Identifying opportunities for optimising the management of high-risk COPD patients in Australia: an observational study

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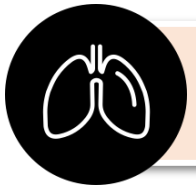
Co-authors conflict of interest

Speaker disclosure

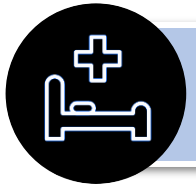
- In accordance with the policy of the Thoracic Society of Australia and New Zealand the following presenter has indicated that they have a relationship which could be perceived as a real or apparent conflict of interest. The nature of the conflict is listed:
- The presenter has advised that the following presentation will NOT include discussion on any commercial products or service and that there are NO financial interests or relationships with any of the Commercial Supporters of this year's ASM
- This study was conducted by Optimum Patient Care Australia (OPCA) and was partially funded by AstraZeneca and Optimum Patient Care Australia (OPCA).
- David Price has advisory board membership with AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Novartis, Viatris, Teva Pharmaceuticals; consultancy agreements with AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Novartis, Viatris, Teva Pharmaceuticals; grants and unrestricted funding for investigator-initiated studies (conducted through Observational and Pragmatic Research Institute Pte Ltd) from AstraZeneca, Chiesi, Viatris, Novartis, Regeneron Pharmaceuticals, Sanofi Genzyme, and UK National Health Service; payment for lectures/speaking engagements from AstraZeneca, Boehringer Ingelheim, Chiesi, Cipla, Inside Practice, GlaxoSmithKline, Medscape, Viatris, Novartis, Regeneron Pharmaceuticals and Sanofi Genzyme, Teva Pharmaceuticals; payment for travel/accommodation/meeting expenses from AstraZeneca, Boehringer Ingelheim, Novartis, Medscape, Teva Pharmaceuticals.; stock/stock options from AKL Research and Development Ltd which produces phytopharmaceuticals; owns 74% of the social enterprise Optimum Patient Care Ltd (Australia and UK) and 92.61% of Observational and Pragmatic Research Institute Pte Ltd (Singapore); 5% shareholding in Timestamp which develops adherence monitoring technology; is peer reviewer for grant committees of the UK Efficacy and Mechanism Evaluation programme, and Health Technology Assessment; and was an expert witness for GlaxoSmithKline.

Introduction: Global & local impact of COPD

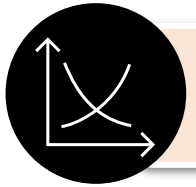
3rd leading cause of death worldwide[1]



7.5% of Australians aged ≥40 years have COPD[2]



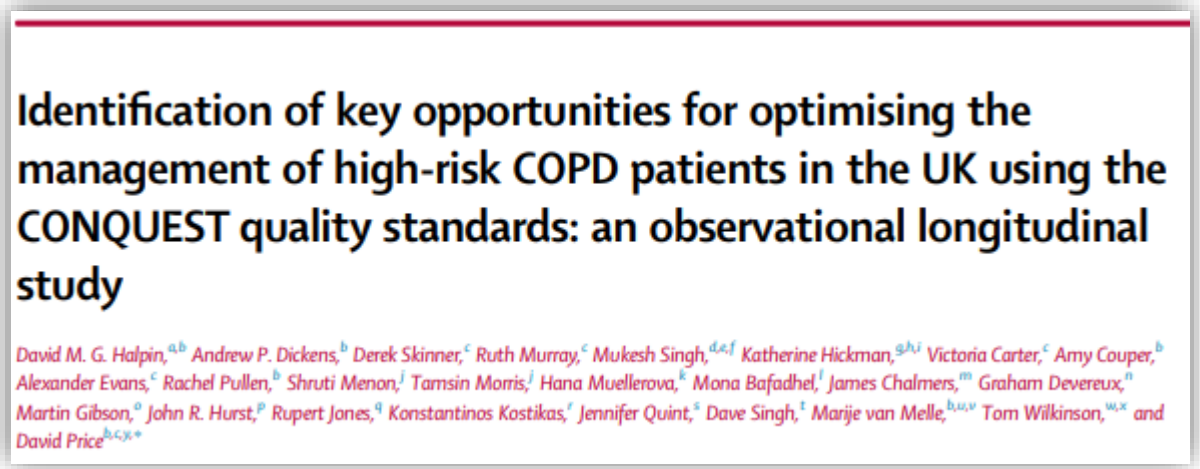
Foremost cause of preventable hospitalisations amongst chronic health conditions in Australia[3]



Estimated global economic burden of >$4 trillion between 2020-2050[4]

1. Global Burden of Disease Collaborative Network. Global Burden of Disease Study 2019 (GBD 2019). Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2020;
2. Toelle BG et al. 2013. Respiratory symptoms and illness in older Australians: the Burden of Obstructive Pulmonary Disease (BOLD) study. https://doi.org/10.5694/mja11.11640;
3. AUSTRALIAN INSTITUTE FOR HEALTH AND WELFARE 2019. Admitted patient care 2017–18: Australian hospital statistics. 90 ed. Canberra: AIHW. https://www.aihw.gov.au/reports/chronic-respiratory-conditions/copd/contents/copd.
4. Chen S et al. 2023. The global economic burden of chronic obstructive pulmonary disease for 204 countries and territories in 2020–50: a health augmented macroeconomic modelling study. Lancet Glob Health. https://doi.org/10.1016/S2214-109X(23)00217-6

Introduction: Opportunity Analyses studies



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,[a,b] Andrew P. Dickens,[b] Derek Skinner,[c] Ruth Murray,[c] Mukesh Singh,[d,e,f] Katherine Hickman,[g,h,i] Victoria Carter,[c] Amy Couper,[b] Alexander Evans,[c] Rachel Pullen,[b] Shruti Menon,[j] Tamsin Morris,[j] Hana Muellerova,[k] Mona Bafadhel,[l] James Chalmers,[m] Graham Devereux,[n] Martin Gibson,[o] John R. Hurst,[p] Rupert Jones,[q] Konstantinos Kostikas,[r] Jennifer Quint,[s] Dave Singh,[t] Marije van Melle,[b,u,v] Tom Wilkinson,[w,x] and David Price[b,c,y,*]

