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Texas Preventable Disease

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COLLECTION

contents:

Excavation Cave-in Fatalities -- Texas, 1976-1985
Monthly Statistical Summary
Viral Isolates for July 1986
Amendments to the Rules and Regulations for the
Control of Communicable Diseases

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EXCAVATION CAVE-IN FATALITIES -- TEXAS, 1976-1985*

A review of death certificates in Texas for 1976-1985 identified 93 fatalities resulting from 81 excavation cave-ins among male workers in that state (Figure 1). Thirty-five fatalities occurred in 30 incidents during the first five years (1976-1980), and 58 fatalities occurred in 51 incidents during the last five years (1981-1985). This is a 66% increase in the number of such deaths during the second five years.

The average age at death for all 93 workers was 33.1 years. Forty-eight (52%) of the workers killed were Hispanic (32 of whom were not US citizens); 30 (32%) were white non-Hispanic; and 15 (16%) were black. The cave-in incidents occurred in 40 of the 254 Texas counties, with 21 worker fatalities occurring in the Dallas-Fort Worth metropolitan statistical area (MSA) and 21 in the Houston MSA. Together, these two locations accounted for 45% of the fatalities.

Based on information recorded on the death certificates regarding occupation and industry, 74 (80%) fatalities took place during construction activities; eight (9%), in utility-related jobs; five (5%), among persons described only as "laborers"; and six (6%), among persons with other, unrelated occupations (eg, "student").

Editorial Note: In a recent report from the National Institute for Occupational Safety and Health (NIOSH) of four fatalities caused by excavation cave-ins, investigators concluded that adherence to safe work practices and especially to the shoring (bracing)/sloping of excavation walls would have reduced the inherent risk in each case.¹ Although no review of the work practices that preceded the cave-in fatalities in Texas was possible, the data available from death certificates are useful for directing prevention-oriented activities, because they document a temporal increase and indicate the location and activities involved in such fatalities in the state.

These cave-in fatalities were identified through the manual review of death certificates in Texas for males 16 years of age and older within selected cause-of-death codes.** This method probably underreports the total number of cases because cave-in fatalities can be misclassified and inadequately described on death certificates. The 66% increase in fatalities observed for 1981 through 1985 may be the result of more accurate recording of cause-of-death information during those years or may represent a real increase in the number of fatalities because of decreased attention to safety (shoring/sloping). It could also be explained by an expansion in construction activities or in the population at risk in the state.

* Also published in: CDC. MMWR 1986; 35:313-4.

** Eighth Revision, International Classification of Diseases, E913.9, and The International Classification of Diseases, 9th Revision, E913.3

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The risk of excavation cave-ins can be reduced through greater employer recognition of and adherence to Occupational Safety and Health Administration (OSHA) standards[†] and NIOSH recommendations² for shoring/sloping the walls of excavation sites.

The current OSHA standards specify that:

1. The walls and faces of all excavations in which employees are exposed to danger from moving ground shall be guarded by a shoring system, sloping of the ground, or some other equivalent means.
2. Sides of trenches in unstable or soft material five feet or more in depth shall be shored, sheeted, braced, sloped, or otherwise supported by means of sufficient strength to protect employees working within them.
3. Excavations (including trenches) adjacent to backfilled areas or subjected to vibrations from railroads, highway traffic, or operation of machinery shall have additional shoring and bracing precautions taken.

NIOSH and the National Bureau of Standards (NBS) recommend that:

1. Shoring systems or sloping of the walls be used in all excavations 5 to 24 feet deep in any type of soil, except solid, stable rock.
2. Appropriate shoring, shielding, or sloping requirements for all excavations deeper than 24 feet (except those in unfractured rock) be determined by an engineer qualified to make these determinations.
3. All employers engaged in excavation activities familiarize themselves with the provisions of the NBS/NIOSH document, *Development of Draft Construction Safety Standards for Excavations*², and implement them as safe work practices in conjunction with compliance to the existing OSHA standards.

Other states are encouraged to undertake studies such as this for the surveillance of occupational fatalities, not only from excavation cave-ins but from other causes as well. The Texas investigators used death certificates; additional records (eg, workers' compensation claim files) may also be useful.

[†] 29 CFR 1926.651 and 1926.652.

This report was prepared by Patricia Honchar, PhD, NIOSH-CDC assignee, Bureau of Epidemiology, TDH, and Lucina Suarez, MS, Bureau of Epidemiology, TDH.

