

*Epidemiologic Notes and Reports***Lead Poisoning in Bridge Demolition Workers —
Georgia, 1992**

Bridge demolition and maintenance are leading causes of lead poisoning among workers in the United States (1-5). In June 1992, a local health department in Georgia detected elevated blood lead levels (BLLs) in four demolition workers. This report summarizes the investigation of these cases.

In February 1992, a temporary-service company was subcontracted by a steel corporation to cut apart steel beams that had been removed from a local bridge. Four men were hired; one worker, aged 54 years, began work in late February; two, aged 36 and 28 years, in March; and one, aged 24 years, in early April. All four were immigrants from Mexico; only two spoke English. The work was performed outdoors, without protective equipment or training, using oxy-acetylene flame-cutting torches.

In April, all four workers reported light-headedness and shortness of breath from the metal fumes, requiring frequent fresh-air breaks during the day. In early May, all four workers developed a variety of symptoms including headache, dizziness, fatigue, sleep disturbance, confusion, forgetfulness, arthralgia, and abdominal pain. Paper masks were provided to the workers in late May by the steel company; however, because these became blocked within hours by the accumulation of dust, the workers discarded them. The severity of symptoms intensified through June, with nausea, vomiting, constipation, weakness, shortness of breath, loss of balance, and nervousness. The 36-year-old worker left employment for 3 weeks (from mid-June through early July) because of his symptoms.

As part of an annual risk-management assessment by the steel company's insurance carrier, personal air sampling was conducted April 30 for one of the four workers; this specimen measured an airborne lead concentration of 525 $\mu\text{g}/\text{m}^3$, more than 10 times the Occupational Safety and Health Administration (OSHA) permissible exposure limit (PEL) of 50 $\mu\text{g}/\text{m}^3$ for general industry*. In early June, the steel company suggested BLL examinations of the workers; their BLLs, measured at the local health department, were 93, 90, 59, and 66 $\mu\text{g}/\text{dL}$ for the 54-, 28-, 24-, and 36-year-old men, respectively. The workers' employment was terminated in late June on receipt of the test results by the company.

In follow-up to the BLL results, in mid-June the health department investigated each worker's household, using a standard protocol of visual inspection and portable radiographic fluorescence readings of window sills, walls, and trim; no environmental sources of lead exposure were identified. BLLs were obtained from three children who resided in the homes; all had levels <10 $\mu\text{g}/\text{dL}$, which is below the CDC BLL of concern for children (6).

The health department recommended that the workers promptly seek medical evaluation and care; however, because they had no medical insurance and both the subcontractor and the steel company declined to assume the costs of treatment, the workers initially delayed seeking medical treatment. They subsequently contacted an attorney, who initiated worker's compensation proceedings and arranged for a local

* 29 CFR §1910.1025.

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hospital to admit them for treatment. Each worker received three 5-day chelation treatments with intravenous calcium disodium ethylenediamine tetraacetic acid approximately 15 days apart. All four reported improvement but continued to experience memory deficits, arthralgias, headaches, dizziness, and/or sleep disturbances.

The health department also recommended that the workers request an OSHA inspection of the worksite. Findings from the inspection of the steel company on July 15 resulted in citations for violations of the medical removal protection and worker training provisions of OSHA's lead standard*. OSHA inspectors also investigated work conditions at the bridge from which the beams were removed; the demolition company was cited for excessive lead exposures (based on the construction industry PEL of 200 $\mu\text{g}/\text{m}^3$ †), failure to provide personal protective equipment, and failure to monitor workplace conditions.

On December 14, 1992, the workers were evaluated at a university-based occupational medicine clinic. Physical examinations of three workers were normal; the 54-year-old worker was markedly depressed with evidence of neurologic abnormalities, including a strongly positive Romberg test and marked dysnomia. BLL measurements were 27, 25, 13, and 16 $\mu\text{g}/\text{dL}$ for the 54-, 28-, 24-, and 36-year-old workers, respectively. No further treatment was recommended, but follow-up BLL monitoring was planned.

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Editorial Note: An estimated 90,000 bridges in the United States are coated with lead-containing paints (7). Because of maintenance and reconstruction requirements, lead exposure is a continuing occupational health hazard for construction and demolition workers. Previous cases of lead poisoning associated with similar work have been characterized by extremely high BLLs in affected workers, which developed after brief exposures and, in some instances, were unresponsive to chelation therapy.

