Vectorborne Diseases — Continued

screened or air-conditioned buildings or by using repellents or other personal protection measures. The decision to use large-scale application of insecticides to reduce vector population densities is complex and depends on many factors, including detection of early-season arbovirus transmission, indicating increased risk for human infection. Timely intervention, however, requires an active program of mosquito and avian surveillance and appropriate mosquito-control measures.

Reasons also may exist for emergency control of mosquitoes that are not related to disease transmission after a disaster. Pest (i.e., nonvector) mosquito species may cause severe nuisance problems that compromise emergency-response operations. CDC recommends control of pest mosquitoes when 1) emergency-response or reconstruction efforts are substantially hampered by large populations of mosquitoes, 2) normal civil services (e.g. police, fire, emergency medical services, power, and water and sewage services) in the disaster area are substantially disrupted, or 3) large nuisance mosquito populations place additional stress on the human population (*1*). Surveillance protocols and control methods vary by the mosquito species. Decisions to control pest mosquitoes are based on criteria that differ from those to control vector mosquitoes. No large-scale emergency control of pest mosquitoes was conducted in the 1993 flood disaster.

In the disaster area, the risk for epidemic transmission of arboviruses during 1994 is being monitored by human, bird, and mosquito surveillance. Winter snows and spring rains contributed to flooding and standing water in some areas of the midwestern United States that experienced flooding in 1993. As a result, mosquitoes in these localities may be more abundant than usual during the 1994 arbovirus transmission season.

Reference

1. CDC. Emergency mosquito control associated with Hurricane Andrew—Florida and Louisiana, 1992. MMWR 1993;42:240–2.

Notice to Readers

Adult Blood Lead Epidemiology and Surveillance — United States, 1992–1994

CDC's National Institute for Occupational Safety and Health Adult Blood Lead Epidemiology and Surveillance program (ABLES) monitors elevated blood lead levels (BLLs) among adults in the United States (*1*). Twenty-two states currently report surveillance results to ABLES. Beginning in 1993, ABLES began detecting both new cases and persons with multiple reports over time. In this report, ABLES provides data for the first quarter of 1994 and compares annual data for 1993 and 1992.

During January 1–March 31, 1994, the number of reports of elevated BLLs increased over those reported for the same period in both 1992 and 1993 in all reporting categories (Table 1); this increase is consistent with the increase from 1992 to 1993 in total annual BLL reports (*2*). The number of reports of adults with elevated BLLs reflects monitoring practices by employers. Variation in national quarterly reporting totals, especially first-quarter totals, may result from 1) changes in the number of par-

Notices to Readers — Continued

ticipating states; 2) timing of receipt of laboratory BLL reports by state-based surveillance programs; and 3) interstate differences in worker BLL testing by lead-using industries.

The reported number of adults with elevated BLLs increased from 8886 in 1992 to 11,240 in 1993 (Table 2); this increase resulted in part from a net gain of two reporting states (three additions and one deletion) to ABLES in 1993. A total of 6584 new case reports* accounted for 59% of the total cases (11,240) reported during 1993.

*At least one report of an adult with an elevated BLL (≥25 µg/dL) who had not been reported previously in 1992. Of the newly reported cases in 1993, 257 (4%) were reported by new ABLES states (for which all cases are considered new).

TABLE 1. Reports of elevated blood lead levels (BLLs) among adults — 22 states,* first quarter, 1992–1994

Reported BLL (µg/dL)	First quarter, 1994 No. reports	First quarter, 1994 No. persons†	Reports, first quarter 1993§	Reports, first quarter 1992¶
25–39	4086	3295	3360	3475
40–49	1370	1014	846	904
50–59	275	202	162	221
≥60	116	86	79	86
Total	**5847**	**4597**	**4447**	**4686**

*Reported by Alabama, Arizona, California, Connecticut, Illinois, Iowa, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, New York, North Carolina, Oklahoma, Oregon, Pennsylvania, South Carolina, Texas, Utah, Vermont, Washington, and Wisconsin.

†Individual reports are categorized according to the highest reported BLL for the individual during the given quarter.

§Data for first quarter 1993 were reported from 17 states (Alabama, Connecticut, Illinois, Iowa, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Oregon, Pennsylvania, South Carolina, Texas, Utah, Vermont, and Wisconsin). Data on number of persons with elevated BLLs are unavailable.

¶Data for first quarter 1992 were reported from 12 states (Alabama, California, Connecticut, Illinois, Iowa, Maryland, Massachusetts, New Jersey, New York, Oregon, Texas, and Wisconsin). Data on number of persons with elevated BLLs are unavailable.

