Te Tāhū Hauora
Health Quality & Safety Commission

Chronic obstructive pulmonary disease: Clinical audit template

The clinical audit process aims to encourage teams to reflect and act on the best information available to improve clinical practice.

Chronic obstructive pulmonary disease (COPD) is the fourth most common cause of death in Aotearoa New Zealand, and the third most common cause of death in the Māori population.[1]

It is estimated around 15 percent of individuals over the age of 45 years have COPD.[2] In 2019, about 6,644 individuals were newly diagnosed with COPD, and most cases were linked to smoking.[3] Māori and Pacific peoples, in particular, experience a high and disproportionate burden of the disease.

What is the practice concerned about?

Identifying people with a diagnosis of COPD and reviewing to ensure management is optimal. Audit indicators have been drawn from the Atlas of Healthcare Variation[4] and the NZ COPD Guidelines.[5]

Findings from the Atlas that warrant further investigation to determine whether they represent under-use of effective treatment are as follows:

- About 4 in 10 of those admitted to hospital with a primary diagnosis of COPD did not regularly receive triple therapy in the following 12 months after admission. Triple therapy is recommended to minimise exacerbations and improve airway functioning. Not all individuals admitted with COPD will meet the criteria for triple therapy.
- One-third of those with COPD who received two or more courses of prednisone did not regularly receive triple therapy in the following 12 months. Repeated use of prednisone without optimal COPD management may indicate poorly controlled COPD.

1 Health New Zealand. 2024. *Mortality web tool*. URL: www.tewhatuora.govt.nz/for-health-professionals/data-and-statistics/mortality-web-tool (accessed 23 June 2025).

2 Asthma and Respiratory Foundation NZ. 2024. *Understanding COPD*. URL: www.asthmafoundation.org.nz/stories/understanding-copd (accessed 23 June 2025).

3 Telfar Barnard L, Zhang J. 2021. *The impact of respiratory disease in New Zealand: 2020 update.* Wellington: Asthma and Respiratory Foundation NZ. URL: www.asthmafoundation.org.nz/assets/documents/Respiratory-Impact-report-final-2021Aug11.pdf (accessed 23 June 2025).

4 Te Tāhā Hauora. Atlas of Healthcare Variation. URL: https://www.hqsc.govt.nz/our-data/atlas-of-healthcare-variation/chronic-obstructive-pulmonary-disease/ (accessed 1 August 2025).

5 Asthma Respiratory Foundation NZ. 2021. *NZ COPD Guidelines*. URL: https://www.nzrespiratoryguidelines.co.nz/uploads/8/3/0/1/83014052/nz_copd_guidelines_web.pdf (accessed 1 August 2025).

- Influenza vaccine rates in people with COPD by age showed potential for improvement, with 35 percent of those aged 45 to 64 years, 61 percent of those aged 65 to 74 years and 74 percent of those aged 75-plus years receiving an influenza vaccination in 2023.

Recommended reading

- Asthma and Respiratory Foundation NZ. 2024. *COPD*. Wellington: Asthma and Respiratory Foundation NZ. URL: www.asthmafoundation.org.nz/resources/topic/copd
- Health New Zealand | Te Whatu Ora. 2024. *Chronic obstructive pulmonary disease (COPD)*. Wellington: Health New Zealand. URL: info.health.nz/conditions-treatments/lungs/chronic-obstructive-pulmonary-disease
- Healthify | He Puna Waiora. 2024. *COPD* | *Mate ia tuku*. URL: healthify.nz/health-a-z/c/copd
- Te Tāhū Hauora | Health Quality and Safety Commission. 2023. *Chronic obstructive pulmonary disease (COPD)* | *He mate puru ia auraki (Frailty care guides 2023)*. Wellington: Te Tāhū Hauora. URL: www.hqsc.govt.nz/resources/resource-library/chronic-obstructive-pulmonary-disease-copd-he-mate-puru-ia-auraki-frailty-care-guides-2023/

Carrying out a clinical audit

Plan

Use the template below to identify your patients with COPD and assess your current management using the audit indicators described.

