Collaborative Commissioning:
Development of a COPD Care Pathway for South Eastern NSW

Final report

13 February 2023

Contents

Introduction

Context

COPD is the single biggest contributor to the total health services burden due to potentially preventable hospitalisations, and represents the fifth leading cause of death in the region from chronic conditions.[1] For Aboriginal and Torres Strait Islander people, chronic lower respiratory disease is one of the leading causes of death in the region.[2]

COORDINARE (the South Eastern NSW Primary Health Network), Illawarra Shoalhaven Local Health District (ISLHD) and Southern NSW Local Health District (SNSWLHD) have partnered together through the Collaborative Commissioning Program to jointly develop and implement a care pathway for Chronic Obstructive Pulmonary Disease (COPD). The care pathway aims to improve outcomes for people with COPD and to improve healthcare system sustainability, including through reducing preventable hospitalisations. The care pathway is also intended to be broadly applicable to other chronic health conditions.

Methodology

The care pathway outlined in this document was developed through a co-design process, which included:

- A literature scan, including the latest COPD-X guidelines developed by the Lung Foundation and Leading Better Value Care NSW Chronic Obstructive Pulmonary Disease Clinical Priorities.
- Development of an initial high-level care pathway - sources reviewed are listed at Appendix C.
- Five co-design workshops to explore each stage of the care pathway in detail.
- An additional three co-design workshops to test the initial care pathway in full, and explore enablers of the care pathway.
- Three additional Interviews to enable input from stakeholders unable to attend the workshops.

Workshops were held during November and early December 2022, and included both online and face-to-face sessions. The process was designed to enable a broad range of stakeholders to shape and refine the initial care pathway in line with local needs, capacity and opportunities. Stakeholders involved in the co-design process are listed at Appendix A.

The co-design process engaged the following stakeholder groups (full list is provided at Appendix A):

- Consumers
- General Practitioners
- General practice staff
- Non-GP specialists
- Nurses
- Pharmacy
- Allied health
- LHD staff
- Community health providers
- Aboriginal Health Workers
- Residential Aged Care Facilities

While a broad range of stakeholders participated in the workshops, there were some stakeholder groups that were underrepresented. These included Aboriginal Community Controlled Health Organisations (ACCHOs), and Aboriginal and Torres Strait Islander consumers and/or carers. Ongoing consultation will occur as the opportunities for implementation are further developed as part of the joint development phase of the Collaborative Commissioning Program.

More information about the co-design sessions and participants is included in Appendix A.

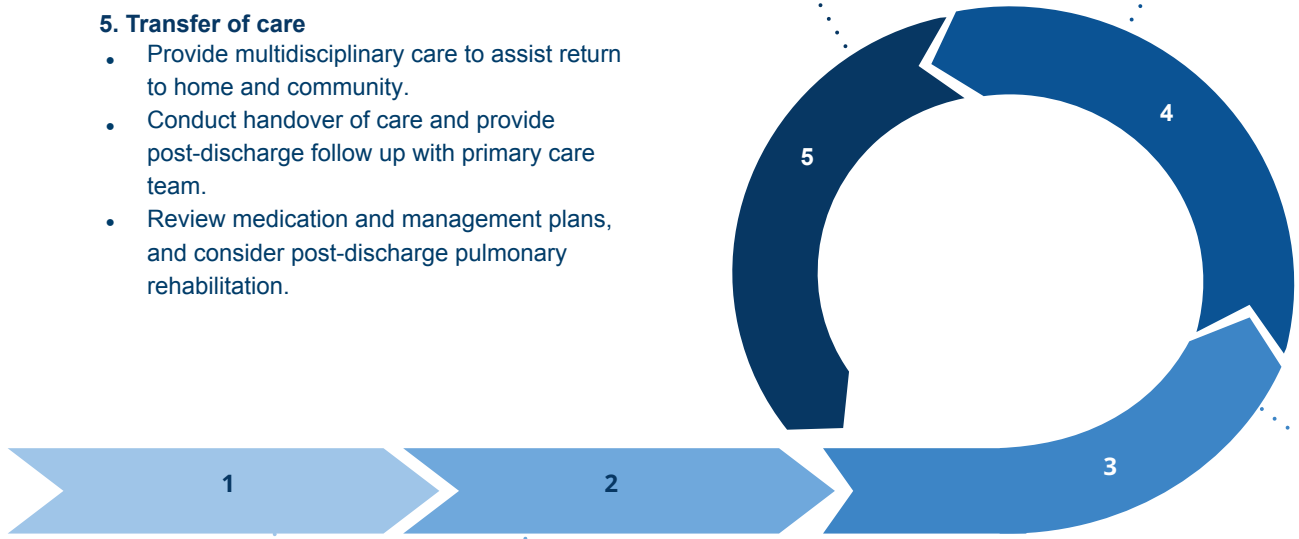
Purpose of this document and next steps

The purpose of this report is to outline the proposed care pathway, which has been developed through a co-design process. It includes recommendations for the Patient Centred Co-commissioning Group (PCCG), to support the next step of the Joint Development Phase. This will include budget and sustainability modelling, through which the pathway will continue to be refined, ahead of the initial feasibility implementation phase. More detailed information on the co-design findings is available in the accompanying *'Summary report on co-design workshops'*.

[1]Dabscheck. E, "COPD-x Australian Guidelines for the Diagnosis and Management of Chronic Obstructive Pulmonary Disease: 2022 Update." The Medical Journal of Australia, September 19, 2022. https://www.mja.com.au/journal/2022/217/8/copd-x-australian-guidelines-diagnosis-and-management-chronic-obstructive.
[2]Australian Institute of Health and Welfare (2014) Coronary heart disease and chronic obstructive pulmonary disease in Indigenous Australians, AIHW, Australian Government, accessed 25 November 2022.
[3]. Chronic obstructive pulmonary disease - aci.health.nsw.gov.au (2022) Leading Better Value Care - Chronic obstructive pulmonary disease Clinical priorities. NSW Health. Available at: https://aci.health.nsw.gov.au/__data/assets/pdf_file/0003/508602/COPD-Clinical-Priorities.pdf (Accessed: November 25, 2022).

Overview of the Care Pathway

An overview of the proposed Care Pathway is depicted in the figure below. It illustrates the five pathway stages, and the key objectives of each stage. More detailed information on each pathway stage, including its key features and considerations for change are included in the following section.



5. Transfer of care

- Provide multidisciplinary care to assist return to home and community.
- Conduct handover of care and provide post-discharge follow up with primary care team.
- Review medication and management plans, and consider post-discharge pulmonary rehabilitation.

4. Managing exacerbations

- Support patients to manage exacerbations at home, while recognising the signs and symptoms to escalate care.
- Provide safe alternatives to ED and hospital admission where appropriate.

3. Care planning and coordination

- Enable effective management of COPD and other comorbidities, including referral to pulmonary rehabilitation where appropriate.
- Support self-management and regular review in line with care plan.
- Provide support to coordinate services and navigate the system, where needed.

1. Awareness, prevention and screening

- Promote community awareness of risk factors and lifestyle changes to prevent COPD.
- Support early detection and diagnosis of COPD.

2. Diagnosis and early intervention

- Early and accurate diagnosis.
- Early engagement with services to encourage timely lifestyle interventions.