REFERENCES:

1. CDC. Workers fatalities due to excavation cave-ins. MMWR 1986;35:49-50.
2. National Institute for Occupational Safety and Health/National Bureau of Standards. Development of draft construction safety standards for excavations. Vols. I and II. Cincinnati, Ohio: National Institute for Occupational Safety and Health, 1983; NBSIR 83-2693 (DHHS [NIOSH] publication no. 83-103).

MONTHLY SUMMARY OF REPORTABLE DISEASES IN TEXAS
 Dates of Onset: June 29 to July 26, 1986

| REPORTABLE DISEASE | PHR 1 | PHR 2 | PHR 3/12 | PHR 4 | PHR 5 | PHR 6 | PHR 7/10 | PHR 8 | PHR 9 | PHR 11 | WEEKS 27 - 30 1985 | 1986 | CUMULATIVE 1985 | 1986 |
|-----------------------------|-------|-------|----------|-------|-------|-------|----------|-------|-------|--------|-----------------------|-------|--------------------|--------|
| AIDS | | | | | | | | | | | 48 | 0 | 275 | 82 |
| Amebiasis | | | 4 | | 1 | 8 | | 2 | 1 | 3 | 33 | 19 | 162 | 219 |
| Botulism | | | | | 1 | | | | | | 0 | 1 | 4 | 2 |
| Bruceellosis | | | | | | | | | | | 4 | 0 | 32 | 8 |
| Campylobacteriosis | | 5 | 9 | 2 | 4 | 2 | 4 | 1 | 10 | 13 | 87 | 50 | 395 | 396 |
| Coccidioidomycosis | | | | | | | | | | | 0 | 0 | 13 | 26 |
| Encephalitis | | 1 | | | 4 | | 2 | 2 | 1 | | 18 | 10 | 87 | 59 |
| Hansen's Disease | | | | | | | | | | | 0 | 0 | 18 | 14 |
| Hepatitis A | 2 | 4 | 6 | 7 | 44 | 19 | 1 | 7 | 2 | 10 | 216 | 102 | 1,490 | 1,121 |
| Hepatitis B | 1 | 3 | 12 | 5 | 25 | 7 | 2 | 4 | 3 | 6 | 111 | 68 | 807 | 810 |
| Hepatitis, NA-NB | | | 1 | | | | | 1 | 1 | 2 | 20 | 5 | 111 | 107 |
| Hepatitis, U | 1 | 4 | 1 | 2 | 18 | 2 | 5 | 8 | 10 | 1 | 99 | 52 | 797 | 531 |
| Histoplasmosis | | | | | | | | | | | 2 | 0 | 29 | 15 |
| Legionellosis | | | | | | | | | | | 5 | 0 | 18 | 15 |
| Leptospirosis | | | | | | | | | | | 1 | 0 | 2 | 1 |
| Malaria | | | | | 1 | | | | 1 | 1 | 12 | 3 | 59 | 42 |
| Measles | | | | | 1 | | | | 1 | | 24 | 2 | 429 | 298 |
| Meningococcal Infections | 1 | | | 1 | 2 | 1 | | | 1 | 1 | 5 | 7 | 76 | 83 |
| Meningitis, Aseptic | | 1 | | 1 | 16 | 5 | 11 | 1 | 6 | 8 | 142 | 49 | 623 | 428 |
| Meningitis, H. influenzae | | | 2 | | 7 | 2 | 3 | 1 | 1 | 2 | 37 | 18 | 300 | 262 |
| Meningitis, Other Bacterial | | 1 | | | 7 | 1 | 3 | 1 | 2 | 9 | 27 | 24 | 261 | 364 |
| Mumps | | | 2 | | 4 | | | | | | 13 | 6 | 215 | 138 |
| Pertussis | | | | | 1 | | | | | | 75 | 1 | 191 | 29 |
| Plaque | | | | | | | | | | | 0 | 0 | 0 | 0 |
| Psittacosis | | | | | | | | | | | 1 | 0 | 1 | 2 |
| Rabies | | | | | | | | | | | 0 | 0 | 1 | 0 |
| Relapsing Fever | | | | | | | | | | | 0 | 0 | 0 | 1 |
| Reye Syndrome | | | | | | | | | | | 2 | 0 | 11 | 5 |
| RMSF | | | | | | | | | | | 3 | 0 | 18 | 10 |
| Rubella | | | | | | | | | | | 3 | 0 | 34 | 55 |
| Salmonellosis | 5 | 9 | 12 | 3 | 46 | 19 | 13 | 38 | 9 | 17 | 248 | 171 | 1,077 | 976 |
| Shigellosis | 3 | 1 | 27 | 4 | 57 | 18 | 7 | 37 | 16 | 48 | 190 | 218 | 800 | 781 |
| Tetanus | | | | | | | | | 1 | | 1 | 1 | 6 | 6 |
| Toxic Shock Syndrome | | | 1 | | 1 | | | | | | 1 | 2 | 13 | 12 |
| Trichinosis | | | | | | | | | | | 0 | 0 | 2 | 2 |
| Tularemia | | | | | | | | | | | 0 | 0 | 5 | 3 |
| Typhoid | | | | | | | | | | | 3 | 0 | 19 | 11 |
| Typhus, Endemic | | | | | | | | | | | 1 | 0 | 20 | 20 |
| Chickenpox | 1 | 13 | 21 | 16 | 24 | 42 | 19 | 83 | 47 | 72 | 234 | 338 | 17,756 | 20,802 |
| Influenza | 158 | | 58 | 148 | 90 | 88 | 52 | 359 | 60 | 97 | 1,444 | 1,110 | 73,595 | 63,166 |
| Strep Infections | 12 | 99 | 132 | 120 | 281 | 255 | 83 | 341 | 374 | 208 | 1,566 | 1,905 | 21,460 | 30,091 |
| Scarlet Fever | | 3 | 1 | | 2 | 2 | 3 | 30 | 3 | 11 | 24 | 55 | 654 | 1,390 |

