

Time Trends of Birth Defects in Texas

Staff at the Texas Birth Defects Registry (TBDR) observed a 29% increase in total birth defects from 1999 through 2007. This analysis explored that more fully to see if we could find potential explanations.

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We used a statistical technique called Poisson regression to fit trend lines to the data over time for total birth defects, and for every birth defect collected by the TBDR. We also grouped data on birth defects and on affected children various ways.

Main findings from this research

- ◇ From 1999 through 2007, the occurrence (birth prevalence) of total birth defects in Texas increased 3.6% per year on average. Increases were seen for:
 - ◇ All age groups except mothers over 40
 - ◇ All racial/ethnic groups
 - ◇ All education levels
 - ◇ A wide variety of birth defects
- ◇ There were no obvious changes over time in the demographic makeup of population that would explain this increase. Increases were greatest in:
 - ◇ Urban areas of Texas
 - ◇ Children with less severe birth defects
 - ◇ Defects that are more susceptible to diagnostic variation (for example, some birth defects are picked up more if doctors start routinely using different screening technology). One exception was gastroschisis, which is not very susceptible to diagnostic variation but showed an average increase of over 5% per year. Increases in this defect have been observed in other parts of the country and overseas.

Conclusion and discussion

This research suggests that the observed increase in total birth defects and in many specific birth defects may be due to increased awareness, detection, or other changes in health care delivery practices, resulting in the TBDR picking up cases of birth defects more completely over time.

Translating research to practice and policy

A statewide, active program for birth defects surveillance is an important tool for detecting whether or not there have been changes in rates. However, it is important to understand the many factors can influence time trends. These factors include changes in screening, diagnosis, and medical record documentation.