
Identification of Indigenous status for measurement of perinatal risk factors and outcomes: Insights gained through use of both mother and baby status

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Identification of Indigenous status for measurement of perinatal risk factors and outcomes: Insights gained through use of both mother and baby status

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The Perinatal Data Collection (PDC) is a key data source for measuring maternal and infant outcomes in Queensland. Of particular interest are the perinatal outcomes of Aboriginal and Torres Strait Islander (Indigenous) mothers and their babies. A number of performance frameworks, such as the National Indigenous Reform Agreement (NIRA)¹ and the Queensland Department of Health 'Performance Indicators in Aboriginal and Torres Strait Islander Health',² compare Indigenous and non-Indigenous perinatal risk factors and outcomes.

These existing indicators rely on analyses of outcomes by the Indigenous status of the mother.

Previous analysis of outcomes of babies recorded as Indigenous in birth registrations³ showed that while the perinatal outcome measures for babies with an Indigenous father and non-Indigenous mother were worse than for babies with non-Indigenous parents, they were better than the outcomes experienced by babies born to Indigenous mothers.

The practice for assigning an Indigenous status for babies registered in Queensland is on the basis of the status of either parent, i.e. if either the mother or father document that they are Indigenous, the baby is classified as Indigenous during the registration process.

On 1 July 2010, a variable capturing the baby's Indigenous status was introduced into the PDC. This enables the mother to identify her child's Indigenous status independently of her own status. As a result, about 2% of babies born in Queensland are now recorded as having an Indigenous status different from that of their mother.

This StatBite compares a set of perinatal and demographic measures by the mothers' and babies' Indigenous status. The measures were compared among four groups:

- Indigenous mother, Indigenous baby
- Indigenous mother, non-Indigenous baby
- Non-Indigenous mother, Indigenous baby
- Non-Indigenous mother, non-Indigenous baby

This analysis is restricted to births recorded in the PDC between 1 January 2011 and 30 June 2013. Each mother was counted once. In the case of multiple births, the baby's Indigenous status was taken from the first baby born. Across the two years, 6.05% of mothers and 6.89% of babies were identified as Indigenous (Table 1).

Table 1: Indigenous status of mother by status of baby, Queensland, 01/01/2011 to 30/06/2013

Indigenous status of mother	Indigenous status of baby					
	Indigenous		Non-Indigenous		Total	
	#	%	#	%	#	%
Indigenous	8,932	5.66	624	0.40	9,556	6.05
Non-Indigenous	1,936	1.23	146,345	92.72	148,281	93.95
Total	10,868	6.89	146,969	93.11	157,837	100.00

Source: Perinatal Data Collection.

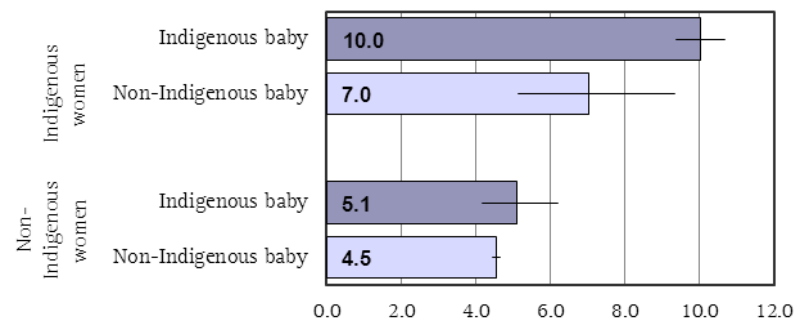
Indigenous statuses of “not stated” were recoded to “non-Indigenous”.

In the case of multiple births, the baby’s Indigenous status is taken from the first baby born.

