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Advanced neonatal medicine in China: A national baseline database

Xiang-Peng Liao

Centre Hospitalier Universitaire de Sherbrooke Research Centre, Canada

Background: Previous surveys of neonatal medicine in China have not collected comprehensive information on workforce, investment, health care practice, and disease expenditure, yet it is necessary to know the situation.

Methods and Findings: We summarized the above components by extracting data from the databases of the national key clinical subspecialty proposals issued by national health authority in China, as well as publicly accessible databases. Sixty-one newborn clinical units from provincial or ministerial hospitals at the highest level within local areas in mainland China, were included for the study. Data were gathered for three consecutive years (2008-2010) in 28 of 31 provincial districts in mainland China. Of the 61 newborn units in 2010, there were 4,948 beds (median=62 [IQR 43-110]), 1,369 physicians (median=22 [IQR 15-29]), 3,443 nurses (median=52 [IQR 33-81]), and 170,159 inpatient discharges (median=2,612 [IQR 1,436-3,804]). During 2008-2010, the median yearly investment for a single newborn unit was US\$344,700 (IQR 166,100-585,800), median length of hospital stay for overall inpatient newborns 9.5 (IQR 8.2-10.8) days, median inpatient antimicrobial drug use rate 68.7% (IQR 49.8-87.0), and median nosocomial infection rate 3.2% (IQR 1.7-5.4). For the common newborn diseases of pneumonia, sepsis, respiratory distress syndrome, and very low birth weight (<1,500 grams) infants, their lengths of hospital stay, daily costs, hospital costs, ratios of hospital cost to per-capita disposable income, and ratios of hospital cost to per-capita health expenditure, were all significantly different across regions. The survival rate of extremely low birth weight (ELBW) infants (Birth weight <1,000 grams) was 76.0% during 2008-2010 in the five hospitals where each unit had more than 20 admissions of ELBW infants in 2010; and the median hospital cost for a single hospital stay in ELBW infants was US\$8,613 (IQR 8,153-9,216), which was 3.0 times (IQR 2.0-3.2) the average per-capita disposable income, or 63 times (IQR 40.3-72.1) the average per-capita health expenditure of local urban residents in 2011.

Conclusions: Our national database provides baseline data on the status of neonatal medicine in China, gathering valuable information for quality improvement, decision making, longitudinal studies and horizontal comparisons.

Biography

Xiang-Peng Liao has his expertise in improving the quality of neonatal intensive care unit. He was a Chief Physician, Academic Director of Newborn Medicine Department at Wuxi Maternity and Child Health Hospital, Nanjing Medical University, China. He has participated in the Stecker International Scholars Program, and attended the Neonatal-Perinatal Medicine Observership Program at the four affiliated hospitals of Harvard Medical School. He also was a scholarship holder from the Canadian Institutes of Health Research - Quebec Training Network in Perinatal Research Program. He is responsible for a guideline about vitamin D and bone health in China, and principal investigator for 5 government projects, and has published more than 40 articles and book chapters.

lxp4848@aliyun.com

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