

## LETTER

# Dividing intensive care specialists according to their backgrounds is not useful to improve quality in intensive care

Jan-Peter Braun\* and Claudia Spies

See related research by Billington *et al.*, <http://ccforum.com/content/13/6/R209>

We have some strong concerns regarding the principle message in Billington and colleagues' article [1] – namely, that intensivists' base speciality of training may be associated with variations in practice patterns and outcome in critical care patients. We caution against propagating the concept of dividing intensive care specialists according to their backgrounds.

Some methodological weaknesses in the paper are as follows.

First, the impact of nursing factors was not considered. Specifically, the standardised mortality rate was higher in intensive care units (ICUs) with lower numbers of nurses per bed [2]. The quality of invasive procedures will also be greatly impacted by nursing practices.

Second, there was very significant variation in size between the three ICUs involved in the study. There is good evidence demonstrating that cost efficiency is better in ICUs with more than about 12 beds [3].

Third, the median years since critical care medicine certification and the mean weeks of service per year as well as the absolute numbers of physicians were significantly lower in intensivists with base specialty training in anaesthesia, general surgery and emergency medicine.

Fourth, there is no information regarding variation in surgical versus nonsurgical patients, the times to stabilisation in the emergency room and, finally, procedural or structural differences between the various institutions involved.

Finally, the authors observed no differences in patients' length of ICU stay, or in hospital mortality or hospital length of stay. Without information regarding scores at discharge, we consider drawing conclusions based simply on ICU mortality figures to be problematic.

### Conclusion

The authors themselves remind us that 'our results should only be viewed as hypothesis-generating given the retrospective design of the study' [1]. We are concerned that this potentially divisive hypothesis is not founded on sound evidence, and we have attempted to highlight the multiple important confounding factors in this study that are not addressed by studies such as this. We call for attention to remain focused on the major hurdles facing all physicians in modern-day intensive care medicine: defining, training, maintaining and improving physician competencies, implementation of quality assurance practices and, ultimately, our collective goal of the optimisation of patient safety.

### Authors' response

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We would like to thank Dr Braun and Dr Spies for their interest in our study [1], and we appreciate the opportunity to clarify their concerns.

First, the Department of Critical Care Medicine is regionalised. Throughout the study period all three units

had the same nursing ratios (approximately 75% nursing ratio 1:1 and 25% nursing ratio 2:1), policies/procedures and organisational structure.

Second, while the economics of critical care medicine is an important topic, our study was not intended to investigate or demonstrate cost efficiency.

Third, we controlled for physician years of experience and weeks of service per year in our statistical models.

Fourth, we acknowledge that our database did not have all the variables of interest to Dr Braun and Dr Spies. The potential for unadjusted confounders is present in all

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studies of this type and as such they can only be *hypothesis-generating*.

Finally, we selected ICU mortality and ICU length of stay as our primary outcomes because, once patients are discharged from the ICU, nonintensivists assume patient care and confound the effect of intensivists on patient outcome.

In the end, we believe Dr Braun's and Dr Spies' message that training is one of the important hurdles facing physicians. We disagree that our study is 'divisive,' and suggest that it would be irresponsible not to examine physician factors related to patient outcome. Clearly more studies are needed to refute or confirm our results. But imagine if simple changes to the way we are training future intensivists could positively impact quality of care. Would we not want to know?

#### Abbreviations

ICU, intensive care unit.

#### Competing interests

The authors declare that they have no competing interests.

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