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MORBIDITY AND MORTALITY WEEKLY REPORT

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Epidemiologic Notes and Reports

Tuberculosis Outbreak Among Persons in a Residential Facility for HIV-Infected Persons — San Francisco

From December 19, 1990, through April 4, 1991, 12 cases of clinically active pulmonary tuberculosis (TB) were diagnosed at a residential facility for HIV-infected persons in San Francisco. This report summarizes results of the outbreak investigation.

On December 19, 1990, a resident who had lived in the facility since November was hospitalized with a history of several weeks of productive cough, fever, and night sweats. He was subsequently diagnosed with sputum-smear-positive and culture-positive pulmonary TB, with organisms susceptible to all anti-TB drugs. He received anti-TB medication and did not return to the residential facility.

On January 19, 1991, another resident was admitted to a local hospital with a history of 7 days of productive cough, fever, chills, and shortness of breath. Sputum induction was performed to rule out *Pneumocystis carinii* pneumonia, and a specimen of induced sputum was smear-positive for acid-fast bacilli (AFB). The patient began anti-TB therapy on January 21. *Mycobacterium tuberculosis* subsequently grew from his sputum, blood, and pleural fluid. He was discharged back to the facility February 5 but did not take medication as recommended. He was readmitted to the hospital February 15, and his sputum was again smear-positive for AFB. Despite the administration of anti-TB therapy and mechanical ventilation, he died March 10 of respiratory failure and sepsis caused by *Pseudomonas aeruginosa*.

From February 21 through March 4, four additional residents of this facility who had symptoms of pulmonary TB were admitted to hospitals (Figure 1); two had sputum specimens that were smear- and culture-positive for *M. tuberculosis*. A sputum specimen from a third patient was smear-negative for AFB, but a culture of bronchoalveolar lavage was positive for *M. tuberculosis*. A sputum specimen from a fourth patient was smear- and culture-negative, but the patient had a documented tuberculin skin-test conversion and an abnormal chest radiograph; both radiographic and clinical improvement were observed on anti-TB therapy.

Tuberculosis Outbreak – Continued

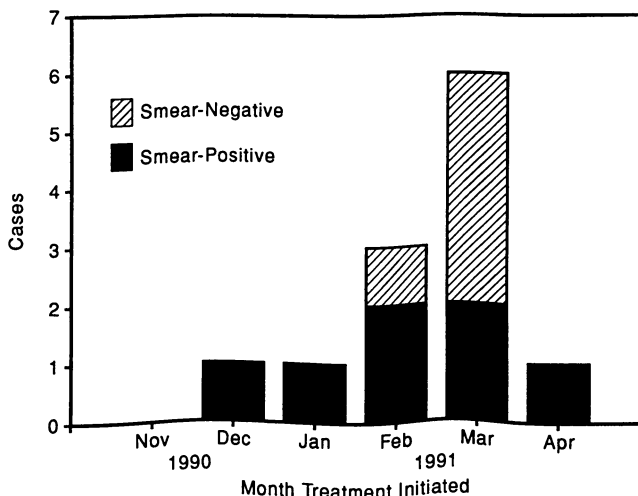
On March 6, the Tuberculosis Control Division, City and County of San Francisco Department of Public Health, conducted tuberculin skin-test screening of all 17 persons who resided in the facility on that date and 14 of 20 staff members; seven persons who had resided in the facility after November 1990, as well as six staff members, were unavailable during the initial screening. Seven (41%) of the residents had positive tuberculin reactions (≥ 5 mm); one (6%) had a negative tuberculin reaction (0 mm) with positive reactions to companion delayed-type hypersensitivity (DTH) skin-test antigens (mumps and *Candida*); and nine (53%) were anergic. Four (29%) of the staff had positive tuberculin reactions (≥ 5 mm); one had previously had a negative tuberculin reaction. Staff were not tested with companion antigens.

Chest radiographic examinations were performed on all residents, regardless of skin-test status. Three (43%) of the seven residents with positive tuberculin tests had clinically active pulmonary TB. All three had negative sputum-smears for AFB; two had positive cultures for *M. tuberculosis*. The third patient, who had an abnormal chest radiograph consistent with TB, improved clinically and radiographically on anti-TB therapy; culture results from this patient are pending. In addition, two (22%) of the nine anergic patients had clinically active pulmonary TB; both had sputum specimens that were smear- and culture-positive. All positive *M. tuberculosis* isolates were susceptible to all anti-TB drugs.

Of the remaining 12 residents without evidence of clinically active TB, 11 were offered isoniazid (INH) preventive therapy for TB; 10 accepted. One patient was not treated preventively because of abnormal liver function. This patient was anergic during the screening on March 6 but had had a normal chest radiograph. However, on April 1, the patient developed fever, chills, and a nonproductive cough. A chest radiograph on April 3 showed an infiltrate and left hilar adenopathy. An induced sputum test was smear-positive for AFB; results of sputum cultures are pending.

Chest radiographs for the four staff members who had positive skin tests showed no clinically active disease. All accepted INH preventive therapy.

FIGURE 1. Pulmonary tuberculosis at a residential facility for HIV-infected persons, by month of treatment initiation – San Francisco, November 1990–April 1991



Tuberculosis Outbreak – Continued

The two-and-one-half-story facility has 32 private rooms, several shared bathrooms, two group meeting rooms, and a shared kitchen. Each room has a forced-air heating vent with no recirculation of air. Eight of the 12 case-patients lived on the second floor (which has 15 rooms); the remaining four case-patients lived on the first floor (11 rooms). No cases were identified in the six rooms of the half story. All case-patients were ambulatory.

