



## ICU Organisational Changes: Impact on Patient Outcome and Cost



Changes in the organisation of the intensive care department over the past decades – including the implementation of the closed format and electronic patient record – have resulted in better patient outcome and reduction of cost, according to a review published in *Journal of Intensive Care*. In addition to planning for future improvements, the paper says the focus should also be on implementation of and compliance with proven beneficial organisational structures within the ICU.

**See Also:** [New Guidelines for Promoting Family-centred Care in ICU](#)

The mortality rate of critically ill patients is high and the cost of the intensive (ICU) department is among the highest within the healthcare industry. In the US alone, annual critical care medicine costs nearly doubled from 2000 to 2010 (from \$56.6 to an estimated amount of \$108 billion). In highly developed European healthcare systems, the average cost per ICU patient is around €1200 per day and €17,000 per admission.

The main drivers of cost are personnel cost followed by infrastructure and pharmaceutical expenditure. This illustrates that reduction of cost should be aimed at the improvement of the utilisation of personnel, processes, and infrastructure, the researchers explained. The innate complexity of the ICU makes organisational structuring of care an attractive target for performance improvement strategies, they added.

One improvement in the past is assigning “intensivists” (specialists in critical care medicine) in managing ICU patients instead of specialists from the referral medical departments, which is also called “closed format” ICU departments. Aside from reducing overall ICU mortality, the closed format transformation has been shown to reduce intensive care stay and hospital stay, and, subsequently, a reduction of costs.

In addition, the introduction of patient digital management systems (PDMS) provided intensivists with a fast overview of patient’s critical data. Having an interface with the electronic medical record at the unit level was significantly associated with a lower risk of mortality in the ICU.

“The finding that electronic medical records integrated with ICU information systems are associated with lower in-hospital mortality adds support to existing evidence on organisational characteristics associated with in-hospital mortality among ICU patients,” say Alexander P. J. Vlaar, MD, PhD, MBA, of the Department of Intensive Care Medicine, Academic Medical Center in Amsterdam, and colleagues.

The paper says possible future options to improve the organisation of the ICU department to further reduce mortality and cost include pooling of dedicated ICU into mixed ICU and embedding business strategies such as

lean and total quality management. While the closed format model of ICU is a superior clinical practice, the paper notes that shortage of intensivists and financial reasons have led to the development of telemedicine. Results of previous studies suggest that telemedicine might be a solution to bridge the shortage of intensivists while still improving quality of care and reducing healthcare cost in rural areas.

"Challenges are ahead as the ICU is taking up the largest share of national healthcare expenditure, and with the ageing of the population, this will continue to increase. We would like to advocate for standard inclusion of cost analysis into future study reports, as financial constraints within the healthcare industry have become an important issue nowadays and cost-effectiveness may influence decision-making whether or not to implement an intervention," the authors write.

Source: [Journal of Intensive Care](#)

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