

# CONQUEST

Quality Improvement Initiative for Achieving Excellence in Standards for COPD Care

### **Research in Focus**

https://www.opcglobal.org/opcg-conquest



Output	Publication or Study Name	Publication Type	Associated Slide Numbers
#1	Quality Standards for the CONQUEST QI Programme	Manuscript	3 – 25
#2	CONQUEST: A Global Operational Protocol	Manuscript	26 – 49
#3	UK Opportunity Analysis: Comparing UK Current Practice to CONQUEST Quality Standards (2000-2019)	Manuscript	50 – 61
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### CONQUEST Quality Standards





### CONQUEST quality standards: for the COllaboratioN on QUality improvement initiative for achieving Excellence in STandards of COPD care

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International Journal of Chronic Obstructive Pulmonary Disease 2021:16 2301–2322

CONQUEST is conducted by Optimum Patient Care Global and the Observational and Pragmatic Research Institute and is co-funded by Optimum Patient Care Global and AstraZeneca



### **CONQUEST Quality Standards | Background**

International Journal of Chronic Obstructive Pulmonary Disease

A Open Access Full Text Article

ORIGINAL RESEARCH

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CONQUEST Quality Standards: For the Collaboration on Quality Improvement Initiative for Achieving Excellence in Standards of COPD Care

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Background: Chonic obstructive pulmonary disease (COPD) are managed predominantly in primary care. However, Key opportunities to optimize treatment are often not realized date to unrecognized disease and delayed implementation of appropriate interventions for both diagnosed and undiagnosed individuals. The COIIabaratalov an QLaligi morevenent intriative for achieving Excellence in STandards of COPD care (CONQUEST) is the first-of-itskind, collaborative, interventional COPD registry. It comprises an integrated quality improvement program focussing on pattents (diagnosed and undiagnosed) at a modifiable and higher risk of COPD exacerbations. The first step in CONQUEST was the development of quality standards (QS). The QS will be imbedded in rooting primary and secondary care, and are designed to drive patient-centered, targeted, risk-based assessment and management optimization. Darw aim is to provide an overview of the CONQUEST QS, including how they were developed, as well as the rationale for, and evidence to support, their inclusion in healthcare versets.

Methods: The QS were developed (between November 2019 and December 2020) by the CONQUEST Global Steering Committee, including 11 internationally recognized experts with a specially and research floces in COPD. The process included an extensive internate review, generation of QS draft wording, three iterative rounds of review, and consensus. **Results:** Four QS were developed 1; identification of COPD target populations, 2) assessment of disease and quantification of future risk, 3) non-pharmacological and pharmacological intervention, and 4) appropriate follow-up. Each QS is followed by a rationale statement and a summary of current guidelines and research evidence relating to the standard and its components.

Conclusion: The CONQUEST QS represent an important step in our aim to improve care for patients with COPD in primary and secondary care. They will help to transform the patient journey, by encouraging early intervention to identify, assess, optimally manage and followup COPD patients with modifiable high risk of future excerbations. **Keywords**: identification, assessment, intervention, follow-up

#### Plain Language Summary

Under-diagnosis and under-treatment of COPD results in significantly higher risk of exacerbations, morbidity and death. Early identification and appropriate management should mitigate that risk. The COllaboratioN on OUAlity improvement initiative for achieving Excellence in STandards of COPD care (CONQUEST) aims to improve the management of patients at grater risk of future COPD exacerchains by developing and implementing

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- Globally, the burden of COPD is high and remains a public health priority
- It is often underdiagnosed and undertreated in primary care, leading to worsening of disease and increased symptom

CONQUEST is the first-of-its-kind collaborative, interventional, COPD registry with an integrated quality improvement program aiming to improve patient care and outcomes.

#### Underpinning the CONQUEST programme are

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#### The CONQUEST Quality Standards

These focus on patients (diagnosed and undiagnosed) at a modifiable, but higher risk of COPD exacerbations and adverse cardiac events ("Modifiable high-risk")

Pullen R et al. Int J Chron Obstruct Pulmon Dis 2021:16 2301-2322





### The CONQUEST Quality Improvement Programme Underpinned by Quality Standards

The Need for CONQUEST & Programme Background





### **Opportunities To Diagnose COPD Are Often Missed in Primary Care**







# Impact of recurrent exacerbations



SCS: Systemic Corticosteroid 1. Hurst JR, et al. N Engl J Med 2010; 363 (12): 1128–1138. 2. Kerkhof M, et al. Int J Chron Obstruct Pulmon Dis 2020; 15: 1909-1918 3. Jones PW, et al. Eur Respir J 2014; 44:1156–1165 4. Menzies-Gow et al., Oral Presentation - British Thoracic Society, January 2021 5.Kunisaki KM, et al. Am J Respir Crit Care Med 2018; 198: 51-57

### Evidence for Under and Over-treatment of COPD patients based on UK data

Halpin DG, Price D et al. E Clinical Med 2019; 14:32-41

Appropriateness of therapy in COPD patients on **maintenance** therapy with ≥ 2 exacerbations and **mMRC <2** in 2014\* Appropriateness of therapy in COPD patients on **maintenance** therapy with ≥ 2 exacerbations and **mMRC ≥2** in 2014\*



Under treatment observed in all COPD patient groups, irrespective of blood eosinophil count and symptom burden

\*according to the GOLD 2019 report, based on dyspnea, exacerbation frequency and blood eosinophil counts ('eos') at Index Date.