Three of the 12 patients died; TB was considered a contributory cause of two deaths.

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Editorial Note: This outbreak demonstrates the rapidity with which TB can spread among immunocompromised persons in a communal setting. Time from diagnosis of first case to last was 106 days. Although no information on previous skin-test status was available for the residents, the temporal and spatial clustering of these cases strongly suggests transmission of TB within the facility. A previous study emphasized the high risk for developing clinically active TB among HIV-infected persons with latent remote tuberculous infection (1); the current report and others demonstrate that HIV-infected persons recently infected with *M. tuberculosis* are at high risk for progressing rapidly to clinically active disease (2,3).

This outbreak further demonstrates the urgency of immediate identification and medical evaluation of all HIV-infected contacts of persons with documented or suspected infectious TB (4). The rapid progression from tuberculous infection to clinically active disease in HIV-infected persons makes early investigation of contacts especially critical.

In addition, this and other outbreaks (5) indicate the importance of TB screening for all persons who are HIV-infected or at high risk for HIV infection before they enter communal living facilities. Persons with infectious TB, especially HIV-infected persons, should be admitted to communal settings only when they are considered noninfectious (i.e., clinically responding to therapy and sputum smear-negative for AFB) (6).

Companion DTH skin-testing during this contact investigation identified two of nine anergic patients with clinically active disease. Companion DTH skin-testing should be performed on persons with or at high risk for HIV infection. HIV-infected persons who are anergic and known contacts of infectious TB patients or otherwise at high risk for TB infection (e.g., injectable-drug users or those born in a country with endemic TB) should receive chest radiographs and clinical assessment to rule out clinical TB and, if negative, preventive therapy with 1 year of INH should be considered (7).

Health-care workers and others caring for HIV-infected or high-risk persons should be familiar with the symptoms of TB and be alert for TB among these patients. Persons suspected of having TB should be evaluated medically and immediately transferred to appropriate isolation settings. All HIV-infected patients with symptoms compatible with TB should receive chest radiographs and other diagnostic evaluations, regardless of the results of tuberculin and companion antigen skin-tests.

References

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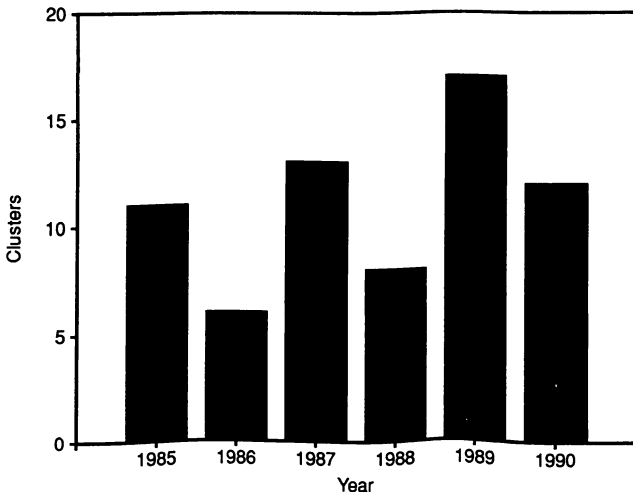
Tuberculosis Outbreak – Continued

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Current Trends**Homicide Followed by Suicide – Kentucky, 1985–1990**

During March–May 1990, three widely publicized homicides followed by suicides occurred in Kentucky. Because the three incidents shared many features, the Division of Epidemiology, Department for Health Services, Kentucky Cabinet for Human Resources, conducted a study to determine the extent of the problem and the characteristics of perpetrators and homicide victims. This report presents the findings of this study.

A homicide/suicide cluster was defined as one or more homicides with the subsequent suicide of the perpetrator that occurred in Kentucky from 1985 through 1990. Of 67 homicide/suicide clusters identified (Figure 1), 63 (94%) were found through matching death certificates by the last name of the homicide victim(s) and the perpetrator or by county of occurrence for homicides and suicides that occurred on the same day ($n=53$) or through computer searches of two newspapers with

FIGURE 1. Clusters of homicide followed by suicide, by year – Kentucky, 1985–1990

Homicide/Suicide – Continued

statewide coverage (n=40); 30 homicide/suicide clusters were from both sources. The remaining four (6%) homicide/suicide clusters were reported by the Kentucky Domestic Violence Association, a private advocacy group.

The 67 homicide/suicide clusters included 80 homicides; seven clusters involved multiple homicides. In 64 (96%) homicide/suicide clusters, the homicide and suicide occurred within a 24-hour period. Firearms were used in both the homicide and suicide in 63 (94%) homicide/suicide clusters.

Homicide/suicide clusters accounted for 6% of all homicides and 2% of all suicides in the state during the study period. The mean annual incidence of homicide/suicide clusters for Kentucky was 3.0 per million population.

Sixty-five (97%) of the 67 perpetrators were male, and 58 (73%) of the 80 homicide victims were female. The median age of perpetrators was 41 years (range: 21–89 years); the median age of homicide victims was 35 years (range: 2–90 years). Six (9%) of the 67 homicide/suicide clusters occurred in an occupational setting. For the 64 (96%) homicide/suicide clusters in which the race of both perpetrator and homicide victim(s) was known, 55 (86%) occurred among whites, and six (9%) among blacks; three (5%) were interracial. The incidence rate of homicide/suicide clusters for whites was 2.7 per million population, and for blacks, 3.4 per million.

