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Current Trends

Reasons for Tobacco Use and Symptoms of Nicotine Withdrawal Among Adolescent and Young Adult Tobacco Users — United States, 1993

Cigarettes and other forms of tobacco are addictive because of the presence of nicotine (*1*). Among adults in the United States who have ever smoked daily, 91.3% tried their first cigarette and 77.0% became daily smokers before age 20 years (*2*). Among high school seniors who had ever tried smokeless tobacco (SLT), 73% did so by the ninth grade (*2*). To further characterize the development of nicotine addiction among persons aged 10–22 years, CDC analyzed data from the 1993 Teenage Attitudes and Practices Survey (TAPS-II). This report summarizes the results of that analysis and focuses on assessments of reasons for using tobacco and symptoms of nicotine withdrawal.

For TAPS-II, data about knowledge, attitudes, and practices of tobacco use were collected by telephone interviews; persons who could not be contacted by telephone were contacted in person. The TAPS-II sample for this analysis had two components: 1) of the 9135 respondents (aged 12–18 years) to the 1989 TAPS telephone interview*, 7960 (87.1%) participated in TAPS-II (these respondents were aged 15–22 years); and 2) an additional 4992 persons from a new probability sample of 5590 persons aged 10–15 years (89.3% response rate) participated in TAPS-II. Data were weighted to provide national estimates, and 95% confidence intervals (CIs) were calculated using SUDAAN (*3*).

Persons who had smoked cigarettes (n=2121) or who had used SLT (n=470) during the 30 days preceding the survey were asked if they used tobacco because "it relaxes or calms me" and if they used it because "it's really hard to quit" (either answer indicates an influence of the psychopharmacologic properties of nicotine [*1*]). Smokers who had tried to quit and persons who had quit smoking (n=1925)† were asked, "When you quit/tried to quit did you feel a strong need or urge to have a cigarette; feel more irritable; find it hard to concentrate; feel restless; feel hungry more often; feel

*TAPS respondents who completed the survey by mail questionnaire were not eligible for TAPS-II. TAPS-II included household interviews of persons who did not respond by telephone.
†Persons who reported that they had never smoked regularly were excluded from these analyses.

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sad, blue, or depressed?" SLT users who had tried to quit and persons who had discontinued use (n=1216) were asked similar questions adapted to SLT use.

Lifetime history of tobacco use was assessed through three categories for cigarette smoking (20 or fewer cigarettes smoked during lifetime, 21–98 cigarettes smoked, and 100 or more cigarettes smoked) and with two categories for SLT use (never used regularly versus ever used regularly). Frequency of use was measured by the number of days on which cigarettes were smoked or SLT was used during the preceding month (0, 1–14, 15–29, or 30 days). Intensity of use was measured by the average number of cigarettes smoked per day during the preceding 7 days (five or fewer, 6–15, or 16 or more) and by the number of times SLT was used on the days it was used (1–2, or three or more).

For persons who had smoked during the preceding 30 days and for those who had used SLT during the preceding 30 days, the frequency of reporting that tobacco was used because it is relaxing or because it is hard to quit increased in relation to increasing lifetime use, frequency of use, and intensity of use (Table 1); this pattern characterized the overall sample and persons in both age categories (10–18 years and 19–22 years). The percentages of persons who reported smoking cigarettes or using SLT for these two reasons also were similar across age groups. Among smokers and SLT users with the greatest lifetime use or intensity of use, the proportions who reported using tobacco to relax were similar to those who reported using it because it was hard to quit. Among those with the lowest lifetime use or frequency or intensity of use, relaxation was more commonly cited as a reason for use than was difficulty quitting. For every category of usage frequency, cigarette smokers were more likely to report use for relaxation than were SLT users. Regardless of age, approximately three fourths of daily cigarette smokers (73.8%) and daily SLT users (74.2%) reported that one of the reasons they used tobacco was because it was hard to quit.

The likelihood of reporting symptoms of nicotine withdrawal increased in relation to frequency (Table 2) and intensity (Figure 1) of use. Younger and older smokers were equally likely to report increasing nicotine withdrawal symptoms as exposure to nicotine increased (Table 2). The same pattern characterized SLT users among both age groups combined (group-specific analyses are not presented because of limitations in sample sizes of persons who used SLT during the preceding 30 days). Among persons aged 10–22 years, those who smoked cigarettes and those who used SLT on a daily basis were equally likely to report symptoms of nicotine withdrawal (with the exception of depression, which was less prevalent among SLT users). Among persons who reported using tobacco on 1–14 days during the preceding 30 days, those who smoked cigarettes were generally more likely to report symptoms of nicotine withdrawal than were persons who used SLT. At least one symptom of nicotine withdrawal was reported by 92.4% of daily cigarette smokers and 93.3% of daily SLT users who had previously tried to quit. Persons who smoked six or more cigarettes per day were more likely than those who smoked five or fewer cigarettes per day to report difficulty concentrating, feeling more irritable, and craving cigarettes during a previous quit attempt; however, among persons who smoked five or fewer cigarettes per day, 28.7% reported difficulty concentrating; 47.5%, feeling more irritable; and 56.9%, craving cigarettes during a previous quit attempt (Figure 1).

TABLE 1. Prevalence of selected reasons for using cigarettes and smokeless tobacco, by age group and use history — United States, Teenage Attitudes and Practices Survey, 1993

	"It relaxes or calms me"						"It's really hard to quit"					
	10–18 yrs		19–22 yrs		10–22 yrs		10–18 yrs		19–22 yrs		10–22 yrs	
Tobacco product/Use history	%	(95% CI*)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Cigarettes												
Lifetime use†												
≤ 20 cigarettes	30.5	(± 7.5)	18.1	(±10.0)	26.9	(± 6.1)	8.2	(± 4.7)	3.8	(± 6.1)	7.0	(±3.8)
21–98 cigarettes	48.7	(± 9.1)	39.5	(± 9.8)	45.0	(± 6.8)	21.1	(± 7.3)	10.4	(± 6.0)	16.7	(±5.2)
≥100 cigarettes	66.8	(± 3.4)	69.2	(± 3.0)	68.1	(± 2.2)	63.1	(± 4.1)	64.8	(± 3.3)	64.1	(±2.7)
Frequency of use§												
1–14 days	40.6	(± 5.0)	37.8	(± 5.7)	39.4	(± 3.8)	17.7	(± 4.0)	18.3	(± 4.8)	18.0	(±3.2)
15–29 days	60.8	(± 7.2)	75.7	(± 6.6)	68.2	(± 5.0)	50.5	(± 7.8)	56.2	(± 8.2)	53.4	(±5.5)
30 days	73.3	(± 4.2)	72.4	(± 3.7)	72.8	(± 2.8)	74.3	(± 4.4)	73.5	(± 3.3)	73.8	(±2.7)
Intensity of use¶												
≤ 5 cigarettes	57.3	(± 5.1)	61.5	(± 5.7)	59.1	(± 3.8)	39.6	(± 5.4)	34.6	(± 6.2)	37.4	(±4.1)
6–15 cigarettes	69.7	(± 5.8)	74.4	(± 4.8)	72.4	(± 3.8)	72.4	(± 5.9)	73.4	(± 4.6)	73.0	(±3.7)
≥16 cigarettes	75.4	(± 7.0)	71.1	(± 5.9)	72.5	(± 4.4)	82.6	(± 6.8)	78.8	(± 4.8)	80.1	(±3.9)
Smokeless tobacco												
Lifetime use**												
Never regular user	10.5	(± 6.2)	19.3	(±12.8)	13.8	(± 6.0)	5.0	(± 4.2)	1.7	(± 2.5)	3.8	(±2.9)
Ever regular user	43.2	(± 8.7)	55.1	(± 7.3)	49.7	(± 6.0)	47.5	(± 8.7)	54.2	(± 8.1)	51.2	(±5.2)
Frequency of use††												
1–14 days	17.7	(± 6.8)	33.4	(±10.1)	24.5	(± 5.6)	10.0	(± 5.4)	12.9	(± 6.0)	11.2	(±4.0)
15–29 days	41.5	(±15.7)	56.6	(±15.2)	48.5	(±11.7)	31.9	(±14.3)	38.5	(±13.2)	35.0	(±9.6)
30 days	49.4	(±13.4)	56.8	(± 9.4)	53.8	(± 8.7)	74.4	(± 9.6)	74.0	(± 9.2)	74.2	(±6.5)
Intensity§§												
1–2 times	22.3	(± 7.0)	39.2	(± 9.3)	29.4	(± 5.9)	13.3	(± 5.8)	15.3	(± 6.9)	14.1	(±4.1)
≥3 times	43.1	(±11.0)	52.9	(± 8.8)	48.6	(± 7.5)	56.7	(±10.3)	61.9	(± 9.3)	59.7	(±6.3)

* Confidence interval.
† Lifetime number of cigarettes smoked. Sample sizes (n=2042–2047) are for persons aged 10–22 years. Sample sizes for the 10–18-year category and the 19–22-year category are approximately half of the total sample size. Sample sizes vary because of variation in missing values for each item.
§ Days smoked during preceding 30 days; n=2072–2079.
¶ Cigarettes smoked per day. Samples (n=1634–1637) exclude persons who smoked during the preceding 30 days but not during the preceding 7 days.
** Based on responses to the questions, "Are you now a regular user of chewing tobacco or snuff?" and "Was there ever a time when you considered yourself to be a regular user of chewing tobacco or snuff?"; n=458–467.
†† Days used during preceding 30 days; n=457–466.
§§ Times used per day; n=452–460.

