’s main diagnostic tool is spirometry. CT scanning is also completed if the patient has an abnormal chest x-ray or shows symptoms of lung cancer. As a large, public hospital system, many of the rooms and diagnostic equipment are constantly booked. Therefore, in order to streamline the diagnostic process, consultants will pre-book spirometry testing for consultations that could result in a COPD diagnosis. If they are diagnosed in the inpatient setting, they are linked to an outpatient clinic for follow-up care. If they are instead diagnosed in the outpatient setting, patients may continue to be monitored by the outpatient clinic, referred to a specialist for treatment, or discharged back to their GPs.

Western Health COPD Care Pathway

Source: Clinical Investment Insights research and analysis
Strong IP and OP Connections Facilitate Care

Capacity Maximised Via Mild COPD Patient Discharge
For the least severe COPD patients, Western Health doctors will refer chronic care management back to the GP practice to preserve capacity for the most resource-intensive patients. Western Health pulmonary rehabilitation is available at two outpatient sites in addition to a small smoking cessation intervention programme for heavy smokers. Because smoking cessation is a large part of symptom management, Western Health has several strong smoking cessation and palliative care networks. Currently, there is no remote monitoring platform in place, although clinic nurse coordinators make themselves available to frequent patients through the telephone. In addition, there is no data tracking programme at Western Health, which makes patient identification for research trials or other resources an extremely time-intensive process.

HARP Program Targets Frequent Exacerbators
Upon admission for exacerbation, patients are directed to one of two inpatient wards. The more severe COPD patients requiring respiratory-specific attention reside in the respiratory medicine ward. Less severe, potentially co-morbid patients are treated in the general medicine ward. Inpatients have access to a full range of services including psychology, nutrition, and rehabilitation specialists. COPD nurse educators also visit each patient, and assist them in developing proper inhaler technique and developing action plans. Multidisciplinary collaboration between doctors occurs through weekly inpatient meetings, and final decisions on patient discharges are made together. Follow-up appointments are scheduled in Western Health’s outpatient clinic, regardless of hospital length of stay.

Frequent exacerbators are referred to the Hospital Admission Risk Program (HARP), where they are assigned to a registered nurse care facilitator. The nurse’s primary role is to answer any questions regarding medicine administration, symptom changes, and strategies for increased quality of life at home. Additionally, nurses link patients to community resources and facilitate strong communication between patients and their GPs. Patients can be enrolled in this programme up to six months.

Relationship with Community Health Centers Opens Access to Aboriginal Community
While there is a low number of indigenous patients in the surrounding area, Western Health has experience in treating the high-risk indigenous patient population. The COPD programme frequently communicates with community health centres to streamline chronic care management with the specialised treatment offerings at Western Health.

The COPD Programme also runs a COPD lecture series in the community and visits community support groups and services to educate the public on its health care offerings. In addition, Western Health hosts a community-wide event on World COPD Day. With a small research presence within the COPD programme, staff members sometimes complete community outreach to recruit subjects for small-scale clinical research trials.

Source: Clinical Investment Insights research and analysis
Cabrini Health

Private Model Enables Uniform Services Across Care Settings

Pulmonology Programme Overview
Cabrini Health’s pulmonary programme is located on its main campus, and sees approximately 400 acute admissions per year. There are also 2 inpatient rehabilitation campuses that have 70 beds in total, as well as a palliative care campus that contains 40 beds. Outpatient pulmonary rehabilitation operates out of the same facilities as the inpatient rehabilitation services. There are 6 respiratory consultants credentialed to operate within Cabrini Health.

Key Takeaways
• The RCCP programme, which provides home health services for COPD patients and guides patients through the COPD care pathway is extremely effective in coordinating care and preventing patient readmission; the programme has shown to reduce readmission by 80% in six months
• Chronically ill patients have a difficult time recognising when symptoms are worsening; education regarding symptoms that do or do not require immediate medical attention is crucial to self-management

BODE Score Facilitates Effective Patient Stratification
The main access point into the COPD care pathway is through ED admission, with only 20-30% of patients arriving via consultant referrals. COPD diagnosis is primarily made with spirometry and CT scans, although the programme has the ability to complete a more specialised assessment for complex cases. Patient stratification is an important diagnostic component, as it allows staff to effectively navigate the patient to the appropriate resources. The BODE score is the most frequent tool used to assess patient severity. Upon discharge, patients are linked to a network of outpatient services for chronic care management.