### **COPD Exacerbations linked to increased Cardiovascular Event Risk**

Post-hoc analysis from SUMMIT trial

COPD patients with CVD or risk factors for CVD + ≥1 exacerbation



overall in subsequent CVD events vs pre-exacerbation period



Relationship present regardless of cardiac history at outset

Kunisaki KM, et al Am J Respir Crit Care Med 2018;198:51–57; CI: Confidence Interval; CVD: cardiovascular disease ; HR: Hazard Ratio ; SUMMIT: Study to Understand Mortality and Morbidity in COPD

### The Need For Improved Quality of Care – Goals for COPD Management in the USA & UK







### **CONQUEST: Programme Vision**



Driving patient-centred, targeted, and risk-based assessment to empower patients and physicians to improve COPD care for both diagnosed and undiagnosed modifiable high-risk patients





### The CONQUEST Quality Improvement Programme Underpinned by Quality Standards

The Development of the CONQUEST Quality Standards





□ Making the QS practical & easy to use for all stakeholders (e.g., clinicians, policy makers, advocacy groups)

□ Ensuring the QS are feasible to implement in routine clinical practice

□ Future-proofing the QS by advocating general principles rather than a stringent and didactic approach

Ensuring QS adherence and impact on disease outcomes can be compared across healthcare systems

Accounting for intercountry differences in COPD burden (morbidity, mortality, socioeconomic)

"These Quality Standards are core research and evidence-based statements that underpin the CONQUEST initiative and are intended to cover care for a targeted COPD population, a large proportion of whom may be positively impacted by quality COPD care."





Pullen R et al. Int J Chron Obstruct Pulmon Dis 2021:16 2301-2322



### **Modifiable High-Risk**

Aged  $\geq$ 40 with COPD (or potential COPD) with  $\geq$ 2 moderate, or  $\geq$ 1 severe exacerbations in last 12 months

AND whose medical record data indicates clearly that there is scope for management optimisation

Undiagnosed patients with potential MHR COPD

### **Diagnosed** MHR

**COPD** patients

#### 1. Identification of target population

Identify individuals ≥40 years of age (with or without a COPD diagnosis) with a history of smoking or relevant environmental exposure, at increased risk of exacerbations, morbidity, and mortality and with scope for COPD management optimization.

And, within this population, to identify those with greater cardiovascular risk.

#### 4. Follow up

Ensure regular follow up to address pharmacological and non-pharmacological interventions, symptoms review & risk prevention and lifestyle risk factors



### 2. Assessment of disease & quantification of future risk

Perform thorough phenotyping, assessment of underlying biological traits and risk prediction of all patients identified within the target population.

### 3. Non-pharmacological and pharmacological Intervention

Target therapeutic interventions according to individual risk assessment and biological traits



### **The Four Quality Standards**

Detailed Description of Each CONQUEST Quality Standard





#### Patients

- ✓ ≥40 years old
- ✓ With or without a COPD diagnosis
- ✓ History of smoking/relevant environmental exposure
- ✓ Increased risk of exacerbations, morbidity, and mortality
- ✓ Scope for COPD management optimization (i.e., modifiable high-risk disease)

### Rationale

- Early intervention would slow the speed of disease progression
- Patients at risk of exacerbations require more intense focus on identification, assessment, and treatment optimization

### Goals of optimized management

- Reduce exacerbation rate
- Reduce/attenuate lung function decline
- Improve patient health-related quality of life
- Decrease cardiovascular risk associated with exacerbations









Identify those with greater cardiovascular risk within this population



#### **Phenotype patients**

Assess underlying biological traits

### **Predict individual risk**



#### **Disease assessment**

- 1. **Symptomatic assessment** via the COPD Assessment Test (CAT) and MRC dyspnea scale
- 2. **Post-bronchodilator spirometry** to confirm diagnosis and track lung function
- 3. Measuring **blood eosinophil counts** to guide therapy
- 4. **Imaging** to evaluate disease, consider other respiratory pathologies, and potentially phenotype patients
- 5. Identifying comorbidities

#### **Risk assessment**

- 1. Body Mass Index **(BMI)** evaluation to aid in prediction of exacerbation risk, mortality, and comorbidities
- 2. Cardiovascular (CV) risk evaluation
- 3. Evaluation with validated **multicomponent risk assessment** indices
- 4. Evaluation of **cigarette smoke exposure** and **physical activity** levels







Non-pharmacological interventions	Pharmacological interventions	
Smoking cessation interventions as appropriate	Dual bronchodilators if symptomatic on LABD monotherapy	
Pulmonary rehabilitation referrals, where indicated	Triple therapy when appropriate	
Long-term oxygen therapy, where indicated	Adequate and prompt therapy for cardiac risk factors & disease	
Pneumococcal & annual influenza vaccination to all with COPD	Regularly assess inhaler choice and technique	
Enhancing patient motivation and engagement with patient reported outcome information & shared decision-making	Short courses of oral steroids and/or antibiotics during exacerbations	



### **Quality Standard #4: Appropriate Follow Up**

Initial visit







### Conclusions

 Takeaway Messages from the Quality Standard Manuscript & Next Steps for the CONQUEST Programme





The CONQUEST Quality Standards are the first step in transforming the patient pathway to improve the care of COPD patients in primary and secondary care internationally

These Quality Standards will be a useful tool in identifying high-risk patients with modifiable disease, optimizing their management, and ensuring appropriate follow up to reduce symptoms, exacerbations, comorbidity and mortality

Moving forward, CONQUEST will advocate for appropriate and early interventions to slow disease progression and optimize patient outcomes; it will also utilize shared decision-making to lock in behavioural change and generate transformational evidence to measure treatment success in the real world





### Next Steps for the CONQUEST QI Programme

- > Translation of the Quality Standards into **Quality Improvement Programme operational protocols** 
  - These protocols will describe the core components of the programme required to implement CONQUEST in a healthcare system or a practice
- Select regions of the UK & USA have been identified as initial targets for the CONQUEST intervention
- An Opportunity Analysis will be conducted in both countries using retrospective analysis of EMR data to compare the Quality Standards with current practice – highlighting opportunities for management optimisation
- The impact of CONQUEST on COPD outcomes will be evaluated by a cluster randomized trial (PREVAIL) in each country







### For More Information on the CONQUEST Quality Standards

> View the full article here: https://www.dovepress.com/article/download/67814





### Global QI Operational Protocol for CONQUEST

QI: Quality Improvement





### CONQUEST: A Quality Improvement Program for Defining and Optimizing Standards of Care for Modifiable High-Risk COPD Patients

Luis Alves, Rachel Pullen, John R Hurst, Marc Miravitlles, Victoria Carter, Rongchang Chen, Amy Couper, Mark Dransfield, Alexander Evans,

Antony Hardjojo, David Jones, Rupert Jones, Margee Kerr, Konstantinos Kostikas, Jonathan Marshall, Fernando Martinez, Marije van Melle, Ruth

Murray, Shigeo Muro, Clementine Nordon, Michael Pollack, Chris Price, Anita Sharma, Dave Singh, Tonya Winders, David B Price.