TABLE 2. Percentage of cigarette smokers and smokeless tobacco users who reported experiencing symptoms of nicotine withdrawal during previous attempts to discontinue use, by age group and frequency of use — United States, Teenage Attitudes and Practices Survey, 1993

Tobacco user/ Age group	Find it hard to concentrate		Feel hungry more often		Feel more irritable		Strong need/urge to smoke/chew		Feel restless		Feel sad, blue, or depressed		Any indicator	
	%	(95% CI*)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Cigarette smokers†														
Frequency§														
10–18 yrs (n=943–967)														
0	11.8	(± 3.3)	24.4	(± 4.9)	21.4	(± 4.1)	21.9	(± 4.7)	17.0	(± 4.2)	9.3	(±3.1)	44.4	(± 5.4)
1–14	22.8	(± 6.6)	35.4	(± 7.5)	36.5	(± 8.1)	36.3	(± 7.8)	30.3	(± 7.2)	17.9	(±6.0)	66.0	(± 7.6)
15–29	39.2	(± 9.5)	43.0	(± 9.6)	55.8	(± 9.4)	71.2	(± 8.7)	49.9	(± 9.9)	24.4	(±8.2)	88.1	(± 6.0)
30	46.1	(± 5.9)	49.0	(± 6.6)	77.0	(± 5.1)	81.6	(± 4.8)	62.6	(± 6.0)	28.6	(±5.6)	93.3	(± 3.3)
19–22 yrs (n=931–951)														
0	14.6	(± 3.9)	30.0	(± 5.3)	29.2	(± 4.9)	28.1	(± 4.9)	27.2	(± 4.8)	11.7	(±3.8)	50.0	(± 5.5)
1–14	16.9	(± 6.7)	40.5	(± 8.6)	32.5	(± 8.6)	43.8	(± 8.7)	32.2	(± 8.6)	11.5	(±5.4)	68.7	(± 8.2)
15–29	26.9	(± 9.5)	52.8	(±10.1)	49.9	(±11.0)	63.4	(±10.1)	54.6	(±10.6)	18.5	(±8.2)	86.0	(± 7.0)
30	47.3	(± 4.9)	50.5	(± 5.1)	70.9	(± 4.6)	78.1	(± 4.0)	60.8	(± 4.9)	23.1	(±4.3)	91.7	(± 2.8)
10–22 yrs (n=1880–1918)														
0	13.0	(± 2.3)	26.8	(± 3.7)	24.7	(± 3.2)	24.6	(± 3.4)	21.3	(± 3.2)	10.3	(±2.4)	46.8	(± 4.0)
1–14	20.5	(± 5.0)	37.4	(± 5.6)	35.0	(± 6.0)	39.2	(± 6.0)	31.0	(± 5.6)	15.4	(±4.2)	67.0	(± 5.7)
15–29	32.8	(± 6.6)	48.0	(± 7.2)	52.7	(± 7.5)	67.2	(± 6.9)	52.4	(± 7.6)	21.3	(±6.0)	87.0	(± 5.0)
30	46.8	(± 3.8)	49.9	(± 4.2)	73.5	(± 3.2)	79.6	(± 3.0)	61.6	(± 3.8)	25.5	(±3.4)	92.4	(± 2.1)
Smokeless tobacco users														
Frequency¶														
10–22 yrs (n=1199–1213)														
0	5.4	(± 1.6)	7.7	(± 1.9)	8.0	(± 1.9)	8.5	(± 2.0)	6.0	(± 1.7)	3.3	(±1.2)	17.6	(± 2.9)
1–14	10.2	(± 5.3)	12.4	(± 6.4)	8.5	(± 5.1)	20.5	(± 7.6)	11.2	(± 5.4)	3.1	(±3.5)	35.4	(± 8.6)
15–29	23.9	(±11.7)	48.6	(±13.0)	47.1	(±13.7)	44.5	(±13.4)	34.8	(±12.7)	10.5	(±9.0)	72.6	(±12.3)
30	41.1	(±10.0)	38.9	(±10.9)	62.9	(± 9.6)	85.4	(± 7.0)	55.2	(±10.3)	9.0	(±6.4)	93.3	(± 4.2)

*Confidence interval.
†Excludes persons who voluntarily reported that they had never smoked regularly.
§Days smoked during preceding 30 days. Sample sizes vary because of variation in missing values for each item.
¶Days used during preceding 30 days. Sample sizes vary because of variation in missing values for each item.

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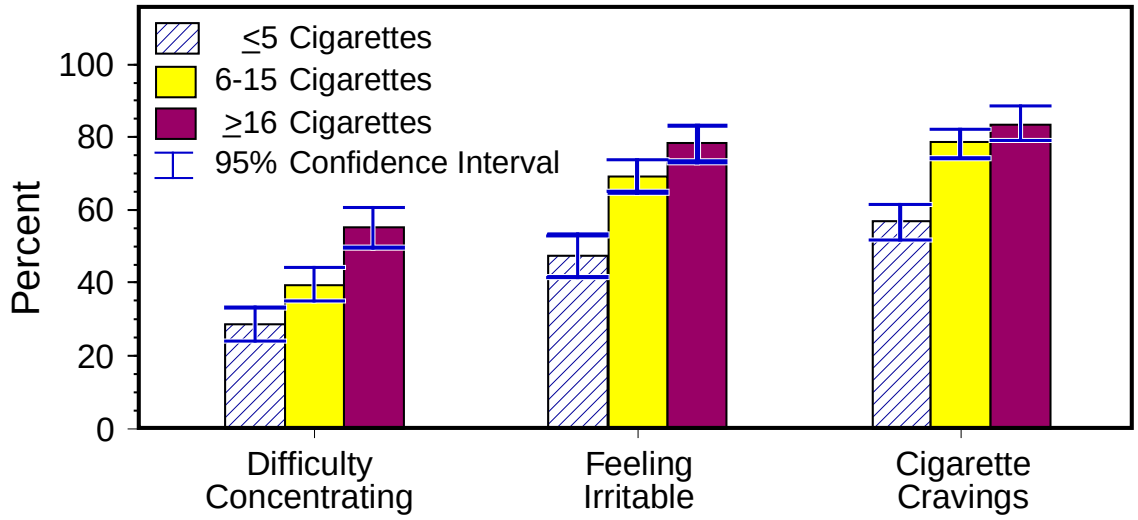
FIGURE 1. Percentage of cigarette smokers* aged 10–22 years who reported experiencing difficulty concentrating, feeling more irritable, and craving cigarettes† during previous attempts to quit smoking, by mean number of cigarettes smoked per day — United States, Teenage Attitudes and Practices Survey, 1993



*Persons who smoked during the preceding 7 days.
†Feeling a strong need or urge to have a cigarette.

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Editorial Note: This analysis of TAPS-II underscores the relation between use of tobacco and reasons for using tobacco—a relation that reflects the psychopharmocologic properties of nicotine. In addition, the frequency of smoking and of using SLT strongly correlated with self-reported symptoms of nicotine withdrawal. These findings are consistent with previous studies that indicated high prevalences of symptoms of nicotine addiction among adolescent and adult smokers (*2,4,5*).

Previous reports indicate that adolescents initially tried cigarettes for reasons related to social norms, advertising, social pressure, and curiosity (*2,6*). However, once the behavior becomes established, regular smokers are more likely than beginning smokers to report that they smoke for pleasure and because they are addicted (*2,6*). Among students who were high school seniors during 1976–1986, a total of 44% of daily smokers believed that in 5 years they would not be smoking; however, follow-up indicated that 5–6 years later, 73% of these persons remained daily smokers (*2*). This finding suggests that many of these persons could not overcome the social, psychological, and chemical influences that maintain or advance the smoking behavior once it is established (*2*) and indicates that many adolescents do not understand the personal risks of smoking, including nicotine addiction (*7*).

