THE Texas Birth Defects MONITOR

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From the Director

Legislation Paves the Way for Further Research

Tuesday, April 21, 1998, President Clinton signed the Birth Defects Prevention Act of 1998. This law mandates the collection of information on babies born with birth defects and on research to prevent such problems.

The bill was passed by the House in March and by the Senate last year. It allots a $70 million budget over the next two years to study and inform the public about birth defects and prevention. The Health and Human Services Secretary is required to coordinate medical and other data on birth defects. A national clearing house for information on birth defects will be established by the secretary within the Centers for Disease Control and Prevention (CDC). Currently, $26 million is provided for birth defects research through the CDC.

The bill originally was sponsored in the Senate by Sen. Christopher "Kit" Bond (R-Missouri) and in the House by Rep. Solomon Ortiz (D-Corpus Christi, Texas) and Rep. Henry Bonilla (R-San Antonio, Texas).

Many provisions of this law are already in effect in Texas. However, Texas could still benefit from increased funding for the research centers. While this might allow the Texas Birth Defects Research Center to conduct more biological sampling, this law is not intended to fund comprehensive surveillance systems such as the one in Texas.

Research Center Update

A Glimpse into Texas Women's Health

TBDMD has begun evaluation of data obtained through the Texas Women's Health Survey (TWHS), a telephone survey of nearly 1,300 Texas women in the fall of 1997. This survey, which focused primarily on folic acid and the prevention of neural tube defects (NTDs), was funded through a Centers for Disease Control and Prevention (CDC) five-year Cooperative Agreement

Interviewers asked respondents, "Have you ever

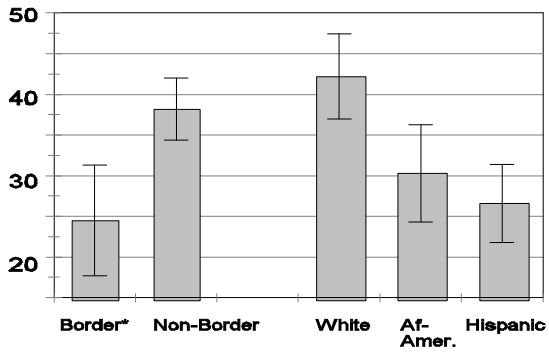


Figure 1: Daily Supplement Use Reported by Texas Women Ages 18-44
*14 counties along the Texas-Mexico border.

What's Inside

heard or read anything about folic acid?" Sixty-six percent of all Texas reported an awareness of folic acid, which is identical to the national estimate reported an a March of Dimes 1997 Gallup Poll.

Respondents also answered the question, "Do you currently take any vitamin or mineral supplements on a daily basis?" Forty-two percent of all women reported that they currently take some type of vitamin or mineral supplements on a daily basis. This percentage is similar to the national estimate (45%) reported by the March of Dimes 1997 Gallup Poll of women's behavior and knowledge. Texas women reported having an awareness of folic acid 1½ times more often than they reported taking vitamins or mineral supplements daily.

Preliminary analysis of the data generated by the survey reveals that:

1. African-Americans and Hispanics reported lower daily supplement use, compared with whites (See Figure 1).
2. Women living in the 14 counties bordering Mexico were less likely to be taking daily supplements than those in the rest of the state.
3. Daily supplement use was lowest in the Lower Rio Grande Valley, which includes Brownsville (the location of the 1991 neural tube defect cluster).
4. The highest daily supplement use was reported in the two most urban regions, Houston and Dallas/Ft. Worth.

Further analyses of the TWHS data will be forthcoming in the 1997 Epidemiology Report, produced by the Texas Department of Health, Bureau of Epidemiology. For more information about the TWHS, contact Dawna Wright or Mark Canfield at TBDMD, (512) 458-7232.

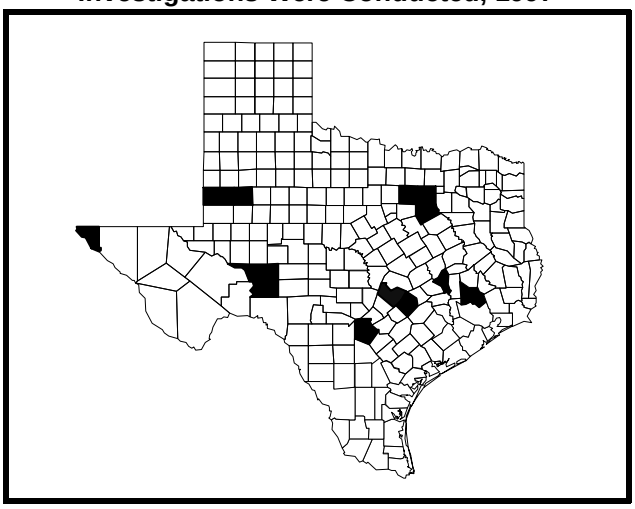
Cluster Investigations

1997 Cluster Report Available

In calendar year 1997, a total of twelve investigations of birth defects clusters were conducted by the Texas Department of Health. These were:

