

Are We Using Indicators Appropriately To Identify Areas For Quality Improvement?

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Objective:

To report the benefits of using clinical indicators aggregated over time to identify areas for improvement.

Methods:

Two major enquiries, (Bristol Royal Infirmary in the UK and King Edward Memorial Hospital in Australia), showed that the key indicators had to be averaged over more than six years to obtain a statistically significant difference, which involved about 30 and 60 excess deaths respectively. When reporting indicators to hospitals in Australia, only the last periods are used and rarely are the data aggregated over 6 or more years.

Reports from 878 hospitals for one to 13 six-month reporting periods, 1998 – 2004, for 163 ACHS clinical indicators were used. The indicators, CIs, were rate based. If the aggregated rate was more than 5 standard deviations from the expected rate, then the result was determined as statistically significant and if the number of excess cases was also greater than 50, it was classed as “of interest”. We report only this latter group.

Results:

For the 163 CIs, 59 CIs had no hospitals that were of interest, and 18 CIs had one hospital of interest. Fifty CIs had 10 or more hospitals classified as of interest. The proportion of hospitals of interest varied between the specialties. Infection control had no hospitals with rates of interest, but only 2 years of data were available. Surgery and ophthalmology also had a lower number of HCOs of interest (0.2% and 1.1%). Those specialties with a high proportion of hospitals being of interest were usually associated with process measures, such as access and delays. These included pathology (27%), emergency medicine (16%), intensive care (14%), rehabilitation (13%) and anaesthetics (11%).

The CIs reporting on thrombolysis initiated within one hour of presentation for acute AMI showed consistency across the hospitals with only two rates of interest. However, in one HCO, 86 patients did not receive timely thrombolysis compared to the average rate of 80% in Australia. For bypass mortality, there were no rates of interest, although one HCO had a statistically significantly high rate with an excess of 38 deaths. For patients on Warfarin, there were 2 hospitals with an excess of more than 50 patients with an INR greater than 5.

The process measure of emergency patients with a triage score of 2 who were not seen within 10 minutes showed that 48 hospitals were of interest, with one HCO having an excess of 1100 patients.

Conclusion:

Aggregating the CIs over time has identified a very large number of CIs and hospitals that can be classified as of interest. As found in the Bristol and KEMH enquiries the past data have information in identifying significant clinical variation. It is recommended that the CI rates for individual hospitals not only be reported annually but also as aggregated rates and as trends over time. This will help to identify those areas where quality improvement projects are most likely to be fruitful.