Cabrini Health COPD Care Pathway

Source: Clinical Investment Insights research and analysis
Cabrini Health

Chronic COPD Services Linchpin to Preventing Readmission

RCCP Effectively Reduces Preventable Readmissions
Cabrini Health’s COPD programme differentiates itself from other Australian hospitals in its extremely effective COPD management programme. Known as the Respiratory Continuing Care Program (RCCP), this outpatient service provides patients with home health consultations, care coordination, self-management support, and COPD action planning for discharged patients. The primary goal of RCCP is to keep patients out of the acute care pathway through continual monitoring and consultation. Within several days of patient discharge, RCCP programme staff will visit the patient’s home and reinforce smoking cessation, inhaler technique, and complete assessments for specialised referrals. In addition, the programme educates patients on how to determine which symptoms require emergent care versus outpatient consultation. In a six month period, the service has shown to reduce readmission by over 80% and hospital length of stay by 70%.

In addition to RCCP, Cabrini offers a pulmonary rehabilitation programme that operates two days a week, and is staffed by social workers, dieticians, respiratory nurses, and therapists. The pulmonology programme has a strong referral network to smoking cessation clinics in the community.

Inpatient Rehabilitation May Serve as “Step-Down” Facility for Patients Experiencing Exacerbations
When patients are admitted into the acute care setting, they are stabilised and seen by a respiratory specialist, occupational therapist, pharmacist, social worker, and other specialised doctors. The ward contains a multidisciplinary group of doctors that meet and discuss inpatient cases on a weekly basis. After stabilisation, if the patient is not deemed fit to return home, the programme offers an inpatient rehabilitation service that lasts for approximately ten days. Upon discharge, the RCCP programme will ask the multidisciplinary team for permission to enroll the patient in its services, and make first contact with the patient days later. For patients experiencing sporadic symptom worsening, RCCP staff will prescribe medications for patients to self-administer as needed.

Palliative Care Programme Completes COPD Care Continuum
Cabrini Health provides the only funded palliative care programme in Australia within the private sector. This affiliated facility allows for streamlined care continuity, providing a sense of familiarity and comfort for extremely sick patients and their families. Doctors with severe COPD patients will begin discussions on palliative care treatment, and aid patients in transitioning into the care facility, where they may continue to provide medical support.

Community Outreach Limited By Budget Constraints
Cabrini Health does not provide specialised indigenous services to its local catchment area because of the small aboriginal population. Additionally, in contrast with the public health sector, the health system’s reimbursement model does not allocate extensive capital to fund outreach initiatives. However, Cabrini Health has partnered with an organisation in the northern part of Australia in delivering limited care to a predominately indigenous population.

Finally, nurses and doctors network with Medicare locals to bring awareness to the programme’s offerings, and establish strong coordination between GPs and specialised care.
The Royal Brompton Hospital

Specialised Facility Focuses on Advanced COPD Treatment

Pulmonology Programme Overview
The Royal Brompton is a specialised centre that receives referrals from GPs and respiratory specialists from across the UK. The COPD programme treats the most difficult COPD patients (severe exacerbations, sleep disorders, significant breathing difficulty), and has an adjunct lung volume reduction surgery programme. The clinic sees approximately 500 patients a year, and the inpatient ward is designated for those receiving treatment or undergoing a procedure. The programme has 4 consultant doctors, 1 clinical assistant, and a research fellow who works in the clinic as well.

Key Takeaways
• By transitioning chronic patient care to the GP setting, The Royal Brompton Hospital can invest all its resources and personnel in specialised care

COPD Program Serves as Triage Center for Specialised Care
Because Royal Brompton Hospital does not have an ED, the only access point is through a GP or respiratory specialist referral. The majority of patients referred to Royal Brompton are already diagnosed with COPD, and are in need of specialised treatment. Doctors assess patients with CT scans, CAT survey, spirometry, and exercise tests to collect detailed information on lung function. Depending on the results, patients may undergo a specialty procedure, receive referral to another specialty centre, or return back to their GP for follow-up.

