

# Performance of intensive care units, we all want to know!

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When patients in the Netherlands need medical care, only 13% actively choose their hospital based on available information on quality of care and available alternatives.<sup>1</sup> Of course, this does not mean that patients do not want to choose their doctors and hospitals. It is obvious, that patients, especially when faced with life-threatening disease, prefer the hospital where the chances of good outcomes are best. The fact that they do not choose and passively go to the nearest hospital simply reflects the fact that performance indicators and reliable data on quality of care of hospitals are hardly available to the public.

In 1996, the National Intensive Care Evaluation (NICE) was one of the first registries of relevant patient outcome data in medical specialities in the Netherlands. At present 84 ICUs are sharing information within NICE, including data on the number of admissions, patient characteristics, severity of illness at admission and outcomes. These data are first of all collected to improve quality of care in Dutch intensive care units (ICUs) and include information about organisation (e.g. number of nurses per patient), processes of care (e.g. glucose control) and outcomes of patients, such as survival, length of stay and complications.

Until very recently, NICE data were not publicly available. ICUs reported their own data, together with clustered data of all ICUs in the Netherlands or subgroups of ICUs (e.g. all academic ICUs). These data were used for internal quality improvement projects, and once a year all ICUs discussed their data in a national symposium. However, NICE never presented data in a way that they could be linked to specific patients or ICUs.

This strategy, to keep data confidential, originated from the belief that public disclosure of quality indicators would lead to 'league tables' wrongly suggesting that ICUs with the best ranking provided the best quality. Mortality is a very relevant outcome indicator for intensive care treatment and well-validated prognostic models such as APACHE IV may adjust for severity of illness on a population level providing standardised mortality ratios (SMRs). Still, research by NICE showed that ranking ICUs

by severity of illness adjusted mortality was influenced by the choice of prognostic models to measure severity of illness and also by chance; ranking orders in league tables suffered from uncertainty and 95% confidence intervals should be provided when interpreting results.<sup>2</sup> Also, adjustment for severity of illness is never perfect<sup>3</sup> and occasionally differences in case-mix may still influence SMRs, e.g. in ICUs specialised in oncology or burn patients. Also, it has been argued that public disclosure of outcome data would lead to fraud by healthcare institutions and even to a tendency that high-risk patients would be denied intensive care treatment.<sup>4</sup>

Seen from the above-mentioned perspective, it is understandable that intensivists initially choose to keep the performance data confidential. At the same time, however, we cannot ignore the fact that society has a strong interest in knowing how things are going in hospitals. This is just like other important things we want to control. Given the fact that we all want to know the performance of a school before we send our children there, and that we want to know the specifications and performance of that new car we want to buy, it is not strange that people also want to know about the ICUs, the departments where the most vulnerable of patients are fully dependent on the equipment, doctors and nurses and where approximately 10-20% of patients will die.

Opponents of transparency often state that the public are not 'smart' enough to correctly interpret outcome data, that they cannot understand the fact that SMR is not synonymous with quality. If so, this should not be a reason to ban transparency, but rather an incentive for intensivists to explain their data. If we are not able to explain our results, something is clearly wrong.

Lastly, the risk that ICUs would manipulate data if they were to be made public is ridiculous. We as a professional body should not tolerate this, and in the end the Health Inspectorate is there to make sure such things are penalised appropriately.

We are not the first to make ICU data public. For some years, in the United Kingdom, the Intensive Care National Audit &

Research Centre (ICNARC) presents quality and performance indicators of ICUs on their website (<https://onlinereports.icnarc.org>).

In 2012 NICE organised a meeting on this topic. In an interactive workgroup 62 participants, including 44 intensivists and 6 ICU nurses, discussed transparency of NICE data. A large majority (96%) of participants believed that making NICE data public was inevitable and 86% considered making NICE data public a positive development. When asked to whom these data should be made public, more than 50% of participants answered 'to all ICUs, patients, insurance companies as well as to the government'.

In December 2014, NICE offered all participating ICUs the opportunity to make their data open to the public. If an ICU chooses to participate in this project, a uniform set of ICU characteristics, including length-of-stay, mechanical ventilation time and mortality data are made public ([www.stichting-nice.nl/datainbeeld/public](http://www.stichting-nice.nl/datainbeeld/public)). Outcome data are typically presented as a funnel plot in which the chosen ICU is highlighted and compared with all other ICUs (figure 1). The funnel plot emphasises that the benchmark, the average value for all ICUs, is not a fixed number but a confidence interval. All ICUs with an indicator value within this funnel are believed not to differ from the benchmark. Also, funnel plots do not present ICUs as a league table with a best and a worst contestant. In each funnel plot, only one ICU is specifically addressed, the other ICUs are still anonymous. Some measures are taken to give ICUs the opportunity to 'explain' their results. First, results were only made public after six months. Thus, ICUs have the

opportunity to explore unexpected findings. Second, ICUs may give their own 'help text' on the website to highlight specific circumstances that may influence the data.

At the start of the project, already 58 ICUs agreed to present their data publicly, clearly showing the general acceptance of transparency among Dutch intensivists. This is a very positive development. Now, everyone can see that ICUs are not hiding important information. Almost all Dutch ICUs have SMRs lower than 1.00, now they can publicly show that results in their hospital are very good. Lastly, if an ICU has a not-so-good result of an indicator, they have something to explain or, even better, to improve. Public reporting will undoubtedly be a great incentive for ICUs to further improve their performance.

In conclusion, public disclosure of performance and quality indicators is necessary to help patients and relatives to feel confident they will receive good treatment in the hospital where they are treated, and to help them if they want to make their own choice. It will also be an enormous stimulus for ICUs to continuously improve their quality of care.

## References

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**Figure 1.** Funnel plot showing standardised mortality ratio (APACHE IV) as presented on the NICE website ([www.stichting-nice.nl](http://www.stichting-nice.nl)). Dots represent Dutch ICUs that gave permission to show their data publicly. The X-axis represents the annual number of ICU admissions and the Y-axis shows the SMR. The red dot is a specific non-anonymous ICU (in this case the LUMC), black dots are the other ICUs that remain anonymous in this plot. The funnel borders represent the 95% and the 99.8% confidence intervals. Visitors to the NICE website can construct funnel plots and choose which ICU is public (red dot) for all participating ICUs.

Aantal opnamen = Number of admissions