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

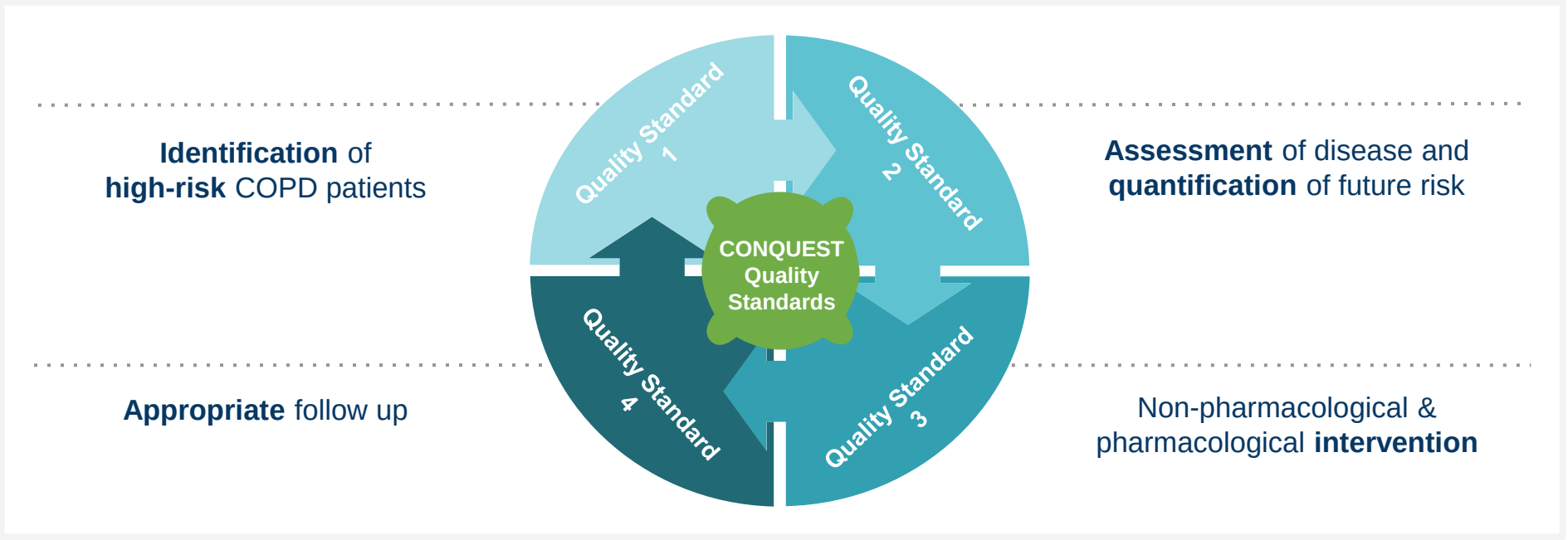
Margee Kerr,[a,b] Yasir Tarabichi,[c] Alexander Evans,[b] Douglas Mapel,[d] Wilson Pace,[e,f] Victoria Carter,[b] Amy Couper,[a] M. Bradley Drummond,[g] Norbert Feigler,[h] Alex Federman,[i] Hitesh Gandhi,[h] Nicola A. Hanania,[j] Alan Kaplan,[a,k,l] Konstantinos Kostikas,[m] Maja Kruszyk,[a,n] Marije van Melle,[a,o,p] Hana Müllerová,[q] Ruth Murray,[b] Jill Ohar,[r] Michael Pollack,[h] Rachel Pullen,[a] Dennis Williams,[s,w] Juan Wisnivesky,[i] MeiLan K. Han,[t] Catherine Meldrum,[u] and David Price[a,b,v,*]

- UK & US Opportunity Analyses[1,2] undertaken as part of CONQUEST identified significant opportunities to optimise COPD management of high-risk patients (≥2 exacerbations in the previous 12 months)
- It is currently unknown the extent of similar opportunities in other healthcare systems, such as Australia

1. Halpin, DMG; Dickens, AP; Skinner, D et al. 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. Lancet Regional Health – Europe. (2023). 29: 100619. https://doi.org/10.1016/j.lanepe.2023.100619
2. Kerr M; Tarabichi Y; Evans A et al. Patterns of care in the management of high-risk COPD in the US (2011-2019): an observational study for the CONQUEST quality improvement program. Lancet Regional Health – Americas. (2023). 24: 100546. https://doi.org/10.1016/j.lana.2023.100546

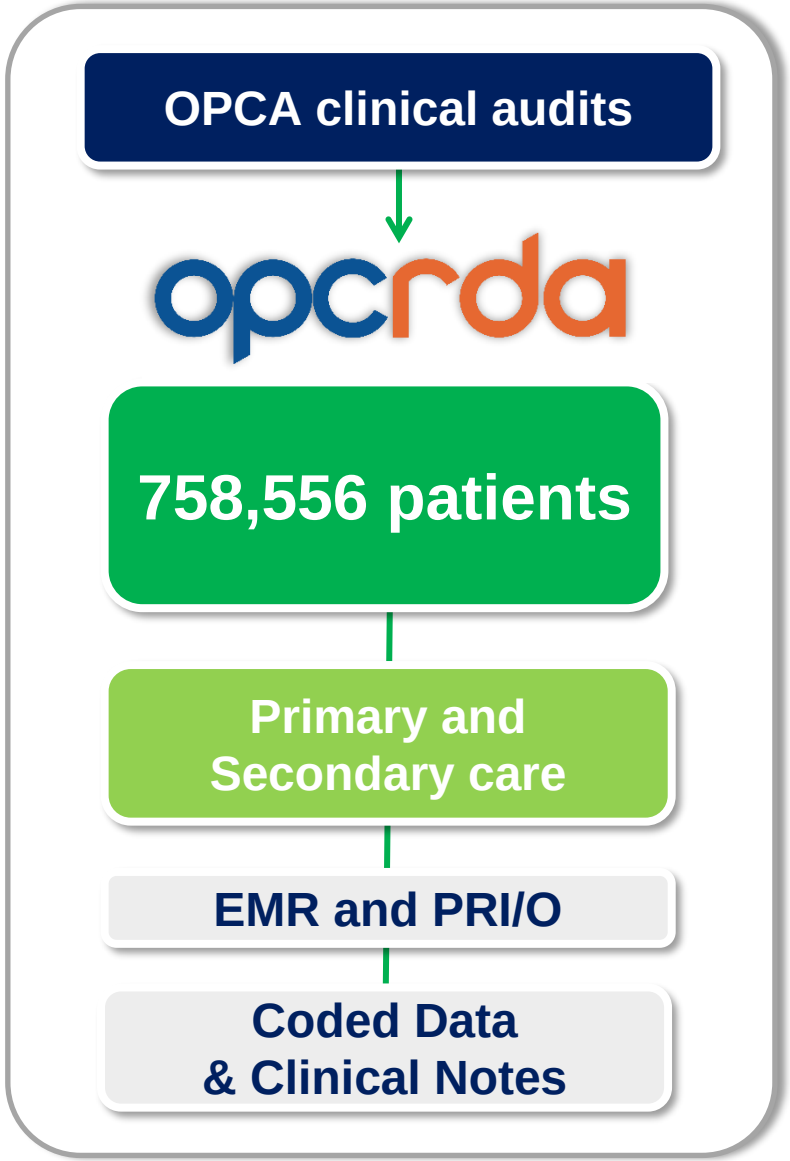
Aims of the Australia Opportunity Analysis

To comprehensively review management opportunities for high-risk COPD patients in Australia, with reference to national and international guidelines, and also to the CONQUEST quality standards[1]:



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: Optimum Patient Care Research Database Australia (OPCRDA)

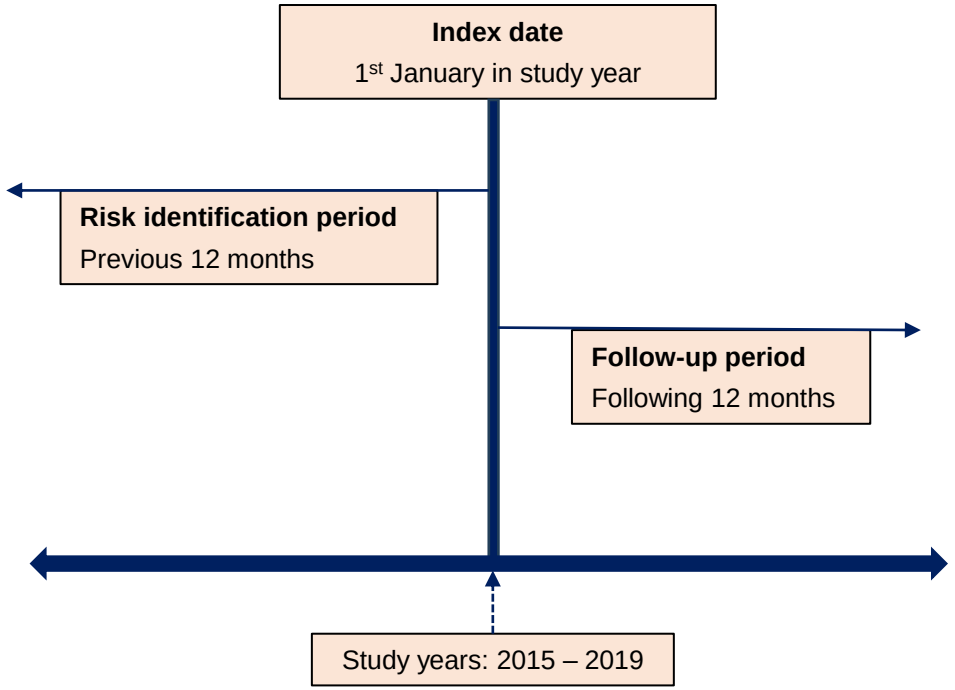


- Data & analyses have been derived from primary care electronic medical records (EMRs) within the OPCRDA.
- OPCRDA is established and maintained by Optimum Patient Care Australia (OPCA).