The findings in this report are subject to at least two limitations. First, because of small sample sizes, the prevalence of SLT withdrawal symptoms could not be analyzed in relation to lifetime history of cigarette smoking; however, SLT users who tried to quit were probably less likely to experience symptoms of nicotine withdrawal if

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they concurrently smoked cigarettes (*1*). Second, the relation of nonpharmacologic (e.g., social and psychological) influences on tobacco use were not quantified; however, the findings are consistent with previous reports documenting the psychopharmacologic effects of nicotine on tobacco use and tobacco withdrawal (*1,2,4*).

In 1992, approximately two thirds of adolescent smokers reported that they wanted to quit smoking, and 70% indicated that they would not have started smoking if they could choose again (*8*). Most adults probably could be prevented from becoming tobacco users if they could be kept tobacco-free during adolescence (*2*). Four strategies that may assist in supporting tobacco-free adolescence include 1) strict enforcement of the prohibition of sales to minors (sales to persons aged <18 years are illegal in all 50 states), 2) reduction of advertising and promotion practices that stimulate demand, 3) increases in the real (i.e., inflation-adjusted) prices of tobacco products, and 4) school health education programs that are reinforced by media-based and other community programs (*2*).

The Institute of Medicine recently published recommendations for a comprehensive national strategy to prevent nicotine addiction among youth (*9*). These recommendations especially address tobacco-free policies; restrictions on tobacco advertising and promotion; tobacco taxation; enforcement of youth access laws; regulation of the labeling, packaging, and contents of tobacco products; further research on nicotine addiction and on prevention and cessation programs; and the coordination of policies and research. Copies of this report can be purchased from National Academy Press, telephone (800) 624-6242 or (202) 334-3313.

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Epidemiologic Notes and Reports

Lead-Contaminated Drinking Water in Bulk-Water Storage Tanks — Arizona and California, 1993

Lead poisoning is a major environmental health problem for children in the United States (*1,2*): during 1988–1991, approximately 1.7 million U.S. children aged 1–5 years had elevated blood lead levels (BLLs) (≥10 μg/dL) (*3*). To determine the source of lead exposure for children with BLLs ≥20 μg/dL, the Arizona Department of Health Services (ADHS) conducts environmental investigations. In 1993, as a result of investigations of increased BLLs in two children in southwestern Arizona, ADHS detected lead levels approximately 30 times the Environmental Protection Agency (EPA) action level of 15 parts per billion (ppb) in bulk-delivered drinking water in the homes of these children. Because two of the three companies that supplied bulk water to southwestern Arizona were based in California, ADHS notified the California State Department of Health Services (CSDHS) about the problem. As a result, CSDHS conducted a separate investigation and identified one child with an elevated BLL whose drinking water sources included bulk-delivered water with lead levels exceeding EPA standards. This report summarizes the investigations of elevated BLLs in these three children and high lead levels in bulk-delivered drinking water in Arizona and California.

Arizona

In July 1993, routine screening by ADHS for lead poisoning detected a BLL of 42 μg/dL (CDC BLL of concern=10 μg/dL) in a 6-month-old infant in Yuma County, Arizona. To determine the source of lead exposure, ADHS initiated an environmental investigation. Lead was not detected in a first-draw water sample from the kitchen faucet, which was connected to a private well. However, the parents reported that the child's formula was prepared using bulk-stored water, and a first-draw water sample taken through the brass fitting of a bulk-water storage tank contained 495 ppb lead. Other potential environmental sources of lead included peeling lead paint on the outside of the house and on one kitchen wall covered with wallpaper. ADHS advised the parents to stop drinking bulk-stored water, informed them about professional paint removal and encapsulation, recommended measures to prevent lead exposure, and notified the water-delivery company about the high lead level in the bulk-stored water.

In August 1993, a BLL of 37 μg/dL was detected in a 12-month-old child in Yuma County who was tested by ADHS for lead poisoning following a complaint of abdominal pain. Lead was not detected in a first-draw water sample from the kitchen faucet, which was connected to the municipal water supply. However, the parents reported that the child's source of drinking water was bulk-delivered water, and a first-draw water sample obtained from a kitchen faucet supplied by a bulk-water storage tank contained 450 ppb lead. The investigation also identified lead-contaminated soil (68 ppm) at a relative's home where the child routinely stayed during the day. ADHS advised the parents to stop drinking bulk-stored water, recommended measures to prevent lead exposure, and notified the water-delivery company about the high lead levels in the bulk-delivered water. Two weeks after the first-draw sample was obtained, lead levels in water taken through the brass fitting on the tank and directly from the tank were 1050 ppb and 602 ppb, respectively.

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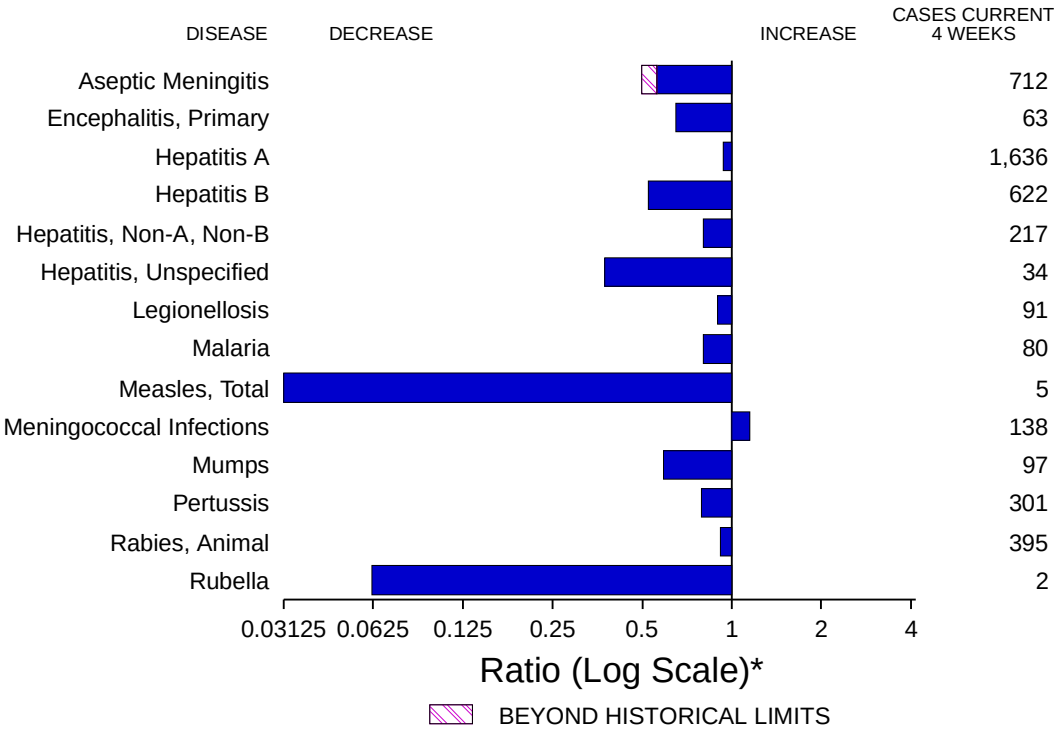
FIGURE I. Notifiable disease reports, comparison of 4-week totals ending October 15, 1994, with historical data — United States



*Ratio of current 4-week total to mean of 15 4-week totals (from previous, comparable, and subsequent 4-week periods for the past 5 years). The point where the hatched area begins is based on the mean and two standard deviations of these 4-week totals.

TABLE I. Summary — cases of specified notifiable diseases, United States, cumulative, week ending October 15, 1994 (41st Week)

	Cum. 1994		Cum. 1994
AIDS*	61,173	Measles: imported	170
Anthrax	-	indigenous	681
Botulism: Foodborne	45	Plague	14
Infant	51	Poliomyelitis, Paralytic[§]	1
Other	7	Psittacosis	29
Brucellosis	70	Rabies, human	1
Cholera	11	Syphilis, primary & secondary	16,867
Congenital rubella syndrome	3	Syphilis, congenital, age < 1 year[¶]	1,123
Diphtheria	1	Tetanus	26
Encephalitis, post-infectious	91	Toxic shock syndrome	147
Gonorrhea	304,089	Trichinosis	29
Haemophilus influenzae (invasive disease)[†]	915	Tuberculosis	17,111
Hansen Disease	89	Tularemia	74
Leptospirosis	26	Typhoid fever	343
Lyme Disease	8,544	Typhus fever, tickborne (RMSF)	359

*Updated monthly to the Division of HIV/AIDS, National Center for Infectious Diseases; last update September 27, 1994.
[†]Of 870 cases of known age, 237 (27%) were reported among children less than 5 years of age.
[§]The remaining 5 suspected cases with onset in 1994 have not yet been confirmed. In 1993, 3 of 10 suspected cases were confirmed. Two of the confirmed cases of 1993 were vaccine-associated and one was classified as imported.
[¶]Total reported to the Division of Sexually Transmitted Diseases and HIV Prevention, National Center for Prevention Services, through second quarter 1994.

