1. Method

Risk-stratified models of clinical outcome

Prytherch et al[5] have shown that it is possible to develop models that accurately predict the risk of adverse outcome (mortality in this case) following admission for general surgery, using data that is routinely collected in hospitals. Models have been developed for both patients undergoing operation and those not undergoing operation. Data items required were: urea, sodium, potassium, haemoglobin, white cell count, age on admission, sex, mode of admission and classification of operation. Subsequent work shows that inclusion of albumin and creatinine levels may improve the models. These models were applied to the totality of general surgical admissions – no attempt was made to model separate sub-specialties. However, this model has been successfully applied to the analysis of the VSGBI National Vascular Database[6] using the same limited data items which has generated the Vascular Biochemical and Haematological Outcome Modelling (V-BHOM) model [7].

It had been originally hoped to carry out case-mix correction using V-BHOM, to examine if for example, there was a systematic difference in the risk profiles of patients treated at large centres compared to others. Unfortunately, it was found that there was an imbalance in the availability of the data that such risk adjustment depends on. Risk data concerning emergency admissions were more frequently missing than for elective cases. In view of this, risk adjustment using only the risk data that are available might well give a very distorted representation of actuality and so risk adjustment has been omitted.