P&I Vaccination Coverage — Continued

5. Massey JT, Moore TF, Parsons VL, Tadros W. Design and estimation for the National Health Interview Survey, 1985–1994. Hyattsville, Maryland: US Department of Health and Human Services, Public Health Service, CDC, 1989. (Vital and health statistics; series 2, no. 110).
6. CDC. Implementation of the Medicare influenza vaccination benefit. MMWR 1994;43:771–3.
7. Butler JC, Breiman RF, Campbell JF, Lipman HB, Broome CV, Facklam RR. Pneumococcal polysaccharide vaccine efficacy: an evaluation of current recommendations. JAMA 1993; 270:1826–31.
8. Hirschmann JV, Lipsky BA. The pneumococcal vaccine after 15 years of use. Arch Intern Med 1994;154:373–7.
9. CDC. Race-specific differences in influenza vaccination levels among Medicare beneficiaries—United States, 1993. MMWR 1995;44:24–7,33.
10. Fedson DS, National Vaccine Advisory Committee. Adult immunization: summary of the National Vaccine Advisory Committee report. JAMA 1994;272:1133–7.

Adult Blood Lead Epidemiology and Surveillance — United States, 1994 and First Quarter 1995

CDC's National Institute for Occupational Safety and Health (NIOSH) Adult Blood Lead Epidemiology and Surveillance program (ABLES) monitors elevated blood lead levels (BLLs) among adults in the United States (*1*). Twenty-three states currently report surveillance results to ABLES. Maine is the 23rd state, and its data (beginning in 1994) are included for the first time in this report. This report presents ABLES data for the first quarter of 1995 compared with the first quarter of 1994 and annual data for 1994 compared with 1993.

First Quarter Reports 1995. During January–March 1995, the number of reports of elevated BLLs increased by 10% over those reported for the same period in 1994 (Table 1). The number of reports increased at the lowest reporting level (25–39 μg/dL), but decreased at all higher reporting levels (40–49 μg/dL, 50–59 μg/dL, and ≥60 μg/dL). The trend of increasing reports at the lower levels and decreasing reports at the higher levels is consistent with the 1994 fourth quarter report (*2*).

Annual Reports 1994. The reported number of adults with elevated BLLs increased from 11,240 in 1993 to 12,137 in 1994 (Table 2); this increase resulted, in part, from the addition of three reporting states in 1994. A total of 5619 new cases accounted for 46% of the cases reported in 1994, compared with 59% new cases in 1993 (Table 2). Compared with 1993, the proportion of new cases declined in the 25–39 μg/dL, 40–49 μg/dL, and 50–59 μg/dL categories and increased in the ≥60 μg/dL category. Even with additional states reporting, the number of new cases decreased 15% from 1993 through 1994 (Table 2). This decrease may be explained in part by the definition of a new case, which is an elevated BLL (≥25 μg/dL) in an adult reported in state surveillance data in the current year but which was not recorded in the immediately preceding year. By this definition, all persons reported represent new cases in the year a state begins surveillance.

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Blood Lead Epidemiology — Continued

TABLE 1. Number of reports of elevated blood lead levels (BLLs) among adults, number of adults with elevated BLLs, and percentage change in number of reports — 23 states,* first quarter, 1994–1995

Reported BLL (μg/dL)	First quarter, 1995		No. reports, first quarter, 1994†	% Change first quarter, 1994 to 1995
	No. reports	No. persons§		
25–39	4914	3635	4102	+20%
40–49	1197	878	1371	–13%
50–59	245	204	278	–12%
≥60	82	58	117	–30%
Total	**6438**	**4775**	**5868**	**+10%**

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

†Data for Maine are included. These data only recently became available for 1994 and were not included in previous reports.

§Individual reports for persons are categorized according to the highest reported BLL for the person during the given quarter. Pennsylvania provides the number of reports but not number of persons; the number of persons for Pennsylvania in this table are estimates based on the proportions from the other 22 states combined and the number of reports received from Pennsylvania. Data for South Carolina were missing; first quarter 1994 data were used as an estimate.

TABLE 2. Number of reports of elevated blood lead levels (BLLS) among adults, number of adults with elevated BLLS, and new cases of elevated BLLs — United States, 1993 and 1994

Reported BLL (μg/dL)	1994 (23 states)*				1993 (20 states)†			
	No. reports	No. persons§	New cases¶		No. reports	No. persons	New cases**	
			No.	(%)			No.	(%)
25–39	19,420	8,651	4,254	(49)	18,529	8,041	4,693	(58)
40–49	5,821	2,562	887	(35)	5,398	2,293	1,288	(56)
50–59	1,132	644	269	(42)	1,311	627	419	(67)
≥60§	459	280	209	(75)	633	279	184	(66)
Total	**26,832**	**12,137**	**5,619**	**(46)**	**25,871**	**11,240**	**6,584**	**(59)**

*Alabama, Arizona, California, Connecticut, Illinois, Iowa, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, New York, North Carolina, Oklahoma, Oregon, Pennsylvania, South Carolina, Texas, Utah, Vermont, Washington, and Wisconsin. Data for Maine were not included in previous reports. Data for South Carolina were missing for fourth quarter 1994; fourth quarter 1993 data were used as an estimate.

