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Vibrio vulnificus Infections Associated with Eating Raw Oysters — Los Angeles, 1996

Of all foodborne infectious diseases, infection with *Vibrio vulnificus* is one of the most severe; the case-fatality rate for *V. vulnificus* septicemia exceeds 50% (*1,2*). In immunocompromised hosts, *V. vulnificus* infection can cause fever, nausea, myalgia, and abdominal cramps 24–48 hours after eating contaminated food; because the organism can cross the intestinal mucosa rapidly, sepsis and cutaneous bullae can occur within 36 hours of the initial onset of symptoms. Cases are most commonly reported during warm-weather months (April–November), and often are associated with eating raw oysters. During April 1993–May 1996, a total of 16 cases of *V. vulnificus* infection were reported in Los Angeles County. Fifteen (94%) of these patients were primarily Spanish-speaking, 12 (75%) had preexisting liver disease (associated with alcohol use or viral hepatitis), all were septicemic, and all had eaten raw oysters 1–2 days before onset of symptoms. In May 1996, three deaths related to *V. vulnificus* infection among primarily Spanish-speaking persons were reported to the Los Angeles County Department of Health Services (LACDHS). This report summarizes the findings of the investigations of these fatal cases and illustrates the importance of prevention strategies for persons with preexisting liver disease.

Case Investigations

Case 1. On May 1, 1996, a 38-year-old man had onset of fever, chills, nausea, and myalgia. On April 29, he had eaten at home raw oysters purchased from a retail store. On May 2, he was admitted to a hospital because of a fever of 102 F (39 C) and two circular necrotic lesions on the left leg. He reported a history of regular beer consumption (36–72 oz per day) and insulin-dependent diabetes. Sepsis and possible deep-vein thrombosis were diagnosed, and the patient was transferred to the intensive-care unit (ICU). In the ICU, therapy was initiated with ticarcillin/clavulanic acid, gentamicin, vancomycin, and ceftazidime. On May 3, *V. vulnificus* was isolated from the blood sample obtained from the patient on admission, and ciprofloxacin was added to his therapy. On May 4, he died. Traceback of the oysters by environmental health inspectors indicated they originated from a lot harvested in Galveston Bay, Texas, on April 27.

Case 2. On May 10, a 46-year-old man had onset of fever, sweats, and nausea. On May 9, he had eaten at home raw oysters purchased from a retail store. On May 11, he

Skid-Steer Loader-Related Fatalities — Continued

cannot be engaged directly from the operator's seat, they should be engaged by a second person who can stay clear of the raised lift arms and bucket while doing so.

- Operators and service personnel should read and understand the manufacturer's operating and service procedures specified in the operator's manuals and on the machine's safety signs. Manuals and other operator training materials (e.g., instructional videos and/or operator training courses) can be obtained from the equipment dealer or manufacturer.

References

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Adult Blood Lead Epidemiology and Surveillance — United States, First Quarter 1996, and Annual 1995

CDC's National Institute for Occupational Safety and Health Adult Blood Lead Epidemiology and Surveillance program (ABLES) monitors laboratory-reported elevated blood lead levels (BLLs) among adults in the United States (*1*). Twenty-three states reported surveillance results to the ABLES program in 1995. Ohio and Minnesota joined ABLES in 1996; their data are included for the first quarter of 1996. This report presents ABLES data for the first quarter of 1996 compared with the first quarter of 1995 and annual data for 1995 compared with 1994.

First Quarter Reports, 1996

During January 1–March 31, 1996, the number of reports of BLLs ≥25 μg/dL decreased by 8% compared with the number reported for the same period in 1995 (*2*), which has been revised to include previously unpublished 1995 data for Minnesota and Ohio (Table 1). The number of reports for 1996 decreased in all reporting categories. This overall trend of decreasing reports is consistent with the fourth quarter report for 1995 (*3*).

Annual Reports, 1995

Overall reports of BLLs ≥25 μg/dL decreased from 26,832 in 1994 to 26,459 in 1995 (Table 2); this represents a 1% decrease, with the same 23 states reporting in each year. In comparison, the number of reports increased by 4% from 1993 to 1994; however, three additional states had initiated reporting in 1994 (*2*). Although total reports decreased in 1995, the number of reported persons with BLLs ≥25 μg/dL increased

Adult 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 — 25 states,* first quarter, 1996

Reported BLL (μg/dL)	First quarter, 1996		No. reports, first quarter, 1995§	% Change from first quarter, 1995 to 1996
	No. reports	No. persons†		
25–39	4954	3612	5236	– 5%
40–49	1152	819	1313	–12%
50–59	207	154	282	–27%
≥60	102	54	108	– 6%
Total	**6415**	**4639**	**6939**	**– 8%**

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

† 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 no information on persons. The data about persons for Pennsylvania included in this table are estimates based on the proportions from the other 24 states combined and the number of reports received from Pennsylvania. Data for Alabama and Arizona were missing; first quarter 1995 data were used as an estimate.

§ Unpublished data for Ohio and Minnesota are included for the first time in addition to previously published 1995 totals (*2*).

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,† 1994 and 1995

Highest BLL (μg/dL)	1995				1994			
	No. reports§	No. persons¶	New cases**		No. reports	No. persons	New cases††	
			No.	(%)			No.	(%)
25–39	19,979	9,586	3,780	(39)	19,420	8,651	4,254	(49)
40–49	5,125	2,399	894	(37)	5,821	2,562	887	(35)
50–59	911	447	176	(39)	1,132	644	269	(42)
≥60§	444	232	143	(62)	459	280	209	(75)
Total	**26,459**	**12,664**	**4,993**	**(39)**	**26,832**	**12,137**	**5,619**	**(46)**

* A new case is defined as at least one report of a BLL ≥25 μg/dL in an adult that appears in state surveillance data during the current year and was not recorded in the immediately preceding year. Based on this definition, in the year a state begins surveillance, all persons are new cases; as surveillance continues into subsequent years, repeating persons are no longer counted as new cases. Thus, a decrease in the proportion of new cases may be explained in part by removal of reports from the "new case" category as a state enters its second year of reporting.