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)

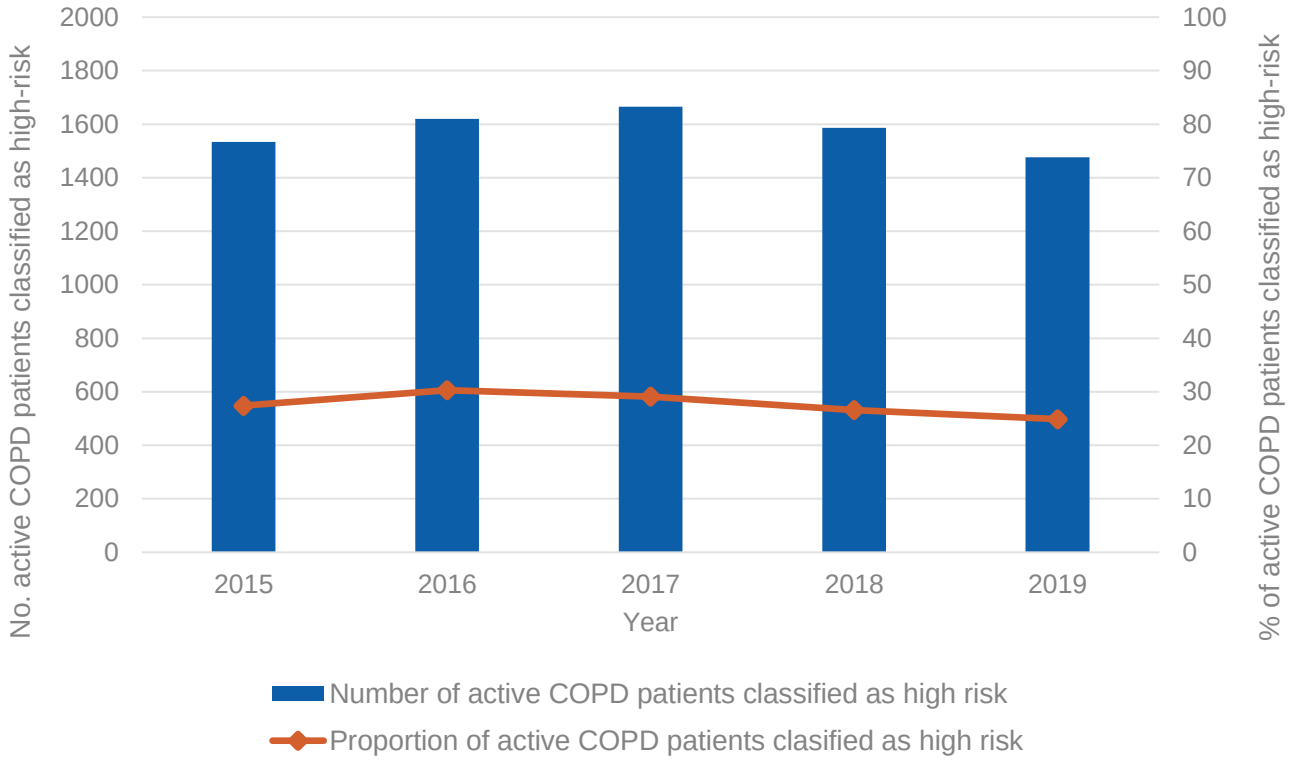
Methods

- Already diagnosed COPD patients at high-risk:
  - Aged ≥40 years
  - COPD diagnosis prior to the risk identification period.
  - Evidence of ≥2 exacerbations in the past 24 months.
  - No asthma consultation in the risk identification period.
  - No other significant lung disease or active cancer.
- Analysed EMR coded and free text data from OPCRDA.
- Cross-sectional analysis of annual patient cohorts between 2015-2019.



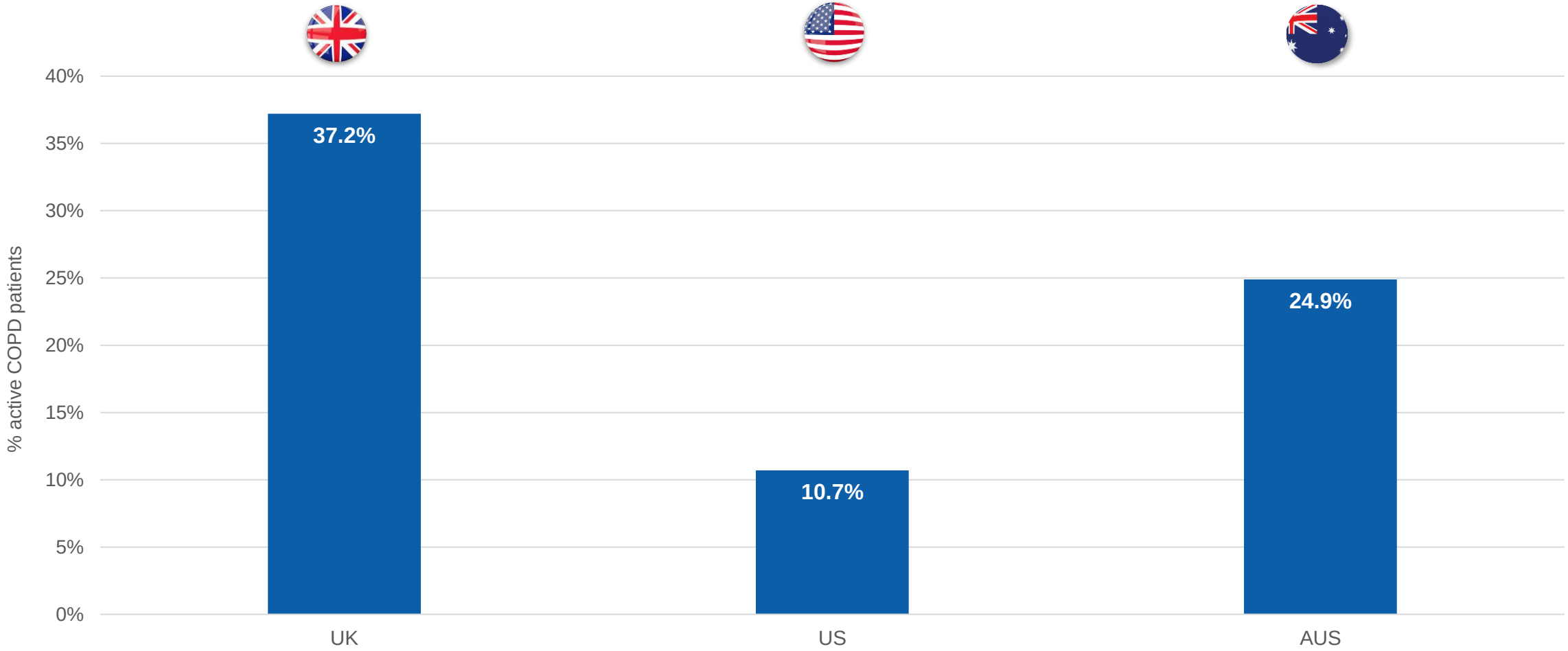
COPD diagnoses and high-risk status in each study year

- In each study year, 2.3% of all active patients were identified as already diagnosed COPD.
- The proportion of already diagnosed active COPD patients defined as high-risk ranged from 30.3% in 2016 to 24.9% in 2019.



