

# Congenital anomalies requiring surgery in New Zealand

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## BACKGROUND

The indicator “congenital anomalies typically requiring surgery” (CARS) has not previously been documented for New Zealand, yet these anomalies place considerable burden on families and the health sector, for example, from lengthy stays in hospital or high fiscal costs. If treated with cost-effective surgical procedures, children with these anomalies have an improved long-term prognosis.

This study described the prevalence of CARS among total births (livebirths and fetal deaths) in New Zealand for the years 2000–2011.

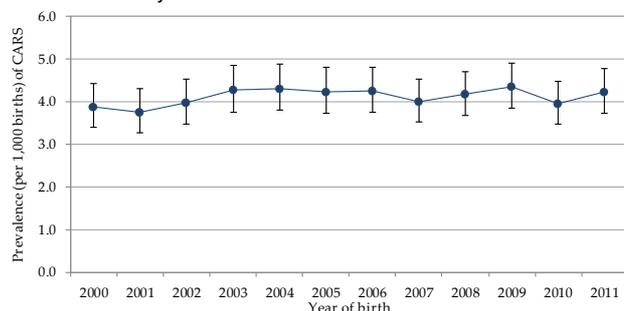
## METHODS

Six CARS anomalies have a high pregnancy survival rate and a high requirement for surgery before the age of one year, as defined by EUROCAT (European network for the surveillance of congenital anomalies).

Six congenital anomalies typically require surgery (CARS):

- craniosynostosis (ICD-10-AM Q75.0),
- gastroschisis (ICD-10-AM Q79.3),
- omphalocele (ICD-10-AM Q79.2),
- severe congenital heart disease (ICD-10-AM Q20.0, Q20.3–Q20.4, Q21.2–Q21.3, Q22.0, Q22.4–Q22.6, Q23.0, Q23.4, Q26.2),
- digestive system malformations (ICD-10-AM Q39.0–Q39.1, Q41.0–Q41.8, Q42.0–Q42.3, Q43.1, Q44.2, Q45.1, Q79.0), OF
- orofacial cleft (ICD-10-AM Q35–Q37).

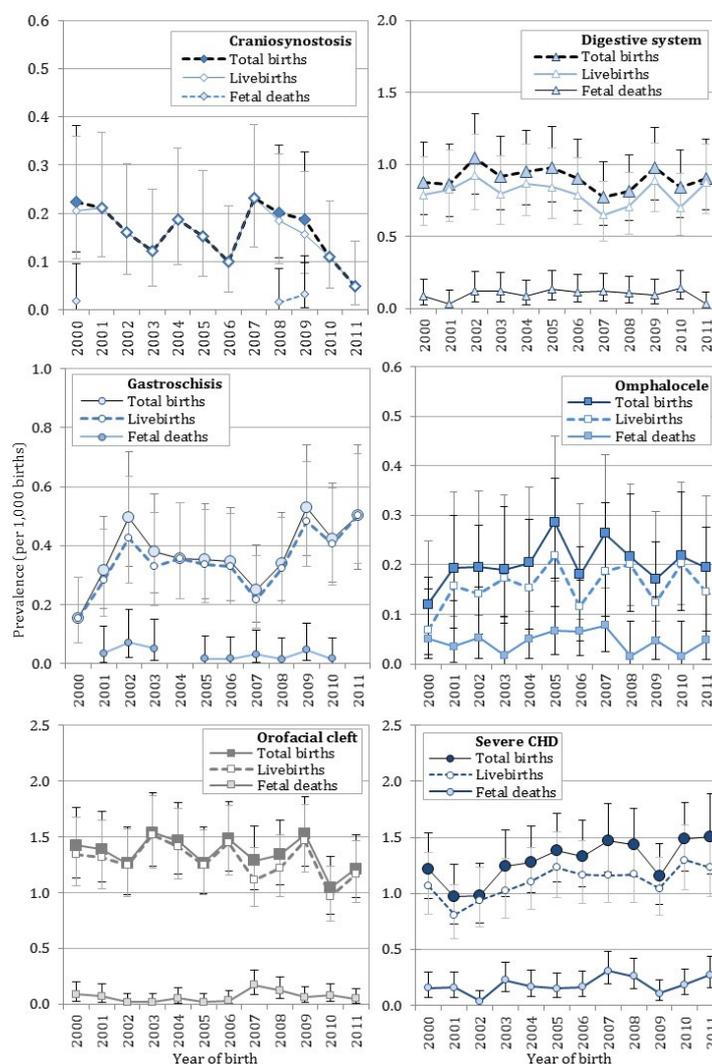
This definition was applied to identify CARS cases in hospital liveborn babies or fetal deaths in New Zealand, using ICD-10-AM diagnostic information held in the National Minimum Dataset and the National Mortality Collection.



Prevalence (total births per 1,000 births with 95% CI) of congenital anomalies typically requiring surgery (CARS) by year, 2000–2011

## RESULTS

- Birth prevalence of CARS was 4.11 per 1,000 births for 2000–2011 ( $n=2,993$ , 95% CI 3.97–4.26)
- Stable temporal trend for CARS ( $p=0.2$ ; 2000: 3.88 [ $n=226$ , 95% CI 3.39–4.42]; 2011: 4.23 [ $n=261$ , 95% CI 3.73–4.77])
- Most common CARS anomalies were:
  - orofacial clefts (32.8 percent),
  - severe congenital heart disease (31.4 percent), and
  - digestive malformations (22.0 percent)
- Of the six individual anomalies, only gastroschisis was significantly higher in 2011 than in 2000 ( $p=0.02$ )



Prevalence (with 95% CI) of individual congenital anomalies typically requiring surgery, by year, birth status, and congenital anomaly, 2000–2011

## CONCLUSION

The prevalence of CARS in New Zealand is comparable to rates observed for the English EUROCAT registers; however, the stable trend contrasts to the decreases seen for Europe.

The requirement for paediatric surgical services for congenital conditions is not presently monitored for New Zealand. This study highlights the continued need for these services; in particular, the increasing need for urgent post-delivery surgery for babies born with gastroschisis.

This study reports CARS as diagnosed at birth, and consequently may underestimate prevalence.

Extension of the indicator criteria from birth to diagnosis up to one year of age, and identification of terminations of pregnancy for fetal anomaly, warrant further investigation.