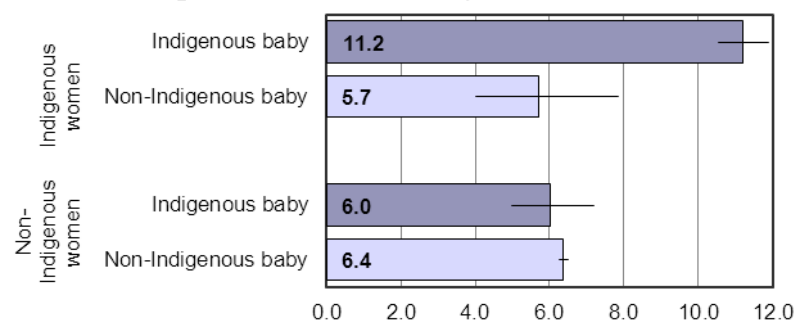
The highest rates of perinatal risk factors and adverse outcomes were among Indigenous babies born to Indigenous mothers, while the lowest rates were among non-Indigenous babies born to non-Indigenous mothers (Figure 1). Intermediate rates were recorded in groups where the baby and the mother had different Indigenous status.

Figure 1. Perinatal risk factors and outcomes by Indigenous status of mothers and babies, Queensland, 01/01/2011 to 30/06/2013

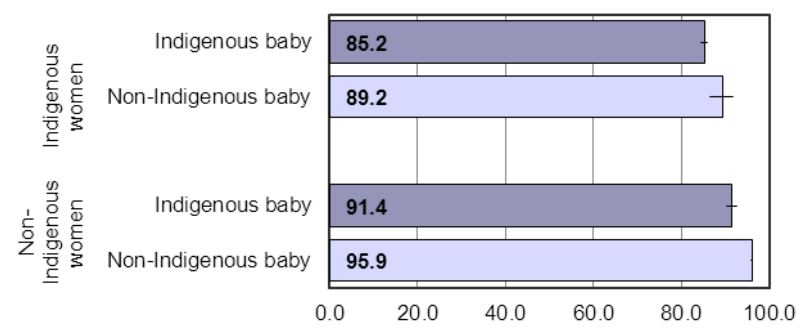
Low birthweight (< 2500 grams) babies (%)



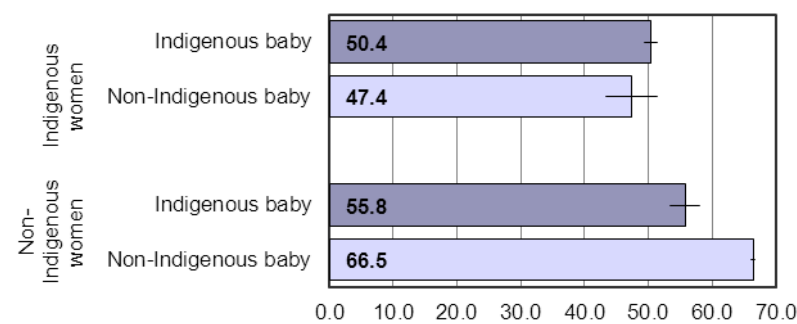
Babies born preterm (< 37 weeks gestation; %)



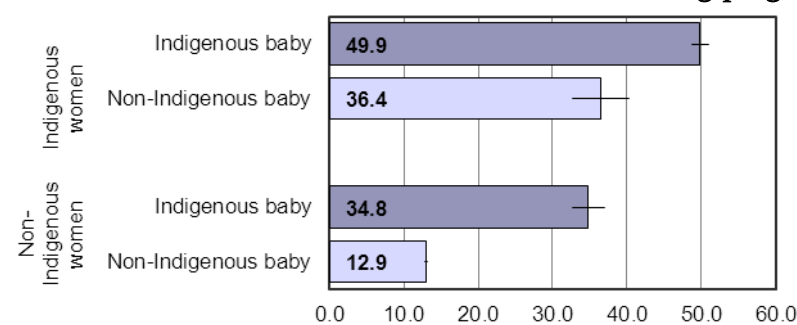
Babies born to mothers with fewer than five antenatal visits (%)



Babies born to mothers whose first antenatal visit was after the first trimester (0-13 weeks gestation; %)



Babies born to mothers who smoked tobacco during pregnancy (%)



Source: Perinatal Data Collection.