Recommendations

In order to support the implementation of this care pathway for COPD, and broader chronic conditions in future, there are a number of recommendations that should be considered at each stage of the pathway. These recommendations have been identified through co-design and evidence review, and aim to help address existing service and capability gaps, and increase accessibility of the pathway to consumers across the South Eastern NSW region.

Recommendations will require further consideration and exploration, including assessment of costs and value, through the joint development phase of the Collaborative Commissioning program.

Further detail on recommendations is provided within the care pathway design section.

Stage	Recommendations
1. Awareness, prevention and screening	1.1 Encourage health professionals (including allied health, community pharmacy and Practice Nurses) to participate in screening through engagement and capacity building.
	1.2 Provide capability building support and/or guidance to general practitioners, allied health and Practice Nurses on how to approach and support consumers to make preventative lifestyle changes.
	1.3 Integrate existing exercise and smoking cessation programs into the pathway, alongside raising health professional and consumer awareness of them (potentially through inclusion in HealthPathways or similar guidance), to encourage access to these programs.
	1.4 Support promotional campaigns for signs and symptoms of COPD, in pharmacies and general practice through targeted health messaging.
1. Awareness, prevention and screening *(cont.)*	1.5 Consider opportunities to expand the accessibility of prevention initiatives, including exercise and smoking cessation programs, potentially through transportation support, online options, and/or services outside of business hours.
	1.6 Encourage general practices to sign up to the use of Lumos to support the planning, monitoring and evaluation of value based healthcare.
2. Diagnosis and early intervention	2.1 Support GPs and Practice Nurses to upskill in diagnosis so that consumers can access affordable diagnostic tests without referral to a non-GP specialist where possible.
	2.2 Drive increased access to affordable and timely spirometry tests, including considering provision of free diagnostic tests through primary care and public outreach services.
	2.3 Consider specialist outreach clinics for higher risk populations, particularly for Aboriginal and Torres Strait Islander communities.
3. Care planning and coordination	3.1 Upskill and support Practice Nurses to work at ‘top of scope’ and provide care planning and coordination support to consumers, without reliance on having a Chronic Disease Management Plan in place.
	3.2 Support general practice to strengthen operating models to maximise Medicare Benefits Schedule (MBS) claiming and enable quality care and team-based approaches.
	3.3 Facilitate access to pulmonary rehabilitation, including through funding additional services and driving increased awareness of available services.

Recommendations

Stage	Recommendations
3. Care planning and coordination *(cont.)*	3.4 Increase availability of community-based exercise classes to encourage self-management and lifestyle changes.
	3.5 Integrate care coordination supports into the pathway, including existing LHD and PHN-funded services, and consider commissioning additional care coordination services to fill gaps.
	3.6 Drive increased consistency in quality and completion of care plans (COPD Actions Plans and GP Management Plans) and involvement of consumers and carers in the care planning process.
	3.7 Encourage consideration of social and emotional wellbeing following diagnosis, and referrals to exercise and social groups as part of care planning.
4. Managing exacerbations	4.1 Drive increased awareness and uptake of Virtually enhanced Community Care (VeCC) as a key feature of the care pathway, including encouraging increased referrals from primary care.
	4.2 Explore models to strengthen access to non-GP specialist services to support management in the community and hospital avoidance. This could include facilitating non-GP specialist outreach in the primary care setting.
	4.3 Consider options to expand the availability of primary care services after hours, including considering leveraging existing services and practitioners (such as pharmacists) to reduce avoidable hospital presentations.

Stage	Recommendations
4. Managing exacerbations *(cont.)*	4.4 Explore opportunities to provide out of hours information to consumers, potentially using digital methods and leveraging existing after hours triage services (such as Healthdirect).
5. Transfer of care	5.1 Improve attendance at GP, post admission to hospital, by scheduling appointments prior to discharge.
	5.2 Increase access to follow up appointments, upon discharge, by encouraging general practices to prioritise COPD consumers.
	5.3 Drive early engagement with community care coordination services through inpatient services to encourage early referrals and facilitate transfer of care, leveraging existing LHD services.
	5.4 Encourage and facilitate case conferencing, multidisciplinary team meetings and shared care planning between the care team (including primary care and non-GP specialists) to strengthen care handover points.
	5.5 Drive increased quality and timeliness of discharge summaries to the primary care team to facilitate care handover, including exploring opportunities to enhance communications through digital improvements.
	5.6 Explore options to increase access to respiratory clinics, including considering establishing new clinics to address service gaps. All respiratory clinics should be multidisciplinary including non-GP specialist, hospital and primary care teams to facilitate handover, follow up and hospital avoidance.

Recommendations

Stage	Recommendations
6. Overall recommendations	6.1 The pathway should be able to be delivered at no additional cost to consumers.
	6.2 While focused on COPD initially, the pathway should support the establishment of models of care for other chronic conditions (i.e. it should be 'disease agnostic').
	6.3 Initiatives should deliver sustainable improvements to the health system in the South Eastern NSW region.
	6.4 Promote the use of Patient Reported Outcome Measures (PROMs) and Patient Reported Experience Measures (PREMs) to measure and understand the impact of the pathway.
	6.5 The pathway should aim to increase community access to non-GP specialists through increased outreach clinic capacity, telehealth options and encouraging non-GP specialist workforce to rural areas - this should build on the recommendations of the Increasing Specialist Access in the Community project led by COORDINARE.

Stage 1: Awareness, prevention and screening

Objectives

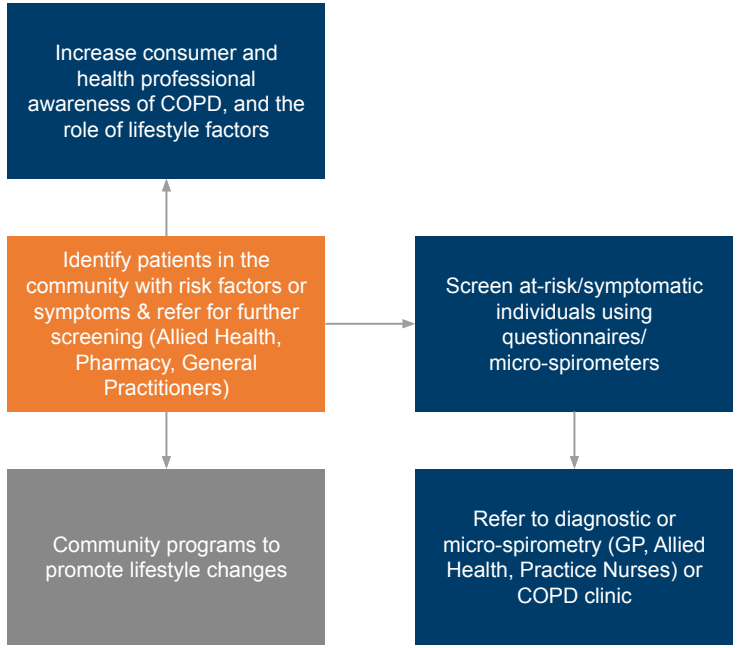
The objectives of this stage are to:

- Promote community awareness of COPD risk factors.
- Encourage lifestyle changes to prevent COPD.
- Support early detection and diagnosis of COPD.

