Surveillance for Possible Estuary-Associated Syndrome—Six States, 1998-1999

Pfiesteria piscicida (Pp) is an alga that has been associated with fish kills in estuaries (where fresh water mixes with salty seawater) along the eastern seaboard and possibly with human health effects.

Since June 1, 1998, surveillance for possible estuary-associated syndrome (PEAS), including possible Pp-related human illness, has been conducted in Delaware, Florida, Maryland, North Carolina, South Carolina, and Virginia. This report summarizes passive surveillance for PEAS during June 1, 1998—December 31, 1999, which indicated no persons had illnesses that met PEAS criteria.

The PEAS surveillance system collects information about possible human health problems that may occur after exposure to estuarine water (such as sounds or coastal river mouths or in laboratories or aquaculture facilities). For surveillance purposes, persons are considered to have PEAS if (1) they report developing symptoms within 2 weeks after confirmed exposure to estuarine water; (2) they report memory loss or confusion of any duration and/or three or more selected symptoms (e.g., headache, skin rash at the site of water contact, sensation of burning skin, eye irritation, upper respiratory irritation, muscle cramps, and gastrointestinal symptoms) that, except for skin rash at the site of water contact and sensation of burning skin, persist for greater than or equal to 2 weeks; and (3) a health-care provider cannot identify another cause for the symptoms.

The six state health agencies were available throughout the year to respond to inquiries from the public and health-care providers. Calls from persons requesting information or reporting symptoms that may be related to Pp or Pfiesteria-like organisms (PLOs) were recorded; environmental exposure and symptom information were recorded in the surveillance database. Surveillance information was periodically transferred to CDC for data aggregation and dissemination to the public.

From June 1, 1998, through December 31, 1999, the six state health departments received 1984 calls about Pp, PLOs, and PEAS. Most (96%) calls involved requests for information about Pp, PLOs, or PEAS. Seventy-eight calls concerned a symptomatic person; 54 (69%) of these persons had possible exposure to estuarine water. Of the 54 persons, 44 were seen by or referred to a health-care provider. Of the 44, 24 did not meet PEAS symptom or exposure criteria, 15 had another cause for symptoms identified, and five have environmental and medical results pending. To date, no illnesses have met the PEAS criteria.

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The findings in this report are subject to at least four limitations. First, because surveillance was passive, some cases may have been missed. Second, the number of information-only calls are underreported because several states do not track all information requests because of state differences in hotline system design. Third, data provided may have been incomplete because all states did not use the same data collection methods; however, a standardized core data collection method has been developed. Finally, the surveillance system tracks PEAS rather than Pp-related illness because a Pp toxin(s) has not been identified; therefore, a biomarker of exposure has not been detected. For this reason, association between PEAS and Pp remains to be established. Detection of Pp or lesioned fish in water has been used as evidence of suspected Pp toxin(s). However, Pp has been found in waters without reports of harm to fish or persons, and fish lesions can result from a variety of biologic, physical, and environmental factors that may be unrelated to Pp. Consequently, detecting Pp or observing lesioned fish may not indicate the presence of a putative Pp toxin(s).

It is unclear whether persons exposed to Pp while swimming, boating, or engaging in other recreational activities in coastal waters are at risk for developing PEAS. PEAS is not infectious.
and has not been associated with eating fish or shellfish caught in waters where Pp has been found. However, persons should avoid areas with large numbers of diseased, dying, or dead fish and should promptly report those areas to the state’s environmental or natural resource agency. In addition, persons should not go in or near the water in areas that are closed officially by the state and should not harvest or eat fish or shellfish from these areas.

Persons who experience health problems after exposure to estuarine water, a fish-disease event, or a fish-kill site should contact their health-care provider and state or local public health agency. Several states have established toll-free PEAS information lines: Delaware, (800) 232-3336; Florida, (888) 232-8635; Maryland, (888) 584-3110; North Carolina, (888) 823-6915; South Carolina, (888) 481-0125; and Virginia, (888) 238-6154.

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Alcohol Policy and Sexually Transmitted Disease Rates—United States, 1981-1995

IN THE UNITED STATES, ADOLESCENTS AND young adults are at higher risk for acquiring sexually transmitted diseases (STDs) than older adults. In addition, young persons who drink alcohol may be more likely than persons who abstain to participate in high-risk sexual activity, such as unprotected sexual intercourse or multiple sexual partners. If alcohol consumption promotes risky sexual behavior (disinhibition caused by the effects of alcohol), state government alcohol policies, such as alcohol taxation and minimum legal drinking age requirements, might reduce STD incidence among adolescents and young adults. Higher alcohol taxes and increases in the minimum legal drinking age have been associated with lower incidences of adverse alcohol-related health outcomes (e.g., motor-vehicle crash-related deaths, liver cirrhosis, suicide, and violent crime, including domestic violence). This report summarizes the findings of a study that suggest higher alcohol taxes and higher minimum legal drinking ages are associated with lower STD incidence among certain age groups.