The homicide victim and perpetrator were known to each other in 64 (96%) homicide/suicide clusters; 57 (85%) involved family members or intimates. In 47 (70%) clusters, the perpetrator was a current husband (37 clusters), boyfriend (seven), or a former husband (three) of the homicide victim. In 15 (41%) of the 37 in which the current husband was the perpetrator, the couple had previously filed for divorce (12) or was separated (three). In seven of these 15, the wife had obtained a domestic violence protective order or restraining order from a court. In two (3%) of the 67 clusters, the homicide victim(s) had sought shelter at one of 16 state-supported spouse-abuse centers.

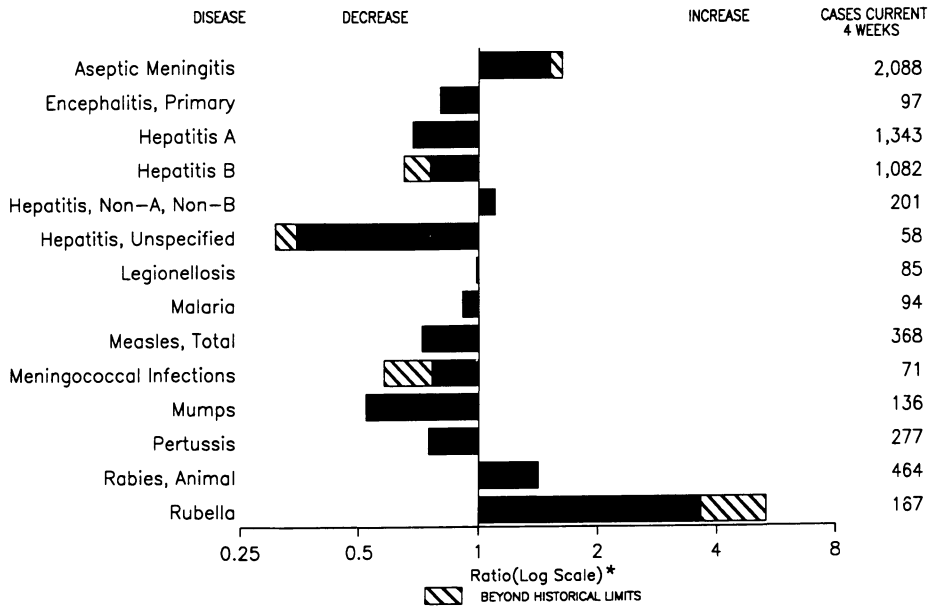
A total of 37 previous criminal charges had been filed against 16 (24%) of the perpetrators; 17 (46%) of the charges involved threats or acts of violence to another person. Six (9%) perpetrators had been reported to the Kentucky Department for Social Services for spouse abuse (three) or for child abuse (three).

Of the 48 (72%) perpetrators who were tested postmortem for drugs and alcohol, 13 (27%) were positive for alcohol, five (10%) for psychoactive drugs, and six (13%) for both alcohol and drugs. Ten (21%) were legally intoxicated (blood alcohol concentration $\geq 0.10\%$).

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Editorial Note: The findings in this study are consistent with those from previous studies that suggest homicide followed by suicide primarily involves family members or intimates (1,2). Earlier studies have indicated that the typical perpetrator is a man married or living with a woman in a relationship marked by physical abuse and who has a history of alcohol and substance abuse and access to firearms (1–3). Perpetrators may also be depressed and have personality disorders (3,4). Women who are ending relationships appear to be at increased risk for becoming victims (3).

FIGURE I. Notifiable disease reports, comparison of 4-week totals ending September 21, 1991, 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 September 21, 1991 (38th Week)

	Cum. 1991		Cum. 1991
AIDS	31,757	Measles: imported	173
Anthrax	-	indigenous	8,352
Botulism: Foodborne	12	Plague	7
Infant	53	Poliomyelitis, Paralytic*	-
Other	4	Psittacosis	65
Brucellosis	55	Rabies, human	2
Cholera	21	Syphilis, primary & secondary	29,675
Congenital rubella syndrome	13	Syphilis, congenital, age < 1 year	15
Diphtheria	2	Tetanus	35
Encephalitis, post-infectious	62	Toxic shock syndrome	217
Gonorrhea	427,097	Trichinosis	59
<i>Haemophilus influenzae</i> (invasive disease)	2,165	Tuberculosis	16,028
Hansen Disease	106	Tularemia	139
Leptospirosis	44	Typhoid fever	303
Lyme Disease	6,591	Typhus fever, tickborne (RMSF)	487

*Three suspected cases of poliomyelitis have been reported in 1991; none of the 8 suspected cases in 1990 have been confirmed to date. Five of 13 suspected cases in 1989 were confirmed and all were vaccine associated.

TABLE II. Cases of selected notifiable diseases, United States, weeks ending September 21, 1991, and September 22, 1990 (38th week)

