

# Analysis of patient demographics and maternal-fetal outcomes following aeromedical retrieval for pregnancy-related complications

Cynthia Wong, Fergus W Gardiner, Alice Richardson, Carly Roxburgh, Marianne Gilliam, Leonid Churilov, Ruth McCuaig, Sean Carter, Chris Arthur, Adam Morton, Leonie Callaway, Karin Lust, Sarah J Davidson, Katie Foxcroft, Kiri Oates, Lucy Zhang, Sahani Jayawardane, Mathew Coleman, and Michael Peek.



Royal Flying Doctor Service

## INTRODUCTION

Limited access to obstetrics and gynaecology (O&G) services in rural and remote Australia is believed to partly contribute to suboptimal perinatal outcomes<sup>1,2,3</sup>. The objective of this study is to describe the characteristics of pregnancy aeromedical transfers, maternal and fetal outcomes, as compared to Australia-wide data.

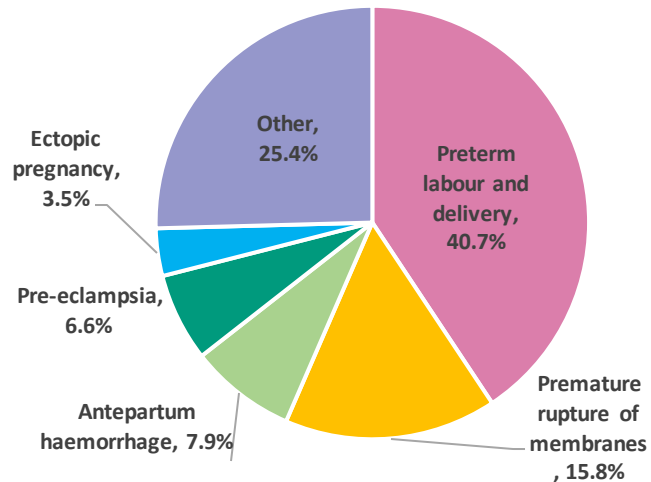


Figure 1. Reasons for aeromedical retrievals Royal Flying Doctor Service cohort of 2015-2017

Reference: <sup>1</sup>Roberts CL, Algert CS. The urban and rural divide for women giving birth in NSW, 1990–1997. *Australian and New Zealand Journal of Public Health*. 2000;24(3):291-297. <sup>2</sup>Gardiner FW, Bishop L, Gale L, Ransom A, Lavery M. At 100: Preparing in our 90th year for the health service needs of rural and remote Australia in the RFDS's 100th year. Canberra, Australia: The Royal Flying Doctor Service 2018. <sup>3</sup>Health Ato, Welfare. *Australia's health 2018*. Canberra: AIHW;2018. <sup>4</sup>Health Ato, Welfare. *Australia's mothers and babies 2018—in brief*. Canberra: AIHW;2020. <sup>5</sup>Bishop L, Ransom A, Lavery M. *Health care access, mental health, and preventive health: Health priority survey findings for people in the bush*. Canberra, Australia: The Royal Flying Doctors;2017. <sup>6</sup>Bishop L, Ransom A, Lavery M. *Cardiovascular health in remote and rural communities*. Canberra, Australia: Royal Flying Doctor Service;2018. <sup>7</sup>Lengyel CS, Ehrlich S, Iams JD, Muglia LJ, DeFranco EA. Effect of Modifiable Risk Factors on Preterm Birth: A Population Based-Cohort. *Maternal and Child Health Journal*. 2017;21(4):777-785. <sup>8</sup>Health Ato, Welfare. *Stillbirths and neonatal deaths in Australia*. Canberra: AIHW;2020. <sup>9</sup>Adane AA, Bailey HD, Marriott R, et al. Disparities between Aboriginal and non-Aboriginal perinatal mortality rates in Western Australia from 1980 to 2015. *Paediatric and Perinatal Epidemiology*. 2019;33(6):412-420. <sup>10</sup>Freemantle CJ, Read AW, de Klerk NH, McAullay D, et al. Patterns, trends, and increasing disparities in mortality for Aboriginal and non-Aboriginal infants born in Western Australia, 1980-2001: population database study. *The Lancet*. 2006;367(9524):1758-1766. <sup>11</sup>Gardiner FW, Bishop L, Graaff Bd, Campbell JA, Gale L, Quinlan F. *Equitable patient access to primary healthcare in Australia*. Canberra, Australia: Royal Flying Doctor Service 2020.

## RESULTS & DISCUSSION

The RFDS conducted 3327 retrievals during the study period. The leading retrieval reason was preterm labour and delivery (n=883; 40.7%) (Figure 1). Most patients were retrieved from rural and remote areas (n=2224; 93.0%). 658 (30.3%) identified as being Aboriginal and/or Torres Strait Islander. Retrieved patients were younger (28.0 vs. 30.0 years), more likely to be overweight or obese (52.2% vs. 45.1%) and to have smoked during their pregnancy (14.0% vs. 9.9%), compared to Australian pregnant women overall. Caesarean section was the mode of delivery for 37.4% of the RFDS cohort (n=812); the median gestational age at birth was 33 weeks. There were 42 (1.7%) stillbirths, which was noticeably higher than observed Australia-wide (0.7%).

Strategies to reduce the burden of perinatal morbidity and mortality for rural and remote Australian women include preterm birth prevention, stillbirth prevention, smoking cessation, obesity management, diabetes management, and local access to maternity care<sup>5,6,7,8</sup>. Access to local, quality, culturally-safe maternity services is key to reducing underlying risk factors, improving pregnancy outcomes, and increasing women's chances of birthing safely, at term, as close to home as practical<sup>9,10,11</sup>.

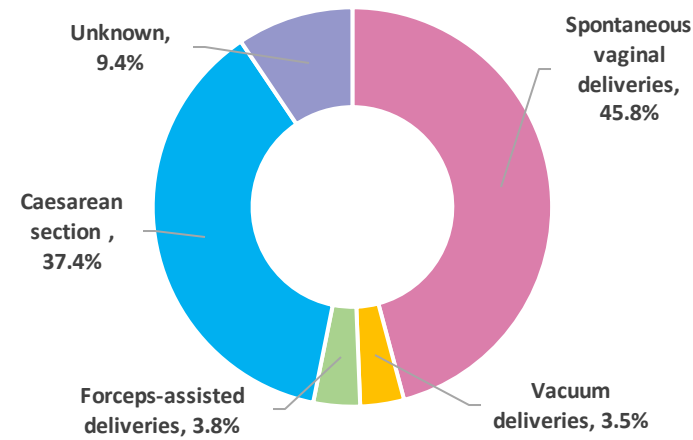


Figure 2. Mode of delivery following aeromedical retrieval in the Royal Flying Doctor Service cohort of 2015-2017

## METHODOLOGY

We conducted a cohort study of women who required a Royal Flying Doctor Service (RFDS) aeromedical retrieval for pregnancy-related issues between the 1st January 2015 and 31st December 2017. Clinical and national databases were used to provide demographic information, characteristics at delivery, birth outcomes, and accessibility to O&G services<sup>4</sup>.