The study examined the association between crude gonorrhea incidence (new cases per 100,000 population) and alcohol policy indicators (alcohol taxation and drinking age requirements) in the 30 states and the District of Columbia during 1981-1995. Alcohol policy data were obtained from the Distilled Spirits Council of the United States,6,7 and gonorrhea incidence data were collected by CDC through surveillance systems in each state.1 The relation between alcohol policy and gonorrhea rates was established using a quasi-experimental analysis of a state’s gonorrhea rate during the year before and after a change was made in the state alcohol policy indicators and a multivariate regression analysis between state gonorrhea rates and state alcohol policy indicators.

The quasi-experimental analysis compared changes in gonorrhea rates in states with a beer tax increase (experimental states) with changes in gonorrhea rates in states without a beer tax increase (control states). An experimental state had a relative decrease in its gonorrhea rate if the decrease was greater (in percentage) than the median of the control states. To test the null hypothesis that beer tax increases had no effect on gonorrhea rates, p-values were calculated as two-tailed tests from the binomial distribution under the null hypothesis that each change in the gonorrhea rate in experimental states would have a 0.50 probability of being a relative decrease. A quasi-experimental analysis of drinking age increases also was conducted.

In the regression analysis, the dependent variable was the state-specific gonorrhea rate, and the alcohol policy indicators were independent variables. The model included variables for each state and each year to control for state-specific differences in gonorrhea incidence and trends in gonorrhea incidence common to all states. To further control the models for omitted and/or unobservable factors (e.g., state-level demographic characteristics and STD-prevention activities) related to state-specific STD rates and trends, the model included the state’s gonorrhea rate during the previous year as an independent variable.

Most beer tax increases were followed by a relative proportionate decrease in gonorrhea rates among young adults (24 [66.7%] of 36 instances of beer tax increases among 15-19-year-olds [p < 0.10] and 26 [72.2%] of 36 instances among 20-24-year-olds [p < 0.05]). In both age groups, this relation was greater for gonorrhea rates among men than women. Most minimum legal drinking age increases were followed by a relative proportionate decrease in the gonorrhea rate, and this majority was statistically significant among 15-19-year-olds (29 [65.9%] of 44 instances of minimum legal drinking age increases) but not among 20-24-year-olds (18 [54.5%] of 33 instances). Regression analysis also showed that higher beer taxes were associated with lower gonorrhea rates among young adults in both age groups, and that minimum legal drinking age increases were associated with lower gonorrhea rates among 15-19-year-olds. The regression analysis suggested that a beer tax increase of $0.20 per six-pack could reduce overall gonorrhea rates by 8.9%.

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The findings in this report indicate that more restrictive state alcohol policies are associated with lower gonorrhea rates among certain age groups. The two methods of analysis yielded similar results and were consistent under a wide range of robustness checks and alternative model specifications. The results of this study are consistent with a study that higher minimum legal drinking ages were associated with decreases in child-bearing rates among teenagers.

The findings in this report are subject to at least two limitations. First, because state gonorrhea reporting practices vary, state-specific gonorrhea rates should be compared with caution. Second, the analysis may be subject to confounding effects of unobservable factors (e.g., community norms regarding alcohol consumption and sexual behavior or dramatic shifts in state-specific STD rates); omitting these variables could cause substantial bias when comparing across states the association between alcohol policy indicators and alcohol-related health outcomes.

Given these limitations, the study findings, particularly the temporal relation between higher alcohol taxes and a decline in gonorrhea rates, are consistent with but do not prove a causal relation between higher taxes and declining STD rates.

The postulated causal relation is based on the assumptions that higher alcohol taxes and a higher minimum legal drinking age can reduce alcohol consumption, and that reduced alcohol consumption can reduce participation in risky sexual behavior. With few exceptions, most studies have demonstrated that alcohol consumption declines after alcohol tax increases and have detected an association between risky sexual behavior and alcohol or drug use.

Reducing alcohol use and risky sexual behavior among young persons are two national health objectives for 2010. Higher alcohol prices and improved enforcement of minimum legal drinking age requirements have been highlighted as potential strategies to reduce alcohol consumption by youth. Alcohol policy also could be used to reduce risky sexual behavior and its adverse medical and social consequences. Additional research is needed to continue examining the relation between alcohol policy and risky sexual behavior.