Patient Related Outcome Measures 2022:13 Pages 53-68

CONQUEST is conducted by Optimum Patient Care Global and the Observational and Pragmatic Research Institute and is co-funded by Optimum Patient Care Global and AstraZeneca



# The CONQUEST Quality Improvement Programme

• Background & Key Features of the Programme





Patient Related Outcome Measures

**Dove**press REVIEW

#### CONQUEST: A Quality Improvement Program for Defining and Optimizing Standards of Care for Modifiable High-Risk COPD Patients

Luis Alves 1, Rachel Pullen 2, John R Hurst 3, Marc Miravitlles 4, Victoria Carter5, Rongchang Chen<sup>6</sup>, Amy Couper 62, Mark Dransfield<sup>7</sup>, Alexander Evans<sup>5</sup>, Antony Hardjojo 62, David Iones 65, Rupert Iones 68, Margee Kerr<sup>5</sup>, Konstantinos Kostikas 69, Ionathan Marshall<sup>10</sup>, Fernando Martinez<sup>11</sup>, Marije van Melle<sup>5</sup>, Ruth Murray<sup>5</sup>, Shigeo Muro<sup>12</sup>, Clementine Nordon<sup>10</sup>, Michael Pollack<sup>13</sup>, Chris Price<sup>5</sup>, Anita Sharma<sup>14</sup>, Dave Singh<sup>15</sup>, Tonya Winders<sup>16</sup>, David B Price<sup>6</sup>

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Abstract: The COllaboration on QUality improvement initiative for achieving Excellence in STandards of COPD care (CONQUEST) aims to improve the quality of COPD care in primary care. The CONQUEST target population includes patients diagnosed with COPD, and those undiagnosed but with COPD-like exacerbations, who are at high but modifiable risk of COPD exacerbations, increased morbidity, and mortality. Timely diagnosis and optimized management to reduce these risks is vital. There is a need for a quality improvement program (QIP) that enables long-term improvement of patient clinical outcomes via integration of the program into routine clinical care. Core to the CONQUEST program is the adoption of four specifically designed, globally applicable, and expert-agreed quality standards (QS) for modifiable high-risk COPD patients. Translation of the QS into clinical practice, and implementation of the QIP, is guided by the CONQUEST global operational protocol provided to sites meeting the minimum healthcare system requirements. Initial analyses of current practices are conducted to generate baseline assessments of need within healthcare systems and sites looking to implement the OIP. Implementation is supported by the provision of CONOUEST resources and tools, such as clinical decision support, that promote prompt identification and treatment of patients. Utilization of electronic medical record (EMR) and patient-reported data are integral components of the QIP. Regular, automated collection and analysis of data, combined with a cyclical review of the implementation process, will be conducted for long-term, continuous improvement and health impact evaluation. The CONQUEST QIP will be an important resource in the identification and management of patients with modifiable high-risk COPD. Embedding the CONOUEST OS into routine clinical practice with regular evaluation and feedback will result in long-term quality of care improvement

Keywords: patient-reported outcome, patient-reported information, clinical decision support, primary care, quality standards, integrated care

Received: 26 October 202 Accepted: 2 February 2022 Published: 23 February 2022 Patient Related Outcome Measures 2022:13 53-68

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- > Timely diagnosis and optimised COPD management are key to reducing exacerbation and cardiac risk
- The CONQUEST QIP fulfills a need to integrate management optimisation for undiagnosed and diagnosed COPD patients into routine clinical care
- CONQUEST QIP target populations include patients diagnosed with COPD, and those undiagnosed but with COPD-like exacerbations, who are at a higher but modifiable risk of COPD exacerbations, cardiac events and increased morbidity
- This article details key features of the programme from development through to implementation and evaluation



### The Need for the CONQUEST QI Programme and Key Programme Elements



#### Key Features of the CONQUEST QI Programme



# The CONQUEST Quality Improvement Programme

The CONQUEST patient population and associated Quality Standards







Adapted from Alves et al. Patient Related Outcome Measures 2022: 13 53-68.









\*Applicable to sites implementing CONQUEST as part of the PREVAIL Cluster Randomised Trial. QIP, quality improvement program. Adapted from Alves et al. Patient Related Outcome Measures 2022: 13 53-68.







\*Applicable to sites implementing CONQUEST as part of the PREVAIL Cluster Randomised Trial. EHR, Electronic Health Record. Adapted from Alves et al. Patient Related Outcome Measures 2022: 13 53-68.
## Implementing the CONQUEST QI Programme

- Translating Quality Standards into Clinical Practice
- Patient Reported Outcomes and Information
- Data collection and analysis





### CONQUEST Quality Standards (QS) and Their Role in Guiding QI Programme Activities



EMR: Electronic Medical Records; QS: Quality Standards; QIP: Quality Improvement Program. Adapted from Alves et al. Patient Related Outcome Measures 2022: 13 53-68.

### Embedding CONQUEST Quality Standards into Clinical Practice: Practical CONQUEST QIP Implementation steps\*



\* Supported by CONQUEST Global Operational Protocol and Clinical Decision Support. QIP: quality improvement program. Adapted from Alves et al. Patient Related Outcome Measures 2022: 13 53-68.