Already diagnosed high-risk patients are those diagnosed with COPD at any point in their history up to 12 months before 1st January in each study year, with ≥2 exacerbations in the last 12 months

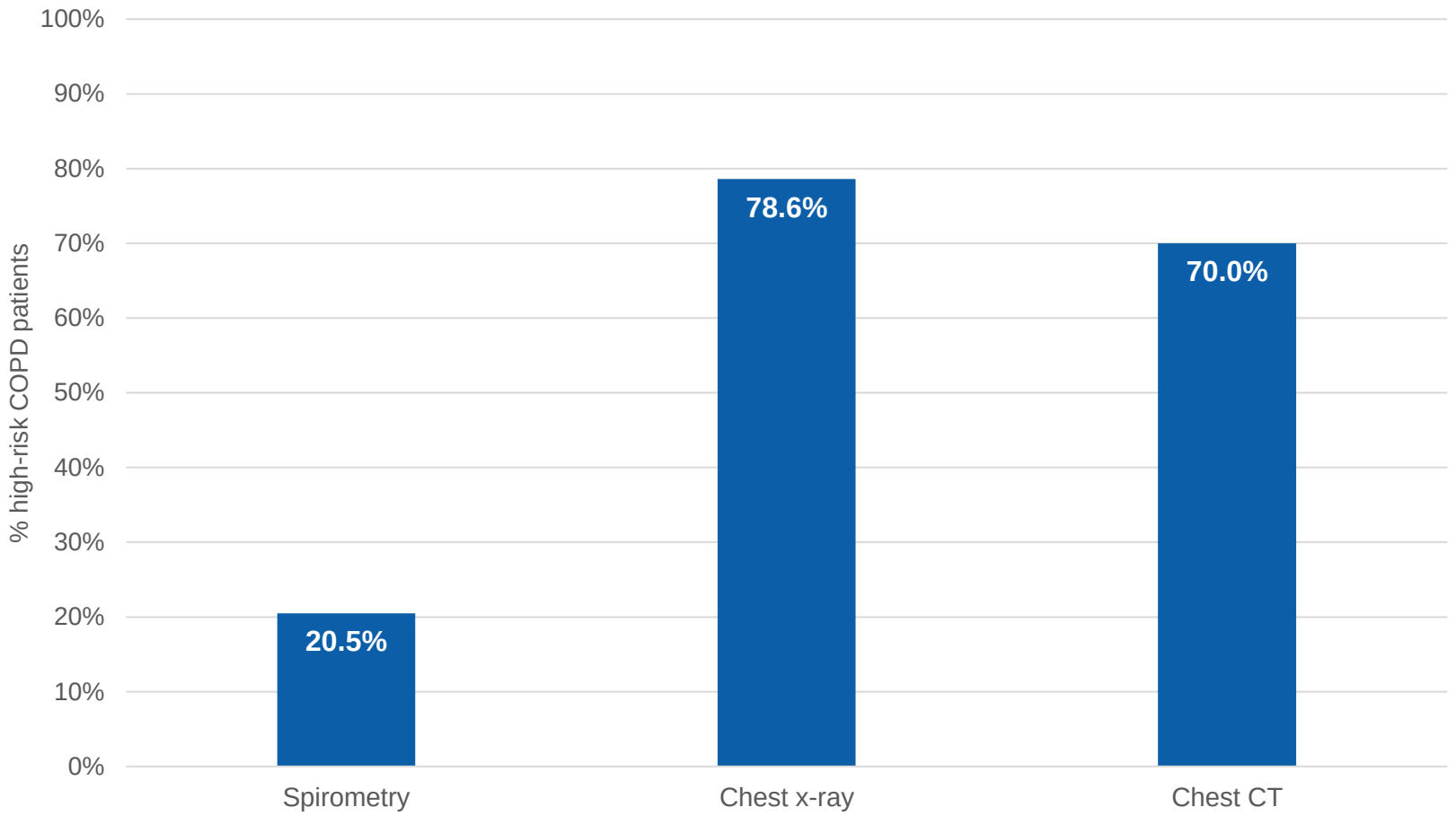
% already diagnosed high-risk patients, by country (UK, USA, Australia): 2019 Snapshot



Already diagnosed high-risk patients are those diagnosed with COPD at any point in their history up to 12 months before 1st January 2019, with ≥2 exacerbations in the last 12 months

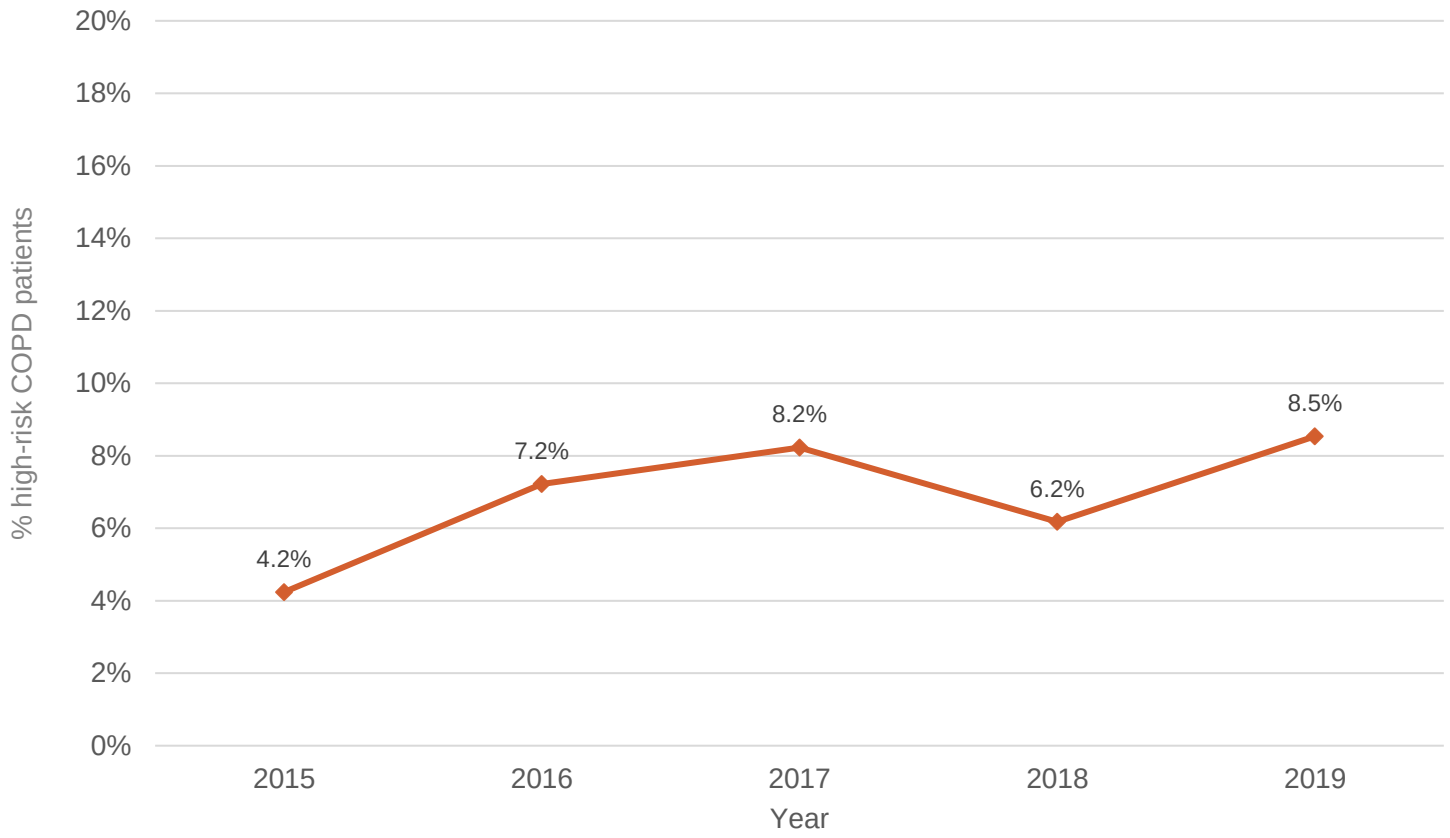
% already diagnosed high-risk patients with spirometry, chest x-ray and chest CT ever-recorded in EMR

- **Time frame:**
  ever recorded prior to 1st January 2019.



