

Can quality of care really be known using administrative data?

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On 1 July 2017 the Independent Hospital Pricing Authority began to incorporate signals for safety and quality in its pricing. This will be expanded in 2018 using data routinely collected by hospitals ('administrative' data). However, can administrative data really be used to assess quality of care?

In 2014-15, 4 NSW hospitals began participation in the American College of Surgeons National Surgical Quality Improvement Program (NSQIP). Data for NSQIP are collected by Surgical Clinical Reviewers (SCRs), a role usually occupied by a nurse, working with the surgical team at the hospital contributing its data to NSQIP.

We undertook a study at one of the hospitals participating in NSQIP to assess the quality of the data collected by the SCRs compared with that contained in the administrative data, and to assess how well specific complications and death can be predicted using NSQIP variables versus the administrative data (the latter to critically evaluate the need for the range of data required by NSQIP).

For the analysis on the level of agreement between the NSQIP and administrative data, only variables for which there are equivalent definitions between the two data sets were used. The pre-operative risk factors in the administrative data (coded by clinical coders) were generally not consistent with the variables in the NSQIP database. For example, of the 48 patients that were coded as having congestive heart failure (CHF) in the NSQIP database, only 10 (20.8%) were coded as such in the administrative data. Conversely, there were six patients with CHF coded in the administrative data who were not coded as such in NSQIP, resulting in a kappa statistic of 0.31 (95% confidence interval of 0.16 to 0.45). The differences in coding by the SCRs compared with the clinical coders were due to a) different source information used by the two groups (e.g. SCRs follow up with patients in some instances); b) different rules followed (e.g. additional diagnoses coded by a clinical coder must meet the definition set out in the Australian Coding Standards, and SCRs can interpret diagnoses from a patient's current medication list rather than being limited to those documented by a doctor); and c) error.

On the question of prediction, the analysis showed that for each of the three outcomes (death, post-operative complication, and readmission), the NSQIP pre-operative risk factors tended to outperform the variables selected using the administrative data.

The study showed that administrative data goes some of the way to reflect safety and quality of care. However, SCRs tend to capture pre-operative risk factors better than clinical coders (which also lead to better prediction of post-operative outcomes). While part of this reflects SCRs' role (e.g. the 'license' to interpret), it also reflects the information that they source. Nevertheless, SCRs also suffer from inadequate or inaccessible clinical documentation. Both administrative data and the data collected by SCRs can be improved through improving systems to capture clinical data, such as more widespread use of electronic medical records, and structuring information in these systems to enable easier extraction and analysis.