Reporting Area	AIDS	Aseptic Meningitis	Encephalitis		Gonorrhea		Hepatitis (Viral), by type				Legionellosis	Lyme Disease
			Primary	Post-infectious			A	B	NA,NB	Unspecified		
			Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1990	Cum. 1991	Cum. 1991		
UNITED STATES	31,757	9,740	652	62	427,097	491,359	17,263	12,208	2,186	910	853	6,591
NEW ENGLAND	1,333	1,160	24	1	10,623	13,530	418	629	54	25	57	1,175
Maine	46	114	3	-	123	159	19	18	2	-	2	-
N.H.	32	136	5	-	154	168	25	21	5	-	7	29
Vt.	13	211	3	-	41	43	23	13	6	-	3	5
Mass.	749	345	10	1	4,582	5,634	198	433	29	22	41	193
R.I.	72	347	1	-	877	841	80	19	10	3	4	107
Conn.	421	7	2	-	4,846	6,685	73	125	2	-	-	841
MID. ATLANTIC	8,302	1,679	49	11	50,949	65,404	1,736	1,167	232	16	240	4,082
Upstate N.Y.	1,119	833	22	7	9,498	10,388	654	436	138	10	86	2,723
N.Y. City	4,669	277	1	-	19,043	27,232	608	174	7	-	32	-
N.J.	1,676	-	-	-	8,389	10,908	203	280	48	-	24	688
Pa.	838	569	26	4	14,019	16,876	271	277	39	6	98	671
E.N. CENTRAL	2,272	1,905	200	7	79,541	91,428	2,217	1,426	352	44	182	201
Ohio	479	734	71	2	24,224	26,475	291	308	137	16	87	114
Ind.	211	132	18	1	8,569	8,126	295	162	1	1	15	9
Ill.	1,025	322	61	4	24,513	28,819	937	209	56	4	18	20
Mich.	402	631	46	-	17,652	21,436	232	461	100	23	35	58
Wis.	155	86	4	-	4,583	6,572	462	286	58	-	27	-
W.N. CENTRAL	874	483	46	7	21,051	25,646	1,737	516	240	19	43	252
Minn.	179	87	24	-	2,159	3,196	313	57	11	2	8	63
Iowa	79	105	-	4	1,459	1,843	43	36	8	3	11	14
Mo.	505	205	12	3	12,938	15,232	465	338	214	9	13	157
N. Dak.	4	7	2	-	30	104	33	4	4	1	1	1
S. Dak.	1	10	4	-	260	191	639	7	1	-	3	1
Nebr.	42	20	2	-	1,364	1,317	174	28	1	-	6	-
Kans.	64	49	2	-	2,841	3,763	70	46	1	4	1	16
S. ATLANTIC	7,378	1,736	131	28	128,521	140,955	1,280	2,546	288	185	137	466
Del.	59	56	2	-	2,065	2,235	7	36	4	2	2	45
Md.	678	174	21	1	13,683	16,424	212	293	48	13	30	176
D.C.	500	54	1	-	6,750	9,558	59	121	1	1	6	2
Va.	545	289	32	3	13,153	13,302	125	159	24	123	11	104
W. Va.	47	33	19	-	908	900	19	42	2	12	-	31
N.C.	420	231	28	-	25,802	21,962	125	398	98	-	14	58
S.C.	250	37	-	-	10,588	11,379	33	535	16	3	28	9
Ga.	1,008	239	8	2	29,394	31,081	156	353	42	-	13	25
Fla.	3,871	623	20	22	26,178	34,114	544	579	53	31	33	16
E.S. CENTRAL	803	638	26	-	42,040	42,568	182	1,008	297	3	43	90
Ky.	124	141	7	-	4,376	4,908	36	132	6	2	17	38
Tenn.	252	196	13	-	14,715	12,662	104	746	269	-	11	39
Ala.	255	237	6	-	12,373	14,621	32	119	18	1	14	13
Miss.	172	64	-	-	10,576	10,377	10	11	4	-	1	-
W.S. CENTRAL	3,163	1,093	73	1	49,078	53,644	2,394	1,630	93	184	35	61
Ark.	130	54	24	-	5,791	6,497	223	81	3	5	7	22
La.	548	93	11	-	11,069	10,148	88	213	6	5	6	1
Okla.	142	2	3	-	5,085	4,652	207	171	40	14	13	29
Tex.	2,343	944	35	1	27,133	32,347	1,876	1,165	44	160	9	9
MOUNTAIN	950	185	16	2	8,726	10,579	2,729	738	121	113	61	13
Mont.	22	17	1	-	73	132	69	59	4	5	4	-
Idaho	19	-	-	-	113	107	71	57	2	1	3	2
Wyo.	13	-	-	-	75	133	90	6	-	-	-	8
Colo.	341	68	6	1	2,455	3,037	440	104	55	20	13	-
N. Mex.	89	17	-	-	740	934	682	177	10	29	3	-
Ariz.	192	43	9	1	3,288	4,003	871	129	16	47	23	-
Utah	82	15	-	-	223	309	237	54	12	11	4	-
Nev.	192	25	-	-	1,759	1,924	269	152	22	-	11	3
PACIFIC	6,682	861	87	5	36,568	47,605	4,570	2,548	509	321	55	251
Wash.	417	-	8	1	3,289	4,288	419	330	109	19	5	2
Oreg.	185	-	-	-	1,511	1,872	290	231	91	8	2	-
Calif.	5,931	786	77	4	30,534	40,075	3,740	1,925	292	293	46	249
Alaska	15	34	2	-	656	883	86	27	13	1	-	-
Hawaii	134	41	-	-	578	487	35	35	4	-	2	-
Guam	2	-	-	-	-	221	-	-	-	-	-	-
P.R.	1,258	200	2	3	423	509	70	347	146	42	-	-
V.I.	12	-	-	-	284	321	1	9	-	-	-	-
Amer. Samoa	-	-	-	-	-	70	-	-	-	-	-	-
C.N.M.I.	-	-	-	-	-	156	-	-	-	-	-	-

N: Not notifiable

U: Unavailable

C.N.M.I.: Commonwealth of the Northern Mariana Islands

TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending September 21, 1991, and September 22, 1990 (38th Week)

