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Editorial

Chronic Obstructive Pulmonary Disease Audit – Turning Data Into Better Care for Patients☆

Auditoría de la enfermedad pulmonar obstructiva crónica: convertir los datos en una mejor asistencia de los pacientes

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There is probably more national and international audit data collected by clinicians on the hospital management of patients admitted with exacerbations of Chronic Obstructive Pulmonary Disease (COPD) than for any other lung disease. Large data sets from Spain[1] and the UK[2] supported by that from over 400 hospitals across 13 European countries in the European Respiratory Society (ERS) audit[3] are amazingly consistent in their findings of wide variation in process of care and outcomes for patients both across, and within countries. Despite the widespread dissemination of management guidelines, based substantially upon research evidence of effectiveness, the majority of patients admitted to European hospitals do not receive the standard of care recommended.[4] Whilst guidelines are not protocols it is difficult to justify why across Europe over 40% of patients treated for exacerbation of COPD had no spirometry result available to the admitting team to confirm the diagnosis whilst antibiotics were given to 90% of patients who did not meet the guideline criteria for antibiotics.[4] Whether we examine length of stay, readmission rates, or use of oxygen the variation remains 2–3 fold between units and the challenge to Respiratory Medicine is how do we move from data collection to better care for patients?

Audit is a quality improvement process. The data inform us of where the problems lie when measured against ideal care-the guidelines, but this is just the beginning. The critical steps are to plan improvements and then put those into place. The linkage of organisation and resources to clinical process and outcome data provides insights that can inform the improvement plan. Audit outcomes for patients managed with Non-Invasive Ventilation (NIV) are much poorer than in randomised controlled trials. In some European hospital units audit confirms that NIV is simply not available, in others there is limited availability.[5] In contrast 38% patients receiving NIV did not meet the guideline criteria for NIV.[4] More detailed data from the UK audits suggest that NIV is started too late for some and is often given to severely acidotic patients who should receive intubation and ventilation.[6] In other cases to end stage patients who may be better managed along a palliative care pathway. Exploring the data helps understand the problems but improving care quality remains the challenge.

There is however a good evidence base for the effectiveness of quality improvement interventions available from Cochrane[7] which should inform our next steps. Simply reporting data to clinical teams produces effects ranging from none at all to substantial improvement. To optimise benefits, clinicians who are not performing well should be targeted as having most to gain with data sharing led by colleagues. Opinion leaders and those who we look to as experts have a responsibility to promote audit results as those most likely to influence change. Clear targets for improvement are required, best set at a national level to provide a shared vision for change but supported by local targets determined by individual hospital audit findings.

Other approaches which have shown greater promise in changing clinician behaviours. Educational outreach visits where experts spend time at an institution reinforcing good practice have a positive impact in some areas of clinical practice, notably prescribing. The concept of peer visiting between teams from different hospitals is now common practice in some European countries notably the Netherlands and UK. There is evidence of the effectiveness of mutual peer review of COPD services, although improvement may take years to achieve.[8]

The reality for most clinicians is that improving care for COPD patients can appear too huge a task to address. Implementation of a complex series of improvement interventions requires whole organisation change. The answer may lie with a simple quality improvement tool designed by clinicians for clinicians: the clinical care bundle. Developed originally in the USA to combat variance in mortality from across intensive care units, the bundle consists of a small number of high impact evidence based interventions known to make a difference to patient outcomes. The bundle forms the core of a management protocol for the patient with that condition and implementation of each element is recorded on a proforma. When enacted together the resulting clinical benefit is much greater than the sum effect of the individual interventions if used at different

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times, or if partially implemented. The deployment of a ventilated patient care bundle across the USA brought about a massive reduction in ICU mortality and variation in outcomes across centres.[9] This success led to the creation of others related to specific conditions or patient groups. More recently COPD discharge bundles have been researched demonstrating beneficial outcomes not just to patients but to the job satisfaction of staff too.[10] A quality improvement sub set from the European COPD Audit participants has since met in London and Barcelona to consider the development of European Admission and Discharge bundles for COPD. Such a bundle might include: all patients to have an arterial blood gas within 1 hour of presentation, those with acidosis having a decision about ventilatory support made within 2 h, patients managed using controlled oxygen if hypoxic, and a chest radiograph taken and reported within 2 h of admission. All are simple measures which are recommended by the guidelines but demonstrated not to be applied in a significant proportion of patients in the European Audit.[4] The benefits of the bundle is it provides aims for good care that are clear to everyone, that are possible to achieve, condenses a guideline of hundreds of pages to a few key processes, and which when documented provides a simple ongoing audit tool.

The evidence base for this approach to COPD quality of care improvement requires strengthening through further research evaluation. We spend a vast resource each year on research into COPD management to build an effective evidence base from which to derive guidelines, but what value does that have if that care is not implemented in real life clinical practice? The challenge for the respiratory community is to turn the data into better care for patients. It is possible but it requires a resource and a co-ordinated effort. We have yet to see evidence of either implemented across Europe.

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