Comments on John Yates' report entitled "A case study exploring the early identification of performance failure in an acute hospital"

The report is a feasibility study on using Hospital Episode Statistics to help identify performance failure at Bristol. HES data for all provider units that performed cardio-thoracic surgery was obtained for a four-year period 1991/92 to 1994/95. Episodes in children under the age of five were examined. The results showed a consistently high death rate in one unit. They conclude that if the unit was BRI, then HES data can be used for retrospective comparisons of hospital mortality rates and suggest also that it might be used for a scanning mechanism to give early warning of performance failure.

The Methods

There are a number of methodological problems within this report:

- The author did explain why, after requesting data from 1990/91 onwards, he analysed data only from 1991/92 onwards. Perhaps this is an acknowledgement of the shortfalls of the data prior to 1991.

- The author initially stated that he was going to examine three different age groupings, but only presented results for one. The 0-5 age group seems a little arbitrary, and has no clinical basis.

- All heart procedures (all OPCS 'K' codes) is a very broad grouping, which includes diagnostic and cardiological procedures as well as surgical procedures. There appears to have been no clinical input into defining procedure groups

- The observation was made that there were different codes referring to the same provider. It seems that the research team did not have access to a table of codes which would allow them to link provider codes which changed over time. Links between different codes were only inferred from the data. In our analysis we used a set of bridging codes, which allowed us to follow code changes throughout the period examined.

- The analysis looks only at episodes and makes no mention of linking episodes into spells. The results probably underestimate mortality by missing final outcomes in multi-episode spells.

It is difficult to compare our results with the report because of different age groups and different operative groups, although the K05 and K06 groups appear to be the same as those used in our own analysis

The Statistical analysis

Within the analysis, there were no confidence intervals presented in any of the tables or graphs.

The Discussion

Within the discussion the report makes a number of points:

- The discussion asks whether comparisons of different data sources should be carried out to see how HES compares with Cardiac Register data. This has been addressed by our expert statistical group within the statistical synthesis.

- It would indeed be interesting to note what centre unit 100 represented, and see if the same centre could be identified in our analyses.

- The report asks the question of whether HES data could be used as a surveillance tool. I think this might be difficult, given the large variety of procedures and hospitals that could potentially be scanned. Using large data sets such as these for surveillance without a prior hypothesis would inevitably run into the problems associated with multiple testing.

Next steps

Within the next steps, several suggestions are made:

- The suggestion is made of an analysis by consultant teams. Within our data set, we were unable to look at consultant team for the time period of interest, as no such field was present. I believe that HES is now being made available for later years with a consultant code.

- Low volume surgery is a possibility (I think David Spiegelhalter is looking into this).

- I am not sure how one could use HES to look at inappropriateness.

Conclusions

As a feasibility study, this report brought up some interesting points, and does not contradict our own findings. It may have been useful if the Department of Health had made the report available at an earlier date, although I don't think our analysis or final report would have been any different, had we seen it beforehand.

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