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### ICU Versus ITU: Comparison of Critical Care Services in India and the UK

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Dr. Raja and colleague analyze the key differences in organization and delivery of critical care services in India and the United Kingdom.

#### Introduction

It has been well documented that intensive care unit (ICU) services may be heterogeneously organized within a single country, as in the United States (Angus 2006). Hence, it is not surprising that a comparison of intensive care delivery models in two countries, India and the United Kingdom (UK), is a study of contrasts. This article focuses on these differences, as well as advantages and potential limitations of each model.

#### Intensive Care Coverage

Since healthcare delivery in the UK is administered through the National Health Service (NHS), a public- funded healthcare system, the distribution of intensive care services throughout the country is relatively homogenous. In India, there is wide disparity in the distribution of healthcare services (Purohit 2004). Marked contrast exists between state-run hospitals, offering near-free services with limited resources and infrastructure, and the private sector, offering 'state of the art' care to the patient segment with purchasing capacity. As intensive care is expensive care, the majority of Indian ICUs are concentrated in urban settings and pooled in the private sector.

The average bed capacity of ICUs in UK is six, ranging from four to 22 (Department of Health). The occupancy rate is about 80 to 90 percent. This puts pressure on ICU staff to ration beds or organize inter-hospital transfers. It has also resulted in the development of critical care networks linking a series of hospitals in a geographical region, to facilitate the sharing of beds and transfer of critically ill patients. Well established protocols, based on guidelines from professional bodies, and the availability of trained staff ensure that adequate standards are maintained during the transfer. In India, most units have a bed capacity of 20 or more, with a range of 14 to 80 beds, and average occupancy tends to be about 60 percent. Hence, there is no shortage of acute care beds, though patient affordability of long-term care might be a limiting factor in many circumstances. There are no formal bedsharing nor inter-hospital transfer protocols, due to barriers imposed by the inherent heterogeneity of the healthcare system.

#### ICU Staffing and Organization

In the UK, critical care services fall primarily under the anesthetic directorate and are staffed by consultants with dual certification in both the anesthesia and intensive care specialities. UK units function as either semi-open or closed models. In the UK, the responsibilities of critical care staff extend outside the ICU to attend or offer informal advice in other acute care areas, such as the medical admission unit and accident and emergency unit. Many ICUs in India, in contrast, are now managed by a separate critical care department, are staffed by trained intensivists and employ semi-open organizational models. Indian critical care staff responsibilities rest within their unit and do not extend to other departments.

In the UK, ICUs tend to have a high ratio of nursing staff per patient. Nurses in the UK play a key role in clinical decision-making and take part in daily clinical rounds. They closely liaise with patients' family members, updating them about clinical progress and other relevant details. Also, UK units employ nurse-driven protocols in ventilatory management and weaning, feeding regimen, glycemic control, etc. India is experiencing an

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acute shortage of qualified nurses, which results in a lower nurse-to-patient ratio in India than in the UK (Oberoi and Udgiri 2003). Many of the practices delegated to nurses in the UK are more often managed by a doctor in India. For example, Indian ICU doctors take primary responsibility for making clinical decisions and liaising with patients' families. Moreover, nurses (and patients' families, for that matter) are not as involved in end-of-life decisions as they are in the UK. In addition to taking the lead in decision-making, the attending physician in India also tends to take responsibility for routine practices, such as ventilatory management. On the other hand, there is no practical difference between the two countries in the presence of inhouse doctors/trainees, physiotherapists, ancillary technicians and biomedical and clerical staff.

Support staff functions in the UK and India differ, as well. In the UK, the typical ICU has a bed manager to facilitate patient transfer, an ICU clinical pharmacist and a speech and language therapist doing daily rounds on tracheostomy patients. In addition, UK units include microbiology services in their daily ward rounds and discussions regarding diagnostic possibilities and appropriate antibiotic therapies. These functions are not always present in Indian ICUs. On the other hand, while the availability of radiological services is a luxury in UK, there is never a major problem in ordering a bedside ultrasound, computed tomography, magnetic resonance imaging, echo cardiogram, or electroencephalogram in India.

In the UK, the role of critical care outreach services is well established and is an integral part of comprehensive critical care services. The delivery model is nurse-driven, and the role of a doctor is to step in when the team requests input in selected circumstances. The team works with an objective to avert ICU admissions by intervening early in clinical deterioration, following up on discharges from the unit and educating ward staff by sharing critical care skills. Along similar lines, the concept of rapid response teams, or medical emergency teams, is slowly coming into practice in India (Senthil Kumar et al. 2006). The key difference is, as these teams are ICU-based teams led by a doctor, the number of interventions done on-site is greater than those performed by UK outreach services.

#### **Case Mix and Patient Care**

In the UK, ICU admission is based on a classification of patient categories into four levels (Levels 0 to 3, with increasing number of organs requiring supportive care in each successive level). The final decision to admit the patient rests with the consultant on call in the unit. The case mix tends to consist of postoperative patients, as well as patients experiencing sepsis with multiorgan failure, trauma, toxidromes and respiratory failure. The majority of ICU patients in the UK are elderly. In India, no strict criteria for ICU admission exist, and the decision to admit the patient is made by the primary physician. The ICU population in India is not that old, and the indications for admission, apart from the categories already mentioned in the UK context, include obstetric emergencies, tropical diseases like malaria, dengue with organ failure, immunocompromised patients, etc.

#### **Other Initiatives**

Clinical audit, to ensure adequate standards and quality of care, is an integral part of the clinical governance in UK. Unfortunately, this practice is not universal in Indian ICUs. On the other hand, while initiating clinical research is becoming a more and more difficult and time-consuming process in European ICUs (Truog et al. 2005), these limitations have not been observed yet in India, enabling clinical research to progress more easily there.

#### **Conclusion**

To sum up, most of the differences observed can be traced to the healthcare delivery model prevailing in these two countries, i.e. the state-funded NHS in the UK, and a fee-for-service model (accounting for 82% of overall health expenditure and 4.2% of gross domestic product) in India. The different evolution of intensive care medicine in these two countries also results in differences. Intensive care in the UK is more traditional and well defined and dates back more than three decades, while in India, intensive care medicine is still a relatively new specialty and is rapidly expanding. Provision of intensive care in these two, very distinct settings will always require different approaches, but the experiences of each country may contribute to improvements in ICUs everywhere.

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