1. Bryan/College Station (Brazos County). Anencephaly
2. Conroe (Montgomery County). Anencephaly
3. Dallas (Dallas County). Neural tube defects
4. El Paso. Biliary atresia

Texas Counties in Which Birth Defect Investigations Were Conducted, 1997



5. El Paso. Multiple defects
6. Fabens (El Paso County). Heart defects
7. Gaines and Dawson Counties. Cleft lip/cleft palate
8. Grand Prairie (Dallas County). Multiple defects
9. Kelly Air Force Base (Bexar County). Multiple defects
10. Ozona (Crockett County). Cleft lip/cleft palate
11. Travis and Bastrop Counties. Anopthalmia
12. The Woodlands (Montgomery County). Anencephaly

Of five investigations initiated in previous years, two were concluded in 1997 (see items 11 and 12). Six of the seven investigations that began in 1997 were still open as of the end of the calendar year, and will continue into 1998 (see items 1, 2, 4, 5, 9, and 10).

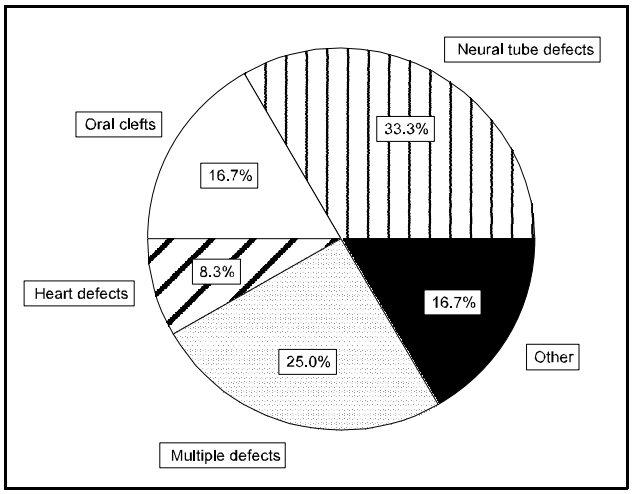


Figure 2: Types of Birth Defects Investigated, 1997

One-third of the investigations were related to neural tube defects (See Figure 2). These reports of neural tube defects included anencephaly (Items 1, 2, 3, and 12). One-fourth of 1997 investigations included multiple birth defects in a specific area (Items 5, 8, and 9).

Reports of suspected or perceived birth defect clusters come from health care professionals (33%), concerned family members (50%) and others in the community (17%).

To inquire about the cluster investigations, contact Peter Langlois, Ph.D., at (512) 458-7232, or by e-mail at peter.langlois@tdh.state.tx.us. Copies of this report are available upon request by calling (512) 458-7232 or by e-mail at amy.case@tdh.state.tx.us.

Prevention Notes

Folic Acid: Recommendations Strengthened

In April 1998, the National Academy of Sciences, Institute of Medicine (IOM) released new recommendations on folic acid intake To reduce the risk of giving birth to a child with neural tube defects (NTDs) the IOM recommends that women who could become pregnant consume 400 micrograms (mcg) of synthetic folic acid daily, from either fortified foods or supplements, besides consuming food folate from a varied diet.

What does this recommendation mean in simple, practical terms?

Food Folate: Women who could become pregnant should continue to eat a varied diet based on the Food Guide Pyramid to get some food folate. The IOM did not make a specific recommendation about how much food folate women of childbearing age need to consume daily. Good sources of food folate are found in fruits, vegetables, and beans and peas. Women should eat at least five servings of fruits and vegetables daily, besides consuming beans or peas several times a week.

Synthetic Folic Acid: In addition to consuming food folate from a varied diet, women of childbearing age should consume 400 mcg of *synthetic* folic acid per day from either of the two following sources:

! **Supplementation:** Most regular multivitamins contain 400 mcg of folic acid.