NOTE: There have been no reported cases of: Anthrax, Cholera, Dengue, Diphtheria, Polio, Q Fever, or Yellow Fever

Cumulative totals for diseases reported to the Bureau of Communicable Disease Services will be printed in Texas Preventable Disease News No. 35.

TEXAS POPULATION BY PUBLIC HEALTH REGION - 1986*

| PHR | POPULATION | PHR | POPULATION | PHR | POPULATION |
|------|------------|------|------------|-------|------------|
| 1 | 403,328 | 5 | 3,739,623 | 9 | 1,532,171 |
| 2 | 388,863 | 6 | 1,578,733 | 11 | 4,070,462 |
| 3/12 | 973,386 | 7/10 | 1,667,111 | | |
| 4 | 706,398 | 8 | 1,526,386 | TOTAL | 16,586,461 |

*Texas Department of Health Population Data System

VIRAL ISOLATES FOR JULY 1986

| <u>Virus</u> | <u>County of Residence of Patient(s)</u> <u>(Number of Isolates)</u> |
|-----------------------------|---|
| Adenovirus | Bell (1), Dallas (3) |
| Cytomegalovirus | Bexar (1), Dallas (12), Galveston (1) |
| Coxsackie B5 | Bell (1) |
| Echovirus 4 | Galveston (2), Harris (1) |
| Echovirus 6 | Bell (2), Bexar (3) |
| Echovirus 9 | Bell (1), Bexar (3) |
| Echovirus 14 | Bell (1) |
| Parainfluenza 3 | Galveston (2) |
| Rotavirus | Dallas (2) |
| Respiratory Syncytial Virus | Bell (2), Bexar (1) |
| Varicella/Zoster | Dallas (2) |
| <i>Chlamydia trach.</i> | Bell (16), Bexar (3), Dallas (6), El Paso (1), Grayson (2), Travis (5) |

AMENDMENTS TO THE RULES AND REGULATIONS FOR THE CONTROL OF COMMUNICABLE DISEASES

On August 16, 1986, the Texas Board of Health adopted proposed changes in §97.4 of the rules regarding the required reporting of certain diseases (25 Texas Administrative Code, §97.1 through §97.10) (PDN, Vol. 46/No. 27, July 5, 1986). The changes become effective in September.

Additions: §97.4 (b)

- Haemophilus influenzae* infections
- Hepatitis, viral, Type D (delta agent)
- Listeria* infections
- Lyme disease
- Meningitis - bacterial, aseptic/viral, fungal, other (specify etiology, all types)
- Vibrio* infections

Deletions: §97.4 (c)

- Streptococcal sore throat (including scarlet fever).

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