Key learnings from co-design

- There is often low awareness of COPD among consumers, and promotional campaigns may be required to target at-risk groups.
- Poor health literacy, lower socioeconomic status, poor quality housing and exposure to tobacco from an early age may impact consumer health outcomes in some areas, and also put people at risk of not being able to afford treatment or be non-compliance with medications.
- There is also perceived stigma around COPD, with consumers often feeling they may be 'blamed' for having COPD (even for non-smokers).
- Encouraging behaviour change among consumers is often a challenge for health professionals.
- Community-based programs that address lifestyle risk factors for smoking, exercise and nutrition (e.g. Health and Active for Life, Stepping On and Health Moves) are important for preventing COPD.
- Access to prevention initiatives including exercise and smoking cessation programs may be limited or costly for consumers.
- Group and family sessions are often effective in developing connections and building accountability for consumers when it comes to making lifestyle changes, particularly around smoking and exercise.
- There may be opportunities for allied health professionals (including physiotherapists, occupational therapists, exercise physiologists, personal trainers and community pharmacy) to play a greater role in awareness, prevention and screening, through identification of at-risk consumers and referral for diagnosis.

Flowchart: Key activities at Stage 1



Target population: General public, with a focus on individuals living at home or in aged care facilities with risk factors and/or symptoms of COPD.

- Enhanced service / activity
- New service / activity
- Existing service / activity
- ····· Stages occur simultaneously

Stage 1: Awareness, prevention and screening

Key Features

Co-design and the evidence base have emphasised the following activities as the ideal key features of this stage of the care pathway for COPD:

- Promoting consumer awareness of COPD and its risk factors through targeted health promotion campaigns - messaging should be tailored for different cohorts, including culturally and linguistically diverse groups, lower socioeconomic cohorts and younger people (particularly in relation to vaping).
- Promoting health professional awareness of COPD risk factors and the local availability of prevention programs, through targeted messaging with a focus on non-GP specialists, Practice Nurses and allied health.
- Identifying patients with risk factors or symptoms in the community and in residential aged care, and conducting screening using questionnaires, thorough histories and/or micro-spirometry (followed by referrals for spirometry where appropriate).
- Supporting consumers to make necessary lifestyle changes, through smoking cessation (including e-cigarette) initiatives, exercise programs such as Healthy and Active for Life, and programs which engage carers and families to facilitate behaviour change.

Potential changes to roles and responsibilities

The following changes in roles and responsibilities were identified to support implementation of the pathway:

- Allied health professionals, community pharmacists and Practice Nurses can play a greater role in screening, identification and referral of at-risk consumers in the community and in residential aged care.
- The PHN and LHDs may be able to play a greater role in promoting awareness of locally available lifestyle change programs, including through building partnerships with the Lung Foundation and other relevant organisations.

Recommendations for implementation:

- 1.1 Encourage health professionals (including allied health, community pharmacy and Practice Nurses) to participate in screening through engagement and capacity building. Co-design findings and evidence highlight that a broader range of health professionals can play a role in screening to help identify patients with risk factors or symptoms and refer into the pathway.
- 1.2 Provide capability building support and/or guidance to general practitioners, allied health and Practice Nurses on how to approach and support consumers to make preventative lifestyle changes. Co-design findings highlight challenges faced by health professionals in encouraging behaviour change, and further support and guidance may assist them to do so more effectively.
- 1.3 Integrate existing exercise and smoking cessation programs into the pathway, alongside raising health professional and consumer awareness of them (potentially through inclusion in HealthPathways or similar guidance), to encourage access to these programs. Co-design findings highlight the importance of these programs, and there is an opportunity to drive increased uptake by integrating them into the pathway.
- 1.4 Support promotional campaigns for signs and symptoms of COPD in pharmacies and general practice through targeted health messaging. Promotional campaigns should aim to raise awareness of signs and symptoms of COPD and encourage referral into the pathway. This should include leveraging existing promotional campaigns, such as those led by the NSW Centre for Population Health.
- 1.5 Consider opportunities to expand the accessibility of prevention initiatives, including exercise and smoking cessation programs. Co-design findings highlight particular opportunities to increase accessbility through transportation support, online options, and/or services outside of business hours, to address some of the barriers to access.
- 1.6 Encourage general practices to sign up to the use of Lumos to support monitoring of consumer risks, outcomes and system outcomes. As of 11 November 2022, 34 out of 201 GPs in the region participate in Lumos, this equates to 16.9% of practices. The South Eastern NSW region has the third lowest participation rate in NSW (out of 10). Increased capture of Lumos data enhances the ability to monitor the effectiveness and outcomes of the pathway and identification of at-risk consumers.

Stage 2: Diagnosis and early intervention

Objectives

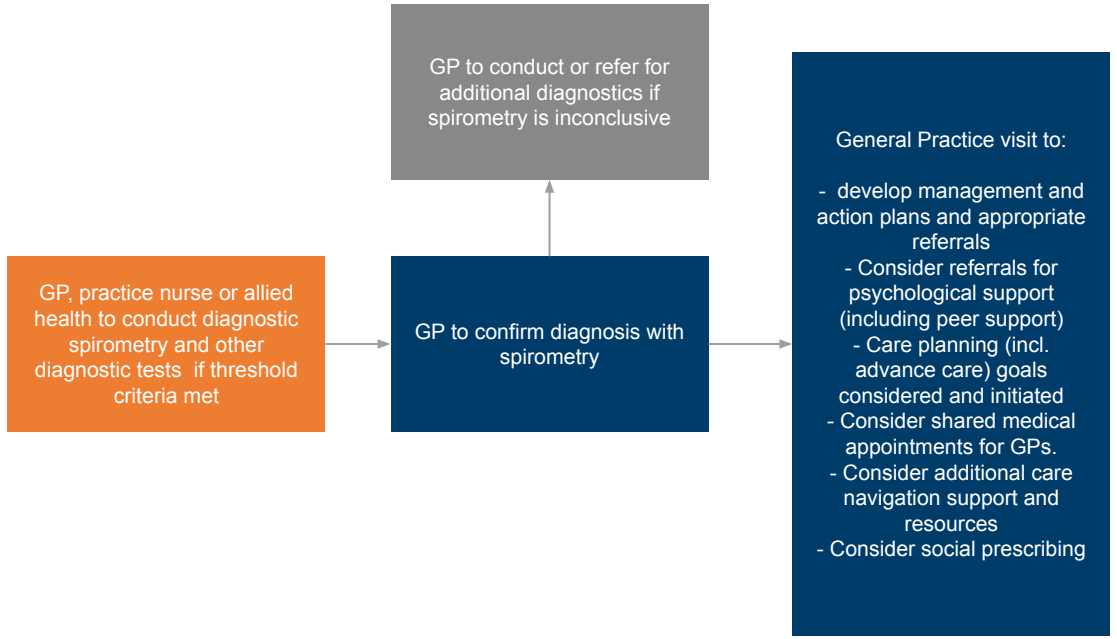
The objectives of this stage are to:

- Support timely and accurate diagnosis of COPD in primary care.
- Reduce misdiagnosed or undiagnosed cases of COPD.
- Ensure that consumers receive the care they need at the right time, with early involvement of multidisciplinary teams as required.