† 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 Alabama and Vermont were missing for 1995; 1994 data were used as an estimate.

¶ Individual reports are categorized according to the highest reported BLL for the person during the given year. Pennsylvania and Michigan provided number of reports but not persons; the number of persons are estimates based on the proportions from the other 21 states combined and the number of reports received from the two states. Data for Alabama and Vermont were missing for 1995; 1994 data were used as an estimate.

** New cases for 1995 were not reported for Illinois, Michigan, Pennsylvania, and South Carolina. New cases for those four states are estimates based on proportions from the other 19 states combined and the number of reports, persons, or unassigned new cases reported from the four states. Data for Alabama, New Hampshire, and Vermont were missing for 1995; 1994 data were used as an estimate.

†† New cases for 1994 were not reported from Illinois, Michigan, Pennsylvania, and South Carolina. Estimates were included in the 1994 data.

Adult Blood Lead Epidemiology — Continued

from 12,137 in 1994 to 12,664 in 1995* (Table 2), representing a 4% increase (with a constant 23 states reporting). Similarly, from 1993 to 1994, the number of persons with BLLs ≥25 μg/dL increased 8%, with three new states starting to report in 1994 (*2*). Finally, the proportion of reported persons with new cases† decreased by 11% from 1994 to 1995 (Table 2); this followed a 15% decrease from 1993 to 1994 (*2*). Of the 12,664 persons reported in 1995, 4993 (39%) had new cases (Table 2); in comparison, of the 12,137 persons reported in 1994, 5619 (46%) had new cases, and of the 11,240 reported in 1993, 6584 (59%) had new cases (*2*).

The proportion of BLLs reported to ABLES at ≥50 μg/dL (the level designated by the Occupational Safety and Health Administration for medical removal from the workplace) was 8% in 1993, 6% in 1994 (*2*), and 5% in 1995. The proportion of persons with BLLs at the ≥50 μg/dL level was 8% in 1993, 8% in 1994 (*2*), and 5% in 1995. The proportion of new cases reported to ABLES at the ≥50 μg/dL level was 9% in 1993, 9% in 1994 (*2*), and 6% in 1995.

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Editorial Note: During 1993–1995, the decreases in the number of reports of BLLs ≥25 μg/dL and the proportions of new cases may reflect improved efforts of the various participating states, and lead-using industries within them, to identify lead-exposed workers and prevent new lead exposures. However, the number of persons with BLLs ≥25 μg/dL increased, and 61% of the persons reported with BLLs ≥25 μg/dL in 1995 also had been reported in 1994. Reasons for repeat reports of elevated BLLs include 1) recurring exposure resulting from inadequate control measures and worker-protection practices, which may indicate a need for strengthened prevention

*Persons often have multiple elevated BLLs reported in a given year. Individual reports for persons are categorized according to the highest reported BLL for the person during the given quarter.

†A new case is defined as at least one report of a BLL ≥25 μg/dL in an adult that appears in state surveillance data during the current year and was not recorded in the immediately preceding year. Based on this definition, in the year a state begins surveillance, all persons are new cases; as surveillance continues into subsequent years, repeating persons are no longer counted as new cases. Thus, a decrease in the proportion of new cases may be explained in part by removal of reports from the "new case" category as a state enters its second year of reporting.

Adult Blood Lead Epidemiology — Continued

measures; 2) routine retesting of employee BLLs that, although elevated, remain below levels requiring medical removal; and 3) increased employer monitoring during medical removal. All the trends in BLLs ≥50 μg/dL seem to be consistent with improved worker protection.

Trends in these surveillance data must be interpreted in relation to variations in annual reporting totals, which reflect 1) changes in the number of participating states; 2) changes in staffing and funding in state-based surveillance programs; and 3) interstate differences in worker BLL testing by lead-using industries. In addition, estimates from the Third National Health and Nutrition Examination Survey of the number of adults exposed to lead (*4*) indicate that ABLES data may be underreported.

The findings in this report document the continuing occurrence of work-related lead exposures as an occupational health problem in the United States. A goal of the ABLES program is to 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.

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Prevention and Management of Heat-Related Illness Among Spectators and Staff During the Olympic Games — Atlanta, July 6–23, 1996

To help ensure the health and safety of athletes, staff, and spectators at the 1996 Summer Olympic Games in Atlanta during July 19–August 5, the Atlanta Committee for the Olympic Games (ACOG) Medical Services; CDC; the Division of Public Health, Georgia Department of Human Resources (GDPH); and other local, state, and federal public health agencies designed and implemented two public health surveillance systems. This report summarizes provisional data from the ACOG health information system about spectators and staff treated by physicians at venue medical-assistance sites from July 6 (when the Olympic Village opened) through July 23; based on these data, heat-related illnesses have been the most commonly reported preventable health problem. This report also presents heat-related data from the GDPH medical-encounter surveillance system designed to monitor health events outside the Olympic venues.

ACOG Health Information System

The ACOG system monitors the approximately 100 medical-assistance sites at the venues (*1*). In Atlanta, the daily temperatures during July 6–23 ranged from 66 F to 95 F (19 C–35 C); in addition, an estimated 2.2 million persons are attending the