Specialist referral to pulmonologist as indicated

Adapted from Alves et al. Patient Related Outcome Measures 2022: 13 53-68. BEC, blood eosinophil count; CDS, Clinical Decision Support; CAT, COPD Assessment Test; CXR, Chest X-Ray; EMR, Electronic Medical Record; GOLD, Global Initiative for Chronic Obstructive Lung Disease; PRI, patient-reported information; PRO, patient-reported outcomes; QIP, quality improvement program; QS, quality standards.



- Record exacerbation history, current symptom assessment and therapy
- Specialist referral to pulmonologist as indicated

Adapted from Alves et al. Patient Related Outcome Measures 2022: 13 53-68. BEC, blood eosinophil count; CDS, Clinical Decision Support: CAT, COPD Assessment Test; CXR, Chest X-Ray; EMR, Electronic Medical Record: GOLD, Global Initiative for Chronic Obstructive Lung Disease; PRI, patient-reported information; PRO, patient-reported outcomes; QIP, quality improvement program; QS, quality standards.



Specialist referral to pulmonologist as indicated

#### Data Collection and Analysis

Collection of key quality indicators

- Quality indicators reflecting quality of care for each group of modifiable highrisk patients
- At QIP implementation and at least annually thereafter

#### Annual status report

- Based on collected quality indicator data
- Summarize the impact of CONQUEST implementation on practices and patients.
- Evaluate change since past data collection and highlight areas for further improvement

Adapted from Alves et al. Patient Related Outcome Measures 2022: 13 53-68. BEC, blood eosinophil count; CDS, Clinical Decision Support; CAT, COPD Assessment Test; CXR, Chest X-Ray; EMR, Electronic Medical Record; GOLD, Global Initiative for Chronic Obstructive Lung Disease; PRI, patient-reported information; PRO, patient-reported outcomes; QIP, quality improvement program; QS, quality standards.

### Patient-reported Outcomes and Patient Reported Information in CONQUEST QIP

- Patient-reported data provide valuable information utilised:
  - in assessment of symptoms and current disease status
  - > to guide therapy choice
- Questionnaires are used throughout the CONQUEST programme:
  - for initial case-finding in undiagnosed patients
  - at or before initial clinical consultations
  - in follow up after clinical consultations

Alves et al. Patient Related Outcome Measures 2022: 13 53-68. QIP: Quality Improvement Programme 
 Table 2 CONQUEST Patient Questionnaire Domains and Instruments Utilized in Collection of Patient-Reported Outcomes and Information

Questionnaire Domain	Instrument	Comments/Rationale for Inclusion
Case-finding questions	CAPTURE questionnaire <sup>63</sup> and COPD diagnostic Questionnaire <sup>64</sup>	Only visible to those who do not have a COPD diagnosis Aims to identify those with a greater likelihood of COPD
Health status: a) Symptoms (eg, breathlessness, cough, sputum production and appearance) b) Physical/daily activities c) Subjective perception	a) mMRC Dyspnea scale, CAT, cough visual analogue scale, COPD control tool b) CAT, mMRC Dyspnea scale, COPD control tool c) COPD control tool	Assessment of health status and disease burden Helps guide therapy and management, eg, information used in GOLD medication algorithms Part of determining clinical impact and stability in the COPD control tool
Exacerbations: Frequency, severity, and treatment	CONQUEST Questionnaire and COPD control tool	Triangulation with EMR data - patient reporting of exacerbation frequency may differ from EMR record. Helps guide therapy and management decisions Informs individual steroid burden. Part of determining clinical stability in COPD control tool and risk of future exacerbations
Inhaler use, technique and adherence	CONQUEST questionnaire and COPD Control tool	Essential to ensure correct use of therapy Guides further management decisions Part of determining clinical impact in COPD control tool
Smoking status	CONQUEST questionnaire	To prompt smoking cessation advice/intervention
Goal setting and self-management	CONQUEST questionnaire	Encourage patient engagement and self-empowerment Information to correlate with EMR records, further detail on steroid and antibiotic use. Prompt creation or update of individual action plans where appropriate

Abbreviations: CAPTURE, COPD Assessment in Primary Care to Identify Undiagnosed Respiratory Disease and Exacerbation Risk; CAT, COPD Assessment Test; CONQUEST, COllaboratioN on QUality improvement initiative for achieving Excellence in STandards of COPD care; COPD, chronic obstructive pulmonary disease; EMR, electronic medical record; GOLD, Global Initiative for Chronic Obstructive Lung Disease; mMRC, modified Medical Research Council.





## **Evaluating the CONQUEST QI Programme**





Cyclical review of implementation process and outcomes

Annual QI status reports utilising quality indicator data to:

- summarise impact on long-term change in practice
- highlight areas for improvement

Formal evaluation through the **PREVAIL cluster**randomised trials

Monitoring Progress, Sustaining improvement, and Programme Evaluation











## Conclusions







### **Patient Related Outcome Measures**

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REVIEW

Dovepress

## CONQUEST: A Quality Improvement Program for Defining and Optimizing Standards of Care for Modifiable High-Risk COPD Patients

> CONQUEST: A unique initiative to improve COPD care, focussing on those at greatest cardiopulmonary risk

> The protocol provides a framework for the translation of CONQUEST quality standards into routine clinical practice

> Implementation is supported by patient reported questionnaire data and clinical decision support

Cyclical review and programme monitoring: a commitment to long-term implementation and improvement in clinical outcomes



### For More Information on the Manuscript Summarising the CONQUEST Operational Protocol

> View the full article here: CONQUEST: a QIP for Patients with Modifiable High-Risk COPD

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### UK Opportunity Analysis: Comparing UK Practice to CONQUEST Quality Standards (2000-2019)

- An observational, longitudinal, descriptive study for the CONQUEST programme
   Focused on a population of high-risk patients with diagnosed or potential COPD
  - (Table 1) registered at general practitioner (GP) practices.
- Analysis sample was identified in 2019 and in each previous year back to 2000.
- Routinely collected primary care data was assessed over the relevant time frame for each outcome; the 12 months before or after 1 January of each study year.
- ✤ 2019 was chosen as the key year for the data as it provides the most up-to-date information prior to the COVID-19 pandemic.