Key learnings from co-design

- Spirometry is critical to making a diagnosis, however some GPs lack the capability or confidence to diagnose COPD - stakeholders suggested this is particularly the case for less experienced GPs.
- Capability, confidence and access to equipment are barriers to use of spirometry and early diagnosis in primary care - it was noted that this was particularly the case following COVID-19, with some practitioners lacking recent experience in conducting spirometry.
- There is limited access to affordable diagnostic services and significant wait times for diagnosis from non-GP specialists (6+ months).
- Consumers noted the high costs of seeing a non-GP specialist.
- There is limited access to outreach non-GP specialists and diagnostic services across the region for complex or severe cases.
- In some areas, pharmacists are currently playing a limited role in conducting medication reviews and checking inhaler technique - there is an opportunity to expand the role of pharmacists in these activities.

Flowchart: Key activities at Stage 2



Target population: Individuals who have been screened and referred for diagnostic spirometry, requiring intervention.

- Enhanced service / activity
- New service / activity
- Existing service / activity
- ····· Stages occur simultaneously

Stage 2: Diagnosis and early intervention

Key Features

Co-design and the evidence base have emphasised the following activities as the ideal key features of this stage of the care pathway for COPD:

- Confirming COPD diagnosis in primary care using spirometry conducted by a health professional with appropriate spirometry training (Practice Nurses, GPs, exercise physiologists, occupational therapists or physiotherapists).
- Conducting additional diagnostics or referral to a non-GP specialist if spirometry results are inconclusive (for example, as a result of comorbidities with similar symptoms which may make diagnosis complex).
- Considering the need for broader wellbeing or psychosocial supports for consumers and carers at the point of initial diagnosis.
- Developing a GP Management Plan and COPD action plan as soon as possible to support multidisciplinary care and early engagement with services and other lifestyle interventions.

Potential changes to roles and responsibilities

The following changes in roles and responsibilities were identified to support implementation of the pathway:

- Practice Nurses, GPs, allied health professionals can undergo training to accurately conduct spirometry.
- GPs could be supported to make diagnoses of COPD with greater capability and access to equipment.
- Pharmacists and allied health professionals may play a role in reinforcing inhaler use and techniques.

Recommendations for implementation:

- 2.1 Support GPs and Practice Nurses to upskill in assessment and diagnosis so that consumers can access diagnostic tests without non-GP specialist referral where possible. Co-design findings highlight that some GPs lack experience or confidence to make a COPD diagnosis, particularly following the reduction in spirometry as a result of COVID-19. Upskilling practices (including GPs and Practice Nurses) may help to increase the accessibility of spirometry and the timeliness of diagnoses.
- 2.2 Drive increased access to affordable and timely spirometry tests, including considering provision of free diagnostic tests through public services and covering the costs of tests in primary care. Co-design findings highlight that delayed diagnosis as a result of lack of accessibility of spirometry can impact consumer outcomes.
- 2.3 Consider specialist outreach clinics for higher risk populations, particularly for Aboriginal and Torres Strait Islander communities and those from lower socio-economic communities. This should be explored through further consultation and co-design, particularly with the Aboriginal health sector.

Stage 3: Care planning and coordination

Objectives

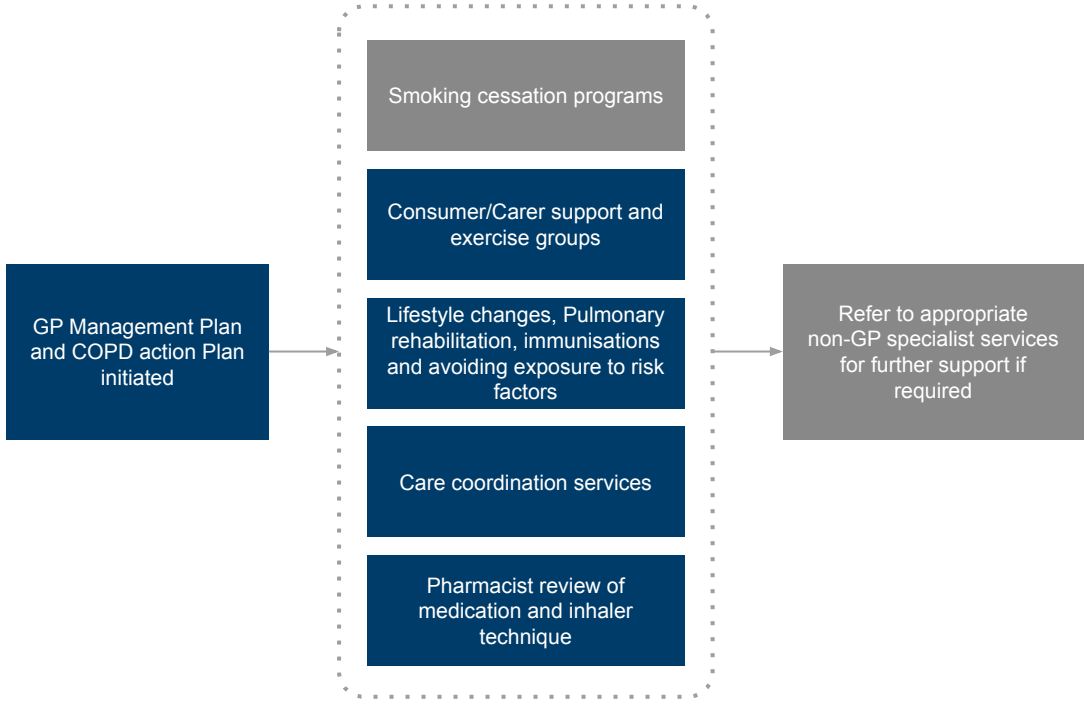
The objectives of this stage are to:

- Enable effective ongoing management of COPD and other comorbidities.
- Provide holistic care planning.
- Coordinate care for consumers who require support to access services.
- Support self-management with regular review.

Key learnings from co-design

- Care planning and coordination support is critical to enable consumers to self manage, including through exercise, nutrition and mental health.
- There is inconsistency in the completion and quality of care plans (including GP Management Plans and COPD Action Plans) and how well they are understood and used by consumers.
- Access to pulmonary rehabilitation and non-GP specialist services is challenging, particularly in rural areas - barriers include availability of services and long wait times, cost and transport.
- Community-based exercise groups (such as Lungs in Action) can provide exercise and rehabilitation as well as community connections for consumers, supporting overall wellbeing.
- Specific care coordination support is available for some consumers through PHN and LHD-funded services - it will be important to increase awareness of these services, and consider supplementing with additional services to increase accessibility.
- Some general practices provide ongoing care management and reviews, often delivered by Practice Nurses - there is an opportunity to recognise and enhance the role of Practice Nurses in all practices, including increasing use of available MBS item numbers.
- This is particularly the case given the high turnover of GPs in some areas, creating challenges for continuity of care.
- Access to community supports may be required to assist with independence such as through My Aged Care, NDIS or ComPacks support.
- Consumers with COPD need to remain up to date with their immunisations, and this can serve as an opportunity to check in on overall disease management.

Flowchart: Key activities at Stage 3



Target population: Individuals who have been diagnosed with COPD and given a management and action plan to reduce the progression of disease and limit hospitalisation.

