## Adverse outcomes of labour in public and private hospitals in Australia

Georgina A Sutherland, Deirdre Gartland, Jane S Yelland and Stephanie J Brown

**To the Editor:** We are concerned that conclusions drawn by Robson and colleagues[1] regarding perinatal outcomes in private and public hospital settings perpetuate misinformation about safe birthing options.

One of the major limitations of using routine datasets, which the authors acknowledge, is that analyses are only able to control for potential confounders held within those datasets.[2] Because these datasets are not designed for research, they commonly do not contain information on all pertinent indicators. In this case, the inability to control for expected and potential pregnancy complications affecting poor perinatal outcomes means caution is warranted when drawing conclusions about the safety of public versus private intrapartum care.

The public hospital system in Australia is designed to cater for women at risk of adverse events in pregnancy and labour, regardless of their health insurance status. Women with known risk factors may opt for public care in a tertiary hospital, where neonatal intensive care facilities are available. Accounting for only a few surrogate markers of social disadvantage is unlikely to control adequately for inequities in these two very different populations. As such, the extent to which the reported odds ratios are a result of differences in the type of care provided in public and private hospitals, or underlying differences in the populations that have not been adjusted for, is unknown.

By attending to odds ratios only, Robson and colleagues have missed the opportunity to disseminate information about overall risk across both health sectors. Although statistical models used in their study indicate the risk of perinatal death is three times more likely in public than private hospitals (taking account of caveats already discussed), the population risk of such adverse perinatal outcomes is extremely small regardless of place of birth.

When using data from secondary sources, the onus is on researchers to exercise caution in interpretation and dissemination of results, because we know the media won't. "Babies die in public hospitals …"[3] is just one example of how the general public are fed conclusions based on insubstantial evidence. We cannot foresee any benefit in undermining trust in our public hospital system. There is, however, potential for harm if women perceive they are in a substandard system of care. It is a simplistic assertion by Robson and colleagues that women can use the information presented in their article to make choices about giving birth in either the public or private sector. For many women, there is no choice.

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1 Robson SJ, Laws P, Sullivan EA. Adverse outcomes of labour in public and private hospitals in Australia: a population-based descriptive study. *Med J Aust* 2009; 190: 474-477. [Published online ahead of print, *Med J Aust* 16 Feb 2009.]

2 Rosenberg AL, Greenfield MVH, Dimick JB. Secondary data analyses. In: Penson DF, Wei JT, editors. Clinical research methods for surgeons. Totowa, NJ: Humana Press, 2006.
3 Hall L. Baby toll lower in private hospitals. *The Australian* 2009; 16 Feb. http://www.theaustralian.news.com.au/story/0,25197,25059394-23289,00.html (accessed Feb 2009). ❑

## Lyndsey F Watson, Mary-Ann Davey, Mary A Biro and James F King

**To the Editor:** In their recent article, Robson and colleagues conclude that women are at increased risk of adverse perinatal outcomes if they give birth in public rather than private hospitals.[1] We are concerned that this interpretation is likely to be false, has caused the public unnecessary alarm, and may be used to support vested interests.

There are several serious limitations in the data, the analyses and the implications.

The authors report that 14.3% of women (about 134 000) giving birth in Australia during the study period were excluded from the analyses. We believe that this exclusion introduces significant bias. Outcomes and sensitivity analyses should have been presented for the excluded groups, enabling the reader to interpret the findings appropriately. Pre- and post-term births and multiple births were appropriately excluded from the analysis. However, perinatal deaths due to congenital anomalies should also have been excluded. In Victoria in 2004, 19% of perinatal deaths at term were caused by congenital anomalies.[2] These almost always occur in public hospitals.

The authors adjusted for a number of maternal demographic characteristics in their risk assessment. Other factors known to reflect sociodemographic status, such as education, occupation and income, and low birthweight, were not included; therefore the adjustment is unlikely to be adequate.

The analysis should have been stratified by hospital level of care. Women at high risk of adverse outcomes should be (and are being) cared for in tertiary public hospitals — which, unlike private hospitals, are designed to provide high-level care — as a matter of need and not of choice. The lumping together of all public hospitals in the analysis and provision of summary outcomes necessarily skews the findings. By doing this, the authors are effectively comparing apples with oranges.

The proper analysis of severe perineal laceration would exclude those women who had caesarean sections, because they are not at risk of perineal trauma. Stratification by type of vaginal birth is misleading when women attempting vaginal birth in private hospitals are much more likely to experience instrumental birth than those in public hospitals.

In conclusion, differential exclusion of a significant proportion of the population, inadequate adjustment for confounding factors, lack of stratification by hospital type, and inappropriate analysis of perineal lacerations are likely to lead to faulty inference and cause unnecessary alarm. This is particularly unfortunate at the time of publication of the national Maternity Services Review.[3]

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## Stephen J Robson, Paula Laws and Elizabeth A Sullivan

***In reply:*** We thank Sutherland and colleagues for their comments and acknowledge that dissemination of our research findings[1] by some in the Australian media has caused unnecessary alarm.[2,3] The data presented in our article show that there appear to be different risk profiles for women giving birth in the public and private sectors in Australia. We agree with Sutherland et al that the "public hospital system in Australia is designed to cater for women at risk of adverse events in pregnancy and labour, regardless of their health insurance status" and/or risk profile.

Watson and colleagues estimate that about 19% of all perinatal deaths among term births in Victoria are due to congenital anomalies.[4] This is consistent with a reported national figure of 18.1% for 2004.[5] This limitation should have been acknowledged in our article, even if the analysis was not possible. Congenital anomaly data are not currently included in the Perinatal National Minimum Data Set. This limitation highlights the need for integrated uniform national perinatal data on cause of perinatal death and diagnosis of congenital anomaly.

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