Reporting Area	Malaria	Measles (Rubeola)					Menin- gococcal infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported*		Total		1991	Cum. 1991	1991	Cum. 1991	Cum. 1990	1991	Cum. 1991	Cum. 1990
		Cum. 1991	1991	Cum. 1991	1991	Cum. 1991									
UNITED STATES	858	27	8,352	4	173	22,204	1,561	46	3,097	113	1,793	2,947	2	1,255	786
NEW ENGLAND	54	3	55	2	15	285	116	-	24	7	235	308	-	4	8
Maine	1	-	2	-	-	29	11	-	-	-	49	10	-	-	1
N.H.	2	-	-	-	-	8	12	-	4	-	17	43	-	1	1
Vt.	4	-	5	-	-	1	13	-	4	-	4	7	-	-	-
Mass.	26	-	25	-	10	26	63	-	1	6	142	225	-	2	2
R.I.	7	-	2	-	-	30	1	-	3	-	-	4	-	-	1
Conn.	14	3	21	2†§	5	191	16	-	12	1	23	19	-	1	3
MID. ATLANTIC	139	-	4,372	-	6	1,383	168	1	234	2	147	425	-	561	11
Upstate N.Y.	39	-	334	-	4	313	84	1	86	2	98	288	-	539	10
N.Y. City	52	-	1,710	-	-	348	11	-	-	-	-	-	-	-	-
N.J.	38	-	791	-	1	338	37	-	55	-	1	34	-	-	-
Pa.	10	-	1,537	-	1	384	36	-	93	-	48	103	-	22	1
E.N. CENTRAL	69	-	71	-	11	3,522	252	8	288	-	304	775	-	317	31
Ohio	15	-	1	-	2	537	81	7	69	-	87	139	-	283	1
Ind.	3	-	1	-	2	416	22	-	6	-	60	97	-	2	-
Ill.	27	-	26	-	-	1,344	73	-	110	-	53	315	-	6	18
Mich.	21	-	41	-	-	473	53	1	84	-	33	69	-	25	9
Wis.	3	-	2	-	7	752	23	-	19	-	71	155	-	1	3
W.N. CENTRAL	29	1	34	-	14	845	86	1	93	9	135	143	-	17	14
Minn.	8	-	7	-	13	362	18	-	17	-	45	21	-	6	9
Iowa	6	1	17	-	-	26	10	1	17	1	16	18	-	6	4
Mo.	6	-	-	-	1	98	30	-	27	7	54	78	-	5	-
N. Dak.	1	-	-	-	-	-	1	-	2	-	2	2	-	-	1
S. Dak.	1	-	-	-	-	23	2	-	1	1	4	1	-	-	-
Nebr.	1	-	1	-	-	106	6	-	5	-	8	7	-	-	-
Kans.	6	-	9	-	-	230	19	-	24	-	6	16	-	-	-
S. ATLANTIC	186	9	460	2	22	1,248	284	24	1,110	6	199	241	-	13	18
Del.	2	-	21	-	-	11	2	-	6	-	-	7	-	-	-
Md.	51	-	173	2†	3	212	27	4	211	-	48	59	-	6	2
D.C.	12	-	-	-	-	22	13	-	23	1	1	14	-	1	1
Va.	40	1	25	-	5	84	30	4	53	-	18	17	-	-	1
W. Va.	2	-	-	-	-	6	12	-	17	-	9	17	-	-	-
N.C.	12	1	41	-	3	30	49	3	229	1	32	65	-	2	-
S.C.	9	-	13	-	-	4	28	11	358	-	11	5	-	-	-
Ga.	17	-	10	-	5	321	57	2	40	4	38	24	-	-	-
Fla.	41	7	177	-	6	558	66	-	173	-	42	33	-	4	14
E.S. CENTRAL	20	-	7	-	3	186	103	-	156	7	77	132	-	100	4
Ky.	2	-	1	-	1	42	37	-	-	-	-	-	-	1	-
Tenn.	11	-	6	-	1	93	32	-	128	3	31	64	-	100	3
Ala.	7	-	-	-	1	25	32	-	9	4	44	61	-	-	-
Miss.	-	-	-	-	-	26	2	-	19	-	2	7	-	-	-
W.S. CENTRAL	61	6	181	-	14	4,268	115	2	344	14	71	142	-	7	66
Ark.	7	-	-	-	5	42	18	-	42	2	7	14	-	1	3
La.	15	-	-	-	-	10	24	-	23	-	13	26	-	-	-
Okla.	7	-	-	-	-	174	13	-	14	2	27	43	-	-	1
Tex.	32	6	181	-	9	4,042	60	2	265	10	24	59	-	6	62
MOUNTAIN	34	8	1,177	-	19	924	61	2	258	61	227	260	2	19	109
Mont.	1	-	-	-	-	1	10	-	-	-	3	32	-	-	14
Idaho	2	1	427	-	2	26	7	-	8	-	23	47	-	-	49
Wyo.	-	-	1	-	2	15	1	-	4	-	3	-	-	-	-
Colo.	9	-	1	-	5	138	11	-	123	8	80	84	-	1	4
N. Mex.	6	-	117	-	5	93	8	N	N	4	35	17	-	-	-
Ariz.	13	-	393	-	-	303	18	1	97	49	57	49	-	2	32
Utah	2	7	220	-	4	128	-	-	13	-	24	27	1	11	2
Nev.	1	-	18	-	1	220	6	1	13	-	2	4	1	5	8
PACIFIC	266	-	1,995	-	69	9,543	376	8	590	7	398	521	-	217	525
Wash.	18	-	46	-	15	254	51	6	160	3	100	141	-	8	-
Oreg.	5	-	49	-	33	212	47	N	N	-	60	65	-	3	9
Calif.	239	-	1,895	-	13	8,984	268	-	397	4	190	273	-	201	503
Alaska	-	-	1	-	3	80	8	-	10	-	12	4	-	1	-
Hawaii	4	-	4	-	5	13	2	2	23	-	36	38	-	4	13
Guam	-	U	-	U	-	1	-	U	-	U	-	-	U	-	-
P.R.	1	-	93	-	1	1,640	15	-	9	1	45	6	-	1	-
V.I.	2	-	-	-	2	24	-	-	9	-	-	-	-	-	-
Amer. Samoa	-	U	-	U	-	521	-	U	-	U	-	-	U	-	-
C.N.M.I.	-	U	-	U	-	-	-	U	-	U	-	4	U	-	-