! **Highly fortified cereal:** The easiest way for a woman to get 400 mcg of folic acid from fortified foods is to consume a highly-fortified cereal such as Total™ or Product 19™ that contain 400 mcg of synthetic folic acid per serving.

Can a woman get enough synthetic folic acid by eating fortified foods exclusive of a highly fortified cereal?

As of January 1, 1998, food manufacturers were required to add synthetic folic acid to most enriched breads, flours, corn meals, pastas, rice, and other grain products. The synthetic folic acid in a serving varies depending on the product. For example, many ready-to-eat cereals contain 100 mcg per serving. However, the average amount of folic acid in a slice of bread is 40 mcg. In order for the average woman to get enough synthetic folic acid from fortified foods (exclusive of fortified cereals), she would have to eat as many as 10 servings of bread or four servings of cereal every day.

Can a woman get too much folic acid?

Intake of synthetic folic acid of 500 mcg or more per day has been reported to worsen neuropathy in individuals who were deficient in vitamin B_{12}. The IOM report set an upper limit (UL) of 1,000 mcg of folic acid per day. Overall, the prevalence of vitamin B_{12} deficiency among females in the childbearing years is very low, and the consumption of folic acid above the UL is unlikely to cause harmful effects.

A woman can either take a multivitamin or eat a serving of a highly fortified cereal to obtain 400 mcg of folic acid. It probably will not matter if on some days she consumes both a vitamin and a serving of a highly fortified cereal along with other fortified foods. Nevertheless, to be safe, a woman should not regularly be consuming more than 1,000 mcg of synthetic folic acid per day.

What is the difference between food folate and synthetic folic acid? Synthetic folic acid is nearly 100% absorbed, whereas food folate is only about 50% absorbed. In other words, a woman needs to consume about 800 mcg of food folate to get the same biological benefits as consuming 400 mcg of synthetic folic acid from a supplement or a food fortified with folic acid.

Contributed by Sherry Clark, MPH, RD, LD, Division of Public Health Nutrition & Education, Texas Department of Health.

Rubella Outbreak Raises Concerns about Potential Birth Defects

State health officials are concerned that rubella could become more widespread in Texas. Some 60 cases have been confirmed in the state this year compared with 12 cases in all of 1997 and eight cases in 1996. All but three of the confirmed cases have occurred among persons of Hispanic ethnicity.

Most rubella illness is mild, but it can cause birth defects, miscarriages and stillbirths if contracted by pregnant women, especially in the first trimester of pregnancy. About 85% of babies born to mothers who contract rubella during the first trimester will have birth defects including deafness, eye defects such as cataracts, cardiac malformations and neurologic abnormalities. Adverse outcomes drop significantly if the mother is infected after the first trimester.

In 1964 and 1965, the United States experienced an epidemic of Congenital Rubella Syndrome (CRS). More than 12 million cases of rubella were reported during that period, and 20,000 babies were born with CRS, including 11,600 deaf infants. (Source: March of Dimes).

More than 7,000 cases of rubella have been recorded in Mexico this year, including 2,400 cases in Coahuila, Chihuahua, Nuevo Leon and Tamaulipas, Mexican states that border Texas. Mexico City has recorded 1,164 cases. The first 19 of Texas' 35 cases were in a federal Immigration and Naturalization Service detention center in South Texas.

Dr. Diane Simpson, TDH Associate Commissioner for Disease Control and Prevention, said, "We're not saying people should automatically cancel travel plans to or from Mexico," she said. "But we do want people, especially pregnant women, to know about the increased risk." She said travelers who could expose pregnant women to the illness also should be aware of the dangers.

Texas Department of Health (TDH) officials say pregnant women who have travel plans to some parts of Mexico might want to postpone those plans if they have not had rubella or been vaccinated against it.

Beginning in 1971, children in kindergarten through fifth grade in Texas were required to be vaccinated for rubella. Since September 1991, a rubella vaccination has been required for school admission in all grades.

Rubella, sometimes called German measles or three-day measles, is a viral illness typically spread from person to person by droplets from the nose or throat of an infected person. Transmission usually requires close contact. Health officials say half the people who get rubella have no symptoms. Persons who have been vaccinated against rubella are considered immune to the illness 30 days after receiving the vaccine.

For more information, contact Jan Pelosi, TDH Immunization Division, at (512) 458-7284.

FAS Corner

Speakers Bureau Expands to San Antonio

The Texas Office for Prevention of Developmental Disabilities (TOPDD) and the Texas Birth Defects Monitoring Division (TBDMD) have collaborated to deliver a course about Fetal Alcohol Syndrome (FAS) and Fetal Alcohol Effects (FAE) in San Antonio. The curriculum trains qualified individuals to make presentations on alcohol related birth defects and their prevention.