Horizontal lines represent 95% confidence intervals.

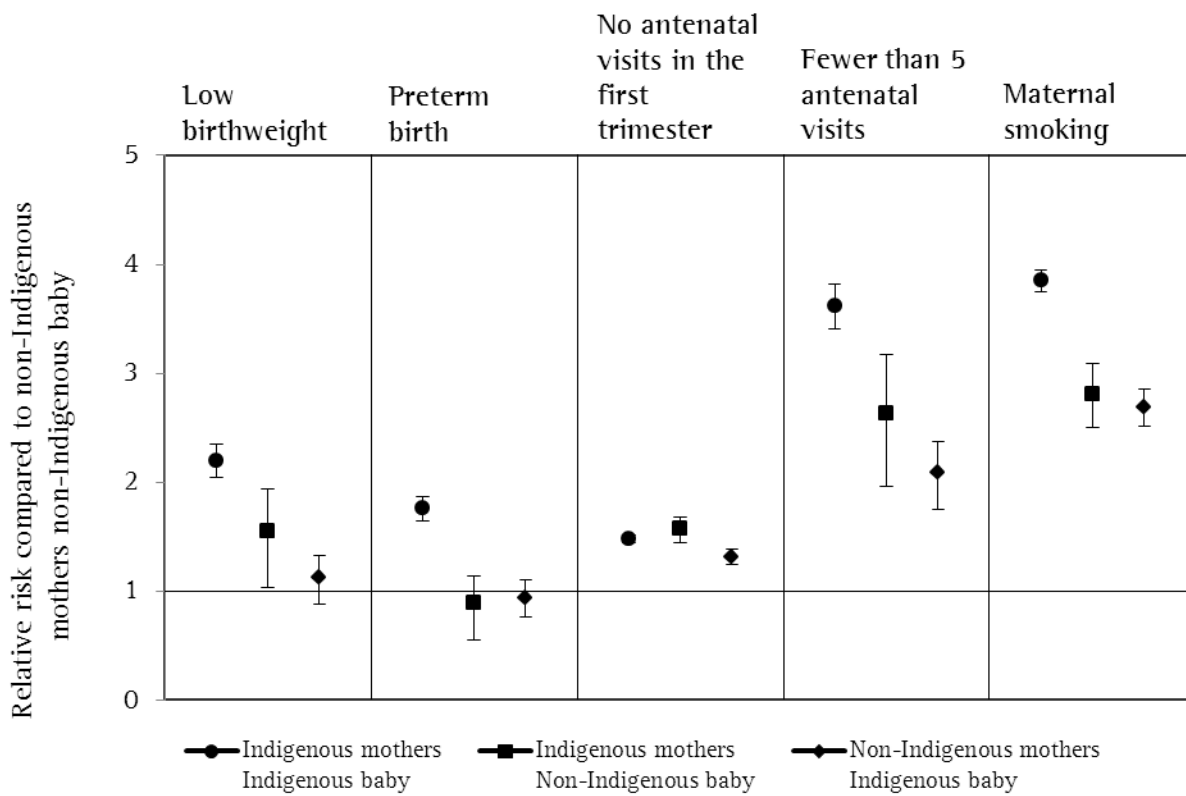
Indigenous statuses of “not stated” were recoded to “non-Indigenous”.

For low birthweight and preterm birth, records were limited to singleton births. For five or more antenatal visits, antenatal visit in the first trimester and maternal smoking, the baby’s Indigenous status was taken from the first baby born in the event of multiple births.

For low birthweight and preterm birth, records were excluded if (1) the baby was stillborn, (2) the baby was born earlier than 20 weeks gestation and weighed less than 400 grams at birth or (3) the baby weight at birth was unknown. For five or more antenatal visits, records were excluded if (1) the gestation weeks were not stated, (2) the first antenatal visit was not stated or (3) the baby was born earlier than 32 weeks gestation. For antenatal visit in the first trimester, records were excluded if the gestation weeks were not stated or the first antenatal visit was not stated.

