

# Can a clinical educational program improve the management of chronic obstructive pulmonary disease (COPD)? Results from a prospective cohort study in the Sicilian general practice setting

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**Background:** Chronic obstructive pulmonary disease (COPD) is a chronic inflammatory disorder of lungs, which is associated with progressive disability leading to increased morbidity and mortality. Guidelines recommend spirometry examination as key test for COPD diagnosis and bronchodilators as main pharmacological treatment. General practitioners (GPs) may play a major role in the COPD management. However, critical issues in the correct diagnosis and treatment of COPD have been documented worldwide.

**Aims:** To evaluate the effectiveness of educational intervention (EI) for the improvement of the COPD management in a research network of Sicilian General Practitioners

**Methods:** Overall, we recruited 24 GPs practicing throughout Sicily who agreed to take part to an education program concerning COPD diagnosis and treatment. Participating GPs extracted, fully anonymized demographic and clinical data of patients with a diagnosis of COPD (ICD-9-CM 496\*: chronic airway obstruction, not elsewhere classified; 491.2\*: obstructive chronic bronchitis), from their electronic medical records, using standardized and dedicated queries. During visit of the patient in the office, GPs also prospectively collected, via structured electronic case report form, additional information. These data, not available in GP's database, were essential for COPD diagnosis, confirmation and staging, in agreement with international guidelines (e.g. CAT test, spirometry examination findings).

All data were safely stored centrally, at the Coordinating Center of University of Messina, where data underwent careful quality check and were further analysed.

A set of 14 process indicators concerning both COPD diagnosis and treatment were developed and agreed by the Coordinating Center as well as participating GPs and two pneumologists practicing in Sicily.

Data concerning indicators were extracted, analysed and compared at baseline (beginning of the study) and after one year from the EI (clinical audit at 6 months together with continuous update on COPD management via email and two face to face meetings).

As comparator, we considered both the historical control (one year prior and after EI) as well as 800 GPs from the Italian general practitioners 'Health Search database (HSD)', using publicly available data on some of the indicators evaluated in the study.

**Results:** Overall, 29,332 inhabitants were registered in the lists of 24 GPs. Of these, 965 (3.3%) had a registered diagnosis of COPD at baseline. After the EI, only 856 (2.9%) of them were identified as COPD patients, as GPs did not confirm diagnosis for 109 patients. From HSD a prevalence of COPD equal to 3.9% in 2011 was found.

As regards diagnosis confirmation, COPD patients with a spirometry examination registered any time, increased from 65.2% at baseline to 74.6% after the EI, while it was 60.9% in HSD.

COPD patients received any prescriptions for drugs targeting obstructive airway diseases (ATC R03\*), increased from 60% at baseline to 67% after the EI, compared to 52% in HSD in 2011.

**Conclusion:** Preliminary data demonstrate the feasibility of the evaluation, through automatic electronic data extraction, of the prevalence of COPD and its diagnosis and treatment indicators in a network of GPs. Initial data show a slight improvement of COPD management in primary care. After visit of the patient in the office GPs to collect additional information, more than 10% of patients with a previous COPD diagnosis were excluded, as a result of improved diagnosis specificity

Moreover, COPD patients receiving a spirometry increased during the study period as well as patients treated with drugs targeting obstructive airway diseases, as suggested by guidelines. Our preliminary data suggest that this educational program in Sicilian primary care could be useful to improve the disease management of COPD.

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