*For measles only, imported cases includes 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 September 21, 1991, and September 22, 1990 (38th Week)

Reporting Area	Syphilis (Primary & Secondary)		Toxic- shock Syndrome	Tuberculosis		Tula- remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1991	Cum. 1990	Cum. 1991	Cum. 1991	Cum. 1990	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1991
UNITED STATES	29,675	35,414	217	16,028	17,015	139	303	487	4,640
NEW ENGLAND	761	1,257	11	467	405	4	32	6	58
Maine	1	7	4	30	6	-	1	-	-
N.H.	12	44	1	5	3	-	1	-	2
Vt.	1	1	-	6	8	-	-	-	-
Mass.	358	489	6	234	216	4	27	5	-
R.I.	42	15	-	69	52	-	-	-	-
Conn.	347	701	-	123	120	-	3	1	56
MID. ATLANTIC	4,694	6,988	35	3,700	4,047	1	60	17	1,562
Upstate N.Y.	103	652	16	250	301	1	12	7	574
N.Y. City	2,389	3,314	2	2,284	2,535	-	30	-	-
N.J.	973	1,148	-	647	674	-	15	6	718
Pa.	1,229	1,874	17	519	537	-	3	4	270
E.N. CENTRAL	3,617	2,464	41	1,626	1,632	6	24	40	135
Ohio	487	385	19	242	287	1	3	23	15
Ind.	129	64	-	156	144	-	-	10	14
Ill.	1,729	980	14	859	834	3	9	4	31
Mich.	891	745	8	295	306	2	10	3	31
Wis.	381	290	-	74	61	-	2	-	44
W.N. CENTRAL	542	396	34	374	440	41	5	32	658
Minn.	51	71	7	69	78	1	2	-	239
Iowa	55	56	7	52	44	-	-	1	127
Mo.	387	207	11	166	227	34	1	20	16
N. Dak.	-	1	-	5	17	-	-	-	75
S. Dak.	1	2	1	27	10	4	-	1	143
Nebr.	12	9	1	15	15	-	2	5	14
Kans.	36	50	7	40	49	2	-	5	44
S. ATLANTIC	8,917	11,460	20	3,053	3,191	4	56	210	1,086
Del.	121	135	1	21	31	-	-	-	119
Md.	726	868	1	266	239	-	10	23	413
D.C.	554	788	1	132	118	-	2	-	10
Va.	657	641	4	259	274	-	8	12	186
W. Va.	21	11	-	51	52	-	1	4	44
N.C.	1,425	1,290	8	418	416	1	3	114	16
S.C.	1,126	760	2	316	355	1	4	31	80
Ga.	2,187	2,953	-	587	541	1	5	25	191
Fla.	2,100	4,014	3	1,003	1,165	1	23	1	27
E.S. CENTRAL	3,343	3,137	9	1,097	1,235	17	2	90	128
Ky.	71	71	4	259	285	4	2	23	37
Tenn.	1,127	1,218	5	323	339	12	-	51	29
Ala.	1,223	1,005	-	280	375	1	-	16	62
Miss.	922	843	-	235	236	-	-	-	-
W.S. CENTRAL	5,419	6,018	14	1,986	2,029	40	20	82	489
Ark.	478	447	3	166	262	28	-	21	36
La.	1,867	1,841	-	184	236	-	4	-	5
Okla.	141	183	4	124	147	11	2	61	139
Tex.	2,933	3,547	7	1,512	1,384	1	14	-	309
MOUNTAIN	444	636	27	433	410	21	7	7	185
Mont.	6	-	1	6	22	8	-	5	36
Idaho	4	6	-	5	10	-	-	-	4
Wyo.	9	1	-	3	5	1	-	-	70
Colo.	63	42	5	33	26	6	1	2	20
N. Mex.	24	32	6	58	81	2	1	-	4
Ariz.	265	456	5	234	183	1	4	-	33
Utah	6	8	10	40	32	3	-	-	12
Nev.	67	91	-	54	51	-	1	-	6
PACIFIC	1,938	3,058	26	3,292	3,626	5	97	3	339
Wash.	126	295	3	213	210	2	5	2	1
Oreg.	56	102	-	84	96	2	4	1	5
Calif.	1,748	2,630	23	2,804	3,152	1	85	-	329
Alaska	4	16	-	46	40	-	-	-	3
Hawaii	4	15	-	145	128	-	3	-	1
Guam	-	2	-	-	34	-	-	-	-
P.R.	315	223	-	167	66	-	9	-	52
V.I.	80	10	-	2	4	-	-	-	-
Amer. Samoa	-	-	-	-	14	-	-	-	-
C.N.M.I.	-	3	-	-	44	-	-	-	-

U: Unavailable

TABLE III. Deaths in 121 U.S. cities,* week ending
September 21, 1991 (38th Week)

