Report Summary

Congenital Anomalies in Canada 2013: A Perinatal Health Surveillance Report by the Public Health Agency of Canada's Canadian Perinatal Surveillance System

B. Irvine, MA; W. Luo, MSc; J. A. León, MD

Congenital anomalies (birth defects or congenital malformations) are abnormalities that are present at birth, even if not diagnosed until months or years later. They may be present from conception, as is the case with a chromosome defect (e.g. Down syndrome) or gene mutation (e.g. achondroplasia), and they also include those structural defects that occur in the embryonic period up to the end of the seventh week of gestation (e.g. spina bifida) or in the early fetal period between 8 and 16 weeks gestation, (e.g. orofacial clefts).

Congenital anomalies are an important health issue because of their impact on the health and wellbeing of Canadian infants and children and their families and because of the health resources they require for management and treatment. Approximately 1 in 25 Canadian babies is diagnosed with 1 or more congenital anomalies every year. Between 1998 and 2009, the national congenital anomalies prevalence rate decreased from 451 to 385 per 10 000 total births, probably due to 3 factors: (1) increased prenatal diagnosis and subsequent pregnancy termination; (2) mandatory folic acid fortification of food; and (3) changes in health behaviours and practices such as a reduction in tobacco smoking in pregnancy. Despite the decrease in the overall prevalence rate, congenital anomalies are second only to immaturity as the leading cause of infant death.

Congenital Anomalies in Canada 2013: A Perinatal Health Surveillance Report is the second national surveillance report from the Public Health Agency of Canada dedicated to congenital anomalies.* It provides comprehensive data on congenital anomalies in Canada, focussing on 6 categories of congenital anomalies: Down syndrome, neural tube defects, congenital heart defects, orofacial clefts, limb deficiency defects and gastroschisis. The report presents national-level birth prevalence data and temporal trends, provincial and territorial estimates, and international comparisons. Known risk factors, prevalence-related impacts of prenatal diagnosis and preventative measures are also discussed.

The report points to maternal obesity as an important emerging risk factor for some congenital anomalies. It also notes that alcohol use and smoking during pregnancy remain key risks that require ongoing public health measures for prevention and prevalence reduction.

The report also highlights the difference between primary and secondary prevention of congenital anomalies. Primary prevention involves avoiding disease through deliberate strategies that mitigate the risks associated with low socio-economic status, obesity and poor nutrition, environmental contaminants, chronic diseases such as hypertension and diabetes, and the influence of older maternal age. Secondary prevention involves the early identification of congenital anomalies through prenatal testing, and subsequent treatment or pregnancy termination for the purpose of reducing or preventing morbidity.

Prevalence rates of 6 categories of congenital anomalies in Canada

Anomaly	Time frame[a]	Rate per 10 000 total births[b]
Down syndrome	1998–2007	14.1
Neural tube defects	2004–2007	4.0
Congenital heart defects	2009	85.1
Orofacial clefts	1998–2007	16.3
Limb deficiency defects[c]	2007	3.5
Gastroschisis	2002–2009	3.7

[a] Time frames vary depending on the data source used for ascertainment of information.

[b] Total births include live births and stillbirths.

[c] For limb deficiency defects, total births include pregnancy terminations over 20 weeks occurring in hospitals.

* The first report, published in 2002 by Health Canada was entitled *Congenital Anomalies in Canada – A Perinatal Health Report, 2002*.

Author reference:

Health Surveillance and Epidemiology Division, Centre for Chronic Disease Prevention, Public Health Agency of Canada, Ottawa, Ontario, Canada

Correspondence: Canadian Congenital Anomalies Surveillance System, Surveillance and Epidemiology Division, Centre for Chronic Disease Prevention, Public Health Agency of Canada, 785 Carling Avenue, Ottawa, ON K1A 0K9; Email: CCASN-RCSAC@phac-aspc.gc.ca

The surveillance information presented in the report is meant to describe trends and patterns of congenital anomalies in Canada and to enhance our knowledge of these conditions, thus contributing to the evidence base that public health and health care programs, policies and practices need for effective prevention and management.

To download an electronic version of the report, go to http://publications.gc.ca/collections/collection_2014/aspc-phac/HP35-40-2013-eng.pdf.