Reply to Hickey et al.

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Received 4 September 2012; accepted 7 September 2012

Keywords: EuroSCORE • Risk model • Cardiac

We thank Hickey et al. [1] for their insightful comments with regard to our validation study on EuroSCORE II [2].

With regard to the era of patients, a time bias almost certainly does exist. This is a limitation of many retrospective single-institution validation studies, as most units do not have the number, and thus the statistical power, to use a small reference time period. It has already been suggested that a seasonal bias may exist in the EuroSCORE II model, making interpretation/validation even more difficult [3]. Validation with a time period similar to the data accrual of the EuroSCORE II project would require the use of a national dataset. In the UK, this is possible, but the data are 3–4 years out of date by the time it has been collected and checked for completeness, but not validated.

With regard to the modified EuroSCORE, this was only included as it is of interest to readers from the UK. This model has not been widely adopted and was used mainly by the Society for Cardiothoracic Surgery (SCTS) in Great Britain and Ireland, hence the limited comment in our article [2].

Discrepancy frequently arises between single institutions and national results, as pointed out by Hickey et al. The UK mortality for isolated aortic valve replacement is 3.1%, with a predicted EuroSCORE II of 3.4% [4]. Our institution has a mortality of 2.3%, with a EuroSCORE II predicted of 6.9% (this does not include transcatheter aortic valve implantation patients). These differences may partially explain the lack of correlation between national and institutional data with regard to the calibration and discrimination of the EuroSCORE original or II risk models.

With regard to procedure-specific models, as already occurs with the Southern Thoracic Society risk models, we agree that this is probably a superior solution to the ‘one model fits all’, however, it should be pointed out that multiple logistic regression is a linear modelling technique, but the data are non-linear [5].

We thank Hickey et al. for their comments.

REFERENCES