- Enhanced service / activity
- New service / activity
- Existing service / activity
- Stages occur simultaneously

Stage 3: Care planning and coordination

Key Features

Co-design and the evidence base have emphasised the following activities as the ideal key features of this stage of the care pathway for COPD:

- Care planning and coordination provided via general practice with General Practice Management Plan and/or COPD Action Plan, with regular follow up.
- Supporting consumers to coordinate access to programs and services (e.g smoking cessation programs, consumer/carer supports, exercise and nutrition programs and immunisations).
- Providing pulmonary rehabilitation that suits the needs and preferences of the consumer.
- Providing access to affordable and convenient community-based exercise groups (such as Lungs in Action) - consumers emphasised the importance of options being affordable and community-based.
- Reviewing medicine management and inhaler technique (by pharmacists).
- Facilitating access to consumer and carer support groups as required.
- Referring to appropriate non-GP specialists as required.

Potential changes to roles and responsibilities

- GPs, allied health and Practice Nurses can assist with care plans and action plans, to ensure that consumers can be adequately educated on how best to manage their COPD and identify signs of deterioration early.
- Upskill allied health and other multi-disciplinary team members to reinforce key health messages that will support self-management, including medication reviews.
- Pharmacists can reinforce the importance of timely immunisations and medications.

Recommendations for implementation:

- 3.1 Upskill and facilitate Practice Nurses to work at ‘top of scope’ and provide care planning and coordination support to consumers, without a dependence on having a Chronic Disease Management Plan in place. Co-design findings highlight the potential for Practice Nurses to play a critical role in COPD and chronic disease management, including providing care coordination and planning support. This means operating at ‘top of scope’,
- 3.2 Support general practice to strengthen operating models to maximise MBS claiming and enable quality chronic care and team-based approaches. Ongoing challenges to the sustainability of general practice and funding models mean there may be a need for some practices to build capacity and adopt enhanced operating models which enable a focus on chronic disease management, continuity of care and team-based approaches to support consumers with complex conditions. This may include assisting practices to maximise MBS reimbursable claims, engaging with practice leads and managers to engender leadership commitment, facilitating access to training, skills development and support for practice teams, and supporting practices to establish and maintain information systems that support operations.
- 3.3 Facilitate access to pulmonary rehabilitation and non-GP specialists, including through funding additional services and driving increased awareness of available services. Co-design findings highlight challenges accessing pulmonary rehabilitation and non-GP specialists, particularly in rural areas, and the need to consider options to address barriers of availability, affordability and transport.
- 3.4 Increase availability of community-based exercise classes to encourage self-management and lifestyle changes.
- 3.5 Integrate care coordination supports into the pathway, including existing LHD and PHN-funded services, and consider commissioning additional care coordination services to fill gaps. Co-design findings emphasise the importance of care coordination services in supporting consumers with complex conditions, ensuring timely management and building consumers capacity to self-manage.
- 3.6 Drive increased consistency in quality and completion of care plans (COPD Actions Plans and GP Management Plans) including encouraging use of plan templates and involvement of consumers and carers in the care planning process.
- 3.7 Encourage consideration of social and emotional wellbeing following diagnosis, and referrals to exercise and social groups as part of care planning.

Stage 4: Managing exacerbations

Objectives

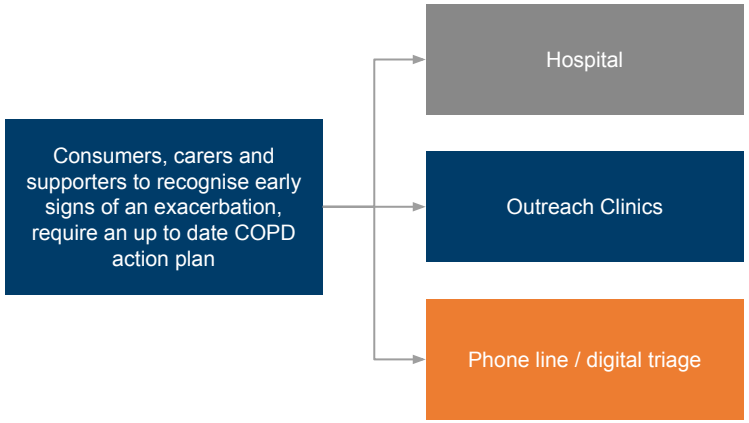
The objectives of this stage are to:

- Support patients to manage exacerbations at home, while recognising the signs and symptoms to escalate care when required.
- Provide safe alternatives to ED and hospital admission where appropriate.

Key learnings from co-design

- COPD action plans and GP management plans should support consumer confidence to manage exacerbations at home when possible - currently there is some inconsistency in the quality of these plans and how well they are understood and used by consumers.
- It is important for consumers to receive appropriate prescriptions (including antibiotic and prednisone prescriptions) for use in case of an event.
- Availability of after hours services is a challenge, with the hospital / emergency department generally the only option for escalation.
- Consumers may be referred to the NSW Health Virtually enhanced Community Care (VeCC) service by their GP, although awareness of the availability of the service appears relatively limited among primary care.
- Some GPs feel that communication from VeCC Teams is not always sufficient to enable them to stay up to date with the care being provided to their patients.
- Following an exacerbation, consumers are not always being referred to pulmonary rehabilitation and care coordination support as soon as acute instability has resolved.

Flowchart: Key activities at Stage 4



Target population: Individuals with a diagnosis of COPD and are prone to or experiencing exacerbations whilst living at home.

- Enhanced service / activity
- New service / activity
- Existing service / activity
- Stages occur simultaneously

Stage 4: Managing exacerbations

Key Features

Co-design and the evidence base have emphasised the following activities as the ideal key features of this stage of the care pathway for COPD:

- COPD action plans / GP management plans should be regularly reviewed by GPs or Practice Nurses to support consumers to manage exacerbations at home when possible.
- Providing alternatives to hospital admission in the event that care needs to be escalated during an exacerbation - this may include:
    - Hospital-based COPD clinics (ISLHD) to assist with Action Plans, medication use and access to pulmonary rehabilitation programs.
    - Lung Rehabilitation services (SNSWLHD) can assist with preventing and managing flare ups.
- Primary care may consider referral to the VeCC service or alternative care coordination and management support services.
- Following an exacerbation, consumers should generally be referred to pulmonary rehabilitation and care coordination support as soon as acute instability has resolved.

Potential changes to roles and responsibilities

- Practice Nurses may play a greater role in the development and review of COPD Action Plans and GP Management Plans.
- In the absence of a GP, nurse phone lines, VeCC, COPD clinics and Lung Rehabilitation services should become a point of escalation to avoid unnecessary hospital admissions.
- LHDs may increase awareness of availability of VeCC services.