TABLE II. Cases of selected notifiable diseases, United States, weeks ending October 15, 1994, and October 16, 1993 (41st Week)

Reporting Area	AIDS*	Aseptic Meningitis	Encephalitis		Gonorrhea		Hepatitis (Viral), by type				Legionellosis	Lyme Disease
			Primary	Post-infectious			A	B	NA,NB	Unspecified		
	Cum. 1994	Cum. 1994	Cum. 1994	Cum. 1994	Cum. 1994	Cum. 1993	Cum. 1994	Cum. 1994	Cum. 1994	Cum. 1994	Cum. 1994	Cum. 1994
UNITED STATES	61,173	14,415	521	91	304,089	314,297	17,707	9,034	3,382	341	1,243	8,544
NEW ENGLAND	2,251	237	16	4	6,612	6,034	232	264	110	15	65	2,176
Maine	71	24	3	-	68	70	21	11	-	-	4	17
N.H.	46	25	-	2	89	43	14	19	8	-	-	23
Vt.	29	26	2	-	26	19	7	-	-	-	-	12
Mass.	1,126	66	9	1	2,528	2,373	88	162	82	13	50	190
R.I.	202	96	2	1	373	341	20	7	20	2	11	347
Conn.	777	-	-	-	3,528	3,188	82	65	-	-	-	1,587
MID. ATLANTIC	18,266	693	42	16	34,350	35,986	1,329	1,103	375	9	202	5,179
Upstate N.Y.	1,722	336	23	2	8,073	7,846	436	299	186	5	53	3,249
N.Y. City	10,514	113	6	5	12,893	9,906	535	257	1	-	9	21
N.J.	4,205	-	-	-	3,828	3,836	224	285	158	-	37	1,022
Pa.	1,825	244	13	9	9,556	14,398	134	262	30	4	103	887
E.N. CENTRAL	4,776	1,141	132	22	57,146	66,203	1,790	899	249	8	376	81
Ohio	870	302	45	4	16,917	17,604	741	136	20	-	161	59
Ind.	479	163	10	1	6,923	6,627	307	154	9	-	97	13
Ill.	2,354	266	43	5	14,352	22,505	356	184	50	3	21	4
Mich.	780	403	30	12	13,892	14,180	231	307	167	5	68	5
Wis.	293	7	4	-	5,062	5,287	155	118	3	-	29	-
W.N. CENTRAL	1,244	325	23	6	16,388	17,297	883	527	73	10	81	209
Minn.	300	20	2	-	2,630	1,807	185	48	17	1	1	141
Iowa	88	101	1	1	1,236	1,259	54	24	9	9	28	13
Mo.	566	125	7	4	9,474	10,474	432	405	25	-	28	36
N. Dak.	22	10	3	-	18	43	5	-	-	-	4	-
S. Dak.	12	2	2	-	154	210	31	2	-	-	1	-
Nebr.	69	14	4	1	-	484	89	19	8	-	14	9
Kans.	187	53	4	-	2,876	3,020	87	29	14	-	5	10
S. ATLANTIC	14,441	1,184	125	27	84,266	79,757	1,152	1,888	500	42	288	678
Del.	213	30	1	-	1,543	1,173	16	4	1	-	26	62
Md.	2,356	209	19	4	14,396	12,823	163	327	28	14	79	273
D.C.	1,089	47	-	1	5,767	3,709	19	44	1	-	9	7
Va.	877	235	27	6	10,532	9,400	142	104	21	6	8	119
W. Va.	54	27	38	-	638	504	16	33	24	-	3	18
N.C.	931	198	39	1	21,998	19,839	111	226	51	-	20	72
S.C.	996	27	-	-	10,552	8,570	32	25	8	-	15	7
Ga.	1,688	47	1	-	137	4,660	24	523	168	-	93	100
Fla.	6,237	364	-	15	18,703	19,079	629	602	198	22	35	20
E.S. CENTRAL	1,606	8,647	31	3	36,894	36,346	470	850	729	2	60	38
Ky.	248	140	14	1	4,031	3,786	125	63	23	-	8	21
Tenn.	539	8,313	10	-	11,727	11,179	208	722	691	1	36	11
Ala.	468	149	5	1	12,400	13,103	83	65	15	1	12	6
Miss.	351	45	2	1	8,736	8,278	54	-	-	-	4	-
W.S. CENTRAL	5,837	680	44	2	37,936	35,515	2,595	1,213	464	64	36	102
Ark.	206	38	-	-	5,232	5,594	157	22	7	1	7	8
La.	995	30	7	-	9,671	9,518	128	142	145	1	12	1
Okla.	215	-	-	-	3,001	3,753	278	271	254	1	11	56
Tex.	4,421	612	37	2	20,032	16,650	2,032	778	58	61	6	37
MOUNTAIN	1,751	264	10	3	6,797	9,035	3,305	505	356	49	69	16
Mont.	19	7	-	-	72	64	18	21	11	-	14	-
Idaho	49	5	-	-	69	147	276	67	64	1	1	3
Wyo.	16	4	2	2	67	67	25	22	135	-	4	3
Colo.	658	100	2	-	2,494	3,012	432	82	55	14	15	-
N. Mex.	123	15	-	-	824	743	911	174	45	11	3	8
Ariz.	493	50	-	-	2,470	3,182	1,046	35	11	11	7	-
Utah	102	46	2	1	189	350	407	58	22	3	6	1
Nev.	291	37	4	-	612	1,470	190	46	13	9	19	1
PACIFIC	11,001	1,244	98	8	23,700	28,124	5,951	1,785	526	142	66	65
Wash.	730	-	-	-	2,396	3,002	283	59	54	2	6	-
Oreg.	486	-	-	-	570	951	504	55	16	1	-	-
Calif.	9,604	1,127	95	7	19,524	23,194	4,940	1,635	451	136	57	65
Alaska	34	17	3	-	686	501	176	10	-	-	-	-
Hawaii	147	100	-	1	524	476	48	26	5	3	3	-
Guam	1	16	-	-	179	81	42	6	-	12	3	-
P.R.	1,759	27	1	3	357	391	57	292	119	11	-	-
V.I.	39	-	-	-	25	79	-	1	-	-	-	-
Amer. Samoa	-	-	-	-	25	39	7	-	-	-	-	-
C.N.M.I.	-	-	-	-	41	71	6	1	-	-	-	-

N: Not notifiable U: Unavailable C.N.M.I.: Commonwealth of Northern Mariana Islands

*Updated monthly to the Division of HIV/AIDS, National Center for Infectious Diseases; last update September 27, 1994.

TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending October 15, 1994, and October 16, 1993 (41st Week)