Figure 2 presents the relative risk ratios of groups with at least one Indigenous status compared to non-Indigenous babies born to non-Indigenous women. Both groups in which the mother and baby had different Indigenous statuses were at significantly greater risk of no antenatal visits in the first trimester, fewer than 5 antenatal visits and maternal smoking than non-Indigenous babies born to non-Indigenous women.

Figure 2. Relative risk ratios of selected groups compared to non-Indigenous babies born to non-Indigenous women on perinatal risk factors and outcomes, Queensland, 01/01/2011 to 30/06/2013



Source: Perinatal Data Collection.

A relative risk ratio of 1 indicates that the risk of an outcome is identical between two groups. 95% confidence intervals are shown with error bars. Results are considered significantly different at 95% confidence when there is no overlap between the confidence intervals and 1.

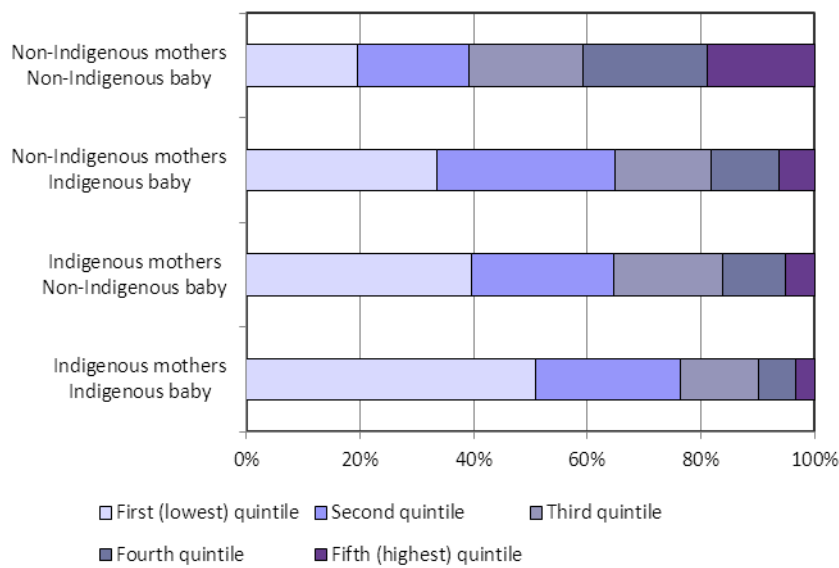
Indigenous statuses of “not stated” were recoded to “non-Indigenous”.

For low birthweight and preterm birth, records were limited to singleton births. For five or more antenatal visits, antenatal visit in the first trimester and maternal smoking, the baby’s Indigenous status was taken from the first baby born in the event of multiple births.

For low birthweight and preterm birth, records were excluded if (1) the baby was stillborn, (2) the baby was born earlier than 20 weeks gestation and weighed less than 400 grams at birth or (3) the baby weight at birth was unknown. For five or more antenatal visits, records were excluded if (1) the gestation weeks were not stated, (2) the first antenatal visit was not stated or (3) the baby was born earlier than 32 weeks gestation. For antenatal visit in the first trimester, records were excluded if the gestation weeks were not stated or the first antenatal visit was not stated.

Finally, the remoteness and socioeconomic status of the mothers’ usual addresses were compared by the Indigenous status of the mother and the baby. Indigenous babies born to non-Indigenous mothers and non-Indigenous babies born to Indigenous mothers were both over-represented in the most disadvantaged quintile (40% and 34%, respectively), compared to non-Indigenous babies born to non-Indigenous mothers (19%; Figure 3).

Figure 3. Indigenous status of mothers and babies by socioeconomic status, Queensland, 01/01/2011 to 30/06/2013



Source: Perinatal Data Collection.