The findings in this report are consistent with other studies that indicate that minority groups are disproportionately exposed to lead and other occupational hazards (8,9). In addition, the hazardous process described in this report (flame-cutting or burning of paint-coated steel beams) had been subcontracted to a smaller company by a larger, well-established firm. Such subcontracting is common in the construction industry but often concentrates hazards among workers with limited access to appropriate training, personal protective equipment, and other safety and health measures.

Construction workers are subject to highly variable exposures, and high worker-turnover rates in the construction workforce may pose special hazards for construction workers. Effective June 3, 1993, a new interim final OSHA standard on "Lead Exposure in Construction" extends to workers in the construction trades the basic health and safety provisions of the OSHA lead standard for general industry, such as requirements for medical monitoring and medical removal protection (10).

The response of the health department to the lead exposure in these workers was prompt and effective. However, the limitations of the interventions available and the

*29 CFR §1910.1025.

†29 CFR §1926.

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persistence of the workers' symptoms underscore the need for primary prevention—including portable local ventilation, personal protective equipment, personal hygiene measures, and worker training—during bridge renovation and related demolition work.

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*Current Trends***Sexual Behavior and Condom Use—
District of Columbia, January–February, 1992**

From 1980 through 1990, the cumulative incidence of acquired immunodeficiency syndrome (AIDS) in the District of Columbia (DC) (2713 cases per 100,000 persons) was approximately eight times that of the surrounding metropolitan area (340 per 100,000) (1). From 1980 through 1986, the AIDS epidemic primarily involved men who had sex with men; since 1986, the incidence of AIDS has been increasing among injecting-drug users (IDUs) and their sex partners (1). Although AIDS incidence in DC has been projected to increase by 34% from 1990 to 1994 (1), patterns of sexual behavior and condom use are unknown among homosexual/bisexual men, IDUs, and other heterosexuals in DC and other urban areas with a high incidence of AIDS. To obtain current data on human immunodeficiency virus (HIV)-related knowledge and behavior, the DC Commission of Public Health (CPH) conducted a telephone survey of DC residents regarding HIV-related knowledge, number of sex partners, and condom use during the 1-year period preceding the survey. This report summarizes results of the survey.

During January–February 1992, the DC CPH conducted a telephone survey of residents aged 18–45 years who were contacted through randomly selected telephone

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Current Trends

Update: Influenza Activity — United States, 1992–93 Season

Influenza activity in the United States increased from December 1992 through mid-February 1993; during this period, influenza type B viruses circulated at high levels nationwide. However, since late February, high levels of influenza type A have been reported. This report updates surveillance for influenza during the 1992–93 season.

Of the 4252 influenza viruses reported from September 27, 1992, through May 15, 1993 (CDC surveillance week 19), 3086 (73%) were type B and 1166 (27%), type A. Of the 640 influenza type A viruses that were subtyped, 71 (11%) were A(H1N1) and 569 (89%), A(H3N2).

The total number of influenza isolates reported per week peaked at 443 during the week ending February 13 (week 6) then decreased steadily. Influenza type A virus circulation increased substantially after January 1993, and type A was the predominant isolate reported after March 20 (week 11) (Figure 1).

Throughout the season, virtually all influenza type B viruses isolated in the United States and characterized at CDC have been antigenically similar to the B/Panama/45/90-like virus included in the 1992–93 influenza vaccine. All characterized influenza A(H1N1) viruses have been related to the A/Texas/36/91-like virus included in the 1992–93 vaccine or the related A/Taiwan/1/86 strain (1). Of the 103 influenza A(H3N2) viruses isolated and characterized this season, 13 (13%) have been antigenically similar to A/Beijing/353/89, the strain included in the 1992–93 influenza vaccine, and 90 (87%) have been similar to the more recently detected antigenic variant A/Beijing/32/92 (1). Laboratory studies suggest that this variant is sufficiently different from the vaccine component to result in diminished effectiveness of the 1992–93 vaccine against infection with the A/Beijing/32/92 subtype virus (1).

Since February, outbreaks of influenza A(H3N2) have been reported in nursing homes and other institutions, particularly in areas where surveillance indicated the highest levels of influenza A(H3N2) activity (the New England, Mountain, Middle Atlantic, and South Atlantic regions). Subsequent increased influenza A(H3N2) activity was concurrent with an increase in the proportion of total deaths associated with pneumonia and influenza (P&I) reported through CDC's 121-city mortality reporting