

# Editorial

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## Intensive Care Units in Malaysia: Scope for Improvement

The demand of critical care service in Malaysia is expected to increase as population age, comorbidities increase and expectation rises, reflecting global trends. Asia accounts for at least half of the cases of sepsis, ARDS and mechanical ventilation in the world. The concept of ICU is accepted today as an integral part of almost every general hospital in Malaysia. The earliest ICU in the country was set up in the late 1960s in Hospital Johor Bahru and University Hospital Kuala Lumpur. Until recently, there has been a lack of consensus on the definition of what constitutes an ICU. In 2017, the World Federation of Societies of Intensive and Critical Care Medicine convened a task force whose objective was to answer the question "What is an ICU?" in an internationally meaningful manner.<sup>1</sup> The proposed definition of ICU is an organized system for the provision of care to critically ill patients that provides intensive and specialized medical and nursing care, an enhanced capacity for monitoring, and multiple modalities of physiologic organ support to sustain life during a period of life-threatening organ system insufficiency. A level 1 ICU is capable of providing oxygen, non-invasive monitoring, and more intensive nursing care than on a ward, whereas a level 2 ICU can provide invasive monitoring and basic life support for a short period. A Level 3 ICU in tertiary hospitals are able to provide a full spectrum of monitoring and life support technologies, serves as a regional resource for the care of critically ill patients, and may also play an active role in developing the specialty of intensive care through research and education.

Do we have enough "ICU beds" in the country? A 2010 census in intensive care services in Malaysia showed that there were 127 hospitals across the nation with ICUs. These provided a total of 160 ICUs which were almost evenly spread between the public and private sectors. Approximately 99% of public hospital and 79% of private hospital ICU beds were levels 2 and 3. The Malaysian Registry of Intensive Care reported that the number of ICU

admissions have increased steadily each year between 2012 and 2015, with median bed occupancy rate of 87.7%.<sup>2</sup> This figure is well above the proposed optimal target for ICU occupancy, which should be around 70-75%, whereas beyond 80% has been associated with mortality. Where the workforce is concerned, there are only around forty intensivists in the country as of now, i.e. 0.2 per 100, 000 populations. The number of ICU nurses as of 2010 stood at 3,749, of which two-thirds were found in public hospitals and only 30% had post-basic training. The persistent gap between intensive care supply and demand is associated with increased unfavourable outcome. The overall in-ICU mortality rate was 26.2%, higher than that reported in high-income countries (8-20.9%). Although vast improvement has been made since inception of this medical specialty the intensive care service in our country is still far from ideal. ICU care should be reserved for the people who truly need it, ensuring that patients who require this advanced care are not overlooked. There is no perfect scoring system to determine and prioritise admissions but recently Malaysian Society of Intensive Care has revised protocol on admissions and triaging that is practical and sensitive to our unique local context to help guide clinicians to make difficult choices.

For critically ill patients, a patient-important outcome such as quality of life is more meaningful than just survival. One way this can be improved is through the implementation of Rapid Response System (RRS), the key aspects of which are the triad of early recognition of deteriorating patients, timeliness of response and activation of clinicians with appropriate clinical competency. Implementation of RRS has been established in many developed countries and recent evidence suggests that it is associated with reduced rates of cardiorespiratory arrest outside the ICU and reduced mortality. On another note, no conversation about improving the use of the ICU is complete without considering the ICU's role in end-of-life care, since one-fifth of the patients will succumb during or shortly after a stay in an ICU. In the course of

management, when burdens of disease and treatment outweigh the potential benefits of treatment, palliative options must be considered and discussed.<sup>3</sup> Aligning treatment with patients' and/or families' desires at the end of life, improves satisfaction with care while also reducing healthcare costs. Similarly to how we should be selective of whom we admit to ICU, we should also be mindful with the decision about discharging patients from ICU. It has been shown that 'premature' discharge is likely to worsen outcome; patients who leave ICU before they are considered fit for discharge are twice as likely to die, despite minimal difference in their risk of death on ICU admission. Our observational study of ICU admissions over five years has clearly demonstrated an association between after-hours ICU discharge and increased odds of in-hospital mortality.<sup>4</sup> This poses a major concern given that one in every three ICU patients is being discharged after-hours in Malaysia due to the pressure on ICU beds. National Early Warning Score (NEWS) at ICU discharge can be applied for determining the most suitable patient for transfer. Higher NEWS indicates a greater severity of illness and has been shown to have high capability to detect an early clinical deterioration after ICU discharge.

Any well-intending physicians or nurses who want to help improve intensive care in Malaysia should come with an open-mind, with the understanding that providing intensive care can be demanding, challenging and exhausting. A recent survey in the Asian ICUs has reported that a large proportion of intensive care physicians and nurses experienced professional burnout.<sup>5</sup> Professional burnout is a multidimensional syndrome comprising emotional exhaustion, depersonalization, and diminished sense of personal accomplishment, and is associated with poor staff health and decreased quality of medical care. It becomes imperative with such small numbers of service provider in the face of increasing ICU demands to look at personal well-being and organisational structures. Personal wellness needs to be improved and prioritised. Interpersonal relationships which includes better communication needs to be cultivated. A conducive work environment that endeavours to provide optimum work-life balance, training and service is necessary to curtail professional burnout.

In conclusion, there is no doubt that intensive care service can change the outlook on the management of the critically ill patients. In a developing country such as ours it is important at this stage to take stock of the needs of our patients. The future of intensive care medicine requires advances in physician and nurses training as well as improvements in the organization of patient management, advances in research and public awareness.

## REFERENCES

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