Salmonella hadar – *Continued*

investigations of *Salmonella* infections, especially during the spring and Easter seasons, health-care workers and public health personnel should consider contact with pet ducklings or chicks as a potential source and obtain cultures from these animals if they are implicated.

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Current Trends

Electrocutions in the Construction Industry Involving Portable Metal Ladders – United States, 1984–1988

In the United States, electrocution is the fifth leading cause of work-related death from injury (*1,2*) and the second leading cause of death in the construction industry (*3*). Ten percent of electrocution incidents in the construction industry involve ladders (*4*). To identify and characterize incidents in which construction workers were electrocuted while using portable ladders, CDC's National Institute for Occupational Safety and Health (NIOSH) analyzed national data for 1984–1988. This report summarizes the analysis and recommendations for prevention of electrocutions involving portable metal ladders.

Data from 1984 through 1988 were analyzed from three sources: 1) death certificates maintained in the NIOSH National Traumatic Occupational Fatality (NTOF) data base,* 2) NIOSH Fatal Accident Circumstances and Epidemiology reports, and 3) Occupational Safety and Health Administration (OSHA) investigation files. After duplicate reports were eliminated, the analysis identified 89 work-related deaths occurring in 82 incidents involving metal ladders for the 5 years.

The average age of persons electrocuted was 30.4 years. Of the 89 deaths, 81 (91%) were caused when workers working near an overhead power line moved portable metal extension ladders that contacted the line. The remaining eight (9%) deaths involved workers who touched an energized apparatus or power line while standing on metal ladders. The risk for such events was highest for workers engaged in painting and roofing activities (Table 1). Electrocutions associated with metal-ladder

*The NTOF data base contains information from death certificates provided by the 50 states and the District of Columbia that meet the following criteria: 1) death was related to external causes (*International Classification of Diseases, Ninth Revision,* codes E800–E999), 2) the decedent was aged ≥16 years, and 3) the injury occurred at work.

Electrocutions — Continued

use peaked in the summer months; during 1984–1988, 50 (56%) of the 89 deaths occurred during July, August, and September.

Reported by: Div of Safety Research, National Institute for Occupational Safety and Health, CDC.

Editorial Note: Electrocution involving portable metal ladders is a potential hazard for construction workers. At greatest risk are painters and roofers who use ladders frequently and who may not be fully aware of risks associated with power lines and electrical equipment.

This analysis has at least three limitations. First, deaths related to metal ladders may be underreported by up to 50% because the data sources used in this analysis do not include all work-related deaths (*5*). Second, the analysis could not completely characterize these incidents because the fatality reports did not consistently provide details about these incidents (e.g., whether electrocution hazard warning decals were affixed to the ladders). Third, trends could not be determined because of the low number of deaths within this time frame.

Investigations by the U.S. Consumer Product Safety Commission indicate that contact with power lines most often occurs with the top 3 feet of the ladder (*6*). The use of extension ladders made of or coated with nonconducting materials is one approach to preventing such incidents; the use of nonconducting materials has been a successful approach with citizen's band radio antennas.

OSHA regulations require the use of nonconductive ladders where the employee or the ladder could contact exposed electrical conductors (i.e., a conductor strung from a utility pole) (*7*) and require that all metal ladders be prominently marked with a warning label (*8*). In 1989, NIOSH recommended that employers and workers use nonconductive ladders in locations where contact with overhead electrical power lines could occur (*9*).

During 1982, ladder manufacturers initiated a voluntary labeling standard issued by the American National Standards Institute that called for labeling portable metal ladders with the warning "Danger! Metal ladders conduct electricity. Do not let ladders of any material come in contact with live electrical wires" (*10*). Because of this voluntary labeling standard, extension ladders are now labeled with an electrocution hazard warning.

Despite these warnings, the regulations concerning ladder use, and the provision of safety training for workers, electrocutions caused by ladders contacting overhead power lines continue to occur. However, the routine use of nonconducting extension ladders in high-risk trades (e.g., painting and roofing) would reduce the risk for death

TABLE 1. Death rates* for electrocution involving portable metal ladders, by construction industry category — United States, 1984–1988

Category, by Standard Industrial Classification codes	No. deaths	No. employed†	Rate
Painting contractors (172)	36	163,100	4.41
Roofing contractors (176)	19	207,000	1.84
Electrical contractors (173)	8	522,200	0.31
All other construction	26	4,011,700	0.13
Total	**89**	**4,904,000**	**0.36**

*Per 100,000 workers, annually.
†During 1986.

