



## The association between maternal country of birth and neonatal intensive care unit outcomes



Preena Uppal<sup>a</sup>, Andrew J. A. Holland<sup>b</sup>, Barbara Bajuk<sup>c</sup>, Mohamed Abdel-Latif<sup>d,e</sup>, Adam Jaffe<sup>f,g</sup>, Lisa Hilder<sup>h</sup>, Kei Lui<sup>a,g</sup>, Ju Lee Oei<sup>a,g,\*</sup>

<sup>a</sup> Department of Newborn Care, Royal Hospital for Women, Randwick, NSW, Australia

<sup>b</sup> Douglas Cohen Department of Paediatric Surgery, The Children's Hospital at Westmead, Sydney Medical School, The University of Sydney, Australia

<sup>c</sup> Pregnancy and newborn Services Network, Westmead, NSW, Australia

<sup>d</sup> Department of Neonatology, Canberra Hospital, Garran, ACT, Australia

<sup>e</sup> School of Paediatrics, Australian National University, ACT, Australia

<sup>f</sup> Department of Respiratory Medicine, Sydney Children's Hospital, Randwick, NSW, Australia

<sup>g</sup> School of Women's and Children's Health, University of New South Wales, Kensington, NSW, Australia

<sup>h</sup> Perinatal and Reproductive Epidemiology Research Unit, School of Women's and Children's Health, University of NSW, Australia

### ARTICLE INFO

#### Article history:

Received 2 October 2012

Received in revised form 6 March 2013

Accepted 12 March 2013

#### Keywords:

Maternal country of birth  
Ethnicity  
Neonatal intensive care  
Outcomes  
Rehospitalization  
Record linkage

### ABSTRACT

**Background:** Immigration is increasingly common worldwide and its impact on neonatal intensive care unit outcomes is uncertain.

**Aims:** To determine the outcomes of children of immigrant mothers admitted to NICUs in New South Wales (NSW), Australia, between 2000 and 2006.

**Study design:** Record linkage study of routinely collected state-based health databases.

**Subjects:** Infants of Australian-born (9813, 81.9%) and overseas born mothers (2166, 18.1%).

**Outcome measures:** NICU and childhood outcomes to a maximum 5 years of age.

**Results:** Immigrant mothers came from 122 countries, 897 (44%) from high income regions. Australian born mothers were more likely to be teenaged (Odds Ratio, 95% confidence interval: 3.07, 2.21–4.26), use drugs (3.55, 2.49–5.06) and suffer an antepartum hemorrhage (1.29, 1.14–1.48). They were less likely to have gestational diabetes (0.45, 0.38–0.54), fetal distress (0.75, 0.66–0.85) and intrauterine growth restriction (0.80, 0.67–0.93). Their infants were more likely to be admitted to the NICU for prematurity but less likely to have low 5 min Apgar scores (0.81, 0.69–0.93) or a congenital abnormality (0.79, 0.70–0.90). Infants of Middle-Eastern mothers had the lowest hospital survival rate (88.5%). Children of immigrant Asian mothers were least likely to be rehospitalized after NICU discharge (1.66, 1.27–2.17).

**Conclusions:** NICU outcomes are affected by maternal country of birth even within the same ethnic group. Further study regarding the impact of paternal race and immigration status and duration of residency will provide data for the changing cultural environment of global perinatal care.

Crown Copyright © 2013 Published by Elsevier Ireland Ltd. All rights reserved.

