Monitoring clinical activity and performance: how can hospital episode statistics be made fit for purpose?

John G Williams

See linked paper on p153

Correspondence to

Professor J G Williams, College of Medicine, Swansea University, Grove Building, Singleton Park, Swansea SA2 8PP, UK; j.g.williams@swansea.ac.uk

Accepted 14 February 2011

Published Online First

31 March 2011

The Health and Social Care Bill¹ will give up to 300 general practitioner consortia in England the power and money (£80 billion) to commission services from NHS hospitals and private providers. Their decisions will be informed by data on activity, performance and patient outcomes. The main source of data will be hospital episode statistics (HES),² supplemented by separately collected patient recorded outcomes.³ These data will also inform patients and enable them to make choices regarding their hospital, consultant and treatment.⁴ It has also been suggested that HES could support the monitoring of quality through national audits,⁵ individual consultant appraisal⁶ and research through linkage to other datasets.⁷

Historically, the process for collecting data for HES has been geared towards supporting the corporate business of the NHS. The uses have been administrative—to monitor activity and performance, identify costs and allocate resources⁸—and epidemiological, particularly at a large area level.^{9–12} As the range of uses has grown, and become more clinical, the quality of the data held in HES has been questioned.^{13–14} There have been many attempts at improvement, particularly through greater consultant engagement,^{15–16} but the data remain much less useful at the level of the individual patient or practitioner than at a population level.

The paper by Roberts *et al* in this issue¹⁷ has used a national audit of inflammatory bowel disease to look at the validity of HES at an individual level by comparison of individual patient data held in HES with data extracted from patient records for the purposes of audit (*in press*). Significant weaknesses in the data are revealed. The time has now come to question the fitness of the data for the widening purposes

for which they are now being used, and the process whereby they are gathered in hospitals. Currently, the clinical content is limited to diagnoses and procedures, which are extracted for coding from unstandardised clinical entries in poorly structured paper records. Diagnoses and procedures are coded using statistical classifications (ICD-10 and OPCS-4) that lack the clinical granularity of a recognised terminology such as SNOMED-CT,¹⁸ and there is poor attribution of decisions and actions to relevant professionals who are limited to consultants in the dataset. Once coded, there is no requirement for clinical validation before central returns are made. Clinical engagement is poor, perpetuating the weaknesses in the validity of the data, which leads to further disengagement, exacerbated by the limited usefulness of the clinical content.¹⁵

As a consequence of these weaknesses, there has been a rapid expansion of clinician led data collection in clinical systems designed for specific purposes. The result is an increasing number of disparate datasets, data collection processes and systems focused on individual diseases, interventions or clinical contexts. In gastroenterology there are endoscopy systems, disease registers, screening support systems, local and national audits, and personal portfolios. This is hugely inefficient, requiring duplicate data entry and generating a myriad of systems containing data that are not standardised, interoperable or comparable between sites.

So what is the solution? A vision for the future has been set out by the Academy of Medical Royal Colleges¹⁹ which argues for a strategic move towards patient centred electronic records that are standardised in structure and content from a clinical perspective and are the single source of data for both individual patient management and for as many secondary

purposes as possible. This vision has been echoed by the Department of Health's consultation on a new information strategy²⁰ and is supported by many statutory bodies. It will not be achievable in the next 1 or 2 years but, if adopted formally by the Department of Health and the devolved nations, would set a target to guide interim initiatives so that they do not foster continuing diversity but converge on a common goal. A first step might be to integrate the current process for collecting patient outcomes after surgery³ into initiatives to develop detailed care records in hospitals, harnessing a powerful, funded driver to collect data at the point of care, involving both patients and professionals. The NHS Information Centre could insist that central returns will only be accepted if the data have been collected in records that use the clinical standards endorsed by the Academy of Medical Royal Colleges,²¹ and the MRC Research Methodology Programme could encourage new methods for prospective research by randomised trial that use data captured routinely at the point of care.^{22,23} The same principle could apply to national audits, and it is encouraging that in the context of the third round of the UK National Audit of Inflammatory Bowel Disease, the Health Quality Improvement Partnership and British Society of Gastroenterology are supporting the development of a register of patients on treatment with biologic drugs that is explicitly geared to integrate with the day to day delivery of patient care. This will be achieved through a standardised, structured record that conforms to national standards and will generate outputs that support individual patient care as well as the national audit. These are small starts, but essential developments if the present weaknesses of paper records and data processes in hospital are not to be perpetuated in the electronic environment.

