BACKGROUND AND RATIONALE

- Globally, chronic obstructive pulmonary disease (COPD) is the third leading cause of death, and is associated with substantial economic burden to healthcare systems.2
- In the United States (US), costs attributed to COPD were estimated at $32.1 billion in 2010 and $49.0 billion in 2020.1
- Disease severity and COPD exacerbations have been shown to be key drivers of healthcare resource utilization (HCRU) and costs.4
- To address a lack of current HCRU and cost estimates among patients with COPD, this study examined real-world COPD costs and predictors of HCRU among a large, diverse sample of patients with COPD in the US.

METHODS

- Patients were identified from US administrative claims data (Inovon Insights, LLC) from 01/01/16-31/12/17.
- Eligibility criteria: aged ≥ 40 years; 1 COPD-related hospitalization or emergency department (ED) claim or 2 other COPD-related claims (index date); pharmacy data available; and 2 years of data post-index date (baseline year, follow-up year).
- COPD complexity, a proxy for disease severity, is a claims-based classification of three groups (high, moderate, and low) based on the presence or absence of comorbid respiratory conditions per Mapel et al. (2011).5
- Annual all-cause and COPD-related HCRU (hospitalizations, ED visits, office visits) and estimated payer-paid costs (prescriptions, hospitalizations, ED visits, office visits) were assessed for baseline and follow-up years.
- COPD-related HCRU was based on COPD exacerbation events as defined in Mapel et al. (2021).6
- Baseline predictors of having COPD-related hospitalizations and ED visits were assessed using multivariable logistic regression models.

RESULTS

Sample Characteristics

- 1,123,924 patients were included; mean (SD) age was 63.1 (11.1) years and 56.2% were female (Table 1).
- COPD complexity in the sample: low (41.9%), moderate (49.7%), and high (8.4%).
- Approximately 97% of patients had ≥1 comorbidity, with an average of 4.7 comorbidity conditions.

Healthcare Resource Use and Costs

- The proportion of patients who had all-cause and COPD-related resource use is shown in Figure 1.
- Overall, unadjusted mean (SD) annual per patient all-cause and COPD-related hospitalizations were 0.30 (0.92) and 0.04 (0.31), respectively, and all-cause and COPD-related ED visits were 1.08 (2.81) and 0.30 (1.14), respectively.
- Among all patients, unadjusted mean annual per patient COPD-related costs were highest for prescriptions and comparable for hospitalizations and ED visits (Figure 2).
- HCRU and costs for all service types increased with increasing disease complexity.

Predictors of COPD-Related Hospitalizations and ED Visits

- Significant predictors of having COPD-related hospitalizations included baseline COPD-related hospitalizations, older age, moderate/high COPD complexity, and certain comorbidities (Figure 3).
- Significant predictors of having COPD-related ED visits included baseline COPD-related ED visits or hospitalizations, payer type, moderate/high COPD complexity, any rescue medication claim, and certain comorbidities (e.g., heart failure, asthma).

CONCLUSIONS

- This analysis adds to the evidence demonstrating that older age, disease complexity, and comorbidity conditions contribute substantially to the economic burden of COPD.
- Additionally, patients in our study were 5 times more likely to have a COPD-related hospitalization if they had a baseline COPD-related hospitalization.
- Greater monitoring of higher-risk COPD patients (e.g., older age, severe disease, certain comorbidities) may be useful in preventing initial exacerbation-related hospitalizations that lead to increased HCRU/costs and poorer outcomes.

REFERENCES AND DISCLOSURES

7. This study was funded by ResMed. All authors are employees of ResMed.