### Identification of key opportunities for optimising the management of high-risk COPD patients in the UK using the CONQUEST quality standards: an observational longitudinal study

David M. G. Halpin, Andrew P. Dickens, Derek Skinner, Ruth Murray, Mukesh Singh, Katherine Hickman, Victoria Carter, Amy Couper,

Alexander Evans, Rachel Pullen, Shruti Menon, Tamsin Morris, Hana Muellerova, Mona Bafadhel, James Chalmers, Graham Devereux, Martin

Gibson, John R. Hurst, Rupert Jones, Konstantinos Kostikas, Jennifer Quint, Dave Singh, Marije van Melle, Tom Wilkinson, David Price.

The Lancet Regional Health – Europe, 2023. Volume 29, 100619

CONQUEST is conducted by Optimum Patient Care Global and the Observational and Pragmatic Research Institute and is co-funded by Optimum Patient Care Global and AstraZeneca



Annual, cross-sectional descriptive study assessing each country's clinical practices in the management of COPD relative to global & national standards, and the CONQUEST QS



Pullen et al. 2021. Int J Chron Obstruct Pulmon Dis. 2021(6), 2301-2322





Halpin et al. 2023. The Lancet Regional Health – Europe, Volume 29, 100619. https://doi.org/10.1016/j.lanepe.2023.100619

## **Key UK Results**

**2019 Data for High-risk Patient Cohorts** 





#### Newly Diagnosed High-risk Cohort

2019 Snapshot



> Significant opportunity to conduct cardiac risk assessment in 81% of newly diagnosed high-risk patients

Scope to record spirometry data within the EMR for >40% of this newly diagnosed cohort and COPD assessment test (CAT) scores in almost 75% of these patients

CAT – COPD assessment test; EMR – Electronic medical records; PR – Pulmonary rehabilitation; QRISK – validated cardiac risk assessment score. Halpin et al. 2023. The Lancet Regional Health – Europe, Volume 29, 100619. <u>https://doi.org/10.1016/j.lanepe.2023.100619</u>



### Already Diagnosed High-risk Cohort: 2019 Snapshot





Significant opportunity to conduct cardiac risk assessment in over ¾ of already diagnosed patients

Scope to offer or refer almost 50% of patients to Pulmonary Rehabilitation (PR)

PN: Pneumococcal; QRISK – validated cardiac risk assessment score. Halpin et al. 2023. The Lancet Regional Health – Europe, Volume 29, 100619. https://doi.org/10.1016/j.lanepe.2023.100619







Undiagnosed High-risk Cohort

2019 Snapshot



Significant opportunity to review patients within 6 weeks following a respiratory hospitalization
 Scope to record patient smoking status in over 1/3 of patients



mMRC – Modified Medical Research Council dyspnoea score; QRISK – validated cardiac risk assessment score. Halpin et al. 2023. The Lancet Regional Health – Europe, Volume 29, 100619. <u>https://doi.org/10.1016/j.lanepe.2023.100619</u>

# Key UK Take Away Messages & Conclusions





4 Top Areas of Opportunity

UK Opportunity Analysis THE LANCET Regional Health Europe



ARTICLES | VOLUME 29, 100619, JUNE 2023

Identification of key opportunities for optimising the management of high-risk COPD patients in the UK using the CONQUEST quality standards: an observational longitudinal study

Earlier Identification of COPD in Patients Experiencing Respiratory Flare-ups Pre-Diagnosis

Conducting Cardiac Risk Assessment in COPD Patients Experiencing Exacerbations who are at High-Risk of Myocardial Infarction and other Cardiac Events

Step-up or Optimization of Treatment in Patients with High-risk COPD

Pulmonary Rehabilitation (PR) Referral for Symptomatic Diagnosed Patients

PR Link: CONQUEST Shines Spotlight on Opportunities to Enhance Cardiopulmonary Outcomes Among High-risk COPD (opri.sg)

Earlier Identification of COPD in Patients Experiencing Respiratory Flare-ups Pre-Diagnosis	<ul> <li>&gt; 35% of patients experienced ≥2 moderate or ≥1 severe exacerbations many years prior to receiving a diagnosis of COPD.</li> <li>&gt; The scope for earlier identification (up to 10-years before diagnosis) remains unchanged from that reported by the OPRI group almost a decade ago.</li> </ul>
Conducting <b>Cardiac Risk Assessment</b> in COPD Patients Experiencing Exacerbations who are at High-Risk of Myocardial Infarction and other Cardiac Events	Scope to conduct cardiac risk assessment in >80% of both newly and already diagnosed high-risk patients.
Step-up or <b>Optimization of Treatment</b> in Patients with High-risk COPD	Opportunity to optimize medication for the 7% of diagnosed patients not on any COPD inhaled therapy, and the 17% on single agent maintenance or reliever therapy only.
Pulmonary Rehabilitation (PR) Referral for Symptomatic Diagnosed Patients	<ul> <li>Scope to offer or refer 66% of newly diagnosed patients to PR.</li> <li>PR is one of the most effective interventions in COPD to improve symptoms and health related quality of life.</li> </ul>

Press Release: CONQUEST Shines Spotlight on Opportunities to Enhance Cardiopulmonary Outcomes Among High-risk COPD (opri.org.uk); Paper: Halpin et al. 2023. The Lancet Regional Health – Europe, Volume 29, 100619. https://doi.org/10.1016/j.lanepe.2023.100619



### For More Information on the Findings of the UK Opportunity Analysis Manuscript

> View the full article here: <u>https://doi.org/10.1016/j.lanepe.2023.100619</u>

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### US Opportunity Analysis: Comparing US Practice to CONQUEST Quality Standards (2011-2019)

An observational, longitudinal, descriptive study for the CONQUEST programme
Focused on a population of high-risk patients with diagnosed or potential COPD.
Analysis sample was identified in 2019 and in each previous year back to 2011.
Routinely collected primary care data was assessed over the relevant time frame for each outcome; the 12 months before or after 1 January of each study year.
2019 was chosen as the key year for the data as it provides the most up-to-date information prior to the COVID-19 pandemic.





