ClinicalEvidence

Editorial

Standardising medical records: improving patient care and informing the evidence base

The NHS Digital Information Policy Directorate recently published good practice guides for medical records.[1][2] It is the latest, and most significant, in a long line of publications on the subject since 1965.[3] The medical record of a hospital inpatient stay, from admission clerking through to the discharge summary, is perhaps the most fundamentally important document relating to hospital clinical practice. Its principal purpose is to record and communicate information about a patient to facilitate his or her care. However, a patient's medical record is also the main source of data for clinical audit, reporting hospital service activity, and monitoring hospital performance. In addition, data from hospital episode statistics are used to examine patterns of health and illness across the country: for example, regional health inequalities, incidence and prevalence of type 2 diabetes, and the impact of obesity on life expectancy.

Unsystematic organisation and partial or inaccurate completion of clinical notes can lead to frustration, debate, clinical misadventure, and litigation. Many clinical accidents arise as a result of poor medical notes — a simple example being where information on allergies is missing altogether, or recorded in an unusual location. Many of the causes of inaccurate clinical coding are rooted in the quality of medical notes.[4]

Despite the fundamental importance of medical records, no country has established national professional standards for their structure and content. In the UK, there continues to be considerable inconsistency across the NHS in the quality of record keeping, with hospitals and clinical departments having their own preferred formats for admission, handover, and discharge proformas (if they implement proformas at all). This diversity happens largely because doctors learn how to take a medical history by apprenticeship rather than the application of a standard record structure. However, research shows that structured records have beneficial effects on doctor performance and patient outcomes, and can also deliver clinical information for audit, epidemiology, and research.[5] As pressure to improve the quality of doctors' practice and hospital services grows, with ever-increasing expectations and costs of medical care, well-structured and complete clinical records are becoming increasingly important,[6] particularly with the advent of the electronic patient record.[7]

The Health Informatics Unit of the Royal College of Physicians has led a programme to develop medical profession-wide national standards for medical records. The first step was the development of 12 generic standards that apply broadly to medical record keeping,[8] followed by a project to develop headings to structure the clinical content of admission records, and handover and discharge communications after admission to hospital. The process of literature review, drafting, extensive consultation, redrafting, and piloting ensured that there was large scale clinical engagement, and that the Medical Royal Colleges and specialist societies contributed to the development of the standards. More than 3000 doctors responded to the consultation on headings for admission records, with more than 80% agreeing that there should be common documentation across the NHS.

Although the high-level headings for the structure of admission, handover, and discharge records were designated as fit for purpose by the Medical Royal Colleges and specialist societies, it is clear that there is inter-specialty variation in the information that should be recorded in subheadings. For example, the

Royal College of Psychiatrists and the Royal College of Paediatrics and Child Health have stated that their specialties require information substantially different from and additional to the proposed headings. However, both colleges stated that this additional information could be largely accommodated within the generic structure proposed. In April 2008, these standards were approved by the Academy of Medical Royal Colleges as the benchmark for all medical and surgical hospital admission, handover, and discharge records, and NHS Connecting for Health is now incorporating this format into all IT systems that deliver the Electronic Patient Record for the NHS in England. The accepted headings can also be used to structure current and new paper-based record proformas.[1][2]

Implementing a national standard for structure and content of the clinical record should provide immediate benefit by improving ease and accuracy in communication of clinical information, and the quality and safety of patient care, as well as enabling more accurate clinical coding. Homogeny across patient records will also be associated with significant benefits in relation to the implementation and audit of adherence to evidence-based practice guidelines.

Although the creation of headings to be used in clinical records goes some way to resolving the issues associated with incomplete patient records, it is only a first step. The next will be to develop subheadings and specialty-specific content as well as content for other clinical contexts such as outpatients and day-case investigations and procedures. Alongside this work programme is the development of electronic patient record applications that will support coding of clinical terms using SNOMED CT. When clinical records with standardised structure and content are in routine use, data can be extracted for research purposes. This could potentially open the doors to the establishment of evidence for best practice in clinical areas for which there is currently none.

A recent editorial in *Clinical Evidence* addressed the problem of relying on data from RCTs to inform best practice in the real world.[9] One group of people for whom this would be particularly pertinent is elderly patients. Older people tend to be systematically excluded from RCTs because they are more likely to be admitted to hospital with multiple diagnoses, and to be taking multiple medications — factors that risk confounding findings of clinical trials. However, older people constitute the majority of hospital inpatients and consume a large proportion of the medications prescribed nationally. In these circumstances, evidence from research using high-quality databases, such as those that can be created from standardised records, are an appropriate alternative. This is the case where the database contains the data that can determine both the same inclusion and exclusion criteria as an RCT and the confounding factors that can then be adjusted for in the outcomes analysis.[10]

A study illustrating how a database that meets the above criteria can provide strong clinical evidence in complex populations was published by Giovanni Gambassi and colleagues.[11] They studied the effectiveness of ACE inhibitors in a population of nearly 20,000 nursing-home residents with congestive heart failure, a mean age of 85 years, and taking either diuretics and digoxin or ACE inhibitors. Gambassi and co-workers demonstrated that the survival and functional benefits of ACE inhibitor treatment observed in younger patients meeting strict inclusion and exclusion criteria of RCTs were also present in people aged 85 years and older, and predominantly women — two populations systematically under-represented in randomised trials.

Standardising the structure and content of medical records, and the introduction of SNOMED CT, could transform evidence-based practice. Large-scale clinical trials will become far more cost-efficient and

less complex to organise as clinical data from everyday medical notes could be readily available for trial participants. It would become possible to use routine hospital data to test RCT findings in real life and develop an evidence base for those areas where there is currently a paucity of data.

With the increasing complexity of health care and increased prevalence of chronic and degenerative diseases, multiple pathology and poly-pharmacy are more and more the norm in all industrialised and emerging nations. It is likely that research using databases created using data extracted from standardised records from routine clinical practice will fill the gaps left by RCTs,[12] or even replace conventional trial methodology in some circumstances.[13][14] Clinical and health services research on a large economical scale will be able to generate evidence for policy and practice in a way that is currently not possible. The McKinsey report has highlighted the opportunities for pharmaceutical research and safety monitoring if a robust standardised patient record infrastructure could be established.[15]

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