Reporting Area	Malaria	Measles (Rubeola)					Menin-gococcal Infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported*		Total									
	Cum. 1994	1994	Cum. 1994	1994	Cum. 1994	Cum. 1993	Cum. 1994	1994	Cum. 1994	1994	Cum. 1994	Cum. 1993	1994	Cum. 1994	Cum. 1993
UNITED STATES	838	4	681	-	170	272	2,085	31	1,117	65	2,660	4,833	-	210	168
NEW ENGLAND	66	-	14	-	14	62	108	-	18	7	303	616	-	128	2
Maine	4	-	1	-	4	1	19	-	3	3	18	15	-	-	1
N.H.	3	-	1	-	-	2	6	-	4	-	53	141	-	-	-
Vt.	3	-	2	-	1	31	2	-	-	-	40	71	-	-	-
Mass.	29	-	2	-	6	18	45	-	2	4	156	318	-	124	1
R.I.	8	-	4	-	3	1	-	-	2	-	5	7	-	2	-
Conn.	19	-	4	-	-	9	36	-	7	-	31	64	-	2	-
MID. ATLANTIC	160	-	166	-	23	21	208	-	87	2	459	732	-	9	58
Upstate N.Y.	42	-	12	-	3	5	77	-	24	2	196	237	-	6	16
N.Y. City	60	-	11	-	3	7	11	-	11	-	82	57	-	1	22
N.J.	35	-	139	-	14	9	50	-	6	-	10	72	-	2	15
Pa.	23	-	4	-	3	-	70	-	46	-	171	366	-	-	5
E.N. CENTRAL	91	-	59	-	43	30	329	4	181	4	337	1,203	-	11	7
Ohio	15	-	15	-	2	9	93	2	53	2	123	318	-	-	1
Ind.	14	-	-	-	1	1	57	-	7	2	53	105	-	-	2
Ill.	38	-	17	-	39	9	101	-	80	-	76	380	-	3	1
Mich.	22	-	24	-	1	6	46	2	37	-	36	84	-	8	2
Wis.	2	-	3	-	-	5	32	-	4	-	49	316	-	-	1
W.N. CENTRAL	38	-	126	-	44	3	145	2	58	1	144	449	-	2	1
Minn.	12	-	-	-	-	-	11	-	5	-	51	252	-	-	-
Iowa	5	-	6	-	1	-	18	2	15	-	17	35	-	-	-
Mo.	12	-	118	-	42	1	78	-	31	-	39	121	-	2	1
N. Dak.	1	-	-	-	-	-	1	-	5	-	4	5	-	-	-
S. Dak.	-	-	-	-	-	-	8	-	-	1	16	8	-	-	-
Nebr.	3	U	1	U	1	-	9	U	2	U	7	12	U	-	-
Kans.	5	-	1	-	-	2	20	-	-	-	10	16	-	-	-
S. ATLANTIC	186	3	57	-	8	28	358	4	161	10	244	472	-	11	6
Del.	3	-	-	-	-	-	5	-	-	-	2	9	-	-	-
Md.	93	-	2	-	2	4	33	3	54	2	68	110	-	-	2
D.C.	12	-	-	-	-	-	4	-	-	2	9	12	-	-	-
Va.	27	-	1	-	2	4	58	-	38	5	35	52	-	-	-
W. Va.	-	-	36	-	-	-	12	-	3	-	4	8	-	-	-
N.C.	10	-	2	-	1	-	44	-	35	-	58	90	-	-	-
S.C.	4	-	-	-	-	-	22	-	7	-	13	64	-	-	-
Ga.	20	-	2	-	-	-	66	-	8	-	22	50	-	2	-
Fla.	17	3	14	-	3	20	114	1	16	1	33	77	-	9	4
E.S. CENTRAL	29	-	28	-	-	1	122	1	19	-	114	261	-	-	-
Ky.	10	-	-	-	-	-	34	-	-	-	58	35	-	-	-
Tenn.	9	-	28	-	-	-	27	-	7	-	18	160	-	-	-
Ala.	9	-	-	-	-	1	61	-	5	-	31	56	-	-	-
Miss.	1	-	-	-	-	-	-	1	7	-	7	10	-	-	-
W.S. CENTRAL	39	1	10	-	7	10	260	2	216	27	178	131	-	13	17
Ark.	3	-	-	-	1	-	39	-	1	5	27	10	-	-	-
La.	7	-	-	-	1	1	29	1	24	-	10	9	-	-	1
Okla.	6	-	-	-	-	-	27	-	23	2	24	70	-	4	1
Tex.	23	1	10	-	5	9	165	1	168	20	117	42	-	9	15
MOUNTAIN	26	-	149	-	17	6	134	14	138	2	320	354	-	6	11
Mont.	-	-	-	-	-	-	6	-	-	1	7	7	-	-	-
Idaho	2	-	1	-	-	-	15	-	7	-	45	90	-	-	2
Wyo.	1	-	-	-	-	-	7	-	2	-	-	1	-	-	-
Colo.	11	-	16	-	3	3	27	-	3	-	109	139	-	-	2
N. Mex.	3	-	-	-	-	-	13	N	N	-	20	36	-	1	-
Ariz.	3	-	1	-	1	2	42	3	89	-	116	50	-	-	2
Utah	4	-	131	-	2	-	19	11	23	-	20	27	-	4	4
Nev.	2	-	-	-	11	1	5	-	13	1	3	4	-	1	1
PACIFIC	203	-	72	-	14	111	421	4	239	12	561	615	-	30	66
Wash.	9	-	-	-	-	-	27	1	7	-	29	60	-	-	-
Oreg.	11	-	-	-	1	4	74	N	N	-	38	51	-	2	-
Calif.	165	-	56	-	9	85	312	2	212	11	476	493	-	23	37
Alaska	2	-	16	-	-	2	2	-	3	-	1	5	-	1	1
Hawaii	16	-	-	-	4	20	6	1	17	1	17	6	-	4	28
Guam	3	U	211	U	-	2	1	U	4	U	2	-	U	1	-
P.R.	2	-	13	-	-	347	15	-	2	-	1	6	-	-	-
V.I.	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Amer. Samoa	-	-	-	-	-	-	-	-	1	-	2	2	-	-	-
C.N.M.I.	1	U	26	U	-	1	-	U	2	U	-	1	U	-	-

*For measles only, imported cases include both out-of-state and international importations.
N: Not notifiable U: Unavailable † International § Out-of-state

TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending October 15, 1994, and October 16, 1993 (41st Week)

Reporting Area	Syphilis (Primary & Secondary)		Toxic-Shock Syndrome	Tuberculosis		Tula-remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1994	Cum. 1993	Cum. 1994	Cum. 1994	Cum. 1993	Cum. 1994	Cum. 1994	Cum. 1994	Cum. 1994
UNITED STATES	16,867	21,067	147	17,111	17,752	74	343	359	4,934
NEW ENGLAND	171	265	4	394	401	1	22	16	1,479
Maine	4	5	1	23	19	-	-	-	-
N.H.	3	22	-	14	15	-	-	-	119
Vt.	-	1	1	6	5	-	-	-	112
Mass.	76	111	2	205	220	1	18	8	567
R.I.	12	11	-	35	48	-	1	-	44
Conn.	76	115	-	111	94	-	3	8	637
MID. ATLANTIC	1,090	1,840	24	3,364	3,715	1	92	16	620
Upstate N.Y.	141	181	14	253	554	1	10	6	207
N.Y. City	496	881	-	2,053	2,182	-	61	1	-
N.J.	163	245	-	620	445	-	17	3	220
Pa.	290	533	10	438	534	-	4	6	193
E.N. CENTRAL	2,220	3,410	30	1,658	1,792	8	66	41	51
Ohio	916	899	9	276	252	1	7	24	4
Ind.	199	296	2	154	174	2	7	5	12
Ill.	615	1,325	9	828	938	3	40	10	15
Mich.	232	472	10	354	359	1	5	2	12
Wis.	258	418	-	46	69	1	7	-	8
W.N. CENTRAL	946	1,353	22	446	390	32	1	32	167
Minn.	40	54	1	100	50	1	-	-	13
Iowa	50	57	8	46	40	-	-	1	70
Mo.	804	1,124	6	197	204	21	1	14	16
N. Dak.	-	4	1	7	6	-	-	-	9
S. Dak.	-	2	-	21	12	1	-	13	29
Nebr.	-	10	2	18	21	2	-	1	-
Kans.	52	102	4	57	57	7	-	3	30
S. ATLANTIC	4,892	5,322	7	3,177	3,573	2	44	168	1,577
Del.	22	90	-	26	38	-	1	-	41
Md.	239	295	-	259	305	1	12	20	433
D.C.	179	273	-	98	136	-	1	-	2
Va.	639	514	1	255	356	-	8	16	324
W. Va.	8	11	-	62	61	-	-	2	61
N.C.	1,348	1,507	1	383	424	-	-	58	135
S.C.	643	779	-	294	321	-	-	15	147
Ga.	1,196	875	1	606	591	1	2	54	304
Fla.	618	978	4	1,194	1,341	-	20	3	130
E.S. CENTRAL	3,081	3,232	4	1,086	1,287	1	2	29	155
Ky.	172	267	2	257	298	1	1	8	18
Tenn.	822	932	2	322	391	-	1	15	34
Ala.	541	668	-	346	393	-	-	2	103
Miss.	1,546	1,365	-	161	205	-	-	4	-
W.S. CENTRAL	3,657	4,452	1	2,384	2,099	17	13	43	548
Ark.	388	450	-	224	158	16	-	7	25
La.	1,408	2,049	-	137	200	-	3	-	62
Okla.	100	243	1	216	125	1	2	29	31
Tex.	1,761	1,710	-	1,807	1,616	-	8	7	430
MOUNTAIN	193	200	7	387	428	9	9	14	115
Mont.	4	1	-	9	13	3	-	4	15
Idaho	1	-	1	11	10	-	-	-	3
Wyo.	1	7	-	8	4	-	-	2	17
Colo.	105	63	4	21	64	1	3	4	10
N. Mex.	18	24	-	43	46	1	1	2	6
Ariz.	33	82	-	180	181	-	1	1	41
Utah	8	9	2	38	25	2	2	-	14
Nev.	23	14	-	77	85	2	2	1	9
PACIFIC	617	993	48	4,215	4,067	3	94	-	222
Wash.	29	49	2	215	203	-	3	-	-
Oreg.	21	37	-	90	-	2	4	-	9
Calif.	561	893	43	3,663	3,612	-	83	-	183
Alaska	4	8	-	43	48	1	-	-	30
Hawaii	2	6	3	204	204	-	4	-	-
Guam	9	3	-	142	48	-	1	-	-
P.R.	235	412	-	137	165	-	-	-	55
V.I.	25	37	-	-	2	-	-	-	-
Amer. Samoa	1	-	-	4	4	-	1	-	-
C.N.M.I.	2	3	-	31	29	-	1	-	-