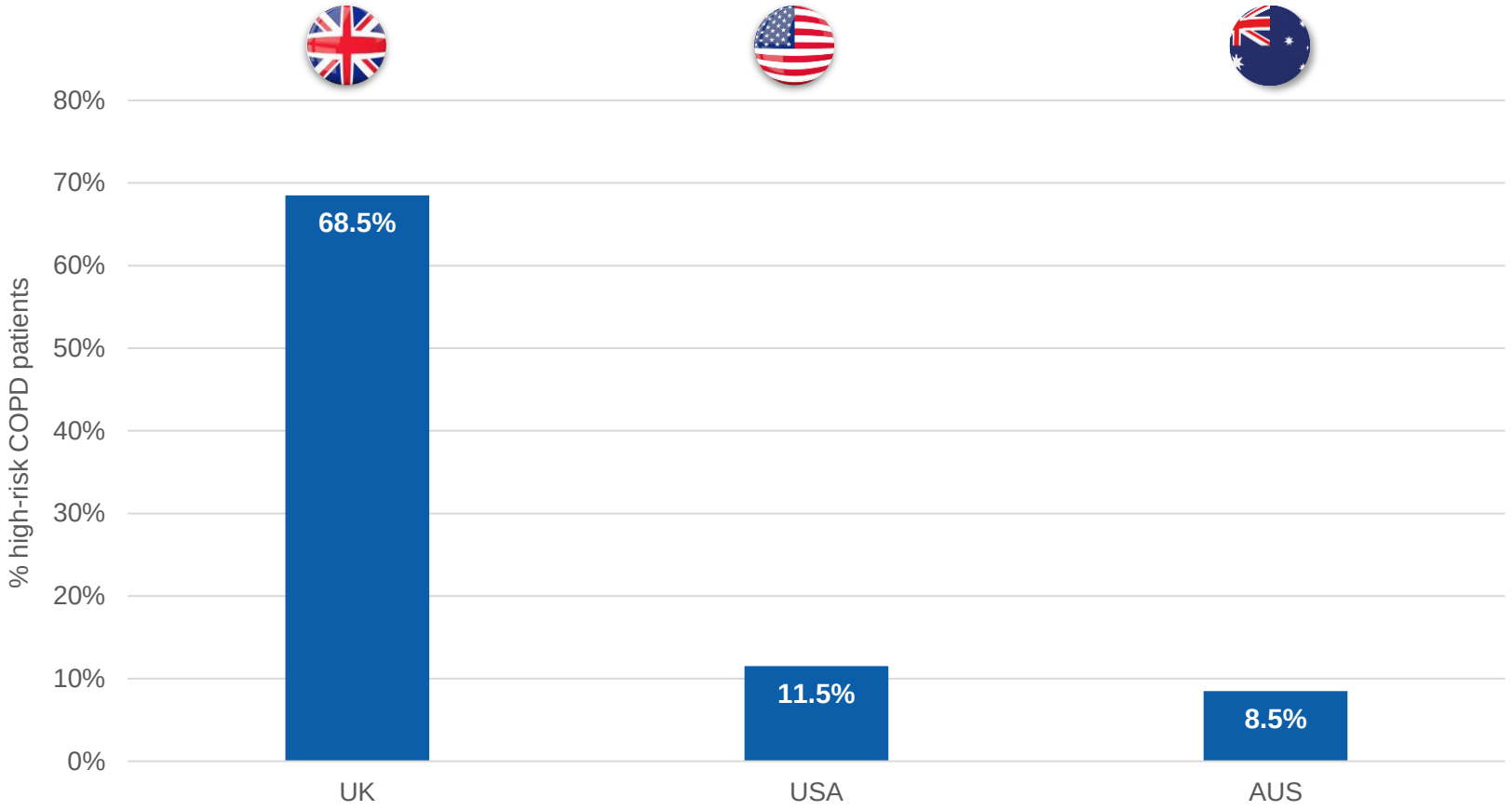
% already diagnosed high-risk patients with spirometry or PEF recorded in each study year

- **Time frame:** 12 months prior to 1st January.
- **Includes:** FEV1, FVC, FEV1/FVC, peak expiratory flow (PEF).



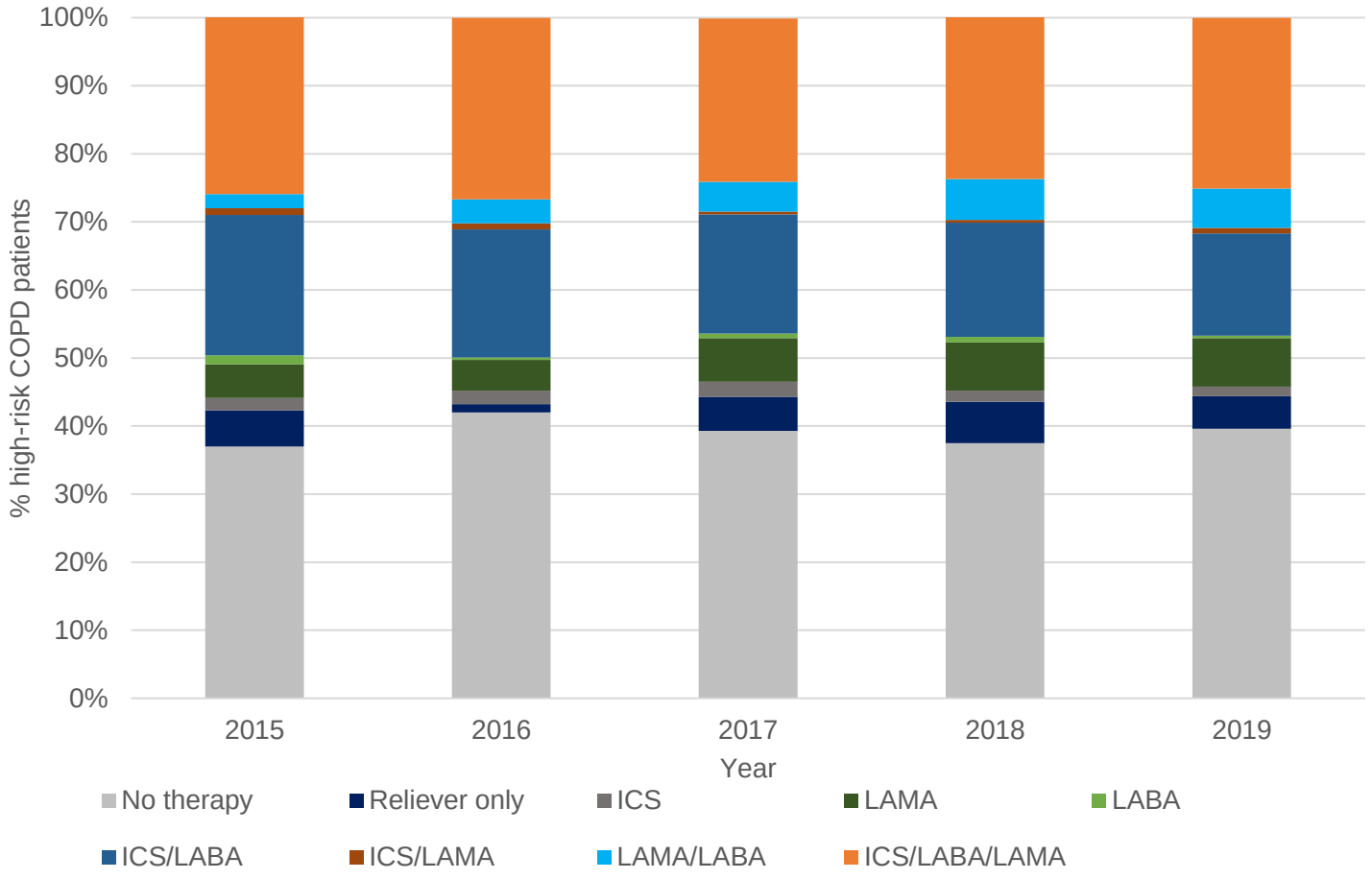
% already diagnosed high-risk patients with spirometry or PEF: 2019 snapshot by country