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The survey used a probability sample of the U.S. civilian, noninstitutionalized population aged greater than or equal to 18 years; 20,766 persons responded to the survey. Respondents were asked to identify the frequency and duration of their participation in 24 sports and conditioning activities during the 2 weeks preceding the survey, and to list the number of hours per day they spent doing hard physical work on the job.

Leisure-time physical activities were scored by the intensity (i.e., metabolic equivalents [METs]), frequency, and duration of effort. METs for each leisure-time physical activity were based on the Compendium of Physical Activities. Respondents were categorized as (1) sedentary (no leisure-time activity), (2) irregularly active (not meeting public health recommendations), (3) moderately active (meeting the current public health recommendation), or (4) vigorously active (meeting the fitness recommendation). Hard physical activity at work was categorized as no hard labor, 1–4 hours per day, and greater than or equal to 5 hours per day.

Prevalence of activity was calculated by age, sex, race/ethnicity, and education level using SUDAAN to adjust for the complex sampling frame.

Approximately one third of adults reported an adequate level of leisure-time physical activity: 31.5% were moderately active, and 4.6% were vigorously active. Men were more active than women at both the moderate and vigorous level. At the moderate level, whites were more active than Hispanics. The prevalence of both moderate and vigorous activity increased with education level and decreased with age.

More than half (56.4%) of adults reported doing no hard physical activity during the workday; however, 20% reported 1–4 hours per day, and 23.6% reported greater than or equal to 5 hours of hard occupational activity. Occupational activity was highest for persons who had less than 12 years of education, and was higher for blacks and Hispanics than whites. Occupational exertion decreased with increased education level and age.

Prevalence of Leisure-Time and Occupational Physical Activity Among Employed Adults—United States, 1990

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2 tables, 1 figure omitted

REGULAR PHYSICAL ACTIVITY AND HIGH levels of physical fitness offer numerous health benefits, such as reduced risk for cardiovascular disease, diabetes, obesity, some cancers, and musculoskeletal conditions. National rates for participation in leisure-time physical activity are consistently low for women, older adults, persons with low educational attainment, and racial/ethnic minorities. Public health recommendations for promoting physical activity emphasize moderate-intensity activities, building on recommendations for vigorous exercise to improve fitness. To determine the prevalence of leisure-time and occupational physical activity, data were analyzed for employed adults aged greater than or equal to 18 years in the 1990 National Health Interview Survey (NHIS). This report summarizes the results of the survey, which indicate that approximately half of adults who reported no physical activity during leisure time also reported that they performed at least 1 hour per day of hard physical activity at work.
The prevalence of hard occupational activity differed by level of leisure-time physical activity. Half (51.3%) of the respondents classified as sedentary in leisure time reported at least 1 hour of hard occupational activity per day. The prevalence of hard occupational activity was lower among persons classified as irregularly (42.0%), moderately (40.7%), or vigorously (36.8%) active during leisure time.

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CDC Editorial Note: The findings in this report indicate that during leisure time approximately two thirds (63.9%) of employed adults in the United States do not meet current recommendations for participation in moderate or vigorous physical activity. The NHIS findings were consistent with previous reports that indicate women, older adults, persons with less than 12 years of education, or members of racial/ethnic minorities are most likely to be inactive during leisure time. However, other opportunities exist for obtaining recommended amounts of physical activity, such as activities involved in commuting to and from work and those associated with certain occupations or maintaining a home.

Although the findings in this report suggest that adults may participate in physical activity at work, the frequency, intensity, and type of activity are not available from the NHIS data. Assessing activity patterns limited to leisure-time physical activity may underestimate the proportion of persons who obtain the recommended level of physical activity. Many persons from groups that are sedentary in their leisure time may be getting sufficient occupational physical activity to derive health benefits.

The findings in this report are subject to at least four limitations. First, estimates are based on self-reported activity and may be overestimates. Second, recall of the 24 types of leisure-time physical activity may have resulted in underreporting if seasonal or irregular activities were not performed during the 2-week recall period. Third, this study does not provide information on other sources of physical activity, such as transportation or housework, which may be disproportionately higher in certain population groups, such as women and racial/ethnic minorities. Finally, questions about occupational physical activity have not been asked since the 1990 NHIS, and the level of physical activity during work may have changed during the past decade.

CDC and the American College of Sports Medicine recommend that every U.S. adult accumulate 30 minutes or more of moderate-intensity physical activity on most, preferably all, days of the week. In 1990, only one third of employed adults met this recommendation or the recommendation for vigorous activity during leisure time. One of the national health objectives for 2000 was to reduce to no more than 15% the proportion of persons who engage in no leisure-time physical activity (objective 1.5). Systems that collect information on physical activity should be expanded to include additional activities. Because of the demonstrated health benefits of moderate-intensity physical activity, surveillance systems should be designed to assess activities such as occupational, childcare, and transportation for future monitoring of health-related physical activity.