Recommendations for implementation:

- 4.1 Drive increased awareness and uptake of Virtually enhanced Community Care (VeCC) as a key feature of the care pathway, including encouraging increased referrals from primary and tertiary care. Co-design findings highlight the positive impact of the VeCC services and opportunities to leverage this for a broader range of consumers. Referrals from primary care are currently limited, and there is an opportunity to increase awareness of the service among general practices to encourage increased uptake prior to and following hospital admission. increasing uptake of VeCC should also consider reviewing the identification of patients through the Risk of Hospitalisation algorithm identification and selection process.
- 4.2 Explore models to strengthen access to non-GP specialist services to support management in the community and hospital avoidance. This could include facilitating non-GP specialist outreach in the primary care setting.
- 4.3 Consider options to expand the availability of primary care services after hours, including considering leveraging existing services and practitioners (such as pharmacists) to reduce avoidable hospital presentations. Co-design findings highlight the lack of available services after hours, resulting in increased hospital presentations. Expanding the availability of services accessible after hours may help to provide alternatives to hospital for consumers where appropriate.
- 4.4 Explore opportunities to provide out of hours information to consumers. Co-design findings indicate that consumers may present to hospital due to a lack of awareness of appropriate alternatives and a lack of availability information during the after hours period. Addressing this could consider the use of digital methods (such as a website or app) and leveraging existing after hours triage services (such as Healthdirect).

Stage 5: Transfer of care

Objectives

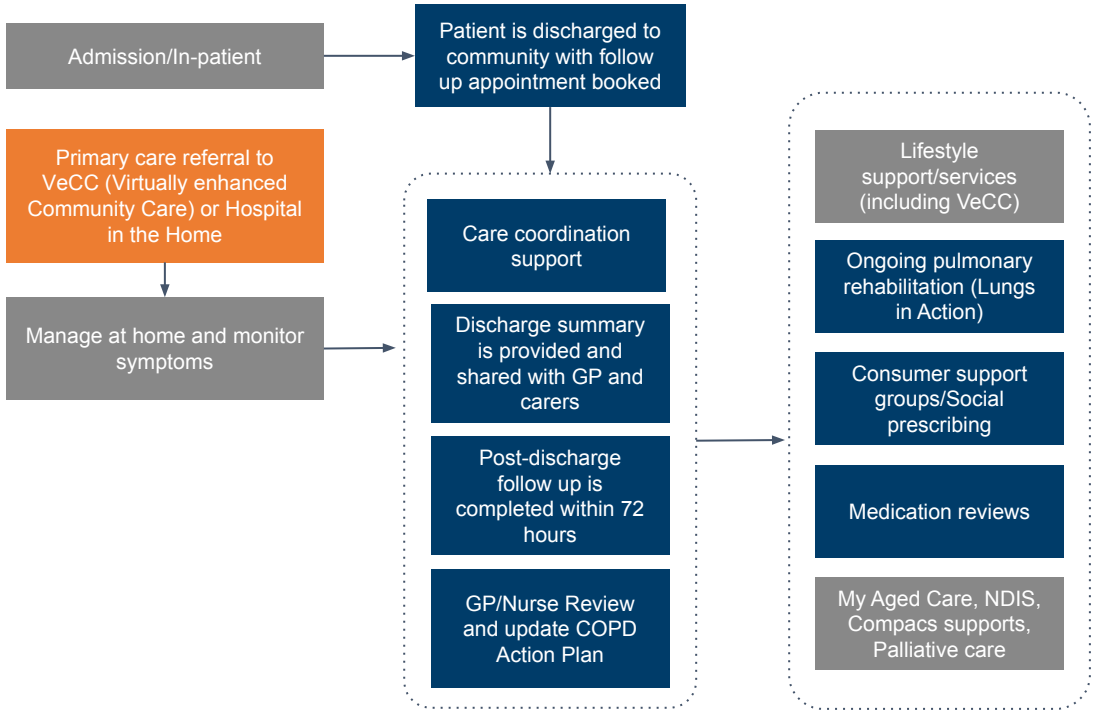
The objectives of this stage are to:

- Provide multidisciplinary care to assist return to home and community.
- Conduct handover of care and provide post-discharge follow up with primary care team.
- Review medication and management plans, and consider post-discharge pulmonary rehabilitation.

Key learnings from co-design

- Discharge summaries are not always shared with the primary care team within 24 hours of discharge, and the quality of summaries varies.
- While post-discharge follow up and reviews are critical, feedback provided by stakeholders indicates that this does not always occur.
- This may be a result of barriers to accessing GPs for a follow up appointment, including the availability of appointments and financial barriers for some consumers.
- Education and ongoing care coordination support are important to reduce the risk of hospital readmission - this can include referring consumers and carers to support groups that provide education and psychological support.
- It is also important to consider consumer eligibility for additional health supports for independent living e.g NDIS, ComPacks, My Aged Care or Palliative Care.

Flowchart: Key activities at Stage 5



Target population: Individuals Individuals who have been diagnosed with COPD and discharged from hospital.

- Enhanced service / activity
- New service / activity
- Existing service / activity
- Stages occur simultaneously

Stage 5: Transfer of care

Key features

Co-design and the evidence base have emphasised the following activities as the ideal key features of this stage of the care pathway for COPD:

- Providing a comprehensive and timely summary upon discharge to support handover of care to the primary care team.
- Providing a follow up GP visit with consumers within 72 hours of discharge.
- Providing hospital in-reach services to encourage self-management and link consumers to services prior to discharge.
- Updating and reviewing COPD Action Plans, reviewing medications and usage.
- Referring consumers back to pulmonary rehabilitation services to continue treatment in line with their care plan.
- Considering the need for social prescribing and consumer groups to address broader wellbeing needs of consumers and carers.
- Referring to lifestyle supports and programs to assist with ongoing maintenance and reduce likelihood of readmission.
- Considering independence needs such as NDIS, My Aged Care, ComPacks and/or palliative care.

Changes to roles and responsibilities

- Hospital staff could ensure that consumer has a booking for follow up appointments with GPs.
- Hospital staff to provide comprehensive and timely discharge summaries.
- Care team (including GPs and non-GP specialists) to participate in case conferencing to strengthen care handover.
- Care coordinators could consider the need for other social supports to enable return to home.
- Carers and supporters should be included as part of the care team.

Recommendations for implementation:

- 5.1 Increase the timeliness of follow up appointments for consumers upon discharge, through encouraging appointments to be scheduled while in hospital. Co-design findings highlight that follow up appointments are often delayed due to lack of general practice availability, and that this has an impact on consumer outcomes and may result in increased risk of hospital readmission.
- 5.2 Increase the timeliness of follow up appointments for consumers upon discharge by encouraging general practices to prioritise consumers being discharged.
- 5.3 Drive early engagement with hospital-based community health teams (including community health nurses and coordinators) through inpatient services to encourage early referrals and facilitate transfer of care, leveraging existing LHD services. This should aim to drive early engagement with community health to support the return of consumers to the community and the handover of care to the primary and community care team.
- 5.4 Facilitate case conferencing between the care team (including primary care and non-GP specialists) to strengthen care handover points.
- 5.5 Drive increased quality and timeliness of discharge summaries to the primary care team to facilitate care handover, including exploring opportunities to enhance communications through digital improvements. Co-design findings highlight successful improvements in this space (particularly in Goulburn) which could be replicated across the region.
- 5.6 Explore options to increase access to respiratory clinics, including considering establishing new clinics to address service gaps. All respiratory clinics should be multidisciplinary including non-GP specialist, hospital and primary care teams to facilitate handover, follow up and hospital avoidance.