- **Time frame:** 12 months prior to 1st January 2019.
- **Includes:** FEV1, FVC, FEV1/FVC, peak expiratory flow (PEF).

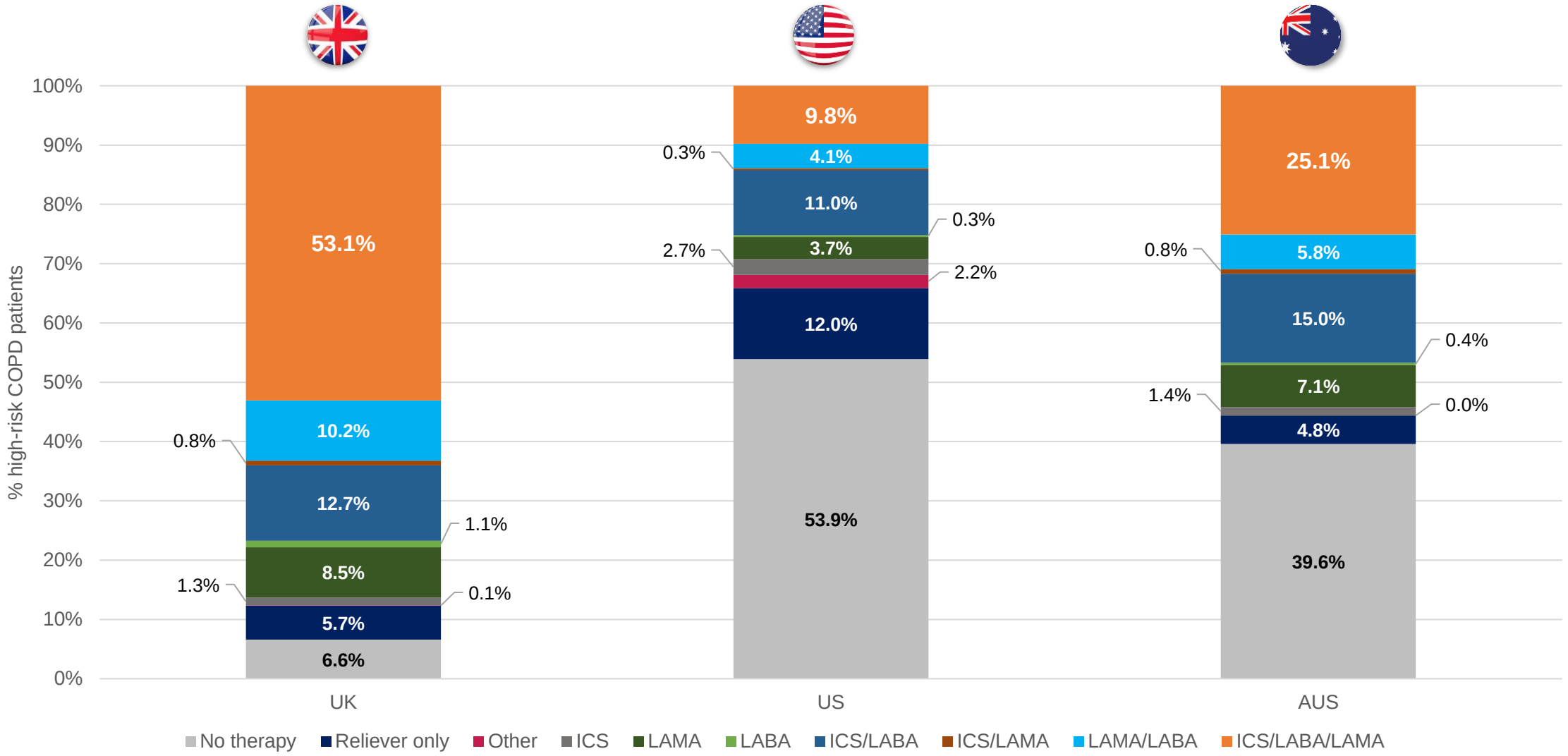


% already diagnosed high-risk patients prescribed inhaled therapy in the 12 months before 1st January in each study year

- Nearly 40% of high-risk patients were not prescribed any COPD maintenance therapy.
- The most common therapies were:
  - ICS/LABA (15.0%)
  - ICS/LABA/LAMA (25.1%)



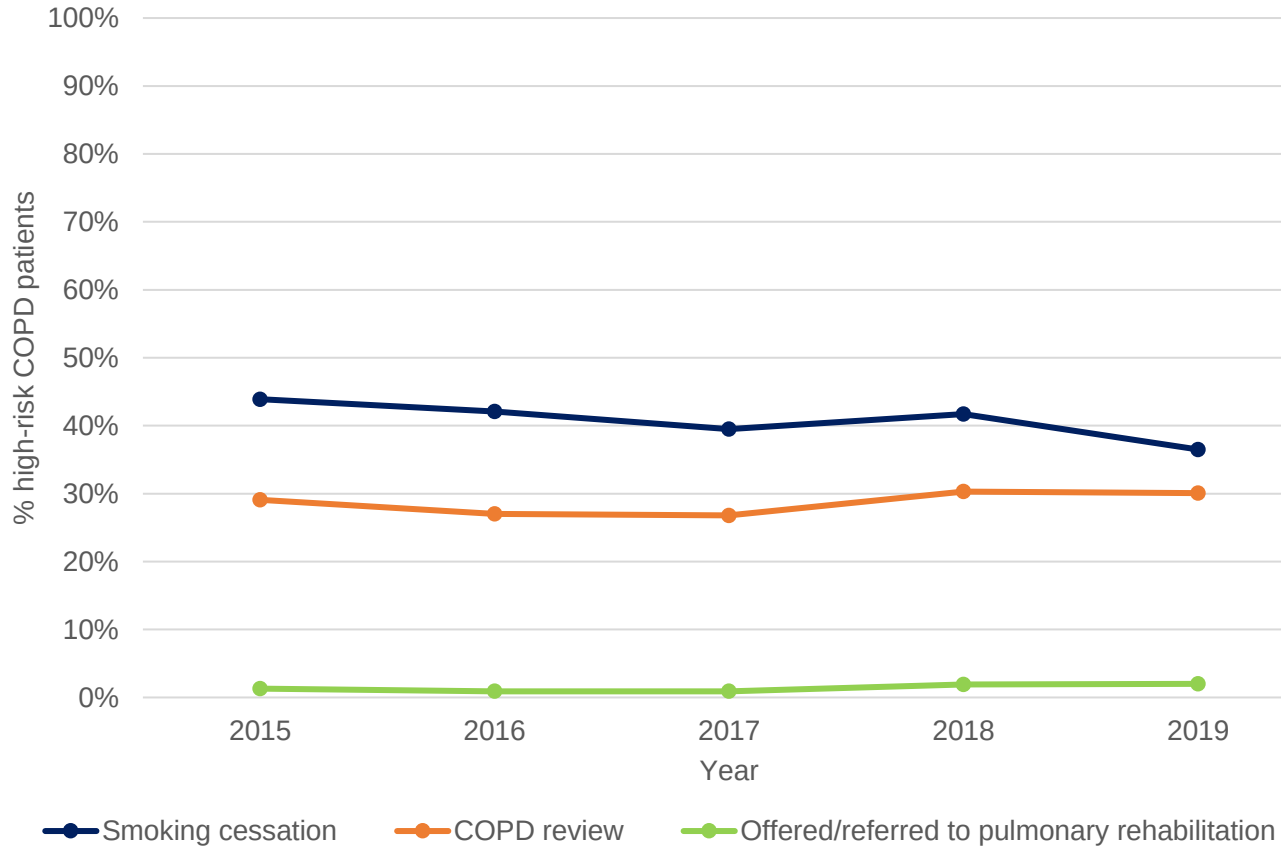
% already diagnosed high-risk patients on triple therapy: 2019 snapshot by country



