



Queensland
Government
Queensland Health

Incidence of primary postpartum haemorrhage with selected maternal characteristics, Queensland, 2008

Rachael Wills, Colleen Morris
Health Statistics Centre, Queensland Health

Postpartum haemorrhage (PPH) is defined as blood loss of 500 ml or more during or after childbirth and is a potentially life threatening birth complication. The average adult has approximately five litres of blood in their body with an increase in red cell mass by 20-30% during pregnancy^{1,2}. A PPH blood loss of 1000 ml or more, or any amount of blood loss postpartum that results in compromised blood circulation, is considered to be a severe PPH³.

PPH is categorised as either a primary PPH, which occurs within the first 24 hours postpartum, or a secondary PPH, which occurs between 24 hours and up to twelve weeks postpartum. Primary postpartum haemorrhage is one of the top five causes of maternal mortality in both developed and developing countries⁴.

There are several antenatal, intrapartum and postpartum risk factors associated with PPH. This study examines the incidence rates of primary PPH by volume (500-999 ml or ≥ 1000 ml) and mother's age, Indigenous status and plurality for all births in Queensland for 2008. Other potential risk factors will be examined in future reports.

Of the 60,328 mothers who birthed in Queensland in 2008, 45 mothers with either an unknown PPH volume (8) or unknown Indigenous status (37) were excluded from this study. Of the remaining, 60,283 mothers, 2,049 (3.4%) had a PPH volume of 500-999 ml, while 968 (1.6%) had a severe PPH.

The percentage of mothers with PPH was highest among those aged younger than 25 or older than 45 years. From the age of 25, the percentage of mothers with PPH gradually decreased to a minimum of 3.9% among mothers aged 35-39 before increasing again (Figure 1). The highest percentages of severe PPH were among mothers aged 40 years and older.

Non-Indigenous mothers had significantly lower rates of PPH than Indigenous mothers (Figure 2). Of the 3,373 Indigenous mothers included, 2,444 were Aboriginal (A), 581 were of Torres Strait Islander (TSI) origin and the remainder were of both A & TSI origin (348). TSI and Aboriginal mothers were 47% (RR 1.47; 95%CI 1.07-2.02) and 31% (RR 1.31; 95%CI 1.11-1.55) more likely to have a PPH than non-Indigenous mothers respectively. Overall, Indigenous mothers also had higher rates of severe PPH than non-Indigenous mothers.

Figure 1. Proportion of mothers with primary PPH by age and PPH volume, Queensland, 2008^p