Patients Return to Primary Care Setting For Chronic Care
The most common specialised procedures performed at Royal Brompton are lung volume reduction surgery and sleep studies. For complex procedures, patients stay in the hospital’s inpatient ward. Upon discharge, the COPD programme has a standardised protocol in place for follow-up consultations. Depending on patient needs, most care is transitioned back to the GP setting after an acute intervention. However, the programme offers pulmonary rehabilitation services to all patients, and runs a chapter of the “Breathe Easy” support group in partnership with the British Lung Foundation.

Royal Brompton Hospital COPD Care Pathway

Source: Clinical Investment Insights research and analysis
Several Diagnostic Tools Used to Confirm GP Diagnosis

The majority of COPD patients enter Indiana University Health’s pulmonology department through a direct referral from a GP, although entryway through the ED is not uncommon. Many of the patients arriving through direct referral have already been diagnosed with COPD; however, these diagnoses are sometimes wrong. Therefore, spirometry is used to confirm the diagnosis, and a CT scan is ordered if indications for lung cancer are present. In order to stratify patients based on severity, Indiana University Health doctors use the results of the CAT survey, a depression questionnaire, a 6-minute walk test, and BODE score. Based on these diagnostic tools, doctors direct patients into the appropriate care pathway. If diagnosis occurs in the ED or inpatient ward, the patient is then referred to the COPD programme’s outpatient clinic for follow-up care. If diagnosis occurs in the outpatient setting, follow-up care can be completed at the same clinic, the patient’s GP clinic, or through specialised services such as pulmonary rehabilitation.
Indiana University Health

Patient Activation, Support Crucial to Effective Care

Anticipatory Prescriptions, Patient Education Decreases Unnecessary Clinic Visits
Stable COPD management occurs predominantly in outpatient community clinics around Indiana. These facilities are staffed by pulmonary specialists that concurrently work in the hospital setting, allowing for easier care coordination between settings. Doctors provide antibiotics, steroids, and inhaled medication for patients to use at home upon symptom manifestation. However, in order for this self-management strategy to be effective, doctors and support staff must provide detailed education on symptom recognition and management at every appointment.

In addition, patients frequently use a nurse telephone line for remote medical advice access. This service consumes a large portion of nurses’ time, but is effective in preventing readmission upon exacerbation manifestation. Follow-up appointments occur one month after the initial outpatient consultation, and then every three months for the first year after diagnosis.

Follow-up care beyond one year varies with patient progress. Patients with minor COPD are referred back to their GP for most of their care, and will see a COPD specialist approximately once a year.

Protocolised Inpatient Assessments Standardise Care
Patients admitted to the inpatient ward with exacerbations are given steroids and fast-acting medication to control symptoms. Once symptoms are stabilised, additional assessments and screening measures are taken. As a large academic medical centre, Indiana University Health has a robust referral pathway to other departments such as cardiology, nephrology, endocrinology, and psychiatry. Before discharge, staff complete mandatory respiratory therapy, inhaler training, and smoking cessation sessions. Face-to-face appointments are scheduled in the outpatient clinic up to two weeks after discharge. These consultations include a physical examination, progress update, and additional smoking cessation and inhaler training.

EHR Infrastructure Enables Retroactive Patient Recruitment
Due to the lack of literature demonstrating that COPD screening initiatives are effective, there are no active screening programmes in place. However, doctors and staff have a presence at small community events that are aimed at bringing awareness to the disease. Additionally, the programme leverages the system’s large electronic health record system to retroactively recruit patients who have seen a doctor at Indiana University in the past, and presented symptoms that could lead to a COPD diagnosis.
University of Pittsburgh Medical Center (UPMC)

Academic Setting Promotes Use of Innovative Care Strategies

Pulmonology Programme Overview

UPMC’s distinguished pulmonology programme includes 100 of the 600 faculty members at the hospital. There is a strong research component that supplements the clinical COPD programme, with faculty members involved in basic science and clinical/translational research on COPD. Closely linked with the COPD programme is a surgical lung centre, which offers lung transplant and lung volume reduction surgery. Additionally, UPMC’s COPD programme has a strong outpatient clinical infrastructure, with satellite clinics across Pennsylvania that are staffed by the same doctors at the UMPC’s flagship hospital. UPMC houses its own pulmonary rehabilitation programme across several outpatient clinics.