# Patterns of care in the management of high-risk COPD in the US (2011-2019): an observational study for the CONQUEST quality improvement program.

Margee Kerr, Yasir Tarabichi, Alexander Evans, Douglas Mapel, Wilson Pace, Victoria Carter, Amy Couper, M Bradley Drummond, Norbert Feigler, Alex Federman, Hitesh Gandhi, Nicola A Hanania, Alan Kaplan, Konstantinos Kostikas, Maja Kruszyk, Marije van Melle, Hana Müllerová, Ruth Murray, Jill Ohar, Michael Pollack, Rachel Pullen, Dennis Williams, Juan Wisnivesky, MeiLan K Han, Catherine Meldrum, David Price.

Lancet Regional Health - Americas. 2023. 24: 100546.

CONQUEST is conducted by Optimum Patient Care Global and the Observational and Pragmatic Research Institute and is co-funded by Optimum Patient Care Global and AstraZeneca



## **Aims & Methods**











Kerr et al. Lancet Regional Health – Americas. 2023. 24: 100546. <u>https://doi.org/10.1016/j.lana.2023.100546</u>

# Key US Results & Take Away Messages







3





Scope to enhance identification of those at high-risk of exacerbations & other adverse events

**Opportunities to Assess & Diagnose Earlier** 

Opportunities to Provide Earlier Pharmacological & Nonpharmacological Intervention

Scope to Improve Consistency in EMR Coding

Kerr et al. Lancet Regional Health – Americas. 2023. 24: 100546. https://doi.org/10.1016/j.lana.2023.100546





#### Takeaway Message 1 : Scope to enhance identification of those at high-risk of exacerbations & other adverse events



High-risk patients are those with COPD or potential COPD who have ≥2 moderate, or ≥1 severe exacerbations in the last 24 months, with at least 1 exacerbation occurring in the last 12 months Kerr et al. Lancet Regional Health – Americas. 2023. 24: 100546. https://doi.org/10.1016/j.lana.2023.100546





#### Takeaway Message 2 : Opportunities to Assess & Diagnose Patients Earlier



Quality Improvement Initiative for Achievin Excellence in Standards for COPD Care

2019 Data. Kerr et al. Lancet Regional Health - Americas. 2023. 24: 100546. https://doi.org/10.1016/j.lana.2023.100546



#### Takeaway Message 3 : Scope to Improve Consistency in EMR Coding



EMR: Electronic Medical Records; PEF: Peak Expiratory Flow. Kerr et al. Lancet Regional Health – Americas. 2023. 24: 100546. https://doi.org/10.1016/j.lana.2023.100546





### Takeaway Message 3 : Scope to Improve Consistency in EMR Coding (2)

Already diagnosed High-risk Cohort



2019 Data. Kerr et al. Lancet Regional Health - Americas. 2023. 24: 100546. https://doi.org/10.1016/j.lana.2023.100546




#### Takeaway Message 4 : Opportunities to Provide Earlier Pharmacological & Non-pharmacological Intervention





Newly & Already Diagnosed

Kerr et al. Lancet Regional Health – Americas. 2023. 24: 100546. https://doi.org/10.1016/j.lana.2023.100546

## **Conclusions from USA Data**







QS: CONQUEST Quality Standard. Kerr et al. Lancet Regional Health - Americas. 2023. 24: 100546. https://doi.org/10.1016/j.lana.2023.100546







### For More Information on the Findings of the US Opportunity Analysis Manuscript

> View the full article here: <u>https://doi.org/10.1016/j.lana.2023.100546</u>

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### Australia Opportunity Analysis: Comparing Australian Clinical Practice to CONQUEST Quality Standards (2015-2019)

An observational, longitudinal, descriptive study for the CONQUEST programme
Focused on a population of high-risk patients with diagnosed or potential COPD.
Analysis sample was identified in 2019 and in each previous year back to 2015.
Routinely collected primary care data was assessed over the relevant time frame for each outcome; the 12 months before or after 1 January of each study year.
2019 was chosen as the key year for the data as it provides the most up-to-date information prior to the COVID-19 pandemic.





# Patterns of care in the management of high-risk COPD in Australia (2015-2019): an observational study for the CONQUEST quality improvement program.

Christine Jenkins, Andrew P Dickens, Alexander Evans, Porsche Le Cheng, Florian Heraud, Kerry Hancock, Anita Sharma, Belinda Cochrane, Alexander

Roussos, Chantal Le Lievre, John Blakey, Sinthia Bosnic-Anticevich, Victoria Carter, Angelina Catanzariti, Clare Ghisla, Mark Hew, Brian Ko, Thao Le,

Paul Leong, Vanessa M McDonald, Chi Ming Lau, Jennifer L Perret, Rachel Pullen, Kanchanamala Ranasinghe, Joan B Soriano, Deb Stewart, Marije van

Melle, Russell Wiseman, and David Price

Lancet Regional Health – Western Pacific, 2025;58: 101555

CONQUEST is conducted by Optimum Patient Care Global and the Observational and Pragmatic Research Institute and is co-funded by Optimum Patient Care Global and AstraZeneca



## **Aims & Methods**





To comprehensively review management opportunities for high-risk COPD patients in Australia, with reference to national and international guidelines, and also the CONQUEST quality standards<sup>1</sup>



1. Pullen et al. CONQUEST Quality Standards: For the Collaboration on Quality Improvement Initiative for Achieving Excellence in Standards of COPD Care. Int J Chron Obstruct Pulmon Dis. 2021 Aug 12;16:2301-2322. doi: 10.2147/COPD.S313498





Data Source for the CONQUEST Opportunity Analysis:

The Optimum Patient Care Research Database Australia (OPCRDA)



Data & analyses have been derived from primary care electronic medical records (EMRs) within the OPCRDA.
 OPCRDA is established and maintained by Optimum Patient Care Australia (OPCA).



