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Letter to the Editor

The contribution of maternal age to increasing caesarean section rates

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Caesarean section (CS) rates are increasing worldwide and in recent years Australia has had one of the 10 highest rates among OECD countries.¹ Although none fully explain these changes, numerous reasons have been cited for increasing CS rates including maternal request, changes in patient and provider perception of safety versus risk, practice changes such as increased use of oxytocin, labour inductions and fetal monitoring, reduced obstetric training in operative vaginal delivery, medicolegal concerns and changes in maternal risk profiles including obesity, maternal age and medical conditions.²⁻⁴ Consequently we were surprised by anecdotal reports that suggested increasing CS rates in Australia were due to increasing maternal age – with the implication that nothing that could be done about it. We therefore aimed to determine the role of maternal age in increasing CS rates

From 1994 to 2010, there were 1,500,964 deliveries in NSW. The caesarean rate increased from 17.4% in 1994 to 30.5% in 2010, while mothers aged ≥ 35 years increased from 13.1% to 24.2% (including 1.8% to 4.3% aged ≥ 40 years). Age-specific caesarean rates demonstrate that all age groups contributed to the rise in caesarean sections (Figure 1). The highest CS rates were among women aged ≥ 40 years, with lower rates for each of the younger age-groups. However in each age group caesareans increased at a similar rate, with the greatest relative increase (by 68%) among women aged 25-29 years.

To determine what proportion of the increase in CS was attributable to changes in maternal age, we compared the observed trend in CS rates with what would have been the trend if the only thing that changed over time was maternal age. We calculated this predicted trend from a logistic regression model of CS and maternal age using data from 1994.⁵ Data from subsequent years were applied to the regression equation to account for the actual changes in maternal age over time, finding that only 11% of the increase in CS was explained by

increasing maternal age. However, this method assumes that the relationships between maternal age and CS remained constant over time and this may not be valid. As an alternative approach, we fitted a regression model to the 2010 data and back-cast the predicted CS rate based on current practice and actual maternal age trends. Using this approach, changes in maternal age account for 18% of the change in CS rates since 1994, somewhat more than the forward prediction but by no means the entire increase. These results suggest that either the risks, or attitudes to the risks, associated with advancing maternal age have changed over time. The explanatory contribution of maternal age varied (using back-casting) among population subgroups: 42% prelabour CS among nulliparae; 21% intrapartum CS among nulliparae; 17% prelabour CS among multiparae; and 14% intrapartum CS among multiparae.

Although maternal age is a risk factor for caesarean section, increasing maternal age explained no more than 18% of the total increase in caesareans in NSW since 1994. Reports suggesting that increasing caesarean rates in Australia are due only to increasing maternal age are incorrect.

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