



Texas Preventable Disease

NEWS

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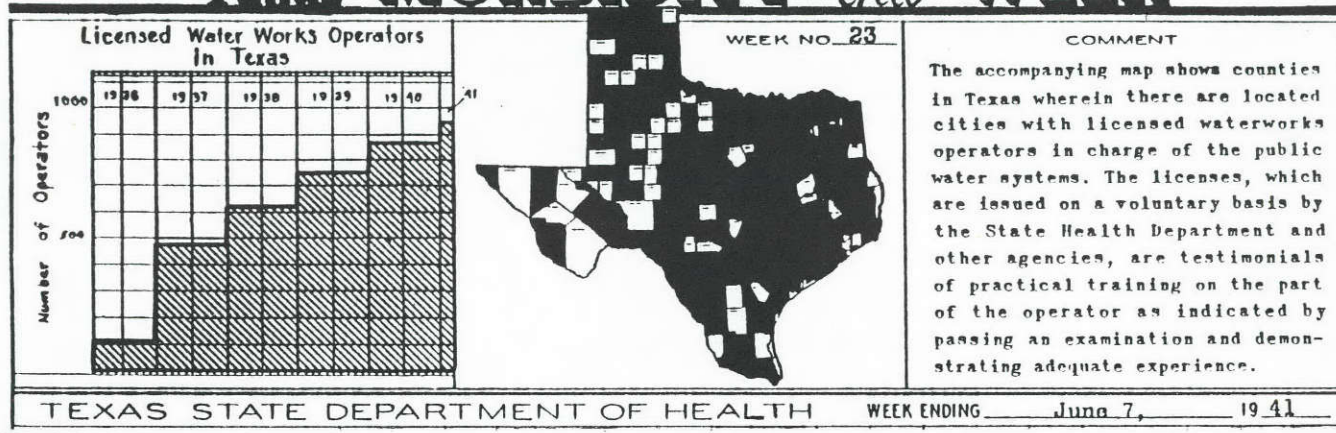
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TEXAS MORBIDITY *this* WEEK



FACTORS IN FAILURE TO IMMUNIZE

An immunization survey of 550 public kindergarten students was conducted in Public Health Region 7 during the 1988-89 school year. The purpose of this survey was to determine immunization status at 2 years of age. Data were also collected for several factors which have historically impacted age-appropriate immunization status and immunization timing.

Students were selected for immunization status reviews from 44 (25%) of the districts in Public Health Region 7. The number of students sampled from each school district was based on the district's percentage of the total enrollment for the 44 districts. Within each school, kindergarten students were systematically sampled from rosters.

Information on each child was collected from school files of provider immunization records, birth certificates, and food service records. For students without immunization records, histories were verified with providers. If this could not be done, the student was excluded from the survey. A complete immunization series was considered to be three doses each of DTP and polio vaccines and one dose each of measles, mumps, and rubella vaccine by 2 years of age. Table 1 depicts the mean age at which children received each vaccine and the percentage of the total receiving a

particular dose before kindergarten. **Only 69% had age-appropriate immunizations by age 2.**

The impact of race/ethnicity, income level, sibling status at birth, source of immunization, and family mobility (child born in Texas) on immunization levels were examined. Table 2 deals solely with the first three doses of DTP. Anglos, children from non-indigent families, oldest siblings, and children who obtained their immunizations from private sources were immunized at younger ages ($p < .0001$, chi-square). Whether or not a child was born in Texas did not significantly impact immunization status at 2 years of age.

The effect of sibling status was dependent on the race/ethnicity of the child. Anglo children with older siblings were only slightly less likely than first-born Anglo children to have their immunizations complete by 2 years of age. Among blacks and Hispanics, first-born children were much more likely than younger siblings to have been completely immunized by 2 years of age.

Late starts put children at increased risk for non-completion by age 2. Eighty-five percent of the 336 children beginning immunizations at or before 3 months of age had complete

immunizations by 2 years of age, while only 43% of 192 children beginning after 3 months were complete ($p < .0001$, chi-square).

Race/ethnicity was correlated with income level and provider source. For instance, Anglo children were likely to be "non-indigent" and to have obtained their immunizations from "private immunization source(s)." After controlling for income level, Anglo children were still more likely than black or Hispanic children to have their immunizations complete.

Immunization levels varied by school district. Only 59% of the children enrolled in the largest district (20.8% of the total sample) had completed immunizations by 2 years of age, while the rest of the districts had a 72% completion rate ($p < .01$, chi-square). This is largely explained by the higher (55% vs 24%) percentage of minority students in this district. Income level and sibling status at birth were not significant risk factors for children in the largest school district, showing that in this district the most important

determinant of immunization completion was the race/ethnicity of the child.

Inappropriately immunized preschool children form a large pool of susceptibles for highly communicable diseases such as measles and pertussis. These diseases can be particularly severe in this young age group. These children can also be an important link in the chain of infection during an outbreak.

This survey identified minority children with older siblings as a high-risk group. Only 44% of this group was appropriately immunized at age 2. These children made up only 18.9% of the sample, **but accounted for 34.6% of the children with incomplete immunizations at 2 years of age.** If their levels of completion were only as high as first-born minority children (70%), the completion level for the whole district could be raised 5%, from 69% to 74%.

Prepared by: Harold Higgins, Immunization Program, Public Health Region 7, Texas Department of Health, Tyler.