Do

Discover what you are doing now.

Study

- Analyse what the audit results tell you.
- Examine the individual patients on your list.

Act

Make changes – what changes can be made to improve patient care?

Write an action plan:

- based on your results, review 10 patients who meet the criteria. You may wish to concentrate on the more severe patients
- decide who will do the review and by when
- plan a review date to follow up on changes
- implement changes.

Monitor change and progress:

- review your action plan to see if you are keeping to the timeline for implementing change

- monitor to see if actions are taking place
- solve problems as they arise
- obtain qualitative feedback from staff and patients about the improvement(s)
- consider if you need to develop new strategies to achieve the goals you have set

General practitioners are encouraged to discuss the outcomes of the audit with their peer group or practice.

Royal New Zealand College of General Practitioners continuing professional development

Please complete and upload all necessary documents to your continuing professional development Te Whanake Programme. This audit should be logged under your MIO category. Credits can be calculated based on time spent completing and prepping for the audit (1 credit = 1 hour of learning + 1 credit for reflection).

Audit indicators Indicators are adapted from the Atlas of Healthcare Variation and the rationale from the NZ COPD Guidelines.		
Indicator	**Rationale**	**Action**
People prescribed a LAMA two or more times in a year who do not have a code for COPD	Identify those with COPD who are not coded in the PMS. Ensuring COPD is coded improves accuracy and completeness of diagnostic coding and supports audit activity.	Review patient list and code those with a diagnosis of COPD not already coded.
COPD patients vaccinated against influenza within the past year	The NZ COPD Guidelines states: Yearly influenza vaccination reduces serious illness and death in patients with COPD and should be actively promoted to patients with COPD. Pharmac funding criteria (2025): Funded influenza vaccine is available to: a) All people 65 years of age and over; or… b) People under 65 years of age who: ii) have either of the following chronic respiratory diseases: a) asthma, if on a regular preventative therapy, or b) other chronic respiratory disease with impaired lung function.	Recall those eligible for vaccination.
COPD patients vaccinated against pneumococcal infections	Consider other relevant vaccinations at the same time as influenza vaccination, including pneumococcal, shingles and COVID-19.	Add alert, discuss as part of influenza vaccination.
COPD patients vaccinated against COVID-19		
Current smokers with COPD	The NZ COPD Guidelines state that stopping smoking is the most important treatment for COPD.	Referral to a local smoking cessation service is recommended.

Audit indicators Indicators are adapted from the Atlas of Healthcare Variation and the rationale from the NZ COPD Guidelines.		
Indicator	**Rationale**	**Action**
	Smoking cessation reduces cardiovascular risk as well as the rate of lung function decline in COPD.	
Those with COPD who have any spirometry recorded	The NZ COPD Guidelines recommend that COPD diagnosis should be confirmed by spirometry. Spirometry is the most useful test of lung function to diagnose and assess the severity of COPD.	If spirometry is not available, patients should be referred.
SAMA and LAMA prescribed at the same time	The NZ COPD Guidelines state that SAMA should not be routinely prescribed to patients on a LAMA. For patients with ongoing dyspnoea, despite as-needed SABA, SAMA or a combination SAMA/SABA, a regular LAMA, such as tiotropium, glycopyrronium or umeclidinium, is recommended unless there is evidence of asthma/COPD overlap.	Review those receiving both.
ICS prescription in COPD	The main role for ICS is to prevent exacerbations in patients with frequent exacerbations (defined as two exacerbations in a year or one hospital admission for COPD). The NZ COPD Guidelines recommend that LABA/LAMA is preferred over inhaled corticosteroid (ICS/LAMA) as initial therapy for most patients with frequent exacerbations because ICS increases the risk of pneumonia. Patients with an eosinophilic pattern of disease may benefit from ICS/LABA instead of LABA/LAMA. Retrospective analyses suggest that blood eosinophil counts predict the benefit of ICS in preventing exacerbations: people with blood eosinophil counts <100cells/µL are least likely to benefit, and	Review, consider LAMA.