De-identified research datasets derived from the OPCRDA can be made available for academic and industry inquires. The process for requesting and receiving OPCRDA datasets, including associated costs is available upon request: (Please submit requests to info@optimumpatientcare.org.au)



Jenkins et al. Lancet Regional Health – Western Pacific 2025;58: 101555 https://doi.org/10.1016/j.lanwpc.2025.101555

# Key Australian Results & Take Away Messages







In 2019, of the eligible patients identified

- 6.2% (1,045/16,816) potential undiagnosed COPD patients
- > 35.2% (87/247) newly diagnosed COPD patients
- > 24.9% (1,476/5,922) already diagnosed COPD patients

were categorised as high-risk\*

Opportunities to reduce this high-risk status across all cohorts within the study periods include:

Greater use of spirometry assessment, particularly newly diagnosed patients

Increased assessment of cardiovascular risk status

Improved guideline and evidence-based inhaled therapy prescribing

Increase provision of regular COPD clinical reviews and non-pharmacological interventions

\*High-risk patients had a history of ≥2 exacerbations (or COPD-like exacerbations if undiagnosed) in the previous 24 months Jenkins et al. Lancet Regional Health – Western Pacific 2025;58: 101555 <u>https://doi.org/10.1016/j.lanwpc.2025.101555</u>





Substantial opportunity for greater performance and recording of spirometry assessment in patients with newly diagnosed COPD



■ Pulmonary rehabilitation ■ Pneumococcal vaccination ■ Influenza vaccination

100%

Key trends in assessment and interventions for Newly diagnosed COPD patients meeting high-risk criteria. Jenkins et al. Lancet Regional Health - Western Pacific 2025;58: 101555







Key trends in assessment and interventions for already diagnosed COPD patients meeting high-risk criteria. Jenkins et al. Lancet Regional Health – Western Pacific 2025;58: 101555







#### Scope to improve guideline and evidence-based inhaled therapy prescribing

3





'Other' refers to Theophylline and Leukotriene Receptor Antagonist Monotherapies. Jenkins et al. Lancet Regional Health – Western Pacific 2025;58: 101555.





\*within the 12 months either side of 1<sup>st</sup> January 2019. Jenkins et al. Lancet Regional Health – Western Pacific. 2025;58: 101555

## **Conclusions from Australian Data**





Considerable opportunities to improve the identification and management of patients with COPD exist in the Australian primary care setting

Responding to these opportunities would align clinical care with national and international guidance, in terms of the diagnosis, assessment, treatment and long-term follow-up of patients at high-risk of future COPD exacerbations

If applied in practice CONQUEST quality standards have the potential to improve long-term outcomes for those at greatest cardiopulmonary risk, even if not already diagnosed with COPD

Jenkins et al. Lancet Regional Health – Western Pacific 2025;58: 101555 https://doi.org/10.1016/j.lanwpc.2025.101555









### For More Information on the Findings of the Australian Opportunity Analysis Manuscript

- > View the full article here: <u>https://doi.org/10.1016/j.lanwpc.2025.101555</u>
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### Global Opportunity Analysis

- Data submitted as an abstract to the Thoracic Society of Australia and New Zealand and the Australian and New Zealand Society of Respiratory Science (TSANSZRS)
- This was accepted as an Oral Presentation and Presented at the TSANSZRS 2025 Annual Scientific Meeting in March 2025





# Opportunities to optimise the management of high-risk COPD: Comparing Australian observational data from 2019 with analogous data from the US and UK

Belinda Cochrane, Amy Couper, Rachel Pullen, Andrew P Dickens, Alexander Evans, Porsche Le Cheng, Jennifer Perret, Sinthia Bosnic-Anticevich,

Margee Kerr, Fabio Botini, Victoria Carter, Angelina Catanzariti, Kerry Hancock, Mark Hew, Christine Jenkins, Brian Ko, Thao Le, Paul Leong,

Chantal Le Lievre, Vanessa McDonald, Ruth Murray, Alexander Roussos, Peter Smith, Deb Stewart, Kanchanamala Ranasinghe, David Price2,3,4

on behalf of OPCA High-risk COPD in Australia Research Group

Internal Medicine Journal 2025. 55 (Suppl. 1) 4–193. Abstract TO038.

CONQUEST is conducted by Optimum Patient Care Global and the Observational and Pragmatic Research Institute and is co-funded by Optimum Patient Care Global and AstraZeneca.



Funding Disclosure: This analysis was conducted by Optimum Patient Care Australia (OPCA) and was funded by AstraZeneca Australia Ltd.

### **COPD** Patients Experiencing Exacerbations are High-Risk



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 medicine or hospital admission.<sup>6</sup>

### CONQUEST: A QIP Underpinned by Quality Standards that Focus on High-Risk COPD Patients



Identifying COPD patients as high-risk based on exacerbation history provides opportunities for targeted care to reduce adverse outcomes





### **Opportunity Analyses**

# Comparing Clinical Practice Against Guideline-Recommended Care





#### Comparing Current Practice to Guidelines & CONQUEST Quality Standards to Identify Opportunities in COPD Care



Similar Australian data may illustrate common potential for improved care amongst COPD patients

QIP: Quality Improvement Programme. 1. Pullen et al. Int J Chron Obstruct Pulmon Dis. 2021(6), 2301-2322. 2. Halpin et al. Lancet Regional Health – Europe. 2023. 29: 100619. 3. Kerr et al. Lancet Regional Health – Americas. 2023. 24: 100546.