U: Unavailable

TABLE III. Deaths in 121 U.S. cities,* week ending October 15, 1994 (41st Week)

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	552	381	92	53	18	8	29
Boston, Mass.	162	99	31	21	8	3	11
Bridgeport, Conn.	29	21	4	3	-	1	2
Cambridge, Mass.	22	15	5	2	-	-	2
Fall River, Mass.	29	26	3	-	-	-	-
Hartford, Conn.	56	33	13	4	4	2	1
Lowell, Mass.	29	22	4	3	-	-	3
Lynn, Mass.	14	10	3	1	-	-	-
New Bedford, Mass.	24	19	1	4	-	-	1
New Haven, Conn.	44	25	11	5	2	1	2
Providence, R.I.	31	25	3	2	1	-	-
Somerville, Mass.	5	5	-	-	-	-	-
Springfield, Mass.	42	33	6	2	1	-	4
Waterbury, Conn.	22	14	5	3	-	-	-
Worcester, Mass.	43	34	3	3	2	1	3
MID. ATLANTIC	2,427	1,550	447	324	54	52	120
Albany, N.Y.	46	34	6	1	2	3	4
Allentown, Pa.	30	23	2	5	-	-	1
Buffalo, N.Y.	U	U	U	U	U	U	U
Camden, N.J.	29	16	3	5	3	2	3
Elizabeth, N.J.	19	9	4	2	1	3	2
Erie, Pa.§	44	34	6	1	3	-	1
Jersey City, N.J.	64	41	8	7	3	5	-
New York City, N.Y.	1,364	850	272	204	17	21	42
Newark, N.J.	79	29	18	20	10	2	3
Paterson, N.J.	29	17	4	7	-	1	6
Philadelphia, Pa.	302	177	61	42	11	11	23
Pittsburgh, Pa.§	45	36	5	3	-	1	7
Reading, Pa.	13	10	1	2	-	-	1
Rochester, N.Y.	127	102	18	6	-	1	11
Schenectady, N.Y.	22	15	4	3	-	-	-
Scranton, Pa.§	35	28	3	3	1	-	3
Syracuse, N.Y.	100	71	19	6	2	2	3
Trenton, N.J.	35	22	9	4	-	-	4
Utica, N.Y.	17	13	1	2	1	-	1
Yonkers, N.Y.	27	23	3	1	-	-	5
E.N. CENTRAL	2,177	1,338	403	226	148	62	131
Akron, Ohio	52	35	8	5	2	2	-
Canton, Ohio	35	25	4	5	-	1	2
Chicago, Ill.	497	200	85	95	97	20	12
Cincinnati, Ohio	161	114	32	10	1	4	16
Cleveland, Ohio	117	79	23	8	3	4	5
Columbus, Ohio	141	93	29	12	3	4	9
Dayton, Ohio	108	73	24	6	2	3	6
Detroit, Mich.	224	125	56	28	12	3	5
Evansville, Ind.	36	31	4	1	-	-	2
Fort Wayne, Ind.	66	42	13	6	3	2	4
Gary, Ind.	9	6	1	2	-	-	1
Grand Rapids, Mich.	72	47	5	8	8	4	8
Indianapolis, Ind.	191	132	35	12	6	6	19
Madison, Wis.	69	49	12	7	1	-	12
Milwaukee, Wis.	136	94	24	11	3	4	12
Peoria, Ill.	33	22	7	3	1	-	2
Rockford, Ill.	52	35	10	2	4	1	4
South Bend, Ind.	47	36	10	-	-	1	5
Toledo, Ohio	72	53	14	3	-	2	6
Youngstown, Ohio	59	47	7	2	2	1	1
W.N. CENTRAL	769	510	139	68	34	18	38
Des Moines, Iowa	116	83	25	5	3	-	7
Duluth, Minn.	23	15	5	1	1	1	4
Kansas City, Kans.	30	20	9	-	1	-	-
Kansas City, Mo.	117	63	20	17	13	4	6
Lincoln, Nebr.	30	20	4	4	1	1	4
Minneapolis, Minn.	150	101	18	17	8	6	10
Omaha, Nebr.	77	61	11	4	-	1	3
St. Louis, Mo.	110	68	23	12	5	2	-
St. Paul, Minn.	59	41	14	3	-	1	4
Wichita, Kans.	57	38	10	5	2	2	-
S. ATLANTIC	1,060	627	238	142	31	18	46
Atlanta, Ga.	142	88	31	18	5	-	6
Baltimore, Md.	146	78	34	24	7	3	15
Charlotte, N.C.	81	49	22	7	2	1	5
Jacksonville, Fla.	124	81	28	8	3	4	5
Miami, Fla.	100	50	27	16	3	3	-
Norfolk, Va.	44	23	10	9	2	-	1
Richmond, Va.	U	U	U	U	U	U	U
Savannah, Ga.	48	34	10	1	3	-	3
St. Petersburg, Fla.	65	49	7	7	-	2	4
Tampa, Fla.	122	75	26	17	1	2	3
Washington, D.C.	182	94	43	35	5	3	4
Wilmington, Del.	6	6	-	-	-	-	-
E.S. CENTRAL	719	450	133	77	30	29	33
Birmingham, Ala.	106	64	18	11	9	4	4
Chattanooga, Tenn.	52	36	9	4	2	1	3
Knoxville, Tenn.	90	57	20	10	2	1	8
Lexington, Ky.	53	39	6	5	3	-	5
Memphis, Tenn.	210	122	35	24	11	18	-
Mobile, Ala.	31	19	5	4	1	2	1
Montgomery, Ala.	67	33	23	10	-	1	3
Nashville, Tenn.	110	80	17	9	2	2	9
W.S. CENTRAL	1,302	774	282	140	54	49	63
Austin, Tex.	62	44	12	6	-	-	3
Baton Rouge, La.	54	31	8	12	2	1	1
Corpus Christi, Tex.	36	23	7	4	2	-	-
Dallas, Tex.	216	117	48	28	13	10	4
El Paso, Tex.	40	28	6	2	2	2	2
Ft. Worth, Tex.	77	50	14	5	2	6	2
Houston, Tex.	313	169	72	40	13	19	25
Little Rock, Ark.	74	43	19	8	2	2	8
New Orleans, La.	127	73	33	14	2	2	-
San Antonio, Tex.	175	115	36	10	10	4	11
Shreveport, La.	38	27	9	1	1	-	-
Tulsa, Okla.	90	54	18	10	5	3	7
MOUNTAIN	844	582	137	79	26	20	48
Albuquerque, N.M.	99	74	14	8	2	1	7
Colo. Springs, Colo.	48	37	9	-	1	1	9
Denver, Colo.	121	85	21	10	2	3	5
Las Vegas, Nev.	131	80	28	17	3	3	1
Ogden, Utah	17	13	2	2	-	-	2
Phoenix, Ariz.	183	143	16	15	2	7	8
Pueblo, Colo.	41	31	5	2	3	-	2
Salt Lake City, Utah	96	53	16	15	11	1	10
Tucson, Ariz.	108	66	26	10	2	4	4
PACIFIC	1,186	788	190	130	40	38	113
Berkeley, Calif.	8	7	1	-	-	-	1
Fresno, Calif.	91	56	15	11	6	3	8
Glendale, Calif.	U	U	U	U	U	U	U
Honolulu, Hawaii	60	40	8	6	3	3	3
Long Beach, Calif.	75	51	16	5	-	3	4
Los Angeles, Calif.	U	U	U	U	U	U	U
Pasadena, Calif.	24	16	5	1	1	1	4
Portland, Oreg.	85	62	10	10	2	1	7
Sacramento, Calif.	144	91	26	19	5	3	11
San Diego, Calif.	137	89	21	13	7	7	20
San Francisco, Calif.	117	77	15	21	1	3	16
San Jose, Calif.	150	98	30	14	5	3	18
Santa Cruz, Calif.	27	20	2	5	-	-	2
Seattle, Wash.	124	73	22	18	6	5	3
Spokane, Wash.	48	32	9	3	2	2	7
Tacoma, Wash.	96	76	10	4	2	4	9
TOTAL	11,036¶	7,000	2,061	1,239	435	294	621

*Mortality data in this table are voluntarily reported from 121 cities in the United States, most of which have populations of 100,000 or more. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.