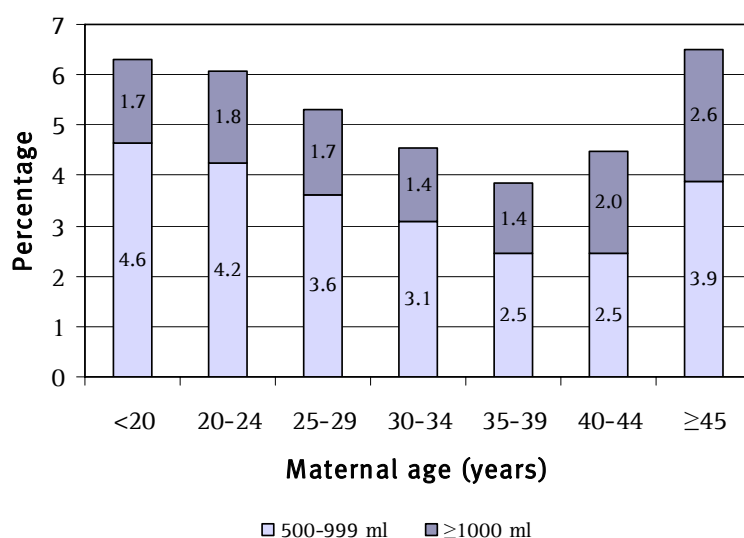
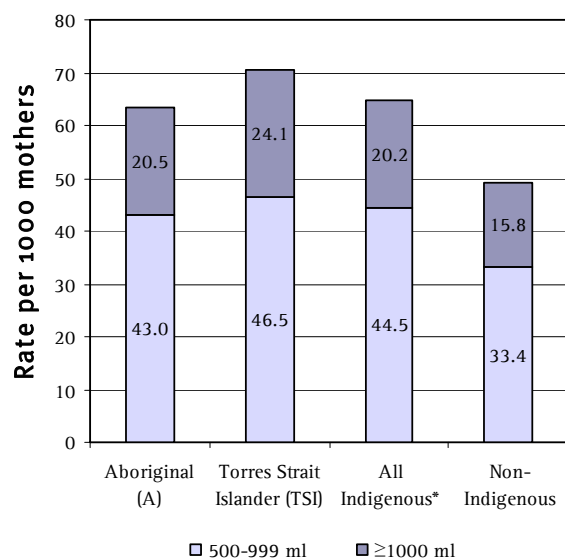
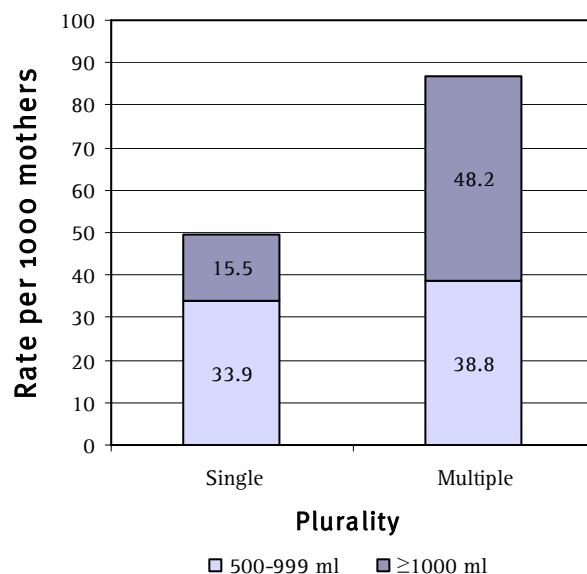


Figure 2. Rates of primary PPH by volume and Indigenous status, Queensland, 2008^p



*Includes 348 mothers of both A & TSI origins

Figure 3. Rates of primary PPH by volume and plurality of pregnancy, Queensland, 2008^p



Rates of PPH differed significantly according to the plurality of a mother's pregnancy (Figure 3). There were 1,058 mothers with multiple pregnancies and these resulted in an 83% higher rate of primary PPH (RR 1.83; 95%CI 1.48-2.28) than singleton pregnancies. Haemorrhages in multiple pregnancies were more than two and a half times more likely to result in severe blood loss (RR 2.72; 95%CI 1.79-4.14). This could be because multiple pregnancies contribute to uterine over-distension and loss of uterine muscle tone⁵.

Incidence of primary postpartum haemorrhage and volume of haemorrhage differed according to maternal age, Indigenous status and was particularly influenced by pregnancy plurality.

References

1. The Franklin Institute, n. d., *The human heart; Blood*. Philadelphia, Accessed 13 January 2010 (<http://www.fi.edu/learn/heart/blood/blood.html>)
2. Ciliberto, C.F., Marx, G. F., 1998. *Physiological changes associated with pregnancy*. Update in Anaesthesia, New York, Accessed 13 January 2010 (http://www.nda.ox.ac.uk/wfsa/html/u09/u09_003.htm)
3. NSW Department of Health. Postpartum haemorrhage (PPH) - Framework for prevention, early recognition and management. Sydney, 2005.
4. Mousa, H.A., Alfirevic, Z. Treatment of primary postpartum haemorrhage (Review). *Cochrane Database of Systematic Reviews* 2007, Issue 4, Art. No.: CD003249. DOI: 10.1002/14651858.CD003249.pub2
5. Selo-Ojeme. D. O., Okonofua F. E. 1997. Risk factors for primary postpartum haemorrhage. *Archives of Gynecology and Obstetrics*. 259(4):179-187