Audit indicators Indicators are adapted from the Atlas of Healthcare Variation and the rationale from the NZ COPD Guidelines.		
Indicator	**Rationale**	**Action**
	people with counts ≥300cells/μL are most likely to benefit. A single blood test may not be representative because eosinophil counts can vary over time. Blood eosinophil counts performed when a patient is taking oral steroids will not be informative.	
CVRA in COPD patients	People with COPD are at increased risk of ischaemic heart disease and cardiac failure because of the shared risk factors of age and smoking status. People with COPD should have a cardiovascular risk assessment done.	Review CVD risk according to guidelines.
More than two prednisone prescriptions in the past year in people with COPD	Prednisone is frequently prescribed for acute exacerbations of COPD to reduce inflammation and improve airflow. However, its repeated use, especially in multiple courses, may suggest poorly controlled COPD or frequent exacerbations.	If multiple courses of prednisone were due to COPD exacerbations, then triple therapy should be considered.
Hospital admission rate with a primary diagnosis of COPD in the past 12 months	Escalation to triple LABA/LAMA/ICS therapy should be considered in patients who continue to exacerbate (twice or more a year) despite adherence to dual LAMA/LABA or ICS/LABA therapy and optimal inhaler technique. A subset of patients with persistent breathlessness and exercise limitation, despite LABA/LAMA combination therapy, may benefit from triple therapy with LABA, LAMA and ICS. However, the increased risk of pneumonia with regular ICS should be considered.	Review and consider triple therapy.

Audit indicators Indicators are adapted from the Atlas of Healthcare Variation and the rationale from the NZ COPD Guidelines.		
Indicator	**Rationale**	**Action**
	Direct escalation to dual or triple therapy, without stepwise up-titration, may be reasonable in the setting of severe or recurrent exacerbations.	
Antibiotic prescription in the past 12 months in those with COPD	Antibiotic prescription may indicate a COPD exacerbation.	Consider annual review and check action plan is up to date.
People with COPD, annual review. Include medication review and history of COPD exacerbations in the past 12 months (requiring oral corticosteroids or antibiotics) and symptom control	Personalised action plans (self-management plans) improve quality of life and reduce hospital admissions and should be offered to all people with COPD. Action plans should be personalised and focus on recognising and treating deteriorating symptoms. Action plans should be checked at each COPD review.	Develop action plans. Patients at risk of exacerbations may be offered antibiotics and prednisone to have at home as part of their action plan. The patient should be advised of a timeframe for clinical review once they have started these medicines for an acute exacerbation of COPD.

Note: COPD = chronic obstructive pulmonary disease; CVD = cardiovascular disease; CVRA = cardiovascular risk assessment; ICS = inhaled corticosteroid; LABA = long-acting beta agonist; LAMA = long-acting muscarinic antagonist; PMS = patient management system; SABA = short-acting beta agonist; SAMA = short-acting muscarinic antagonist.

Audit template

1. To prepare for the audit, check all eligible patients are coded with COPD. Do this by running a query to identify patients prescribed a LAMA who are not coded as having a diagnosis of COPD. Include tiotropium bromide, tiotropium bromide with olodaterol, glycopyrronium, glycopyrronium with indacaterol, umeclidinium, umeclidinium with vilanterol. See appendix 2 for an example query.
2. Run the query to find patients with coded COPD. This is your audit cohort. To focus your audit, an output by age and ethnicity can be helpful, as can the count function to determine how often the patient has had the COPD diagnosis assigned to a consult.
3. When using the template, code ‘0’ when the criterion is not met and ‘1’ where it is. For example, a patient with a recorded spirometry is coded as 0. Columns with a ‘1’ indicate potential action is required.