†Pneumonia and influenza.

§Because of changes in reporting methods in these 3 Pennsylvania cities, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

¶Total includes unknown ages.

U: Unavailable.

Lead-Contaminated Drinking Water — Continued

Because the source of bulk-delivered water for both cases was a California-based water-delivery company, ADHS notified CSDHS about the potential problem of lead-contaminated bulk-delivered water.

California

In November 1993, a newspaper report about lead-contaminated bulk-delivered water prompted parents in Imperial County, California, to have their 14-month-old child screened for lead poisoning by the county health department. A BLL of 15 μg/dL was detected in the child. The parents reported that the child's drinking water sources were bulk-delivered water and surface water. A first-draw water sample from the kitchen faucet, which was connected to a bulk-water tank supply, contained 66 ppb lead. After running the water for 3 minutes, a second-draw water sample from the same faucet contained 9 ppb lead. A first-draw water sample from the refrigerator faucet, also connected to the bulk storage tank, contained 50 ppb lead. First-draw water samples obtained from two other faucets in the house, which were connected to a surface water supply, had lead levels lower than the detection limit of 5 ppb. No other potential sources of lead exposure were identified. The county health department advised the parents to stop drinking bulk-delivered water and recommended measures to prevent lead exposure.

Investigation of Bulk-Water Sources

ADHS identified three water companies (two based in California and one based in Arizona) that supplied bulk water to southwestern Arizona. ADHS obtained water samples from 96 residential and business storage tanks serviced by the two California water companies; no water samples were obtained from the Arizona company because the company used plastic tanks and fittings. Samples were drawn directly from the tanks, from the brass fittings on the tanks, and from the kitchen sinks. Twenty-two (23%) of the 96 water samples contained lead levels exceeding EPA's action level. Samples from three bulk-water delivery trucks containing the source water for the storage tanks met EPA drinking water standards (i.e., <15 ppb lead).

Both California water companies notified their customers about the possibility of lead leaching from soldered seams and brass fittings in bulk-water storage tanks. In addition, one company identified the sources of lead in its bulk-delivered water: lead solder in tanks manufactured before March 1987, lead-containing brass fittings, and lead solder in household plumbing. The company initiated replacement of all lead-soldered storage tanks and brass fittings and informed homeowners of the probable presence of lead-soldered household plumbing.

Reported by: NJ Peterson, MS, FW Chromec, PhD, CM Fowler, MS, P Arreola, MS, E Arvizu, B Erickson, PhD, P Alder, J Soltis, L Sands, DO, State Epidemiologist, Arizona Dept of Health Svcs. V Freeman, M Miramontes, M Johnston, Imperial County Health Dept, El Centro; J Flattery, MPH, R Gambatese, MPH, S Gilmore, MA, R Ehling, MD, AM Osorio, MD, L Barrett, DVM, C Lee, PhD, I Small, GW Rutherford, III, MD, State Epidemiologist, California State Dept of Health Svcs. Lead Poisoning Prevention Br, Div of Environmental Hazards and Health Effects, National Center for Environmental Health, CDC.

Editorial Note: In southwestern Arizona and southeastern California, bulk water delivered and stored in tanks is not an uncommon source of drinking water. Approximately 2500 residences and businesses in southwestern Arizona and 8500 in Imperial and San Diego counties, California, are served by bulk-delivered water. Although lead in

Lead-Contaminated Drinking Water — Continued

the bulk-delivered water probably contributed to the high BLLs detected in the children described in this report, the role of other potential sources of lead could not be determined.

The Food and Drug Administration (FDA) has proposed a provisional total tolerable intake level of lead for infants and children of 6 μg daily (*4*). U.S. residents ingest an estimated 5–11 μg of lead daily (*5*). On average, lead-containing drinking water is estimated to contribute 10%–20% of the total lead exposure for children in the United States (*5*). For infants and young children, ingestion of only 0.5 L of water per day with a lead concentration of 450 ppb (450 μg/L) will result in a daily dose of lead of 225 μg—a level approximately 38 times higher than FDA's total tolerable intake level. The children described in this report ingested daily doses of lead from six to 41 times higher than the total tolerable intake level.

Federal legislation authorizes both FDA and EPA to regulate drinking water (*6*): the Food, Drug, and Cosmetic Act* empowers FDA to regulate drinking water (including bottled water and water used in food and for processing), and the Safe Drinking Water Act† and other statutes enable EPA to regulate public water systems that provide drinking water for human consumption. In 1986, an amendment to the Safe Drinking Water Act§ prohibited the use of 1) water pipes and pipe fittings with >8% lead and 2) solder and flux with >0.2% lead in public water systems and plumbing (in residential or nonresidential facilities) that provide drinking water for humans and are connected to public water systems (*5*). Although lead-containing faucets and fittings may comply with the lead restrictions in the Safe Drinking Water Act, lead from these fixtures can leach into the water supply and result in lead levels in drinking water that exceed EPA's action level. To address this concern, guidelines that further limit the amount of lead in plumbing fixtures are being developed by EPA, National Sanitation Foundation International (a nonprofit organization that tests and certifies water products), and the Plumbing Manufacturers Institute.

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*21 U.S.C. 301 et seq.
†42 U.S.C. 300 et seq, 1974 ed.
§42 U.S.C. 300 et seq, 1986 ed.

Current Trends

Drivers With Repeat Convictions or Arrests for Driving While Impaired — United States

In 1992 (the latest year for which data are available), more than 1.6 million persons in the United States (approximately 1% of licensed drivers) were arrested for driving while impaired (DWI) (*1*). Persons arrested for DWI are at substantially greater risk for future death in a motor-vehicle crash involving alcohol than those who have not been arrested for DWI, and this risk increases directly in relation to the number of DWI arrests (*2*). In addition, drivers convicted of DWI are at greater risk of being involved in a fatal crash, regardless of whether they are killed (*3*). This report summarizes data about convictions and arrests for DWI from state traffic safety officials analyzed by the National Highway Traffic Safety Administration (NHTSA) during 1994.

During May–June 1994, NHTSA contacted the governor's traffic safety representative in each of the 50 states requesting all available data about the proportion of DWI arrests or convictions that involved a repeat DWI offender and the duration for which DWI convictions or arrests are retained in a driver's record. Of the 14 states for which data were available and complete, seven reported data by the number of drivers arrested or convicted for DWI, and seven reported data by the total proportion of DWI arrests or convictions. Only data reported by the number of drivers arrested or convicted for DWI are presented in this analysis.

Five of the seven states reported data about drivers convicted for DWI; in these states, the estimated percentage of drivers with previous DWI convictions ranged from 21% (Iowa during 1992) to 48% (New Mexico during 1992) (Table 1). The other two states reported information about drivers arrested for DWI; the estimated percentages of drivers with previous DWI arrests were 26% (Colorado during 1989–91) and 46% (Minnesota during 1993) (Table 1). The percentage of drivers arrested or convicted for DWI with previous convictions or arrests did not vary substantially during the year(s) for which the data were reported. However, the percentages were greater in most of the states that retained driving records for longer periods of time.

Reported by: JC Fell, MS, Office of Alcohol and State Programs, National Highway Traffic Safety Administration. Div of Unintentional Injury Prevention, National Center for Injury Prevention and Control, CDC.

Editorial Note: Motor-vehicle crashes are the leading cause of death in the United States for persons in all age groups from ages 1 through 34 years (*4*). Approximately 44% of the 40,115 traffic fatalities in 1993 were alcohol-related (*5*). In 1990, alcohol-related crashes cost $46.1 billion, including $5.1 billion in medical expenses (*6*).

Although state laws have been effective in reducing drinking and driving and deaths associated with alcohol-related crashes (*6*), the findings in this report indicate that, in those states that provided data, approximately one third of drivers who were arrested or convicted for DWI had previous offenses for alcohol-impaired driving. Although this finding is consistent with previous unpublished reports of state data, it probably underestimates the prevalence of such drivers because convictions or arrests for DWI that occur out-of-state may not be included in a driver's record.