Appendix A: Overview of co-design process

Overview of co-design process

The co-design process was conducted in two phases. Phase 1 explored each of the care pathway stages in detail, through five co-design workshops (one for each stage). Building on the input from the initial five workshops, phase 2 then tested the care pathway in full, as well as exploring the enablers of the care pathway. Phase two included three co-design workshops, as well as three additional interviews to enable input from stakeholders unable to attend the workshops.

Workshops were held during November and early December 2022, and included both online and face-to-face sessions. The table below lists the co-design sessions conducted, including the date, format, focus and number of participants for each session.

Co-design sessions

Phase	Date and time	Format	Focus	Participants
Phase 1: Exploring each stage of the care pathway	Tuesday 29 November, 10.30am-12pm	Virtual workshop	Prevention, screening and health literacy	19
	Tuesday 29 November, 1-2.30pm	Virtual workshop	Diagnosis and initial intervention	10
	Tuesday 29 November, 3-4.30pm	Virtual workshop	Care planning and coordination	15
	Wednesday 30 November, 1-2.30pm	Virtual workshop	Managing exacerbations	9
	Wednesday 30 November, 9-10.30am	Virtual workshop	Transition of care	10
Phase 2: Testing the care pathway in full	Monday 5 December, 1-3pm	In person workshop (Wollongong)	COPD care pathway	3
	Tuesday 6 December, 1-3pm	In person workshop (Goulburn)	COPD care pathway	6
	Tuesday 6 December, 5.30-7pm	Virtual workshop	COPD care pathway	4
	Thursday 7 - Thursday 15 December	Individual interviews	COPD care pathway	3
	Monday 23 January	In person workshop	Consumer experience	10

Stakeholder representation

The table below provides an overview of the stakeholder groups participating in each part of the co-design process.

Stakeholder group	Workshop session									
	Awareness, prevention and screening	Early diagnosis & intervention	Care planning & coordination	Managing exacerbations	Transfer of care	Overall Care Pathway (Wollongong)	Overall Care Pathway (Goulburn)	Overall Care Pathway (Virtual)	Overall Care Pathway (Interviews)	Consumer experience (Goulburn)
Consumers and/or carers	✔	✔	✔		✔		✔		✔	✔
General Practitioners	✔							✔	✔	
General practice staff					✔		✔			
Non-GP specialists	✔	✔								
Nurses	✔	✔	✔	✔			✔			
Pharmacy	✔	✔	✔	✔	✔		✔			
Allied Health	✔	✔	✔	✔	✔	✔	✔	✔		✔
LHD staff	✔	✔	✔	✔	✔	✔	✔			
PHN staff	✔	✔	✔	✔	✔	✔	✔			✔
Community health provider	✔	✔	✔	✔	✔					
Aboriginal Health Workers	✔	✔	✔	✔	✔	✔				
Aged Care						✔				
Total attendance	**22**	**13**	**18**	**12**	**13**	**6**	**9**	**7**	**5**	**10**

Appendix B: Evidence and existing services

Stage 1: Evidence, resources and current services

Evidence from COPD-X Guidelines[1,3]	• For COPD, smoking cessation can slow the rate of decline in lung function, delay the onset of disability, and preserve remaining lung function. • There is an influence of age, genetics, comorbidities, socioeconomic, nutritional, and environmental factors (e.g. occupation and air pollution) in developing COPD. • Target patient who should have further spirometry testing by using a micro-spirometer and conducting appropriate risk assessments. • People with COPD can present with recurrent episodes of chest infections requiring antibiotics and this can be flagged as a means of case-finding.

Key statistics[2,4]	• Current smokers in Illawarra Shoalhaven LHD region (2021): 12.2% (LHD average: 12%)[2]
	• Current smokers in Southern NSW LHD region (2021): 13.1% (LHD average: 12%)[2]
	• COPD Hospitalisations in over 65+ 2019/20 (rate per 100,000)[2]:
	  ○ Southern NSW LHD: 1471.3
	  ○ Illawarra Shoalhaven LHD: 1388.3
	  ○ All LHD: 1231.4
	• COPD Potentially preventable hospitalisations 2019/20 (rate per 100,000)[2]:
	  ○ Southern NSW LHD: 233.7
	  ○ Illawarra Shoalhaven LHD: 207.8
	  ○ All LHD: 182.3
	• Early identification of those at risk of developing COPD is critical as they will benefit from targeted prevention strategies, including risk modification and close monitoring.

Existing services (LHD)	• Carer program - Workshops and information sessions to help carers in their role. • Quit smoking hotline - 'Quitline'. • Healthy and Active for Life/Stepping On/Health Moves - Exercise Programs. • Text2Quit, My Quit Buddy app, I can quit website, Quitline. • Transport for health - free transportation.
Existing services (SNSWLHD)	• Community Health Central Intake Service - telephone and email based service to process and perceive referrals for different community health services across SNSWLHD. • Lung Health rehabilitation service (SNSWLHD). • Rehabilitation services (OT, Physiotherapists, Social Workers, Coordinators, Allied Health assistants, Living Skills educators). • Palliative Care Services. • NSW Quitline. • icanQuit.

[1]Yang IA, George J, McDonald CF, McDonald V, O'Brien M, Smith B, Zwar N, Dabscheck E. 2022.The COPD-X Plan: Australian and New Zealand Guidelines for the diagnosis and management of Chronic Obstructive Pulmonary Disease.
[2]HealthStats NSW. NSW Combined Admitted Patient Epidemiology Data and ABS population estimates (SAPHaRI). Centre for Epidemiology and Evidence, NSW Ministry of Health.
[3]Yang IA, Dabscheck EJ, George J, Jenkins SC, McDonald CF, McDonald VM, Smith BJ, Zwar NA. COPD-X Concise Guide. Brisbane. Lung Foundation Australia. 2019.
[4]Lung Foundation Australia 2022. Transforming the agenda for COPD: A path towards prevention and lifelong lung health - Lung Foundation Australia's Blueprint for Action on Chronic Obstructive Pulmonary Disease (COPD) 2022-2025. Milton, Queensland: Lung Foundation Australia.

Stage 2: Evidence, resources and current services

Evidence from COPD-X Guidelines[1,3]	• Early diagnosis and treatment of exacerbations may prevent hospital admission and delay COPD progression. • Requires a thorough history and examination. • Perform and document pre and post bronchodilator spirometry to confirm COPD, which is characterised by airflow limitation that is not fully reversible. • Use the COPD Assessment Test (CAT) to assess the impact of COPD symptoms on wellbeing and daily life. • Exacerbations can occur at any stage but frequency will usually increase with severity. • Consider COPD in patients aged 35 years and older with symptoms such as breathlessness, cough, and/or sputum production as well as all smokers or ex-smokers aged 35 years and older.
Supporting Literature[4,5]	• Australia has high rates of underdiagnosis and misdiagnosis of COPD with inaccurate diagnosis being more common in younger patients and those with comorbidities. • The substantial underdiagnosis of COPD means that the number of Australians living with COPD is much higher than the data indicates. Around 50% of people with COPD symptoms do not know they have it. • Early and accurate diagnosis supports timely and appropriate medical intervention and, consequently, improved outcomes for consumers. • Even though spirometry ownership in general practice throughout Australia is high, the frequency of use is low, and has further declined during the COVID-19 pandemic. • A survey of Australian general practitioners suggests that some of the barriers to providing spirometry in primary care include equipment costs and insufficient remuneration. • Victoria have trialled an in-patient physiotherapist led spirometry service that resulted in a 300% increase in spirometry testing for inpatients compared to the previous year.
Existing services (LHD)	• Asthma services Wollongong hospital - Spirometry (ISLHD). • COPD clinics (ISLHD). • Lung rehabilitation services (SNSWLHD) - but this does not assist with diagnosis. • Appears to be a lack of existing diagnosis services that can assist with spirometry.
Existing services (COORDINARE)	• Respiratory Disease Management Clinic • Silverchain • CareFinder • Winter Strategy • Shared Medical Appointments