Topic	**Dx**	**Screening and vaccination**				**Medicine review**		**Possible exacerbation**			**Comment or action**
Indicator	Spirometry not recorded	CVDRA, if less than age 75	Current smoker	No influenza vaccination	No COVID-19 vaccination or infection in past 6 months	SAMA and LAMA coprescription in past year (tip: search SAMA first)	ICS prescription in COPD	Hospital admission due to COPD in past 12 months	Two or more prednisone prescriptions in past 12 months for exacerbation	Antibiotic script in past year for COPD exacerbation	
NHI patient A											
B											
C											
D											
E											

Summary
Reflection
Action

Appendix 1: Four-step COPD consultation

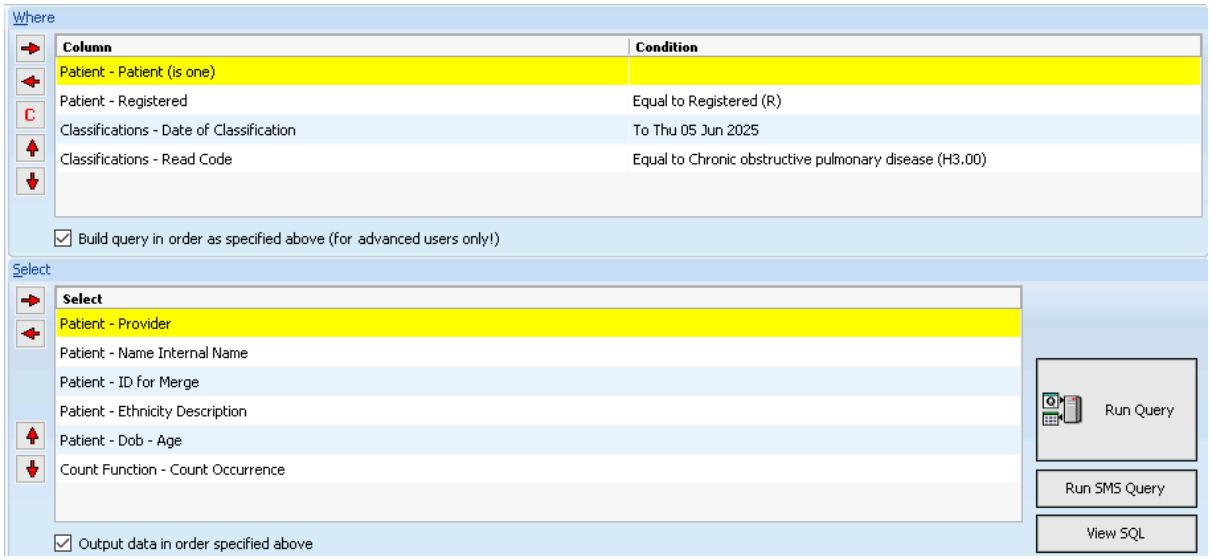
1. Assess COPD control and exacerbation risk	2. Consider other relevant clinical issues	3. Decide whether the treatment plan needs to be changed	4. Complete the COPD self-management (action) plan
Review history of COPD exacerbations in last 12 months (requiring oral corticosteroids or antibiotics) Complete CAT score Complete mMRC (breathlessness score) Review last spirometry result Assess current status: • breathlessness • exercise tolerance • sputum volume • sputum colour • oxygen saturations • flu vaccine • weight	Assess the patient's knowledge of their personal signs and symptoms of an exacerbation Ask about adherence with maintenance treatment Check frequency of using reliever medication Check inhaler technique Review smoking status and cessation strategies Assess whether the patient is coping with activities of daily living Consider a nutritional assessment Consider whether patient requires further specialist review if symptoms and presentation don't correlate Review for any co-morbid conditions	Consider whether additional drug treatment is required if COPD is not adequately controlled such as increasing breathlessness or recent exacerbation Consider withdrawal of ICS if patient is stable and there is no evidence of benefit or recent pneumonia. If ICS is withdrawn review patient in 4 – 6 weeks Consider if a home supply of antibiotics and oral corticosteroids is required Discuss an exercise plan and/or refer to pulmonary rehabilitation and/or physiotherapy Recommend annual flu vaccine and consider pneumococcal vaccine Refer for assessment for domiciliary oxygen if resting oxygen saturations <88% on room air when well and smoke free Refer for support services/specialist review if appropriate	Complete the details on the front page of the patient's plan Review the signs and symptoms of worsening COPD and of a chest infection with the patient (unwell, very unwell and extremely unwell) Remind the patient what to do when unwell: • breathing control techniques • correct inhaler technique • chest clearance (if required) • energy conservation techniques Enter the antibiotic type and length of course (usually 5 – 7 days) Enter the prednisone regimen. The usual regimen in an exacerbation is 40 mg daily for 5 days Advise the patient of a time for clinical review after starting home supply of prednisone and antibiotics (if applicable) Enter additional instructions in the steps to manage breathlessness section Give the patient a copy of the plan and save on the patient record