Key Takeaways

- EHR can play a critical role in patient tracking, monitoring, and ensuring standardised treatment across care settings
- A dedicated, multidisciplinary team of doctors enables strong care continuity between fields, fostering higher-quality, holistic care
- A robust research infrastructure provides programme with differentiating technology, increasing branding and serving as a differentiator within local market

Research Involvement, Large Lung Transplant Focus Provides State-of-the-Art Diagnostic Equipment

Direct referral is the primary access point into UPMC’s pulmonology division. Because of UPMC’s heavy participation in clinical research studies, the COPD programme has access to a wide range of diagnostic equipment. The most commonly used tools are spirometry, echocardiography, CT scans, impulse oscillometry, and exercise testing (including a six minute walk test and a shuttle walk assessment). Additionally, as the largest lung transplant centre in the United States, patients are often assessed for lung volume reduction surgery or lung transplant. Doctors utilise the findings from diagnostic tests along with the mMRC questionnaire and BODE index to stratify patients based on severity.

UPMC COPD Care Pathway

Source: Clinical Investment Insights research and analysis
University of Pittsburgh Medical Center (UPMC)

Utilisation of EHR Technology for Treatment, Recruitment

Outpatient Clinic The Mainstay of Stable COPD Management
UPMC’s outpatient COPD clinics have a strong multidisciplinary focus. The clinics are staffed with pulmonologists, cardiologists, advanced nurse practitioners, and rehabilitation specialists. Doctors also have strong ties to many other outpatient clinics in different disciplines such as nephrology, endocrinology, psychiatry. In outpatient clinic consultations, doctors make treatment adjustments and reinforce smoking cessation and self-management techniques. UPMC utilises its several pulmonary rehabilitation programmes to provide holistic therapy and disease education to its COPD patients. Currently, there are not formal remote monitoring modalities available at UPMC, but the programme is in the process of assessing the need for one. Additionally, UPMC clinics are also developing standardised guidelines for transferring mild COPD patients back to the GP setting. This will allow doctors to maximise the amount of time they spend with patients who are in need of more specialised attention.

EHR Care Pathway Software Standardises Treatment, Streamlines Care
Patients with exacerbations enter the acute care pathway through the Emergency Department. A designated team of multidisciplinary doctors work on the ward including pharmacology, respiratory therapy, pulmonary nursing, rehabilitation specialists, and cardiologists.

The COPD programme is in the process of developing an innovative tool in UPMC’s electronic health record system to streamline COPD patient treatment. If any admitted patient across the system demonstrates a number of COPD-related symptoms, an automatic message will appear on the doctor’s computer, alerting them of the potential diagnosis. Additionally, the message provides the doctor with a standardised treatment regimen, and automatically orders a respiratory specialist consult.

Patient discharge from the acute setting only occurs after the patient has been administered respiratory therapy, smoking cessation education, applicable vaccinations, and a supplemental oxygen assessment.

Research Study Recruitment Only Formal Patient Outreach
Like Indiana University’s COPD programme, there is no formal COPD screening programme due to the lack of robust literature on its effectiveness. Most patient recruitment and outreach revolve around building patient cohorts for clinical research trials. In order to find patients that meet a trial’s specific criteria, doctors use the hospital-wide EHR as a primary means of enrolling participants.

Source: Clinical Investment Insights research and analysis
Appendix: Additional Resources

_Self Management Strategic Framework 2011-2015_, Western Australia Department of Health
- This resource provides detailed information on strategic approaches to self-management education and implementation

_Framework for the Treatment of Nicotine Addiction_, Western Australia Department of Health, November 2010
- The document thoroughly discusses Australia-specific best practices for smoking cessation programmes

_Hospital in the Home (HITH) Guideline_, New South Wales Ministry of Health, August 2013
- This resource provides standardised guidance to Local Health Districts on the programmatic infrastructure of HITH programmes

_Palliative Care Model of Care_, Western Australia Department of Health, April 2008
- This publication provides different models for palliative care programmes and networks, as well as touches on the service gaps in this part of the care continuum

_Using Advanced Care Directives_, New South Wales Department of Health, June 2004
- This document provides health care providers with a set of guidelines for talking to patients about advanced care directives, as well as understanding how to proceed when an ill patient presents Advanced Care Directive documentation

_Advanced Directive Form_, Dr. Jerome Mellor, July 2013
- This is a sample advanced care directive form that patients can fill out to document their end-of-life wishes