[1]Yang IA, George J, McDonald CF, McDonald V, O'Brien M, Smith B, Zwar N, Dabscheck E. 2022.The COPD-X Plan: Australian and New Zealand Guidelines for the diagnosis and management of Chronic Obstructive Pulmonary Disease.
[3]Yang IA, Dabscheck EJ, George J, Jenkins SC, McDonald CF, McDonald VM, Smith BJ, Zwar NA. COPD-X Concise Guide. Brisbane. Lung Foundation Australia. 2019.
[4]Lung Foundation Australia 2022. Transforming the agenda for COPD: A path towards prevention and lifelong lung health - Lung Foundation Australia's Blueprint for Action on Chronic Obstructive Pulmonary Disease (COPD) 2022-2025. Milton, Queensland: Lung Foundation Australia.
[5] Winzer.B, 2015. 13th National Rural Health conference. A physiotherapist led in-patient spirometry service. http://www.ruralhealth.org.au/13nrhc/images/paper_Winzer%2C%20Brooke.pdf

Stage 3: Evidence, resources and current services

Evidence from COPD-X Guidelines[1]	• COPD multidisciplinary care incorporating elements such as exercise, self-management education and use of a COPD action plan for exacerbation management can improve exercise capacity and health-related quality of life, and reduce hospitalisation. • Using the completed GPMP (GP management plan Item 721) for COPD, develop a written and patient-centric COPD action plan to support your patient in monitoring their baseline symptoms and self-managing exacerbations where appropriate. • Consider developing a Team Care Arrangement (TCA, Item 723) in addition to organising a home medicines review with a consultant pharmacist (HMR, Item 900). • Benefit in educational and psychological support groups for self- management. • Assess functional status and impact of COPD regularly. Patient should be referred to specialist respiratory services if there is diagnostic uncertainty or particular indications such as requirement for assessment for oxygen therapy • Ensure all patients with COPD receive influenza vaccine. • Tailor medicines based on the patient's symptoms, exacerbation history, response to treatment, and risk of side effects. • Encourage all patients and health professionals to involve carers and family members in their care management e.g. attending consultations.

Existing services (LHD)	• Aged care and Chronic disease management services (SNSWLHD) - Allied health services such as Physiotherapy, Occupational Therapy, Social Work services and Nutrition and Dietetics and Nursing services.
	  ○ Support to help you work on aspects of your health such as smoking cessation, healthy eating and activity levels.
	  ○ Link you in with other services such as My Aged Care, Carers Australia and those in your local community
	• Chronic Disease Management Service (ISLHD) - VeCC.
	• Lungs in Action is the community-based exercise maintenance program for patients with stable chronic lung disease and stable chronic heart failure post-rehabilitation.

Existing services (COORDINARE)	• Respiratory Disease Management Clinic • Silverchain • CareFinder • Winter Strategy • HealthPathways • Shared Medical Appointments

[1]Yang IA, George J, McDonald CF, McDonald V, O'Brien M, Smith B, Zwar N, Dabscheck E. 2021.The COPD-X Plan: Australian and New Zealand Guidelines for the management of Chronic Obstructive Pulmonary Disease

Stage 4: Evidence, resources and current services

Evidence from COPD-X Guidelines[1]	• Educate patients and carers on how to recognise and respond to exacerbations by combining action plans with self-management education and integrated care based on shared care arrangements • Early diagnosis and treatment of exacerbations may prevent hospital admission and delay COPD progression • A COPD exacerbation is characterised by a change in the patient's baseline dyspnoea, cough, and/or sputum that is beyond normal day-to-day variations, is acute in onset, and may warrant a change in regular medication or hospital admission • Check inhaler technique at each visit, especially in older, frail and cognitively impaired patients • Avoiding re-hospitalisation by the development of collaborative care using 'shared care' models between the GP and other members of the healthcare team. • COPD Action Plan helps people identify when they are getting sick, and indicates medicines, doses and actions to take for maintenance therapy and for exacerbations.
Existing services (LHD)	• Planned Care for Better Health (consumers determined via algorithm) • Ambulatory services dependent upon location • COPD clinics (ISLHD) • Lung rehabilitation services (SNSWLHD) • GP Chronic care programs (variable across district) • Community Nursing - Specialist nursing services for post-acute (hospital), wound care, palliative care, catheter care and asthma education. • Virtually enhanced Community Care (Stable Acute Respiratory Patients, Patients with an acute medical condition which has been stabilised in hospital)

[1]Yang IA, George J, McDonald CF, McDonald V, O'Brien M, Smith B, Zwar N, Dabscheck E. 2021.The COPD-X Plan: Australian and New Zealand Guidelines for the management of Chronic Obstructive Pulmonary Disease

Stage 5: Evidence, resources and current services

Evidence from COPD-X Guidelines[1]	• Patients with COPD discharged from hospital following an exacerbation should receive comprehensive follow-up led by the primary healthcare team. This should commence before the person leaves the hospital. • Check adherence with non-pharmacological (e.g. smoking cessation, immunisation, exercise and oxygen) and pharmacological treatment strategies regularly, preferably at each visit. • Check inhaler technique at each visit, especially in older, frail and cognitively impaired patients. • Consider a home medicines review if adherence issues are more likely e.g. multiple medicines, significant changes to medication or confusion etc. • Hospital discharge plans / clinical summaries should be shared with the primary care team in a timely manner (preferably within 24 hours of discharge). • Patients with COPD discharged from hospital should be reviewed by a member of the primary healthcare team within 7 days of discharge. • Patients discharged with chronic cough and ongoing sputum production should be monitored closely and taught airway clearance techniques by a respiratory physiotherapist if they have difficulties clearing secretions.
Existing services (LHD)	• Physiotherapy - Kiama Outpatient Service - Kiama Integrated Primary and Community Health Centre (ISLHD). • March 2022 there is a new Shellharbour Hospital being built (ISLHD) that will provide outpatient services and rehabilitation services. • Lung rehabilitation services (SNSWLHD). • COPD clinics (ISLHD). • Virtually enhanced Community care (VeCC).
Existing services (COORDINARE)	• Respiratory Disease Management Clinic. • Silverchain. • CareFinder. • Winter Strategy. • Shared Medical Appointments.

[1]Yang IA, George J, McDonald CF, McDonald V, O'Brien M, Smith B, Zwar N, Dabscheck E. 2021.The COPD-X Plan: Australian and New Zealand Guidelines for the management of Chronic Obstructive Pulmonary Disease.

Appendix C: Literature reviewed

Literature reviewed

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