On April 2nd and 3rd in San Antonio, ten people received this training. The trainees then formed a San Antonio Fetal Alcohol Syndrome (FAS) Speakers Bureau and will be seeking opportunities to make educational presentations for interested groups.

Another seminar related to FAS entitled "Women, Children and Addiction" was offered in Corpus Christi on May 19th and 20th.

For more information, contact Mary Ethen, Texas Birth Defects Monitoring Division, (512) 458-7232 or by email at mary.ethen@tdh.state.tx.us.

Reading List

The Latest in Birth Defects Research

Kidney Disease Gene: Scientists have located a gene on chromosome 19 that is responsible for congenital nephrotic syndrome, a degenerative kidney disease that can only be treated with a kidney transplant. [Molecular Cell 1998;1:575-582]

Growth Hormone and Turner Syndrome: A survey of physicians and medical insurers found that while many physicians would recommend growth hormone therapy for children with short stature, such as those with Turner Syndrome, a much smaller percentage of insurers would cover such treatment for such children. [JAMA 1998;279(9):663-668.]

Hazardous Waste Sites and Birth Defects: Researchers in New York State found that women who lived close to sites that released solvents or metals into the air were at increased risk of having an infant with a central nervous system defect, but not musculoskeletal defects. [Arch Environ Health 1997;52(6):416-425]

Folic Acid Use: A 1997 March of Dimes poll found that 64% of women of childbearing age took some form of a vitamin supplement (44% folic acid-containing supplement). Thirty-two percent of the women reported taking a folic acid-containing supplement daily. [MMWR 1998; 47(7):131-134]

Folic Acid and Heart Defects: A study determined that maternal intake of folic acid supplements did not decrease the risk of having an infant with transposition of the great arteries. [Epidemiology 1998;9(1):95-98]

Antidepressants and Birth Defects: A recent article found that three widely used new antidepressants --fluvoxamine (Luvox), paroxetine (Paxil), and sertraline (Zoloft)--do not increase a woman's risk of having an infant with a birth defect when used in their recommended doses. [JAMA 1998;279(8):609-610] Prozac was not included in the study, although it was "vindicated" in one other recent study. [Obstet Gynecol 1997;89(5):713-18]

Tap Water and Spontaneous Abortion: Recent studies found that women in their first trimester who drank five or more glasses a day of tap water containing high levels of common contaminants were more likely to have a miscarriage than women who drank bottled water. [Epidemiology 1998;9(2):126-133 and 134-140]

Genes and Mental Retardation: Researchers at Beth Israel Deaconess Medical Center in Boston have identified a gene (doublecortin) on the X chromosome that guides the migration of fetal nerve cells in the brain. Mutations in this gene may result in such conditions as epilepsy, mental retardation, cerebral palsy, double cortex, and lissencephaly. [Cell 1998;92(1):63-72]

Dextromethorphan and Birth Defects: A recent study found that N-Methy-D-aspartate antagonists, which includes dextromethorphan (a widely used nonprescription antitussive), were found to induce fetal death, congenital defects of the neural crest and neural tube in chicken embryos. [Pediatr Res 1998;43(1):1-7]

Goldenhar Syndrome and Gulf War Veterans: Researchers at the Naval Health Research Center found that the prevalence of Goldenhar Syndrome -- which causes malformations of the eye, jaw, and spine--was higher among Gulf War veterans than for non-Gulf War veterans. However, due to the small sample size, the higher risk observed among Gulf War veterans was not statistically significant. [Teratology 1997;56:244-251]

Birth Defects and Morbidity and Hospital Costs: A recent analysis of hospital discharges in California and South Carolina found that children hospitalized with birth defects and other genetic diseases were younger, stayed in the hospital longer, incurred higher costs, and were more likely to die while in the hospital than children hospitalized for other reasons. [Arch Pediatr Adolesc Med 1997;151(11):1096-1103]

Birth Defects and Intracytoplasmic Sperm Injection: A recent study found that Belgian infants born as a result of intracytoplasmic sperm injection were twice as likely to have a major birth defect and 50% more likely to have a minor defect. [BMJ 1997;315(7118):1260-1265]

Cancer Survivors and Birth Defects: Researchers with the Children's National Medical Center in Washington report that adult survivors of childhood cancer were not at increased risk of having children with birth defects. [Am J Hum Genet 1998;62(1):45-52]

Regional Reports

Region 8

„ TBDMD based in San Antonio formed a partnership with the Neural Tube Defect (NTD) Project. This program of the Texas Department of Health identifies NTD cases in Texas counties bordering Mexico. Often these infants are transferred to tertiary facilities in San Antonio. TBDMD staff does necessary follow-up on these cases. In turn, NTD staff helps with abstracting birth defects cases in border county medical facilities.