Reporting Area	All Causes, By Age (Years)						P&I**	Reporting Area	All Causes, By Age (Years)						P&I**
	All Ages	≥65	45-64	25-44	1-24	<1			Total	All Ages	≥65	45-64	25-44	1-24	
NEW ENGLAND	603	390	115	68	17	13	45	S. ATLANTIC	1,225	719	262	157	52	33	57
Boston, Mass.	177	107	32	25	6	7	8	Atlanta, Ga.	152	76	40	25	7	4	4
Bridgeport, Conn.	14	32	7	6	1	1	3	Baltimore, Md.	236	149	36	39	7	5	19
Cambridge, Mass.	14	11	3	-	-	-	-	Charlotte, N.C.	89	56	16	8	1	5	5
Fall River, Mass.	18	14	4	-	-	-	1	Jacksonville, Fla.	102	57	27	14	-	4	9
Hartford, Conn.	57	38	7	9	2	1	5	Miami, Fla.	97	61	17	14	3	1	1
Lowell, Mass.	19	11	5	1	2	-	2	Norfolk, Va.	62	33	11	9	3	6	4
Lynn, Mass.	10	7	1	2	-	-	-	Richmond, Va.	93	45	30	12	6	-	2
New Bedford, Mass.	21	17	3	1	-	-	4	Savannah, Ga.	35	12	10	6	1	6	1
New Haven, Conn.	45	28	7	7	1	2	4	St. Petersburg, Fla.	60	40	11	-	5	4	-
Providence, R.I.	32	18	8	6	-	-	-	Tampa, Fla.	168	116	34	12	6	-	12
Somerville, Mass.	7	3	3	-	1	-	1	Washington, D.C.	99	51	23	16	6	3	-
Springfield, Mass.	41	27	8	3	3	-	6	Wilmington, Del.	32	23	7	2	-	-	-
Waterbury, Conn.	39	27	6	6	-	-	2	E.S. CENTRAL	756	479	162	58	26	31	33
Worcester, Mass.	76	50	21	2	1	2	9	Birmingham, Ala.	92	54	19	11	3	5	1
MID. ATLANTIC	2,743	1,758	517	332	59	77	120	Chattanooga, Tenn.	52	40	9	1	-	2	-
Albany, N.Y.	45	34	5	5	-	1	2	Knoxville, Tenn.	92	62	19	6	-	5	6
Allentown, Pa.	19	15	4	-	-	-	2	Louisville, Ky.	87	55	16	7	5	4	2
Buffalo, N.Y.	100	70	20	6	1	3	2	Memphis, Tenn.	173	102	45	13	8	5	9
Camden, N.J.	33	21	9	1	2	-	2	Mobile, Ala.	89	58	19	7	3	2	4
Elizabeth, N.J.	13	8	3	1	1	-	1	Montgomery, Ala.	41	29	7	3	1	1	-
Erie, Pa.†	39	34	4	1	-	-	1	Nashville, Tenn.	130	79	28	10	6	7	11
Jersey City, N.J.	41	24	5	6	-	6	1	W.S. CENTRAL	1,422	826	306	156	76	58	69
New York City, N.Y.	1,466	875	282	225	38	46	50	Austin, Tex.	79	44	15	16	2	2	8
Newark, N.J.	86	36	26	13	7	4	8	Baton Rouge, La.	70	43	11	9	4	3	1
Paterson, N.J.	19	14	4	1	-	-	-	Corpus Christi, Tex.	56	36	8	3	2	7	1
Philadelphia, Pa.	400	266	78	41	5	10	18	Dallas, Tex.	185	94	35	29	19	8	4
Pittsburgh, Pa.†	53	36	13	3	-	1	2	El Paso, Tex.	60	34	14	6	-	6	2
Reading, Pa.	40	34	3	3	-	-	4	Ft. Worth, Tex.	89	54	21	11	3	-	5
Rochester, N.Y.	131	101	16	11	1	2	8	Houston, Tex.	356	192	89	41	16	18	26
Schenectady, N.Y.	20	15	3	2	-	-	2	Little Rock, Ark.	79	50	16	4	5	4	6
Scranton, Pa.†	22	18	2	2	-	-	2	New Orleans, La.	125	77	28	7	10	3	-
Syracuse, N.Y.	132	100	18	8	3	3	7	San Antonio, Tex.	183	110	39	22	8	4	10
Trenton, N.J.	43	27	13	2	-	1	6	Shreveport, La.	42	29	8	2	3	-	1
Utica, N.Y.	19	14	4	-	1	-	-	Tulsa, Okla.	98	63	22	4	4	3	5
Yonkers, N.Y.	22	16	5	1	-	-	4	MOUNTAIN	719	449	149	75	18	27	40
E.N. CENTRAL	2,171	1,276	444	252	143	55	99	Albuquerque, N.M.	90	53	17	10	4	5	3
Akron, Ohio	85	55	18	3	3	6	-	Colo. Springs, Colo.	48	34	8	6	-	-	4
Canton, Ohio	48	37	6	2	1	2	-	Denver, Colo.	113	63	24	16	5	5	11
Chicago, Ill.	480	177	101	104	86	12	15	Las Vegas, Nev.	132	83	33	13	2	1	7
Cincinnati, Ohio	161	101	37	15	3	5	18	Ogden, Utah	22	18	1	2	1	-	2
Cleveland, Ohio	95	56	23	5	5	6	2	Phoenix, Ariz.	140	86	34	9	3	8	5
Columbus, Ohio	145	90	30	16	8	1	2	Pueblo, Colo.	18	14	1	3	-	-	1
Dayton, Ohio	106	71	22	9	3	1	10	Salt Lake City, Utah	46	29	9	5	-	-	3
Detroit, Mich.	239	122	50	39	17	10	2	Tucson, Ariz.	110	69	22	11	3	5	3
Evansville, Ind.	30	24	6	-	-	-	2	PACIFIC	1,938	1,251	354	223	69	36	100
Fort Wayne, Ind.	62	47	12	1	1	1	4	Berkeley, Calif.	24	16	5	2	-	1	1
Gary, Ind.	15	11	2	2	-	-	-	Fresno, Calif.	71	46	11	9	2	3	4
Grand Rapids, Mich.	49	36	7	3	1	2	4	Glendale, Calif.	18	12	2	3	1	-	1
Indianapolis, Ind.	198	119	43	29	4	3	14	Honolulu, Hawaii	86	61	16	5	2	2	6
Madison, Wis.	40	23	9	5	1	2	2	Long Beach, Calif.	89	58	14	11	4	2	7
Milwaukee, Wis.	136	98	30	5	2	1	8	Los Angeles, Calif.	568	345	107	75	28	9	26
Peoria, Ill.	42	34	7	1	-	-	-	Oakland, Calif.‡	U	U	U	U	U	U	U
Rockford, Ill.	39	31	6	1	1	-	3	Pasadena, Calif.	34	26	3	3	-	-	2
South Bend, Ind.	50	35	8	4	2	1	6	Portland, Ore.	151	110	25	11	3	2	7
Toledo, Ohio	98	66	23	5	2	2	5	Sacramento, Calif.	153	102	26	19	5	1	12
Youngstown, Ohio	53	43	4	3	3	-	2	San Diego, Calif.	181	116	30	25	6	3	16
W.N. CENTRAL	748	513	137	58	19	21	35	San Francisco, Calif.	150	87	33	21	6	3	8
Des Moines, Iowa	27	18	7	1	-	1	2	San Jose, Calif.	146	96	33	11	4	2	3
Duluth, Minn.	25	19	1	4	-	1	-	Seattle, Wash.	139	90	27	15	5	2	1
Kansas City, Kans.	31	19	9	2	1	-	-	Spokane, Wash.	40	30	7	1	-	-	2
Kansas City, Mo.	102	60	22	16	2	2	3	Tacoma, Wash.	88	56	15	12	3	2	2
Lincoln, Nebr.	25	19	5	1	-	-	-	TOTAL	12,325 ^{††}	7,661	2,446	1,379	479	351	598
Minneapolis, Minn.	238	174	42	12	5	5	17								
Omaha, Nebr.	73	46	12	5	7	3	4								
St. Louis, Mo.	125	92	17	11	1	4	4								
St. Paul, Minn.	45	29	10	2	1	3	1								
Wichita, Kans.	57	37	12	4	2	2	4								

