

The RCP Information Laboratory (iLab): breaking the cycle of poor data quality

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ABSTRACT – A review of data quality in the NHS by the Audit Commission cited a lack of clinician involvement in the validation and use of centrally held activity data as one of the key issues to resolve. The perception that hospital episode statistics cannot support the needs of the individual clinician results in mistrust and disinterest. This in turn leads to under-development of such data from a clinical perspective, and the cycle continues.

The RCP Information Laboratory (iLab) aims to address this problem by accessing, analysing and presenting information from these central repositories concerning the activity of visiting individual consultant physicians. With support from iLab staff – an information analyst and a clinician – local data quality issues are highlighted and local solutions sought. The information obtained can be used as an objective measure of activity to support the processes of appraisal and revalidation.

KEY WORDS: appraisal, clinicians, data quality, hospital episode statistics, information, iLab, revalidation

The divide that exists between the generators of clinical information – clinicians – and the subsequent information flows has been highlighted in more than one recent review. Kennedy's report of the Bristol Enquiry recommended a closer relationship between clinicians and coding staff in order to build confidence in routinely collected data.¹ The Audit Commission's management paper on improving the quality of patient-based information highlighted the need to involve clinical staff in the design of clinical information systems and to demonstrate to them the benefits of data quality in the care of their patients.² In producing a comprehensive review of the long-term trends affecting the health service in the UK, Wanless found the gathering of required data from these information systems to be complicated by their disparity, recommending the development of a single source of validated health-related information based on common definitions.³ Three years after Kennedy, a subsequent in-depth review of information and data quality in the NHS finds slow progress, portraying the issues clearly:

One of the biggest factors underlying poor data quality is the lack of understanding among frontline staff of the reasons for, and benefits of, the information they are collecting. The information collected is too often seen as irrelevant to patient care and focussed on the needs of the 'centre' rather than frontline service delivery. In particular, more effort is needed to involve clinical staff in validating and using the information produced.⁴

A vicious circle ensues: routinely collected data is perceived as being of poor quality and unable to support the needs of the individual. Individual clinicians avoid the use of such readily available information, opting instead for bespoke datasets held separately from the centre – a practice described by Kennedy as 'wasteful and anachronistic'. Centrally held datasets remain unchanged through neglect, clinicians failing to engage with the information process in their trusts and remaining ill at ease with the records of activity which result. It is clear that if this cycle is to be broken, steps must be taken to engage clinicians at a level whereby the information is made readily available, accessible in format and of use to clinical practice. By examining routine data from a clinical perspective and feeding issues of quality back to trust information departments the cycle can be reversed.

The Information Laboratory

The Royal College of Physicians' Information Laboratory (iLab) aims to address this problem by widening access to, and the understanding of, the data routinely collected and held in the Hospital Episode Statistics database (HES, England) and the Patient Episode Database Wales (PEDW). Leading by example, the importance of this link between clinicians and information services is demonstrated by the iLab interface: a clinical research fellow and an information analyst pool their skills and experience to prepare and present data in a meaningful fashion for consultant physicians. This attention to the information needs of the individual clinician is made possible by the presence of a consultant code, attached to each episode of care submitted to HES and PEDW for the last five years. This denotes the consultant team responsible for that period of care, be it day case or inpatient stay. A live link to both the data-

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bases means it is a straightforward process lifting out finished consultant episodes (FCEs), along with routinely collected clinical information concerning diagnoses and procedures.

The information obtained from such queries is detailed, and its interpretation is less straightforward. Case mix, work patterns, subspecialisation and local coding practices to name but a few, all affect the way the data look. Again, there is a need for dialogue – this time between *iLab* staff and participating clinicians – to ensure that the most relevant and useful aspects of the data are highlighted, and valid comparisons made. Through experience of working with data from a wide range of medical specialties and with consultants from trusts across the whole of England and Wales, *iLab* staff are able to offer assistance in interpreting their activity with clinicians, which in turn often highlights areas for improvement locally.