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Public Health Aspects of the Rainbow Family of Living Light Annual Gathering—Allegheny National Forest, Pennsylvania, 1999

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THE RAINBOW FAMILY OF LIVING LIGHT (RFLL) is a loosely organized group that developed out of the late 1960s counterculture movement. RFLL has had a 2-week “Gathering for World Peace and the Healing of the Earth” in a different national forest each summer since 1972. For the June 21-July 10, 1999, gathering, RFLL selected the Allegheny National Forest in Pennsylvania. The site was not accessible by vehicle and was an hour’s walk to the nearest road. No sanitary facilities were available, and water from streams was consumed without treatment. Approximately 20,000 persons attended from the United States and several foreign countries. The state health department requested federal assistance to establish and maintain public health surveillance and to advise on outbreak prevention and control. This
This report describes the public health aspects of the gathering and presents recommendations for the management of health risks at large outdoor events.

RFLL was asked by the state health department’s epidemiologists to conduct or permit surveillance for persons with injuries, vomiting, and diarrhea at the RFLL clinic, the Center for Alternative Lifestyles Medicine (CALM). CALM was predominately staffed by herbalists, faith healers, and acupuncturists. CALM did not maintain records of patient visits but stocked supplies for obtaining stool samples if the staff encountered large numbers of patients with diarrhea. Public health workers visited the CALM clinic daily to inquire about the number of patients and spectrum of diseases encountered; CALM staff requested that these interactions be formal and not involve written records.

Surveillance for injuries and diseases was conducted at the 15 hospitals and clinics within a 75-mile radius of the Pennsylvania gathering. Emergency department (ED) directors of the 15 facilities were informed in person or by telephone about the gathering and were asked to inform their staff about the gathering. From June 27 to July 7, the peak period of attendance, ED staff asked all persons seeking care at their facility whether they were affiliated with the gathering, and if they were, to record on a provided form the participant’s age, sex, reason for visit, and medical disposition. Facilities were requested to return the form by fax each day. Telephone calls to all ED directors were made at the end of the surveillance period to verify data completeness.

Five facilities in the surrounding area reported caring for 115 persons affiliated with the gathering; 112 were attending the gathering, and three were local law enforcement officers detailed to the event. The median age of patients was 23 years (range: 1–70 years) and 69 (60%) were male. Fourteen (12%) of the 115 persons required hospital admission. Twenty-eight (24%) of the 115 sought care for apparent infections, including nine cases of diarrheal illness for which no pathogen was identified. Twenty persons (17%) had musculoskeletal injuries related to falls or altercations; 17 (15%) sought care for soft tissue injuries, 12 of which were bites (e.g., four brown recluse spider bites, two dog bites, and one rattlesnake bite). One death occurred as the result of complications from a myocardial infarction. Other reasons for seeking care included 13 (11%) psychiatric conditions, seven (6%) motor vehicle–related injuries, five (4%) environmental exposures (e.g., severe sunburn and lightning strike), and obstetric/gynecologic, noninfectious gastrointestinal, neurologic, allergic, and neoplastic conditions (less than 5% each). Although not a presenting complaint, lice infestation and illicit substance abuse among RFLL members were reported by medical staff.

Outbreak prevention measures included hygiene and health information provided by public health staff, and training sessions for clinic staff about risks for infectious diarrhea, Lyme disease, and rabies. Signs were posted on the grounds describing appropriate latrine use, handwashing, and water treatment. In addition, the state agency that certifies commercial kitchens in Pennsylvania provided a courtesy “walk-through” to reinforce safe food handling practices in the kitchens.

This report is subject to at least two limitations. First, no formal surveillance existed within CALM; therefore, the number of persons seeking health care and the spectrum of illnesses and injuries cannot be determined. Second, persons seeking care in the surrounding medical centers identified through surveillance may have had more serious illnesses than those reporting to CALM. The number of these persons may have been underestimated because they may not have been asked or they did not identify themselves as affiliated with RFLL.

Effective public health planning for special event gatherings can be achieved through collaboration among the event’s planners; community representatives; and local, state, and/or federal agencies responsible for health and safety. Plans should include (1) assessing the size of the event and the likely health needs of participants; (2) learning about local environmental hazards and diseases (e.g., rabies, Lyme disease, giardiasis, and vectors); (3) estimating local response capacity for laboratory diagnosis and emergency medical treatment; and (4) preparing triage and evacuation systems. Epidemic diarrheal diseases are a concern at outdoor gatherings where there are no sanitary facilities or safe sources of water; therefore, plans for preventing enterically transmitted diseases should include providing clean water, sanitary facilities, personal hygiene information, and surveillance for the prompt detection of epidemics.

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