- **Time frame:** 12 months before 1st January
- **"Other" category:** Theophylline, LTRA monotherapies

% already diagnosed high-risk patients with evidence of non-pharmacological interventions in each study year

- Amongst high-risk patients, the proportion of smokers with recorded smoking cessation support† reduced from 44% in 2015 to 36.5% in 2019.
- Less than a third of high-risk patients received a COPD review‡ in each study year.
- Between 1-2% of high-risk patients were offered/referred to pulmonary rehabilitation* in each study year



† Within 12 months before or after index, proportion of the high-risk COPD patients who were current smokers

‡ Within 12 months after index, proportion of all high-risk COPD patients. Defined as recorded COPD review, advice, education or lung function assessment

* Within 12 months before or after index, proportion of all high-risk COPD patients

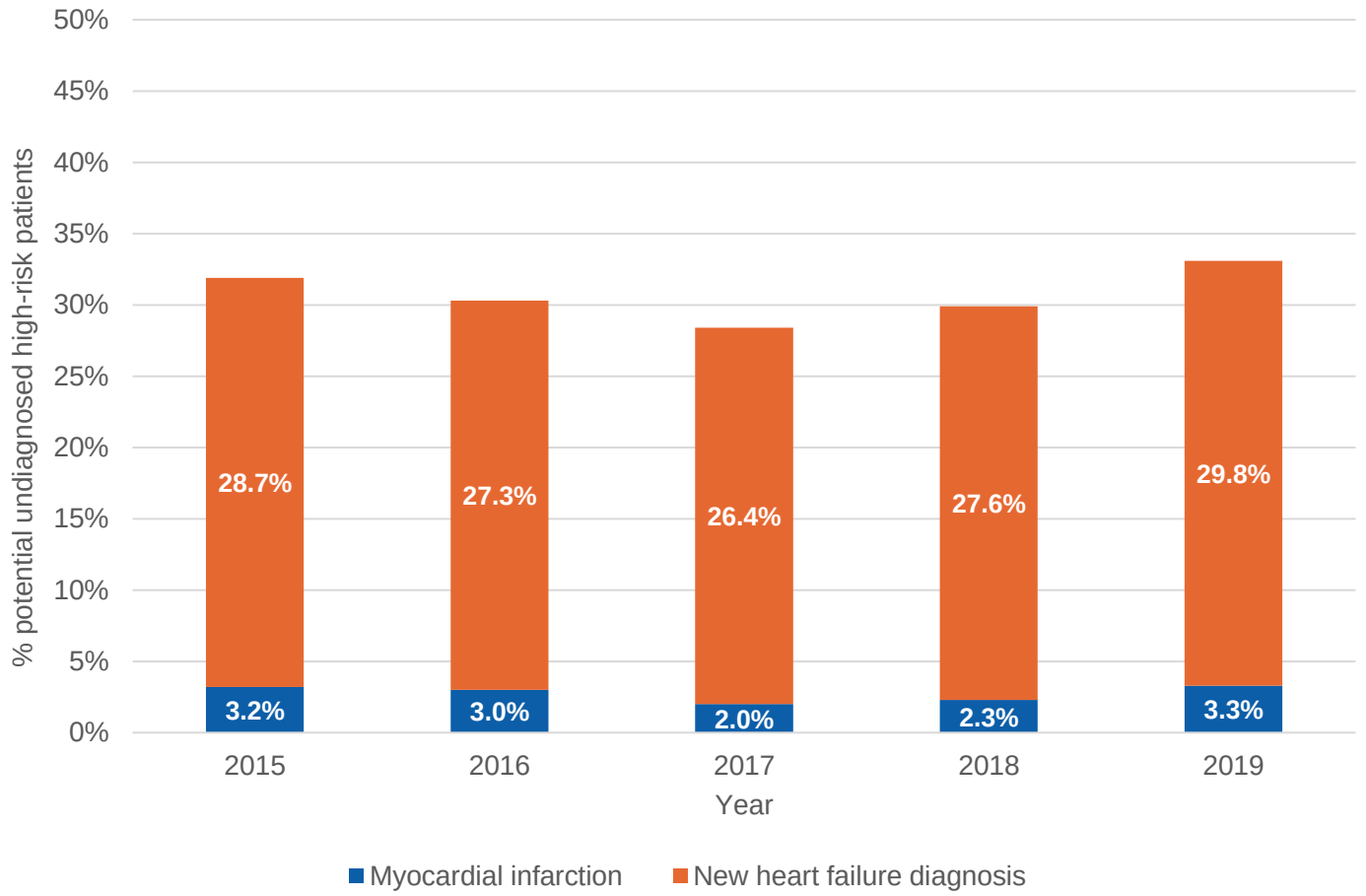
% already diagnosed high-risk patients with a cardiac event in 12 months either side of 1st January

Cardiac event:

