



THE ECONOMIC IMPACT OF BIRTH DEFECTS IN COLORADO

Birth defects are the leading cause of infant mortality in Colorado and in the United States and contribute substantially to childhood morbidity and disability. Major birth defects affect 3-4% of all infants in the first year of their life. Nationally, it has been estimated that children with birth defects account for up to 30% of all pediatric hospital admissions.

The economic impact of birth defects in Colorado is difficult to measure. An estimate of the costs of birth defects using data from the California Birth Defects Monitoring Program and a cost-of-illness economic model was developed by Waitzman et. al.⁽²⁾ This model was used to estimate the life time costs of specific birth defects of individuals born in California and was revised to reflect 1992 dollars by Harris and James⁽³⁾. Using these dollar estimates and data from Colorado Responds to Children with Special Needs (CRCSN), Colorado's birth defects monitoring and prevention program, the lifetime costs for eleven birth defects were estimated for Colorado for 1992.

Costs of Different Birth Defects

Different birth defects have different life time costs depending upon the rate of

survival, the need for medical treatment and any related disabilities. Some conditions can be surgically corrected in early life leaving the child with few related disabilities. Other birth defects require medical treatment throughout life and/or have more related disabilities which require long-term supports and services. The estimates of the costs of each birth defect takes these unique circumstances into consideration.

COST ESTIMATES

The estimates of costs are conservative. These costs include **direct costs** such as medical treatment, developmental services and educational services and **indirect costs** such as loss of income, reduced productivity and shortened life spans. They do not include many of the **social or personal costs** involved with birth defects. Specifically they do not include:

- ❖ the lost income of parents and family members who care for those with birth defects,
- ❖ the psychosocial costs of the individual or their families,
- ❖ the costs of transportation, special vehicles or modifications to houses or other personal costs.

ECONOMIC IMPACT

It is important to understand the scope and costs of birth defects so that we can better evaluate prevention strategies. For example, several studies have shown that women can reduce their risk of having a child with spina bifida by supplementing their diets with folic acid. A cost-to-benefit analysis showed that fortifying grain with folic acid is cost effective in preventing spina bifida. Even though fortifying grain may be costly, it is less costly than the expenses related to

spina bifida. If the strategy of using vitamin fortification with folic acid prevented only two cases of spina bifida in Colorado each year, the total overall savings would be more than the annual budget for Colorado Responds to Children with Special Needs.

REFERENCES

- (1) Waitzman, NF, Romano, PS and Scheffler, RM. Estimates of the economic costs of birth defects. *Inquiry* 31:188-205; 1994.
- (2) Harris, JA and James, L. State-by-state cost of birth defects - 1992. *Teratology* 56:11-12; July/August 1997.

LIFETIME COSTS BY CONDITION FOR COLORADO RESIDENTS BORN IN 1992

BIRTH DEFECT	COST/CASE	NO. CASES	TOTAL COSTS	RATE
Spina bifida	\$ 294,000	17	\$4,998,000	3.12
Truncus arteriosus	505,000	7	3,535,000	1.28
Transposition of the great vessels	267,000	16	4,272,000	2.93
Tetralogy of Fallot	262,000	25	6,550,000	4.58
Cleft lip or palate	101,000	111	11,211,000	20.36
Esophageal atresia/ tracheo-exophageal fistula	145,000	18	2,610,000	3.30
Colon, rectal, or anal atresia	123,000	29	3,567,000	5.32
Reduction defect - upper limbs	99,000	22	2,178,000	4.03
Reduction defect - lower limbs	199,000	11	2,189,000	2.02
Gastroschisis	109,000	32	3,488,000	5.87
Diaphragmatic hernia	250,000	21	5,250,000	3.85
Down syndrome	451,000	66	29,766,000	12.10

Cost/Case: Based on lifetime cost estimates for the 1988 California birth cohort for selected conditions adjusted to 1992 inflation costs ⁽²⁾.
 Number of Cases: Based on CRCSN data for Colorado's 1992 birth cohort.
 Total Costs: The estimated cost per case times the number of cases.
 Rate: Per 10,000 live births

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For more information on healthy pregnancies
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