Table 1.
Mean age (months) at immunization and percentage of children receiving a particular dose, 1988-1989 Kindergarten Immunization Survey --PHR 7, Texas

Risk group	DTP #1	DTP #2	DTP #3
Race/ethnicity			
Anglo	4.6	8.3	14.0
Hispanic	11.1	16.9	19.0
Black	10.0	18.1	28.5
Income level			
Non-indigent	4.6	8.3	13.8
Indigent	9.1	16.2	24.4
Sibling status			
First born	4.5	9.2	14.5
With older sibling	7.7	12.8	20.2
Immunization source			
Private	3.7	7.7	13.8
Both	3.8	8.6	16.4
Public	11.0	17.3	23.7

Table 2.
Mean age (months) at immunization, 1988-1989 Kindergarten Immunization Survey -- PHR 7, Texas

Vaccines	Dose #1 Age (%)	Dose #2 Age (%)	Dose #3 Age (%)	Dose #4 Age (%)	Dose #5 Age (%)
DTP	6.3 (99.8)	11.2 (99.4)	17.7 (98.3)	34.2 (88.1)	57.6 (63.7)
Polio	6.4 (99.8)	11.6 (99.4)	19.5 (97.7)	36.0 (84.9)	57.3 (57.3)
Measles	24.7 (99.8)				
Mumps	24.9 (99.8)				
Rubella	24.9 (99.8)				

MISCONCEPTIONS CONCERNING CONTRAINDICATIONS TO IMMUNIZATION

The Immunization Division frequently receives inquiries regarding perceived contraindications to immunization. Some health care providers inappropriately consider certain conditions or circumstances contraindications to immunization. These "missed vaccination opportunities" leave children unnecessarily susceptible to preventable diseases. The following conditions are those most often **inappropriately** regarded as contraindications to immunization.

1. Reaction to a previous dose of DTP vaccine that involved only soreness, redness, or swelling in the immediate vicinity of the immunization site (local reaction) or temperature <math><105^{\circ}\text{F}</math> (40.5°C).
2. Mild acute illness with low-grade fever or mild diarrheal illness in an otherwise well child.
3. Current antimicrobial therapy or the convalescent phase of illness.
4. Prematurity. The appropriate age for initiating immunizations in the prematurely born infant is the usual chronologic age. Vaccine doses should not be reduced for preterm infants.
5. Present weight <math><10</math> pounds.
6. Pregnancy of mother or other household contact.
7. Recent exposure to an infectious disease.
8. Chickenpox. Vaccine should not be deferred in an individual who has recently recovered from chickenpox. There is no evidence that this viral illness will interfere with the body's response to vaccine.
9. Breastfeeding. The only vaccine virus that has been isolated from breast milk is rubella vaccine virus. There is no good evidence that breast milk from women immunized against rubella is harmful to infants.
10. A history of nonspecific allergies or relatives with allergies.
11. Allergies to penicillin or any other antibiotic, except anaphylactic reactions to neomycin (eg, MMR-containing vaccines) or streptomycin (eg, OPV). None of the vaccines licensed in the US contain penicillin.
12. Allergies to duck meat or duck feathers. No vaccine available in the US is produced in substrates containing duck antigens.
13. An allergy to eggs, unless the allergy is so severe that the person experiences anaphylaxis after eating eggs.
14. Family history of convulsions in persons considered for pertussis or measles immunization.
15. Family history of sudden infant death syndrome (SIDS) in children considered for DTP immunization.
16. Family history of an adverse event, unrelated to immunosuppression, following immunization.
17. Recent receipt of a tetanus toxoid is not necessarily a reason to defer a tetanus-diphtheria (Td) immunization if it has been ≥ 10 years since the last diphtheria booster. Too frequent administration of tetanus toxoid can cause a serum sickness-like reaction in some individuals, and this can be explained to the recipient.

Prepared by: Cindy Banister, RN, Assistant Director of the Immunization Division, Texas Department of Health.

VACCINE-PREVENTABLE DISEASE UPDATE
PROVISIONAL DATA
Weeks 18-21*

CONFIRMED AND SUSPECTED MEASLES				CONFIRMED AND SUSPECTED MEASLES			
County	Latest Rash Onset	# Cases	Affected Population	County	Latest Rash Onset	# Cases	Affected Population
Anderson	05/07/90	1	School-age	Harrison	05/05/90	9	Pre-school, School-age
Bastrop	05/15/90	14	All age groups	Hill	05/01/90	14	All age groups
Bell	05/12/90	40	All age groups	Johnson	05/18/90	14	All age groups
Bosque	05/06/90	7	Pre-school, School-age	Karnes	05/21/90	17	All age groups
Brown	05/18/90	14	Adult	Kendall	05/01/90	1	Pre-school
Burnet	05/16/90	6	All age groups	Kerr	05/08/90	1	Adult
Collin	05/15/90	61	All age groups	Lamar	05/21/90	1	Pre-school
Cooke	05/16/90	18	All age groups	McLennan	05/15/90	14	All age groups
Coryell	04/30/90	22	All age groups	Milam	05/08/90	1	Pre-school
Dallas	05/21/90	2,251	All age groups	Navarro	05/13/90	10	All age groups
Denton	05/14/90	188	All age groups	Tarrant	05/21/90	215	All age groups
Dimmitt	05/05/90	1	School-age	Tom Green	05/08/90	6	Pre-school, Adult
El Paso	05/07/90	230	All age groups	Travis (Data not available)			
Foard	05/11/90	1	Pre-school	Van Zandt	05/06/90	5	Pre-school, Adult
Freestone	05/10/90	2	School-age	Wichita	05/16/90	8	All age groups
Gillespie	05/21/90	3	Adult	Young	05/17/90	6	Adult, College
Gregg	05/18/90	6	All age groups				
Harris (Data not available)				Texas	YTD	4,207	

*Cumulative data for counties with ongoing outbreaks (ie, latest rash onset within last 31 days).

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