Electrocutions — Continued

and injury from electrocution. Other preventive measures include 1) elimination of metal-ladder use within 10 feet of overhead power lines, 2) insulation or deenergization of power lines in work areas, and 3) use of steering lines attached to the upper ends of ladders to stabilize and prevent them from tipping backward into power lines.

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Trends in Alcohol-Related Traffic Fatalities, by Sex — United States, 1982–1990

For 1990, the number of traffic fatalities (44,529) reported in the United States was the lowest number reported since 1985 (*1*). However, limited studies appear to indicate that the proportion of female drivers involved in fatal crashes and the proportion arrested for driving while intoxicated may be increasing (*2–4*). This report summarizes data from the National Highway Traffic Safety Administration's (NHTSA) Fatal Accident Reporting System on trends in alcohol-related traffic fatalities (ARTFs) among females and males in the United States from 1982 through 1990. In addition, a quarterly table (page 199 of this issue) presents data on alcohol involvement in fatal motor-vehicle crashes in the United States for January–March 1991.

A fatal traffic crash is considered alcohol-related by NHTSA if either a driver or nonoccupant (e.g., a pedestrian) had a blood alcohol concentration (BAC) $\geq$0.01 g/dL in a traffic crash reported to police. NHTSA defines a BAC $\geq$0.01 g/dL but $<$0.10 g/dL as indicating a low level of alcohol and a BAC $\geq$0.10 g/dL (the legal level of intoxication in most states) as indicating intoxication. Because BAC levels are not available for all persons involved in fatal crashes, NHTSA estimates the number of ARTFs based on a discriminant analysis of information from all cases for which driver or nonoccupant BAC data are available (*5*). In this report, "alcohol-involved" refers to drivers with a BAC $\geq$0.01 g/dL. Data on drivers refer only to drivers involved in fatal crashes. Data on sex are reported only for persons for whom sex is known ($>$98%).

(Continued on page 195)

CDC
CENTERS FOR DISEASE CONTROL

March 20, 1992 / Vol. 41 / No. 11

MMWR

MORBIDITY AND MORTALITY WEEKLY REPORT

Epidemiologic Notes and Reports

Salmonella hadar Associated with Pet Ducklings — Connecticut, Maryland, and Pennsylvania, 1991

The association between *Salmonella* and pets, particularly birds and reptiles, is well established (*1–4*). In the spring of 1991, a cluster of *Salmonella* infections in Connecticut, Maryland, and Pennsylvania was linked to pet ducklings. This outbreak underscores the need for careful handling of pets, especially ducklings during the spring and Easter seasons.

On April 18, 1991, a local health department notified the Maryland Department of Health and Mental Hygiene of three cases of *Salmonella hadar* (group C2) infection linked to ducklings from one pet store. State health departments in Connecticut and Pennsylvania independently identified cases of *S. hadar* infection among persons who had recently obtained ducklings in their states. To determine the frequency of duckling-associated *S. hadar* infections, each state health department interviewed all persons with *S. hadar* infection reported during April 1–May 15. Specimens from ducklings with whom infected persons had had contact before onset of infection were cultured, and the ducklings were traced to source hatcheries. This report summarizes the results of the investigation.

The three states identified 22 cases of *S. hadar* infection. Sixteen (73%) were duckling-associated: six from Pennsylvania and five each from Maryland and Connecticut; additional information was available for 15 of the 16 cases. Ages of infected persons ranged from 3 months to 42 years (mean: 7.5 years); 13 were aged <10 years. Eleven (73%) were female. Thirteen (87%) reported symptoms, including diarrhea (100%), fever (85%), abdominal cramps (77%), nausea (54%), bloody stool (46%), and vomiting (38%); four (27%) were hospitalized. Symptomatic patients had acquired one or more pet ducklings 3–19 days (median: 8 days) before onset of *S. hadar* infection. In all homes, ducklings were initially kept inside; in at least three, they were allowed to run free. In one home, a duckling lived in the bathtub where children bathed. In another, the mother of a 3-month-old breastfed infant with *S. hadar* infection reported not washing her hands after handling ducklings.

A case-control study of children aged ≤10 years was conducted in Maryland and Connecticut. Nine children with *S. hadar* infection were compared with 19 age-