Using data for comparison and appraisal

The process not only takes steps towards addressing data quality issues, but also benefits the individual clinician. HES and PEDW are fed by data from local systems which are aggregated and presented uniformly across the health service. Therefore data are available for comparison at a trust, specialty and a national level. Combined with the ability to look at the activity of an individual over several years of practice, this makes for a rich source of evidence to support local appraisal and hence the revalidation process. Two aspects of the GMC's *Good medical practice* can thus be addressed, albeit in part: good clinical care and maintaining good medical practice.⁵ Appraisal is a process applicable to all, and should form a part of an individual's professional development – it is a formative rather than summative experience.⁶ The ability to reflect on activity as an individual and a member of the departmental team using centrally held data to underpin this, is hard to overstate. Early results from consultants who have used the *iLab* facility report genuine surprise at the usefulness and potential of such data in providing feedback on their own practice and that of the unit in which they work.

Validity of datasets

Concerns, however, exist about the ability of hospital episode statistics to adequately support these functions, for which they were not originally designed.⁷ Indeed the validity of these routine datasets has been called into question even in their ability to support the purposes for which they were originally modelled. A review of studies assessing the validity of HES and PEDW data found shortfalls in both completeness and accuracy.⁸ These concerns are understandable, yet by analysing the steps in the process of data collection from patient to database, it was suggested that the link most susceptible to error was that of the presentation, and thus coding of the information held in the clinical record. Once again the problem comes full circle: the quality of clinical information held on HES and PEDW is dependent on what's available to coding staff within the patient notes. The argument for structured records – especially clear, detailed discharge summaries – has never been stronger.⁹

Key Points

Lack of clinical input has been cited as one of the main reasons for poor data quality in the NHS

By avoiding the use of centrally held activity data, changes are not made and quality remains poor

The RCP information Laboratory (*iLab*) engages individual clinicians by presenting to them clinical data held in their name

Local data quality issues can be highlighted and local solutions sought

Information obtained can be used as an objective measure of activity to support the processes of appraisal and revalidation

But many of the problems lie in the recording of *administrative* information. Ensuring activity is correctly allocated to individuals; taking into account transfers of care; accurately coding the various types of admission – these are processes bound by local practice. If routine data are to become more robust for use at the level of the individual clinician it is these foundations which require attention. On this matter the *iLab* plays a fundamental role. While data already recorded on HES/PEDW cannot be changed, these local practices *can* be scrutinised to ensure genuine mistakes are not repeated year after year. Only by engaging individual clinicians, by involving them in this process of scrutiny and by highlighting areas for improvement, which will affect the data held in their name can steps be taken to break this vicious circle of poor data quality.

Future developments

Further development of the RCP *iLab* is underway. At present, during a randomised trial of the facility and independent evaluation of the costs and benefits, participants are required to attend either the RCP or the University of Wales Swansea, where the live link to these databases is housed. Steps are being taken to widen access by making *iLab*-prepared data available over a secure internet connection. Specialty-specific queries are in constant development by *iLab* staff, as it becomes clear that a suite of materials designed for individual groups of clinicians is likely to prove invaluable. At a recent high profile launch of the facility, which coincided with a day's symposium on improving the utility and validity of routinely collected data, the work of the *iLab* was endorsed by Derek Wanless in his keynote speech.¹⁰ He strongly recommended that the facility was mainstreamed across all clinical specialties at the earliest opportunity. Links with the other professional colleges are currently being explored.

Kennedy recommended that the HES database be supported as a major national resource, and used – with care – to inform a range of healthcare monitoring.¹ That day has arrived, but will only succeed with the cooperation of clinicians, trust information staff and the governing bodies. Routinely collected central returns offer an abundant source of clinical and administrative

data to support clinicians in their information needs, be it for appraisal and revalidation purposes, feedback on clinical practice, or to support audit and research. There are rich pickings to be had, and the traditional practice of burying our heads in the sand citing poor data quality as justification is no longer valid. The only way the cycle can be broken and the quality of patient-based information improved is to use what is there, embrace the issues and encourage change.

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