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## Quality of care assessment in COPD. AUDIPOC: the Spanish audit experience

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There is now general knowledge illustrating a gap between the health care that patients receive and the practice that is recommended by clinical guidelines. In both primary and secondary care there are undeserved variations in clinical practice that cannot be explained solely by the characteristics of patients or the disease severity. In this context, the assessment of clinical practice as a measure of health care quality has recently become a source of debate and an objective of health systems.

It is obvious that clinical outcomes are naturally related to the severity of the disease or the underlying process. Regarding COPD, there are well-known, well-described clinical factors associated with in-hospital mortality [1]. Accordingly, clinicians are recommended to evaluate all these patient- or disease-related variables to weight the risks and benefits of diagnostic procedures and therapeutic measures. Nonetheless, there are also other sets of aspects intrinsically ligated with the process of care which definitively influence outcomes, to which clinicians are not so aware of, and that need to be taken into consideration for a comprehensive evaluation.

In this regard, a second group of variables related to outcomes relate to hospital resources. Although there are several types of hospitals of different size and resources, all clinical centres should behold the minimum human and material re-

sources so as to guarantee optimal care. We always assume that hospitals are sufficiently equipped so as to guarantee adequate clinical care, and probably this is correct for the majority of centres. However, there are obvious differences with a variety of different types of hospitals that have not been thoroughly evaluated in medical literature until very recently.

Recent publications have addressed the importance of hospital resources on clinical outcomes. One of these is the paper by Needleman et al [2]. These authors used data from a large tertiary academic medical centre involving 197,961 admissions in 43 hospital units to examine the association between mortality and patient exposure to nursing shifts. They found that staffing of nurses below target levels was associated with increased mortality, which reinforces the need to match staffing with patients' needs for nursing care. Another example is the study by Romley et al. [3]. These authors executed an analysis of the database of discharge records from 1999 to 2008 for 208 California hospitals in a retrospective cohort study for 6 major medical conditions, aiming at evaluating inpatient mortality rates. They observed how hospitals that spend more have lower inpatient mortality for these common medical conditions. Similar information was provided by the United Kingdom audits where significant differences in mortality were detected between hospital types [4]. Altogether, there

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**Figure 1.** Participation of the different autonomous communities in AUDIPOC

is a growing body of evidence in different countries supporting the relationship between hospital resources and clinical outcomes.

Finally, clinical practice and its variability must be considered as a third group of factors influencing outcomes [5]. Although we have very good national and international guidelines, the reality of clinical practice is far more complicated and somehow unpredicted than reflected in those recommendations. In this regard, there are several sources of variability. The clinical presentation of patients is variable as it is the response to treatment. There is an increase in expense related to health care that may have an influence on the diagnostic and therapeutic measures in a concrete clinical setting, the ageing of the population is biasing the way we practice medicine, and the fragmentation of health care into primary, secondary, or tertiary care, or in emergencies makes it different to apply a particular type of medicine.

The question here is if we should all follow guidelines in all cases. In fact it is controversial if we should all attach to guidelines for all cases, since this probably does not reflect a good practice, and guideline adherence does not seem to impact symptom prevalence, exacerbation rate, or lung function decline [6]. Guidelines represent a guide on how to treat an average patient, but clinical reality is much more complicated, and probably

a reasonable deviation from guidelines indicates a good clinical practice.

So, disease severity, hospital resources, and practice variability constitute the three basics of excellence in clinical care. In this scenario, clinical audits enter the scene as a way to evaluate the needs and provide information for later prioritising and implementing changes. According to the World Health Organisation, a clinical audit is any summary of clinical performance of health care over a specified period of time aimed at providing information to health professionals to allow them to assess and adjust their performance [7]. In this context, audit and feedback can be used in all health care settings, involving all health professionals, either as individual professions or in multi-professional teams.

