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Reply to technical comment on: Güller et al. Lower hospital volume is associated with higher mortality after oesophageal, gastric, pancreatic and rectal cancer resection

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We thank Dr Romanens for his interest in our study [1, 2]. First, we fully agree with him that the proof of a relationship between higher hospital volume and lower mortality for complex visceral surgery should not solely be based on complex statistics. Although we did carefully risk-adjust our results using multivariable and – as a refined statistical method – propensity score analyses, it is worth looking at our "raw" and unadjusted data. These data show both statistically significant and clinically relevant decreased in-hospital mortalities in high- versus low-volume hospitals. Hence, we do not need fancy statistics to demonstrate the relationship of higher hospital volume and lower in-hospital mortality in our patient cohort.

Second, the example given by Dr Romanens concerning "do not resucciate" (DNR) is far-fetched and unrealistic: no patient undergoing complex visceral surgery such as oesophagectomy or pancreatectomy for cancer is DNR, otherwise they would not be undergoing this type of surgery. Indeed, performing an oesophagectomy or pancreatectomy with palliative intent is ill-advised.

Most importantly, Dr Romanens fails to interpret our investigation in the context of the current scientific literature. There are several hundreds of well-designed and well-conducted studies, systematic reviews and meta-analyses from all over the world demonstrating the inverse relationship between higher hospital volume and lower postoperative mortality for complex visceral surgical procedures. In fact, this association is about as clear as smoking and increased risk of lung cancer. We do not need a randomised controlled trial to prove the relationship of tobacco use and lung cancer, nor to demonstrate that jumping out of an airplane without a parachute is harmful [3]. And we do not need a randomised controlled trial to prove that higher hospital volume results in lower postoperative mortality for complex visceral surgery. And frankly: would the author of the letter to the editor – if he needed complex visceral surgery – be willing to be randomised to a hospital performing 2 complex operations per year versus one performing 100 operations per year? Outcomes research based on administrative data is often the best (and only) way to assess a relationship that is not amenable to a investigation in a randomised controlled trial [4].

Let us face the facts: the volume-outcomes relationship – as well as Newton`s law of gravity – do not stop at the Swiss border!

Disclosure statement

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