Appendix 2: Query build tips and query import

Tips

- To target the query, output by ethnicity and age can be useful.
- The count function shows how often the patient has had the COPD diagnosis assigned to a consult, which can be useful for focusing on who to look at more closely.

The table shows how to build the query manually.



Or import the query below

QBWHERE

QBNAME|QBROW|TABLEREF|DATATYPE|CONDITION|VALUE0|VALUE1|COLDESCR|CONDDESCR|COLREF|WHEREPART|LOGICAL|

COPD Patients by provider|1|ANYBODYPAT|X||||Patient - Patient (is one)||ANYBODYPAT.ISPATIENT|ANYBODYPAT.ISPATIENT = 1 ||

COPD Patients by provider|2|ANYBODYPAT|C|=|R||Patient - Registered|Equal to Registered (R)|ANYBODYPAT.REGCODE|ANYBODYPAT.REGCODE = 'R'||

COPD Patients by provider|3|CLASSIFICATION|D|<=|5/06/2025|5/06/2025|Classifications - Date of Classification|To Thu 05 Jun 2025|CLASSIFICATION.WHENCLASS|CLASSIFICATION.WHENCLASS <= '06/05/2025 23:59:59'||

COPD Patients by provider|4|CLASSIFICATION|V|=|H3.00||Classifications - Read Code|Equal to Chronic obstructive pulmonary disease (H3.00)|CLASSIFICATION.READCODE|CLASSIFICATION.READCODE = 'H3.00'||

COPD Patients by provider|99|CHECKBOX||||||YY|||

<EOF>

QBSELECT

QBNAME|QBROW|TABLEREF|DATATYPE|COLDESCR|SHORTDESCR|COLREF|ISTICKED|

COPD Patients by provider|1|ANYBODYPAT|V|Patient - Provider|Prov|ANYBODYPAT.SERPROVCODE|1|

COPD Patients by provider|2|ANYBODYPAT|U |Patient - Name Internal Name|Name/Chart|ANYBODYPAT.PREFORMATTEDINTERN|1|

COPD Patients by provider|3|ANYBODYPAT|U |Patient - ID for Merge|MM Id|ANYBODYPAT.ID|1|

COPD Patients by provider|4|ETHNICITY1|V|Patient - Ethnicity Description|Ethnicity|ETHNICITY1.DESCRIPTION|1|

COPD Patients by provider|5|ANYBODYPAT|I|Patient - Dob - Age|Age|ANYBODYPAT.YEARS|1|

COPD Patients by provider|6|COUNT|I |Count Function - Count Occurrence|Count Occur|COUNT(*)|1|

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