Impaired Driving — Continued

TABLE 1. Estimated number of drivers convicted or arrested for driving while impaired (DWI), by state and year — United States

State	Year(s)	Drivers convicted of DWI: Total	Previous convictions: No.	Previous convictions: (%)
Iowa	1992	**18,000**	3,780*	(21)
Nebraska	1994†	**146,619**	38,547§	(26)
New Mexico	1992	**11,478**	5,566§	(48)
North Carolina	1988	**65,714**	21,028¶	(32)
Ohio	1980–93	**637,678**	211,280**	(33)

State	Year(s)	Drivers arrested for DWI: Total	Previous arrests: No.	Previous arrests: (%)
Colorado	1989–91	**99,848**	26,335††	(26)
Minnesota	1993	**30,717**	14,034§§	(46)

*Within 6 years of the most recent conviction.
†Drivers convicted as of March 4, 1994.
§Within 30 years of the most recent conviction.
¶Within 7 years of the most recent conviction.
**Within 5 years of the most recent conviction.
††Within 5 years of the most recent arrest.
§§Within 30 years of the most recent arrest.

Because of the limited number of states with available data, the findings in this report may not be representative of all drivers with previous convictions or arrests for DWI. The need for such information underscores the importance for states and localities to develop systems to track DWI offenders (e.g., systems that combine criminal justice records with driver history data).

The risk for repeat arrests for DWI is higher among males and young persons (*7*); this risk is also higher among persons with histories of numerous traffic violations, a high alcohol concentration at arrest, and histories of alcohol problems (*7*). For example, of 461 drivers convicted of DWI in New York City during 1983–84, approximately 73% had histories of serious alcohol problems (*8*).

In addition to the influence of the risk factors, the percentage of drivers with previous convictions or arrests for DWI may reflect the aggressiveness with which states enforce laws against alcohol-impaired driving. Although the annual arrest rate for DWI nationally in 1992 was nine per 1000 licensed drivers (*1*), the rate varied by state and ranged from three to 22 per 1000 licensed drivers (*1*). In addition, most repeat arrests for DWI occur within 5 years of the previous arrest date (R. Peck, California Department of Motor Vehicles, unpublished data, 1994).

Effective strategies implemented by states and localities to prevent drinking and driving have included prompt license suspension for persons who drive while intoxicated; enactment of legislation lowering permissible blood alcohol content to 0.08 g/dL for adults and to 0.02 g/dL for drivers aged <21 years; and initiation of public education, community awareness, and media campaigns about the dangers of alcohol-impaired driving (*6*). Specific measures implemented to prevent repeat convictions and arrests for DWI include mandatory substance-abuse assessment and

Impaired Driving — Continued

treatment, incarceration, and both; house arrest with electronic monitoring; ignition interlocks on vehicles; license plate tags that identify drivers with licenses suspended for DWI; vehicle impoundment or confiscation; fines; and increases in automobile insurance rates (*9*). The effectiveness of these specific measures must be evaluated further; however, the findings in this report suggest that, to prevent injuries and deaths in alcohol-related crashes, additional and stronger state legislation (e.g., mandatory substance-abuse assessment and treatment) should be directed toward persons arrested for or convicted of DWI.

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International Notes

Update: Human Plague — India, 1994

From August 26 through October 18, 1994, a total of 693 suspected bubonic or pneumonic plague cases with positive test results for antibodies to *Yersinia pestis* were reported by India to the World Health Organization (WHO). Cases were reported from five states (Maharashtra [488 cases], Gujarat [77 cases], Karnataka [46 cases], Uttar Pradesh [10 cases], and Madhya Pradesh [4 cases]) and from the federal district of New Delhi (68 cases). Nationwide, 56 fatal plague cases have been reported; no deaths have been reported since October 11.

As of October 19, WHO considered the outbreak to be under control because few new suspected cases had been reported. In addition, WHO continues to recommend no restrictions for travelers visiting India. However, travelers to the city of Surat, Gujarat, or the Beed district, Maharashtra—areas where plague transmission may be

Human Plague — Continued

ongoing—are advised to seek medical attention for any illness that begins within 6 days of departure.

As of October 19, no imported plague cases had been detected in persons in other countries. No plague cases had been reported in U.S. residents in India.

Reported by: World Health Organization, Geneva. Div of Quarantine, National Center for Prevention Svcs; Bacterial Zoonoses Br, Div of Vector-Borne Infectious Diseases, National Center for Infectious Diseases, CDC.

Editorial Note: The reliability of reported data about the plague outbreaks in India is unknown, and criteria for clinical and laboratory confirmation of cases have not been described. However, the most recent data suggest that transmission has been more geographically limited than previously reported (*1,2*). Studies have been initiated to accurately assess the extent of the outbreaks, their relation to persistent foci of transmission, and the clinical spectrum and epidemiologic features of the illness, including the incidence of person-to-person transmission.

Travelers to India and other plague-endemic countries continue to be at low risk for infection with *Y. pestis*. As of October 19, health officials had identified and evaluated 12 airline passengers who had arrived from India with febrile or other illnesses and who disembarked in the United States. Using similar surveillance protocols, health officials have evaluated 40 travelers in Canada (B. Gushulak, Laboratory Center for Disease Control, Ottawa, personal communication, October 18, 1994) and 27 in the United Kingdom (J. Watson, Public Health Laboratory Service Communicable Disease Surveillance Center, London, personal communication, October 18, 1994); none have been diagnosed with plague.

Suspected human plague cases in international travelers should be reported through state and local health departments to CDC's Division of Quarantine, National Center for Prevention Services, telephone (404) 639-8107 or (404) 639-2888 (nights, Sundays, and holidays).

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Notice to Readers

Update: Availability of Inactivated Poliovirus Vaccine — United States

The shortage of inactivated poliovirus vaccine (IPV) in the United States earlier this year (*1*) has been resolved. On September 28, 1994, the Food and Drug Administration announced the release of IPV lots manufactured by Pasteur Merieux Serums & Vaccines, S.A.* (Lyon, France). In addition, IPV (human diploid cell) lots manufactured by Connaught Laboratories, Limited (Willowdale, Ontario, Canada), were released on October 5, 1994. The release of vaccine lots from both manufacturers, distributed by Connaught Laboratories, Inc. (Swiftwater, Pennsylvania), should quickly restore normal supplies.

*Use of trade names and commercial sources is for information only and does not imply endorsement by the Public Health Service or the U.S. Department of Health and Human Services.

Notice to Readers — Continued

Reference

1. CDC. Limited supplies of inactivated poliovirus vaccine—United States. MMWR 1994;43:595–6.

Notice to Readers

Publication of Summary of Notifiable Diseases — United States, 1993

As part of the *MMWR* series, CDC has released the *Summary of Notifiable Diseases, United States, 1993* (*1*). This publication contains summary tables of the official statistics for the occurrence of notifiable diseases during 1993, which are compiled from reports to CDC's National Notifiable Diseases Surveillance System. Data for 1993 are presented in tables by month, geographic location, and patient age and race/ethnicity and in maps and charts for many conditions. Data for notifiable diseases since 1944 are presented. Also included is a table on deaths associated with specified notifiable diseases reported to CDC's National Center for Health Statistics.

All subscribers to *MMWR* receive the *Summary of Notifiable Diseases, United States, 1993*, as well as the *Recommendations and Reports* and the *CDC Surveillance Summaries*, as part of their subscriptions.

Reference

1. CDC. Summary of notifiable diseases, United States, 1993. MMWR 1994;42(no. 53).

Erratum: Vol. 43, No. 38

In the article "Human Plague—India, 1994," on page 689, in the second paragraph of the editorial note, the first sentence should read "Most human plague is the bubonic form, which results from the bites of infected fleas; however, plague also can be transmitted to humans by handling infected animals or by *direct exposure to large respiratory droplets* from persons with pneumonic plague."

Erratum: Vol. 43, No. 39

In the article "Update: Human Plague—India, 1994", on page 723, in the second paragraph of the editorial note, the fourth sentence should read "Under *federal foreign quarantine* regulations (*2*), air passengers who have an illness suspected to be plague (i.e., based on clinical presentation and travel history) during a flight or at disembarkation are subject to isolation and transfer to an appropriate diagnostic and treatment facility." The reference cited in the sentence should be "2. Office of the Federal Register. Code of federal regulations: foreign quarantine. Washington, DC: Office of the Federal Register, National Archives and Records Administration, 1993. (42 CFR Part 71)."

The *Morbidity and Mortality Weekly Report (MMWR)* Series is prepared by the Centers for Disease Control and Prevention (CDC) and is available on a paid subscription basis from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402; telephone (202) 783-3238.

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