



Recent versus historical trends in preterm birth in Canada

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A recent study indicated a 9% increase in preterm birth rates in Canada, from 6.25% of all live births during 1981–1983 to 6.81% during 1992–1994.¹ Rates among singletons increased by 5% (95% confidence interval 3% to 6%) across the same period. This secular increase in preterm birth rates between the 1980s and 1990s appears to contrast with trends between the 1970s and 1980s. A report in *CMAJ* on trends in birth weight for gestational age in Canada stated in passing that “the percentage of singleton births that were premature (before 37 weeks’ gestation) was 8.3% in 1972 and 5.3% in 1986.”² Such a dramatic decline between 1972 and 1986, if true, would represent a historical landmark among perinatal developments in Canada. We sought to identify potential explanations.

A graphical examination of data presented in the *CMAJ* report² provides some insight. The gestational age distribution for 1972 showed peaks and troughs; the peaks corresponded to lunar months (e.g., 7 months or 28 weeks, 8 months or 32 weeks) and half months (e.g., 7.5 months or 30 weeks, 8.5 months or 34 weeks). This tendency toward rounding gestational age to the nearest lunar month or half month was markedly diminished in the 1986 data (Fig. 1). It appears that a true gestational age of 37 weeks was less likely to be stated as 9 lunar months (or 36 weeks) in 1986 than in 1972. The rate of singleton live births at exactly 36 weeks’ gestation decreased from 5.4% of all singleton live births in 1972 to 2.4% in 1986 (an absolute decline of 3%, identical to the decline in preterm birth rates among singletons).

We believe that the observed changes in preterm birth rates between 1972 and 1986 are primarily due to improvements in the quality of gestational age information in vital records, possibly related to the replacement of menstrual dating by early ultrasonography.³ The demonstrated errors in gestational age in the 1972 data will hamper attempts at quantifying the real change in preterm birth rates in Canada since the 1970s (or earlier).

The recent increase in preterm birth rates in Canada parallels that in other industrialized countries.⁴ It has been shown that this increase was significantly associated with a simultaneous decrease in stillbirth rates; both changes have been attributed to increased obstetric intervention.¹ The recent increase in preterm birth rates is also associated with changes in multiple births,⁵ which have increased in frequency and are 25% more likely to be preterm than previously.¹ Although such explanations for the increase are reassuring, they underscore the unresolved challenge of preventing preterm birth.^{6,7}

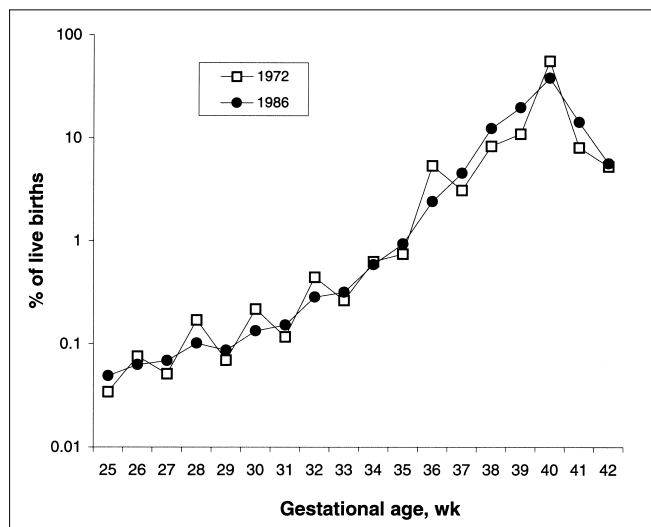


Fig. 1: Gestational age distribution among singleton live births in Canada in 1972 and 1986.²

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References

- Joseph KS, Kramer MS, Marcoux S, Ohlsson A, Wen SW, Allen A, et al. Determinants of preterm birth rates in Canada from 1981 through 1983 and from 1992 through 1994. *N Engl J Med* 1998;339:1434-9.
- Arbuckle TE, Sherman GJ. An analysis of birth weight by gestational age in Canada. *CMAJ* 1989;140:157-65.
- Kramer MS, Platt R, Yang H, Joseph KS, Wen SW, Morin L, et al. Secular trends in preterm birth: a hospital-based cohort study. *JAMA* 1998;280:1849-54.
- Berkowitz G, Papiernik E. Epidemiology of preterm birth. *Epidemiol Rev* 1993;15:414-43.
- Daltveit AK, Vollset SE, Skjærven R, Irgens LM. Impact of multiple births and elective deliveries on the trends in low birth weight in Norway, 1967-95. *Am J Epidemiol* 1999;149:1128-33.
- Morrison JC. Preterm birth: a puzzle worth solving. *Obstet Gynecol* 1990;76:5S-12S.
- Creasy RK, Merkatz IR. Prevention of preterm birth: clinical opinion. *Obstet Gynecol* 1990;76:2S-4S.

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