Undertaking an ambitious evaluation of health care of this nature is a huge challenge. Additionally, Spain's internal administrative organization, divided into 17 different regions — so-called autonomous communities — sets a particular scenario in which geographical variations can be of importance among the different regions of the country. Under the National Health Service, each Regional Health Service holds a wide range of decisions on how to distribute resources, and can apply local changes to the national policy. In this scenario, a study of these characteristics is an added challenge. Firstly, because a regional coordi-

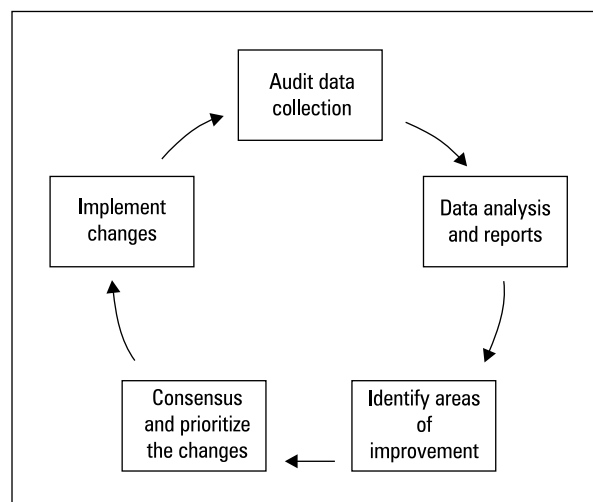
nator for the 17 regions needs to be part of the project. Secondly, because the results must be reported taking into account this regional distribution and gathering of cases. Considering this, a regional report had to be created and distributed to all participants in the different communities.

The nationwide Spanish clinical audit for COPD admissions, AUDIPOC [8], was designed as an observational transverse study with prospective case recruitment and retrospective data gathering. The study was performed at 142 public Spanish hospitals, which represents 65% of general public hospitals with emergency services offering coverage to approximately 80% of the Spanish population (Fig. 1). Hospitalized patients with the clinical diagnosis of COPD exacerbation admitted from the emergency department during the 8 weeks between 1 November and 31 December 2008 were included.

Data on 284 variables related to the participating hospitals and 471 variables on patient subjects were collected into 5 categories: 1) available resources and work organisation or hospital model; 2) clinical practice models, with data on the clinical process; 3) outcomes: duration of hospital stay, mortality rate during hospital stay, and mortality and readmissions at 90 days following discharge; 4) analysis of spatial data: location of the hospital and patient's residence; and 5) audit evaluation: evaluating whether clinicians know the audit in progress and the quality of databases. The detailed description of the results shows a wide variation between patients and hospitals concerning all variables introduced in the study. Thus the interpretation of obtained data required a complex statistical approach [9].

In Spain a National Health Service COPD Strategy has been developed [10] aimed at identifying health care needs regarding COPD and proposing measures to improve COPD care in the country. The National Health Service COPD Strategy represents a concerted effort between the autonomous communities, the Ministry of Health and Social Policy, scientific societies, and patient groups to achieve better efficiency and quality in the management and treatment of this disease in all services that integrate the public health system. The results of this National Strategy are now about to be evaluated at a meeting taking place in Palma de Mallorca in September 2012 at which the results of the AUDIPOC study and the impact on this National Strategy will be evaluated.

In the same line of action, aware of disparities in the delivery of health care, the Spanish Society of Pulmonology and Thoracic Surgery (SEPAR) constituted several years ago a Standards of



**Figure 2.** The audit cycle

Care Committee promoting health care excellence in clinical practice. Recently the committee was asked to propose a set of standard criteria for managing this disease, with the aim of improving equity in access to first-rate care for COPD patients, and standards of care for COPD have been developed [11]. These quality standards focus on the process of delivering health care to patients with COPD and are by no means intended to offer a detailed description of diagnostic or therapeutic management, as such guidance can be found in other recently published papers or clinical guidelines.

In summary, there are several clinical and non-clinical factors associated with clinical outcomes for COPD, among which disease severity, hospital resources, and clinical practice seem to be key. AUDIPOC has provided an overview of management approaches for COPD patients admitted to hospital in a range of public hospitals providing objective retrospective audit data and information on discrepancies in various aspects of admission management and identifying gaps from best-practice guidelines. In practice, clinical audits represent a path of no return with significant added value. After evaluating the quality of care in a community, it is unthinkable not to do anything with the information obtained and complete the audit cycle (Fig. 2). For this reason, implementation and improvement strategies to ensure the best possible health care for patients with COPD in the real possibilities of our health system must be planned.

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### Conflict of interest

The authors declare no conflict of interest.

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