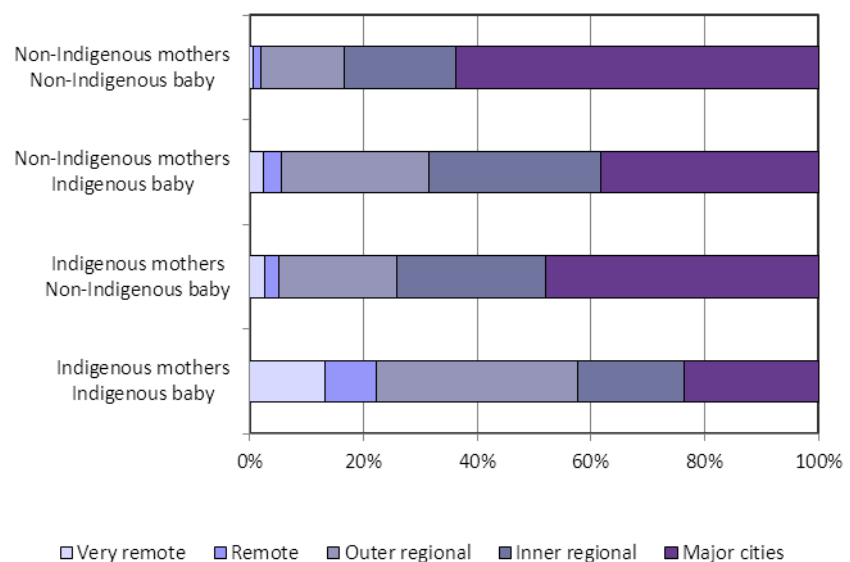
Socioeconomic status is SEIFA (Socio-Economic Indexes for Areas).

In the event of multiple births, the baby's Indigenous status was taken from the first baby born. Records were limited to Queensland residents. Records were excluded where SEIFA could not be assigned (N = 16).

Similarly, groups where the Indigenous status of the mother and baby did not match had a disproportionately higher rate of rural and remote addresses of usual residence. Indigenous babies born to non-Indigenous mothers and non-Indigenous babies born to Indigenous mothers were less likely to live in major cities (48% and 38%, respectively) than non-Indigenous babies born to non-Indigenous mothers (64%; Figure 4).

These results confirm the results of the previous analysis³ i.e. that stratifying Indigenous status by a single dimension – rather than by both mother and baby – obscures differences between groups.

Figure 4. Indigenous status of mothers and babies by remoteness, Queensland, 01/01/2011 to 30/06/2013



Source: Perinatal Data Collection.

Residence is assigned by ARIA+.

In the event of multiple births, the baby's Indigenous status was taken from the first baby born. Records were limited to Queensland residents.

Currently, comparisons of perinatal risk factors and outcomes in Indigenous and non-Indigenous populations are usually based solely on the mother's Indigenous status. As a result, the differing risk profiles of Indigenous babies born to non-Indigenous mothers and non-Indigenous babies born to Indigenous mothers are not recognised. In particular, because Indigenous babies born to non-Indigenous mothers make up only 1.31% (1,935/148,259) of all births to non-Indigenous mothers, their higher risks are obscured when perinatal measures are averaged across all babies born to non-Indigenous mothers.

These results have important implications for services that focus on managing maternal health and behaviour. Antenatal programs targeted at Indigenous mothers, particularly those focussed on smoking and antenatal care, should acknowledge the additional risk group of Indigenous babies born to non-Indigenous mothers. Services and programs aimed at Indigenous mothers should broaden their reach to recognise Indigenous families.

References

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- 1 Council of Australian Governments. (2011). http://www.federalfinancialrelations.gov.au/content/npa/health_indigenous/indigenous-reform/national-agreement_sept_12.pdf, accessed 30 June 2015.
 - 2 Health Statistics Branch. (2014). Department of Health Performance Indicators in Aboriginal and Torres Strait Islander Health. <https://www.health.qld.gov.au/hsu/pdf/other/queensland.pdf>
 - 3 Health Statistics Unit. (2009). Measuring Indigenous perinatal outcomes – should we use the Indigenous status of the mother, father or baby? https://www.health.qld.gov.au/hsu/tech_report/techreport_2.pdf