„ Two staff members from the Region 8 Office have been trained to deliver presentations about

Fetal Alcohol Syndrome and Fetal Alcohol Effects. (See story under *FAS Corner*).

Region 7/4

See Page 7 for Regional Map and contacts.

„ TBDMD, Region 7/4 has begun work in local medical facilities. Since becoming fully staffed in February 1998, the Region 7/4 team has completed introductory presentations and has begun case ascertainment in 21 of 50 regional medical facilities. All medical facilities contacted have been supportive and are committed to being part of such an important initiative. They will be making birth defect prevention information a part of their health fairs and newsletters.

Region 6/5 South

„ In February 1998, the Texas Public Health Association (TPHA) held its annual meeting in Galveston. A presentation describing TBDMD surveillance methods was offered and a poster presentation of 1995 delivery data won second place in the poster presentation awards.

Announcements

FAS Fact Sheets Debut at Governor's Conference

In response to a request from Susan Carlson, wife of Minnesota's governor, the Minnesota Department of Health has gathered information for each state's Fetal Alcohol Syndrome (FAS) activities, expenditures on FAS activities, and contacts within each state.

The fact sheets also address public awareness and community-based prevention activities. To obtain a copy of these fact sheets, contact Onalee Erickson at MDH, P.O. Box 64975, St. Paul, MN 55164-0975, (612) 282-6318, or by e-mail at onalee.erickson@health.state.mn.us. A copy of the Texas information can be obtained from Mary Ethen, Texas Birth Defects Monitoring Division, (512) 458-7232 or by e-mail at mary.ethen@tdh.state.tx.us.

1998 ECI Directory Available

Information about the Texas Early Childhood Intervention system, including eligibility and a description of available service, is included in the 1998 ECI Directory. The Directory is available from the Texas Interagency Council on Early Childhood Intervention, 4900 N. Lamar, Austin, TX 78751-2399. The ECI Care Line is (800) 250-2246.

NBDPN Newsletter Available

The National Birth Defects Prevention Network June 1998 newsletter is now available. To obtain a copy, contact Mr. Bob Meyer at 919-715-4476, or by e-mail at robert_meyer@mail.ehnr.state.nc.us.

TEXGENE Resource Guide

The Texas Genetics Network (TEXGENE) has produced *A Resource List for Individuals and Families Affected by a Genetic Condition or Birth Defect*. This list gives program descriptions and contact information for more than 30 nonprofit, state, and national programs that can provide information, support, or assistance. To obtain a free copy, call (512) 458-7700.

Calendar

Epidemiology of Vaccine Preventable Diseases (EPIVAC)

Live, satellite teleconference 11:00 a.m.-2:30 p.m. Offered *July 27-31* Temple and Tyler, Texas and *Oct. 12-16* Laredo and South Texas.

For further information, contact Candy Cates at 512-458-7284.

.Perspectives in Public Health: TDH Quarterly CME Conference

Texas Department of Health, 1100 W. 49th Street, Austin, Texas. *September 11 and December 11*, $40 registration. Information: (800) 252-8239, press 4, or (512) 458-7677. Sponsored by the Texas Department of Health.

To Test or Not to Test: Issues in Genetic Screening

The Texas Genetics Network (TEXGENE)1998 Annual Conference. *August 26 - 28, 1998*, San

Antonio, Texas (St. Anthony/Crowne Plaza). For a brochure, contact TEXGENE at (512) 458-7700.

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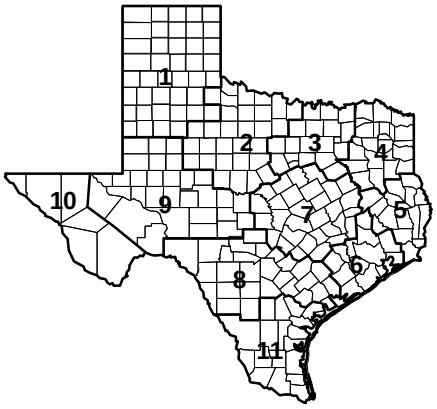

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