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**Title:** Disease severity and complexity in patients with acute exacerbation of chronic obstructive pulmonary disease in Lazio, Italy

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Body: Population based estimates of disease severity and comorbidities in patients with acute exacerbations of Chronic Obstructive Pulmonary Disease (COPD) give insight into the burden of this degenerating condition on patients and health care systems. Hospitalized COPD patients were characterized in terms of COPD severity and complexity. A cohort of 21,144 residents in Lazio, discharged after acute COPD exacerbation in 2006-9 was enrolled from the Hospital Information System. Disease severity was defined as presence of admissions during 12 months prior to index admission with diagnosis of COPD, respiratory failure (RF), invasive respiratory procedures, transfer to intensive care, COPD emergency visits, or oxygen therapy (O2), linked from drug claims register. Comorbidities were retrieved from index admission and admissions during 24 months before. More than half of patients were men (53.9%), mean age was 74.6 years for men and 76.8 years for women. RF and O2 were the two factors detected more often (46.9% and 21.9%, respectively), with higher values in men (RF: 48.5%, O2: 24.5%). Most important comorbidities were hypertension (24.8%), diabetes (20.4%), ischemic heart disease (13.0%), heart failure (12.6%), arrhythmias (12.3%), pulmonary infections (10.3%), and cerebrovascular disease (9.5%), with higher prevalence in men for all but diabetes and hypertension. Patients admitted for acute exacerbations are typically old and more often men. Almost half of patients are affected by respiratory failure, more than a fifth is treated with oxygen. Many patients suffer from cardiovascular disease or diabetes. Partially funded by National Medicines Agency; Prot. FARM8ZBT93.