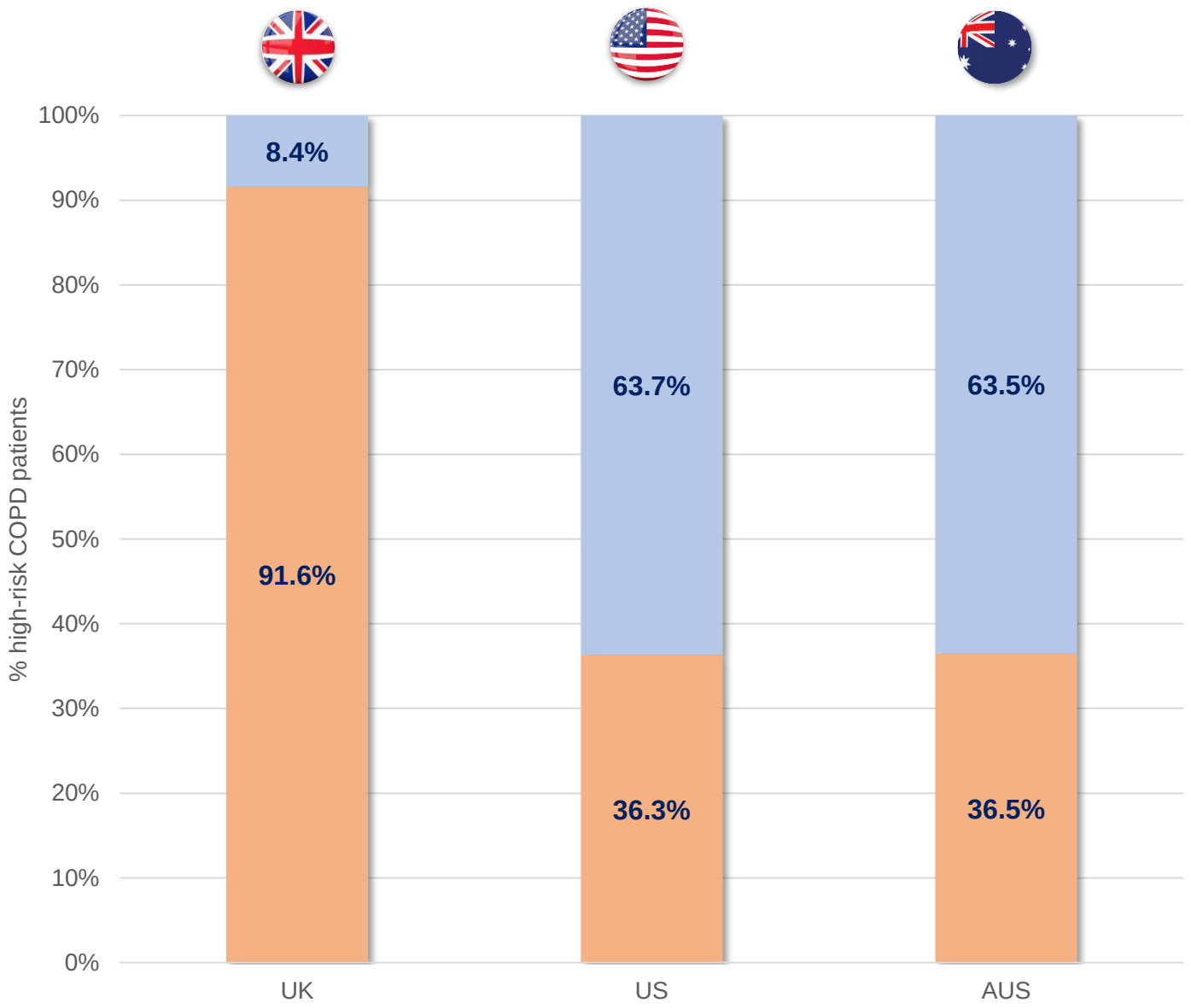
- Myocardial infarction, new heart failure diagnosis

Time frame:

- 12 months either side of 1st January



% already diagnosed high-risk smokers with EMR evidence of smoking cessation support: 2019 snapshot by country

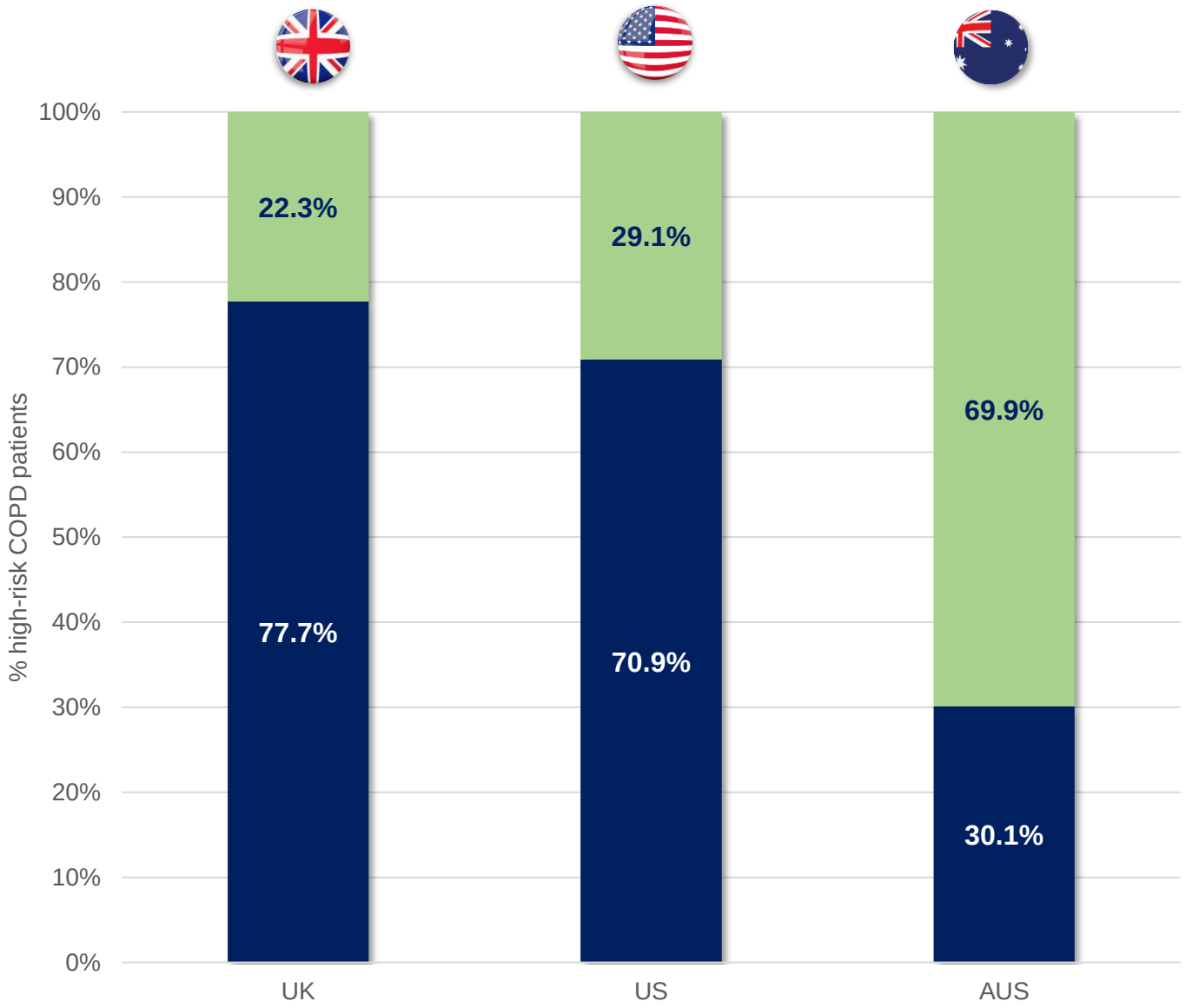


Smoking cessation support includes:

- Smoking cessation (offered/declined/referral), prescription for Varenicline, Bupropion or nicotine replacement therapy

Time frame: 12 months either side of 1st January

% already diagnosed high-risk patients with COPD review recorded: 2019 snapshot by country



COPD Review includes:

- **UK:** Included MRC, CAT, Spirometry, Annual Review, Self-Management, Exacerbation Count.
- **US:** COPD Diagnosis without ABx/OCS, Reviews, Spirometry, Inhaler Technique.
- **AUS:** Review, Medication Review, Spirometry, Respiratory Symptoms.

Time frame: 12-month period after 1st January

Conclusions

- One quarter of active already diagnosed COPD patients in Australia can be considered high-risk.
- In the year that already diagnosed patients met high-risk criteria, the proportion receiving imaging (chest x-ray or CT) was over three times higher than the proportion with a recorded spirometry test.
- Almost half of already diagnosed high-risk patients were not prescribed maintenance therapy.
- In 2019, the proportion of high-risk patients in Australia with a recorded lung function test, COPD review or smoking cessation support was substantially lower, compared to the UK. In the same year, the proportion prescribed triple therapy in Australia was less than half that in the UK.
- There is considerable opportunity to improve the assessment, treatment, and follow-up of patients with high-risk diagnosed COPD in Australia.

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