

mass media and legislation to make cigarette smoking expensive for the consumer and unprofitable for the manufacturer.

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Surgical beds in neonatal intensive care unit

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Tertiary health centers with centralized neonatal intensive care units (NICU) provide finest care to the sick neonates. However, these units are often full to capacity with reversal of infant-bed ratio. The increased proportion of surgical beds is blamed to be one of the reasons for over-occupancy of the NICU. Although, there is no allocated quota for surgical beds and babies admission is on first come first served bases but it has been observed that surgical infants occupy a major portion of the NICU at any given time. Further that many of these

neonates for example: the clinically stable cases of delayed passage of meconium with suspected diagnosis of Hirschsprung's disease requiring rectal washes, do not even meet the arbitrary admission criteria of intensive care unit.¹ Thus, there arises a need to look and document the real status of bed consumption by the surgical cases in the NICU. For this purpose, we carried out the present study.

Neonatal intensive care units at Royal Hospital in Muscat, Oman has 30 beds providing centralized care to all high-risk neonates admitted from different regions of the country. It is one of the main tertiary care centers of the capital; the only one with the facility of neonatal surgery. Records of all admission and discharges to and from the NICU are kept as medical files, computer database and NICU register. For this study, we utilized the NICU register. Our aim was to look at the number of beds occupied by surgical cases as compared to medical cases. A cross-sectional survey of bed occupancy was carried out for 2 consecutive months from January 2004 to February 2004. Data were collected from the admitting register of the NICU. The surgical cases were short-listed from the total admissions.

The medical cases were then separately counted for bed days. Total admitted days (from date of admission to the day of discharge or death) were counted as occupied bed days.² In cases of death on the same day, the stay was counted as one day (one occupied bed day). One day of stay in NICU cost ranges from 10-30 Omani Riyal (approximately 28-79 US dollar or 16-48 Sterling pound). After counting the total surgical and medical admission with the occupied bed days, the proportion was calculated by dividing the surgical bed days and the medical bed days by the total bed days. Results

Table 1 - Bed occupancy in neonatal intensive care units by the Surgical and Medical cases.

Admissions	January 2004	February 2004	Total
Total admissions	52	51	103
Surgical admissions	9	6	15
Medical admissions	43	45	88
Total bed days occupied by all cases	763	554	1317
Total bed days occupied by surgical cases (%)	73 (9.5)	81 (14.6)	154 (11.6)
Total beds occupied by medical cases (%)	690 (90.5)	473 (85.4)	1163 (88.4)

were expressed in number and percentages. One hundred and three infants were admitted to the NICU during the study period representing 1317 consecutive patient bed days, 52 cases in January (763 bed days) and 51 (554 bed days) in February. The comparison between the surgical and medical bed occupancy is depicted in **Table 1**. Total NICU beds occupied by surgical cases during 2 months period were 154 (11.6%) in comparison to 1163 (88.4%) by medical cases. Contrary to the common assumption, we noted that the surgical bed occupancy in our NICU is roughly one tenth of the total admission proving the allegation of 'no space' for admission in NICU. It was made clear that medical cases comprised the main bulk of NICU admission and beds. Thus, despite centralization of surgical care to one unit, bed occupancy remained unaffected putting the question of quota and rationing for surgical cases out of context. Neonatal intensive care unit beds are seldom vacant. Suggestion has been made earlier regarding strict admission criteria.³ Others have advocated the need for increased in the NICU beds.⁴ Some have shown that decentralization of NICU care is as effective as centralized care, taking care of bed problems in single tertiary unit.⁵ The finding of our study provided answer to all these alternatives. Firstly, it has shown that bed occupancy from surgical cases is not high, proving that the increased need for the NICU beds relates to medical rather than surgical cases. Secondly, it clearly indicated that centralized care for surgical cases is still a valid option and no great benefits could be achieved or expected by deferring surgical transfers and managing them at regional centers (decentralized approach), as the proportion of these cases were noted to be small.

In conclusion, we have demonstrated that only small amounts of resources were consumed by the surgical cases admitted to the NICU. Expecting cost savings from further limiting surgical beds is thus not warranted.

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Which local anesthesia should be used in neonatal circumcision in newborns?

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Methemoglobinemia results from oxidation of ferrous iron (Fe²⁺) to ferric iron (Fe³⁺), and renders the hemoglobin molecule unavailable for oxygen transport, resulting in potentially life-threatening hypoxemia. Under physiological conditions, methemoglobin reduction is accomplished mainly by red cell NADH-cytochrome b₅ reductase (NADH-methemoglobin reductase) thus, efficiently that there are insignificant amounts of methemoglobin in the circulating blood. These enzyme pathway is immature in the neonate, therefore this disorder may be triggered by oxidation agents such as topical anesthetics used in minor surgical procedures such as circumcision.^{1,2} The local anesthetic prilocaine is a popular choice for penile blockade in circumcision owing to its short onset time and low incidence of cardiac and central nervous system toxicity. However, prilocaine is the most potent methemoglobin forming local anesthetic.

Circumcision was performed in 15 and 3-day-old neonates in other medical centers using the standard surgical technique. Prilocaine was administered subcutaneously in a dose of 5 mg/kg around the radix of the penis and no complication was observed in both patients. They developed perioral cyanosis one and a half hour and 3 hours after the circumcision respectively and succeeding central cyanosis was seen. The pregnancies and deliveries were unremarkable. The physical examinations revealed no other abnormality. Their cyanosis persisted and transcutaneous oxygen saturations were 89% and 91% with supplemental oxygen. Complete blood cell counts, arterial blood gases and chest x-rays were all normal. Electrophoresis revealed methemoglobin levels of 9.9% and 13%