



# Perinatal Services BC

An agency of the Provincial Health Services Authority

## **Cause of the recent temporal increases in stillbirth rates in British Columbia**

**A Perinatal Services BC Surveillance Abstract**

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### Abstract

**Background:** Stillbirth rates have increased in recent years in several industrialized countries including Australia, New Zealand and Canada and stagnated in other countries such as the United Kingdom and the United States. We carried out a study attempting to identify the underlying cause for the recent increase in stillbirth rates in British Columbia.

**Methods:** We studied all live births and stillbirths to residents of British Columbia between 2000 and 2010 using data from the British Columbia Perinatal Data Registry. Temporal trends in stillbirth rates were examined within categories of birth weight, gestational age and fetal growth, and after excluding stillbirths that followed prenatal diagnosis and pregnancy termination. Changes in the live birth prevalence of congenital anomalies were also assessed. Changes between periods (2000-02 vs 2008-10) were quantified using rate ratios and 95% confidence intervals (CI) and logistic regression was used to assess temporal trends in birth weight-specific spontaneous stillbirth rates after adjustment for maternal age, parity, pre-pregnancy weight and multiple births.

**Results:** Stillbirth rates increased from 7.70 per 1000 total births in 2000-02 to 10.3 per 1000 total births in 2008-10. Birth weight-specific analyses showed variable changes in stillbirth rates between 2000-02 and 2008-10: 9% increase (95% CI 1-17) among births <500 g; 29% increase (95% CI 7-54) among births 500-999 g; 23% decrease (95% CI 4-28) among births 1000-2499 g; and 25% decrease (95% CI 5-41) among births  $\geq$ 2500 g. Gestational age-specific stillbirth rates also showed increases at <22 weeks (11%, 95% CI 4-18) and 22-27 weeks (33%, 95% CI 19-49) but no significant changes among births between 28-36 weeks and  $\geq$ 37 weeks. Exclusion of stillbirths that followed prenatal diagnosis and pregnancy termination eliminated the temporal increase and resulted in a non-significant 7% decrease in spontaneous stillbirth rates between 2000-02 and 2008-10. Logistic regression analyses showed a significant temporal decline in spontaneous stillbirth rates among births  $\geq$ 1000 g and this decline was accentuated by adjustment for changes in maternal age, parity, pre-pregnancy weight and multiple births. The live birth prevalence of congenital anomalies decreased by 9% (95% CI 5-12), from 5.21% in 2000-02 to 4.77% in 2008-10.

**Interpretation:** Increases in prenatal diagnosis and pregnancy termination have been associated with temporal increases in stillbirth rates and declines in the birth prevalence of congenital anomalies in British Columbia.