TABLE 2. Reports of new cases of elevated blood lead levels (BLLs) among adults — 20 states*, 1993

Highest BLL (µg/dL)	No. reports*	No. persons†	New cases§ No.	New cases§ (%)
25–39	17,045	8,041	4,693	(58)
40–49	5,189	2,293	1,288	(56)
50–59	1,208	627	419	(67)
≥60	583	279	184	(66)
Total	**24,025**	**11,240**	**6,584**	**(59)**

*Reported by Alabama, Arizona, California, Connecticut, Illinois, Iowa, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Oregon, Pennsylvania, South Carolina, Texas, Utah, Vermont, Washington, and Wisconsin.

†Individual reports are categorized according to the highest reported BLL for the individual during the given year.

§Reported by Alabama, California, Colorado, Connecticut, Illinois, Iowa, Maryland, Massachusetts, New Jersey, New York, Oregon, Pennsylvania, South Carolina, Texas, Utah, and Wisconsin.

Notices to Readers — Continued

Fifty-two percent of persons reported in 1992 were reported again to the system during 1993. Reasons for repeat reports of elevated BLLs include 1) recurring exposure resulting from lack of existing control measures and inapropriate worker-protection practices; 2) routine tracking of elevated employee BLLs below the medical removal limits; and 3) increased employer monitoring during medical removal. Increased testing of workers in construction trades—as new workplace medical-monitoring programs are established to comply with new Occupational Safety and Health Administration regulations (*3*)—also may partially explain increases in reports of elevated BLLs.

These data suggest that work-related lead exposure is an ongoing occupational health problem in the United States. By expanding the number of participating states, reducing variability in reporting, and distinguishing between new and recurring elevated BLLs in adults, ABLES can enhance surveillance for this preventable condition.

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1. CDC. Surveillance of elevated blood lead levels among adults—United States, 1992. MMWR 1992;41:285–8.
2. CDC. Adult blood lead epidemiology and surveillance—United States, fourth quarter, 1993. MMWR 1994;43:246–7.
3. Office of the Federal Register. Code of federal regulations: occupational safety and health standards. Subpart Z: toxic and hazardous substances—lead. Washington DC: Office of the Federal Register, National Archives and Records Administration, 1993. (29 CFR section 1926, part II).

Notice to Readers

Availability of Version 6 of Epi Info

The Epi Info computer programs produced by CDC and the World Health Organization provide public-domain software for word processing, database management, and statistics work in public health; more than 40,000 documented copies of Version 5 are in use in 117 countries. Version 6 of Epi Info was released in June 1994.

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MORBIDITY AND MORTALITY WEEKLY REPORT

Current Trends

Medical-Care Expenditures Attributable to Cigarette Smoking — United States, 1993

Cigarette smoking is the most important preventable cause of morbidity and premature mortality in the United States; however, approximately 48 million persons aged ≥18 years are smokers (*1*), and approximately 24 billion packages of cigarettes are purchased annually (*2*). Each year, approximately 400,000 deaths in the United States are attributed to cigarette smoking (*3*) and costs associated with morbidity attributable to smoking are substantial (*4*). To provide estimates for 1993 of smoking-attributable costs for selected categories of direct medical-care expenditures (i.e., prescription drugs, hospitalizations, physician care, home-health care, and nursing-home care), the University of California and CDC analyzed data from the 1987 National Medical Expenditures Survey (NMES-2) and from the Health Care Financing Administration (HCFA). This report summarizes the results of the analysis.

The NMES-2 is a population-based longitudinal survey of the civilian, noninstitutionalized U.S. population (*5*). A cohort of 35,000 persons in 14,000 households was selected for face-to-face interviews four times during February 1987–May 1988. Respondents provided data about sociodemographic factors, health insurance coverage, use of medical care, and medical-care expenditures. Information also was collected about self-reported health status and health-risk behaviors including smoking, safety-belt nonuse, and obesity. The Medical Provider Survey, a supplement to NMES-2, provided confirmation of self-reported medical-care costs and supplied information about costs that survey respondents were unable to report.

To estimate costs attributable to smoking, respondents were categorized as never smokers, former smokers with less than 15 years' exposure, former smokers with 15 or more years' exposure, and current smokers. First, the effect of smoking history on the presence of smoking-related medical conditions (i.e., heart disease, emphysema, arteriosclerosis, stroke, and cancer) was determined. Second, for each of the medical-care expenditure categories, the probability of having any expenditures and the level of expenditures were estimated as a function of smoking, medical conditions, and health status (*6*). All models controlled for age, race/ethnicity, poverty status,

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