†Same states as 1994 except Maine, North Carolina, and Oklahoma.

§Individual reports are categorized according to the highest reported BLL for the person during the given year. Pennsylvania provides the number of reports but not number of persons; the number of persons for Pennsylvania in this table are estimates based on the proportions from the other 22 states combined and the number of reports received from Pennsylvania. Data for South Carolina were missing for the fourth quarter 1994; fourth quarter 1993 data were used as an estimate.

¶Illinois, Michigan, Pennsylvania and South Carolina did not report new cases for 1994. New cases for those four states are estimates based on the proportions from the other 19 states combined and the number of reports, persons, or unassigned new cases reported from these four states.

**New cases for 1993 were not reported from Michigan, New Hampshire, and Pennsylvania. No estimates are included in the 1993 data.

Blood Lead Epidemiology — Continued

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Editorial Note: Approximately 54% of the persons reported to ABLES in 1993 were reported again to the system in 1994. Reasons for these repeat reports include 1) recurring exposure resulting from inadequate control measures and worker-protection practices; 2) routine tracking of elevated employee BLLs that remain below levels requiring medical removal; 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 OSHA regulations (*3*)—also has contributed to the increases.

Reporting 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 participating 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 data in this report underscore that work-related lead exposures are an ongoing occupational health problem in the United States. ABLES can further enhance surveillance for this preventable condition by expanding the number of participating states, reducing variability in reporting, and distinguishing between new and recurring elevated BLLs in adults. The Council of State and Territorial Epidemiologists, at its annual meeting in May 1995, designated elevated BLLs among adults as a condition reportable to the National Public Health Surveillance System (formerly the National Notifiable Diseases Surveillance System) (*4*).

References

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, 1994. MMWR 1995;44:286–7.
3. Office of the Federal Register. Code of federal regulations: occupational safety and health standards. Subpart Z: toxic and hazardous substances—lead. Washington, DC: National Archives and Records Administration, Office of the Federal Register, 1993 (29 CFR § 1926, Part II).
4. CDC. Summary of notifiable diseases, United States, 1993. MMWR 1993;42(53):iii–v.

Erratum: Vol. 44, No. 17

In the article, "Prevalence and Impact of Arthritis Among Women—United States, 1989–1991," a programming error led to incorrect estimates for nonarthritis conditions listed in Table 2. The corrected table follows.

The error does not change statements in the text on the relative ranking of arthritis compared with other chronic conditions but does change the following: 1) under the

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MORBIDITY AND MORTALITY WEEKLY REPORT

Outbreak of Acute Gastroenteritis Attributable to *Escherichia coli* Serotype O104:H21 — Helena, Montana, 1994

During February–March, 1994, four persons in Helena, Montana (1995 population: 24,569), developed bloody diarrhea and severe abdominal cramps. Stool cultures for *Salmonella*, *Shigella*, *Campylobacter,* and *Escherichia coli* O157:H7 were negative; however, sorbitol-negative *E. coli* colonies were identified in stools from all four patients. Isolates from three patients were identified at CDC as a rare serotype—*E. coli* O104:H21 that produced Shiga-like toxin II. This report summarizes the epidemiologic and laboratory investigations of this outbreak by the Lewis and Clark County Department of Health and Environmental Sciences, the Montana Department of Health and Environmental Sciences (MDHES), and CDC.

A confirmed case was defined as acute infection with *E. coli* O104:H21 during February 20–May 25, 1994—based on stool culture or serologic evidence—in a resident of or a visitor to the Helena area. A suspected case was defined onset of bloody diarrhea or abdominal cramps during the same period in a resident of or visitor to the Helena area. MDHES and county health departments contacted clinicians, laboratories, and the public through news media reports and requested that suspected cases be reported.

Eleven confirmed and seven suspected case-patients were identified (Figure 1). Manifestations included abdominal cramps (18 [100%]), diarrhea (17 [94%]), bloody stools (16 [89%]), vomiting (10 [56%]), and fever (six of 15 [40%] for whom information was available). The median age was 36 years (range: 8–63 years), and 12 (67%) were female. Four (22%) persons were hospitalized.

Potential sources and risk factors for illness were assessed by a case-control study that included 17 case-patients and three age-, sex-, and neighborhood-matched controls for each case-patient. A history of milk consumption during the 7 days before illness was reported by all 17 case-patients compared with 40 (83%) of 48* controls (matched odds ratio [OR]=undefined). One brand of milk (Brand A) was significantly associated with illness: of those persons who drank milk at home, 11 (92%) of 12 case-patients compared with 17 (47%) of 36 controls reported drinking Brand A (matched OR=16.0; 95% CI=1.3–492.7). Within this brand, no specific type of milk product was

*Persons who responded "Don't know" to any question were excluded from the analysis.