### 1. Introduction

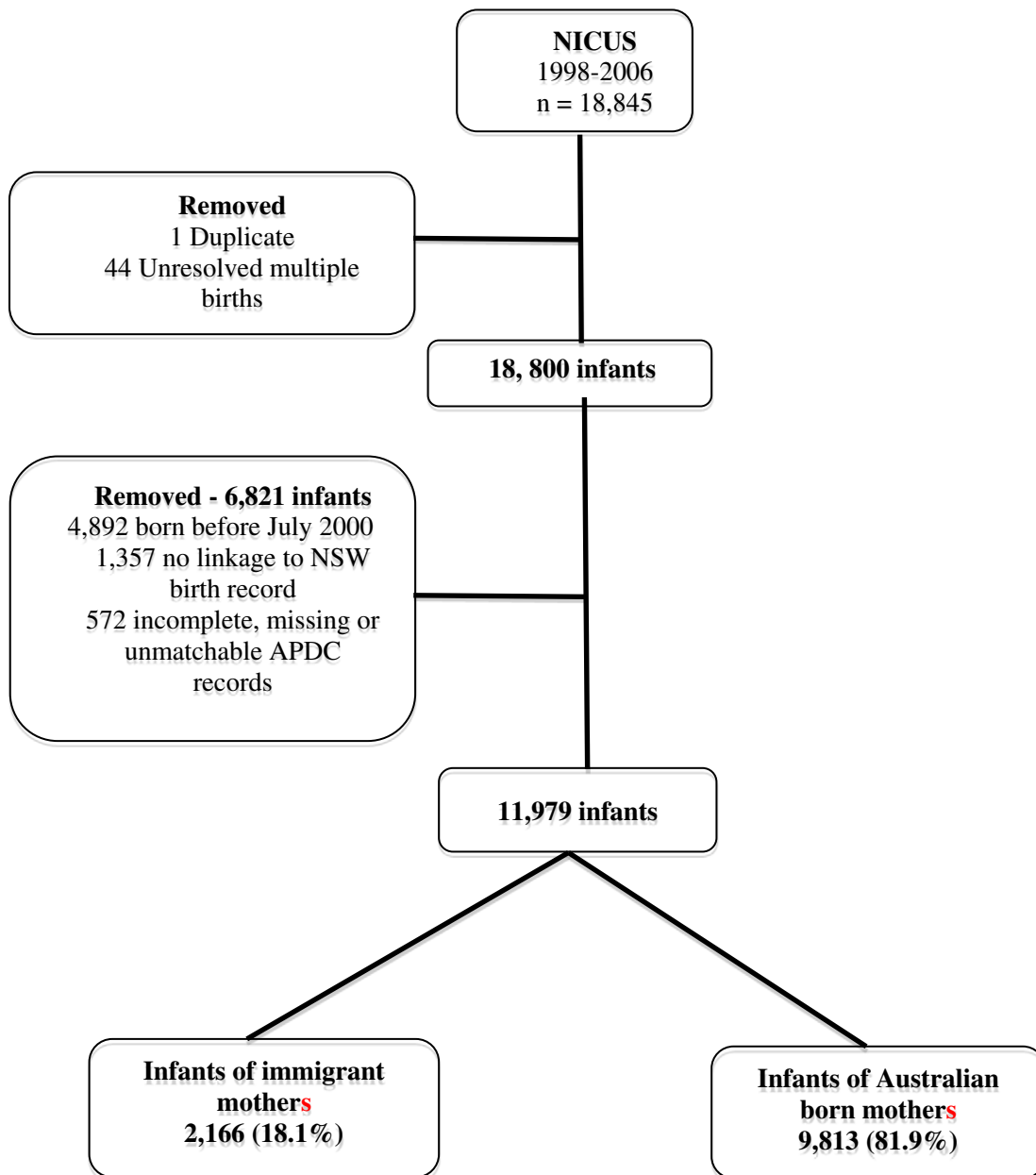
According to the International Organization for Migration, the number of international migrants is expected to increase from 214 million in 2010 to 405 million by 2050 [1]. Countries that were once ethnically homogeneous may be beset with vastly different health problems due to genetic [2], cultural [3] and assimilation [4] issues.

An “immigrant paradox” has been recognized since the 1960s [5] where arrivals from poorer socio-economic regions were noted to be healthier than the original inhabitants of the new country, even when ethnic differences were taken into account [6]. This counter-intuitive phenomenon (as marginalized and impoverished people usually have consistently poorer outcomes) [7,8] may be explained by a selective process, as usually only the fittest and healthiest people have the opportunity to migrate. On the other hand, what is more difficult to explain is the predisposition of more affluent backgrounds, e.g. Asian Indians migrating to the United States for employment, to a higher risk of health problems despite optimum health care [9].

The effect of these phenomena on neonatal intensive care unit (NICU) outcomes has not been explored. In this field, time-critical

\* Corresponding author at: Department of Newborn Care, Royal Hospital for Women, Barker Street, Randwick, NSW 2031, Australia. Tel.: +61 2 9382 6152; fax: +61 2 9382 6191.

E-mail address: [j.oei@unsw.edu.au](mailto:j.oei@unsw.edu.au) (J.L. Oei).



Abbreviations: NICUS: Neonatal Intensive Care Units' (NICUS) Data Collection, APDC: Admitted Patient Data Collection of New South Wales (NSW).

**Fig. 1.** Patient flow chart. Abbreviations: NICUS: Neonatal Intensive Care Units' (NICUS) Data Collection, APDC: Admitted Patient Data Collection of New South Wales (NSW).

decisions are often based on data extracted by an often ethnically-homogenous native population [10,11] and may not be applicable to children of non-Caucasian and immigrant parents [12]. For example, Asian infants have less severe hyaline membrane disease but worse retinopathy of prematurity [13]. Adhering to standard definitions of certain conditions, e.g. World Health Organization (WHO) criteria for gestational diabetes mellitus (GDM), may result in sub-optimal clinical outcomes e.g. Japanese women need more stringent glycemic control to prevent adverse perinatal complications [14].

Currently, there is no population study of the effects of maternal country of birth on high-risk perinatal outcomes. In this study, we used record linkage to determine this association in the state of New South Wales (NSW), Australia, between 2000 and 2006. Due to the unrestricted

nature of Australian health care, we hypothesized that short and long-term outcomes, including survival and rehospitalization after NICU discharge, will not be different between children of native-born and immigrant mothers.

## 2. Methods

This was a retrospective record linkage analysis that combined information between an NICU database and that of routinely collected public health data to determine outcomes of infants registered in NICUS in NSW, Australia. Infants were born between January 1st 2000 and December 31st 2006. Linkage was performed between all databases

Download English Version:

<https://daneshyari.com/en/article/6171894>

Download Persian Version:

<https://daneshyari.com/article/6171894>

[Daneshyari.com](https://daneshyari.com)