Competing interests None.

Provenance and peer review Commissioned; not externally peer reviewed.

References

1. Health and Social Care Bill, 2011. <http://www.dh.gov.uk/en/Publicationsandstatistics/Legislation/Actsandbills/HealthandSocialCareBill2011/index.htm> (accessed 21 March 2011).
2. Department of Health. Hospital Episode Statistics (HES). <http://www.dh.gov.uk/en/Publicationsandstatistics/Statistics/HospitalEpisodeStatistics/index.htm> (accessed 21 March 2011).
3. NHS. Patient Reported Outcome Measures (PROMs). <http://www.ic.nhs.uk/proms> (accessed 21 March 2011).
4. NHS Choices. Your health, Your Choices. <http://www.nhs.uk/Pages/HomePage.aspx> (accessed 21 March 2011).
5. NHS Connecting for Health. Ensuring Success for Secondary Uses Services. <http://www.connectingforhealth.nhs.uk/systemsandservices/sus/> (accessed 21 March 2011).
6. Clinical Governance Support Team. NHS Appraisal for Doctors Group. <http://www.appraisalsupport.nhs.uk/articles2.asp> (accessed 21 March 2011).
7. NHS Connecting for Health. Research Capability Programme. <http://www.connectingforhealth.nhs.uk/systemsandservices/research> (accessed 21 March 2011).
8. Körner E. First Report of the Steering Group on Health Services Information. London: HMSO, 1982.
9. Roberts SE, Williams JG, Yeates D, *et al.* Hospital admission for ulcerative colitis and Crohn's disease in England: comparison of mortality with and without colectomy. *BMJ* 2007;335:1033–6.
10. Roberts SE, Williams JG, Meddings D, *et al.* Incidence and case fatality for acute pancreatitis in England: geographical variation, social deprivation, alcohol consumption and aetiology—a record linkage study. *Aliment Pharmacol Ther* 2008;28:931–41.
11. Button LA, Roberts SE, Evans PA, *et al.* Hospitalized incidence and case fatality for upper gastrointestinal bleeding from 1999 to 2007: a record linkage study. *Aliment Pharmacol Ther* 2011;33:64–76.
12. Roberts SE, Williams JG, Meddings D, *et al.* Perinatal risk factors and coeliac disease in children and young adults: a record linkage study. *Aliment Pharmacol Ther* 2009;29:222–31.
13. Williams JG, Mann RY. Hospital episode statistics: time for clinicians to get involved? *Clin Med* 2002;2:34–7.
14. Croft GP, Williams JG. The RCP Information Laboratory (iLab): breaking the cycle of poor data quality. *Clin Med* 2005;5:47–9.
15. Royal College of Physicians. Engaging clinicians in improving data quality in the NHS. Key Findings and recommendations from research conducted by the Royal College of Physicians' iLab. London: Royal College of Physicians, 2006.
16. Royal College of Physicians. Clinicians' guide to hospital activity data. Produced by the RCP Information Laboratory (iLab). London: Royal College of Physicians, 2007.
17. Roberts SE, Williams JG, Cohen DR, *et al.* Feasibility of using routinely collected inpatient data to monitor quality and inform choice: a case study using the UK Inflammatory Bowel Disease audit. *Frontline Gastroenterol* 2011 (in press).
18. NHS Connecting for Health. SNOMED-CT. <http://www.connectingforhealth.nhs.uk/systemsandservices/data/uktc/snomed> (accessed 21 March 2011).
19. Academy of Medical Royal Colleges. The Case and Vision for Patient Focused Records. Academy of Medical Royal Colleges, 2010. <http://www.aomrc.org.uk/statements.html> (accessed 21 March 2011).
20. Department of Health. Liberating the NHS: An Information Revolution. Department of Health, 2010. http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_120598.pdf (accessed 21 March 2011).
21. Carpenter I, Ram MB, Croft GP, *et al.* Medical records and record-keeping standards. *Clin Med* 2007;7:328–31.
22. Williams JG, Cheung WY, Cohen D, *et al.* Can randomised trials rely on existing electronic data? A feasibility study to explore the value of routine data in health technology assessment. *Health Technol Assess* 2003;7:iii, v–x, 1–117.
23. Vickers AJ, Scardino PT. The clinically-integrated randomized trial: proposed novel method for conducting large trials at low cost. *Trials* 2009;10:14.