Study Design + Identifying Patients through Electronic Medical Records





#### Identifying Eligible Patients with COPD from Data Sources in 3 countries





Cochrane et al. Internal Medicine Journal 2025. 55 (Suppl. 1) 4–193. Abstract TO038. <u>https://doi.org/10.1111/imj.70003</u> Websites: OPCRDA | OPC Australia; OPCRD | Real-world Patient Data for Evidence-based Research

### Identifying Patients ≥40 years old with High-Risk\* COPD





Cochrane et al. Internal Medicine Journal 2025. 55 (Suppl. 1) 4-193. Abstract TO038.

\* High-Risk based on exacerbation history within 12-24 months. Definition varied by country: UK:  $\geq$ 2 moderate or  $\geq$ 1 severe exacerbations in the previous 12 months. US:  $\geq$ 2 moderate or  $\geq$ 1 severe exacerbations in the previous 24 months, with 1 occurring in the last 12 months. Australia:  $\geq$ 2 exacerbations in the previous 24 months.

## **Results**

Identifying Management Opportunities for High-Risk COPD Patients\* Comparing Australian Data from 2019 to Analogous Data from the UK and USA, on:

- A. Pharmacological treatment
- B. Non-pharmacological intervention



\* **High-Risk COPD patients** are those diagnosed with COPD at any point in their history up to 12 months before 1st of January 2019, with  $\geq$  2 recent exacerbations.



# Type of Therapy Recorded<sup>‡</sup> in Patients with High-risk COPD: Significant Proportion of Patients on No Therapy or Reliever Only



<sup>‡</sup> Recorded in the 12-month period **before** January 1<sup>st</sup>, 2019, as a proportion of high-risk patients. § 'Other' therapy refers to Theophylline, Leukotriene receptor antagonist monotherapies. Cochrane et al. *Internal Medicine Journal* 2025. 55 (Suppl. 1) 4–193. Abstract TO038.



# Proportion of High-Risk COPD Patients who are Current Smokers with Recorded Smoking Cessation Support





**Time frame**: 12 months either side of 1st January 2019. Recorded smoking cessation support includes: smoking cessation support (offered/declined/referral), prescription for Varenicline, Bupropion or nicotine replacement therapy Cochrane et al. *Internal Medicine Journal* 2025. 55 (Suppl. 1) 4–193. Abstract TO038

### Proportion of High-Risk COPD Patients with Recorded COPD Review





CAT: COPD Assessment Test; MRC: Medical Research Council Cochrane et al. *Internal Medicine Journal* 2025. 55 (Suppl. 1) 4–193. Abstract TO038

% Opportunity

% Patients

#### Proportion of High-Risk COPD Patients with Cardiac Risk Assessment Recorded





% Opportunity
% Patients

Cochrane et al. Internal Medicine Journal 2025. 55 (Suppl. 1) 4–193. Abstract TO038

# **Global Opportunity Analysis: Conclusions**

Based on Interventions Recorded within Electronic Medical Records







- \* 1/4 of eligible Australian COPD patients can be classified as **high-risk** based on their exacerbation history
- Considerable opportunities exist to better align COPD management with guidelines and CONQUEST QS in Australia, as in the US and UK

From our results, key areas
 for focus in Australian high-

risk COPD patients include:

- > Optimisation of **pharmacological therapy** in patients with high-risk COPD
- > Offering smoking cessation support to current smokers
- > Completion of annual COPD review with high-risk COPD patients
- > Evaluating cardiac risk in patients with high-risk COPD

#### References

#### Slide: COPD Patients Experiencing Exacerbations are High-risk

Kerkhof M, et al. Int J Chron Obstruct Pulmon Dis 2020; 15: 1909-1918
 Menzies-Gow et al., Oral Presentation - British Thoracic Society, January 2021
 Jones PW, et al. Eur Respir J 2014; 44:1156–1165
 Hurst JR, et al. N Engl J Med 2010; 363 (12): 1128–1138.
 Kunisaki KM, et al. Am J Respir Crit Care Med 2018; 198: 51-57
 Lung Foundation Australia - COPD-X Guidelines, April 2022

#### **Slide: Quality Standards**

1. Pullen et al. 2021. Int J Chron Obstruct Pulmon Dis. 2021(6), 2301-2322.

Slide: Comparing Current Practice to Guidelines & CONQUEST Quality Standards to Identify Opportunities in COPD Care

Pullen et al. 2021. Int J Chron Obstruct Pulmon Dis. 2021(6), 2301-2322.
 Halpin et al. Lancet Regional Health – Europe. 2023. 29: 100619.
 Kerr et al. Lancet Regional Health – Americas. 2023. 24: 100546.

Slide: Identifying Patients ≥40 years old with High-Risk\* COPD. (references for COPD prevalence)

 Toelle BG, Xuan W, Bird TE, Abramson MJ, Atkinson DN, Burton DL, et al. Respiratory symptoms and illness in older Australians: the Burden of Obstructive Lung Disease (BOLD) study. Med J Aust. 2013;198(3):144-8)
 Australia Bureau of Statistics Chronic Obstructive Pulmonary Disease, 2022 | Australian Bureau of Statistics Australian Bureau of Statistics

3. US National Trends in COPD | COPD | CDC

4. UK Prevalence of Chronic Obstructive Pulmonary Disease in England from 2000 to 2019 - PMC






## For More Information on the Findings of the Global Opportunity Analysis Abstract

- View the full abstract here: Abstract TO038. <u>https://onlinelibrary.wiley.com/doi/10.1111/imj.70003#imj70003-sec-0149-title</u>
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