*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.

‡Report for this week is unavailable (U).

Homicide/Suicide – Continued

Data on homicide followed by suicide are limited because many law enforcement agencies do not compile statistics on such incidents. No national figures exist on the incidence of homicide followed by suicide. Improved data collection and data linkage will be required to better define the scope of the problem.

As a result of increased public concern in Kentucky, the Kentucky Domestic Violence Association has formed a homicide/suicide task force, and the state attorney general has created the Task Force on Domestic Violence Crime. Both include persons from social service and criminal justice agencies and local and state government. A curriculum for school children on prevention of family violence has been developed by the Kentucky Department of Education.

Although efforts to prevent homicide and suicide have been attempted, none have focused on combined events. Based on data in this study, potential interventions include improving enforcement of existing domestic violence laws, improving access to spouse-abuse shelters, preventing drug and alcohol abuse, and controlling firearms.

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*Health Objectives for the Nation***Current Tobacco, Alcohol, Marijuana, and Cocaine Use
Among High School Students – United States, 1990**

Patterns of tobacco, alcohol, and other drug use usually are established during youth, often persist into adulthood, contribute substantially to the leading causes of mortality and morbidity (1), and are associated with lower educational achievement and school dropout (2–5). This report presents selected data on current use of tobacco, alcohol, marijuana, and cocaine among 9th–12th grade students from two components of the Youth Risk Behavior Surveillance System (6): 1) the 1990 national school-based Youth Risk Behavior Survey (YRBS) conducted during April–May 1990 and 2) similar surveys conducted by departments of education in 22 states and four cities during the same time period.

The national survey used a three-stage sample design to obtain a probability sample of 11,631 students in grades 9–12 in the 50 states, the District of Columbia, Puerto Rico, and the Virgin Islands. The 26 state and local sites used a variety of sampling schemes: 14 drew probability samples from well-defined sampling frames of schools and students, allowing computation of weighted results of known precision; nine drew probability samples of both schools and students, but either low overall response rates or unavailable documentation precluded weighting the data or making estimates of precision; and three used nonprobability samples of either schools or students (Table 1).

For the state and local surveys, school response rates ranged from 31% to 100%; student response rates ranged from 54% to 94%. Sample sizes ranged from 378 to

TABLE 1. Size, response rates, and demographic characteristics of samples – selected U.S. sites and United States, Youth Risk Behavior Surveys, 1990

Site	Sample size	School response rate (%)	Student response rate (%)	Gender (%)		Grade (%)				Race/Ethnicity (%)			
				Female	Male	9	10	11	12	Black, non-Hispanic		Hispanic	Other
										White, non-Hispanic			
State surveys													
Alabama*	2,112	89	90	50	50	24	40	29	7	32	65	1	2
Colorado*†	1,353	63	94	48	52	26	20	31	23	4	76	12	7
District of Columbia* [‡]	1,461	94	57	55	45	7	36	25	31	86	3	5	6
Georgia*	2,384	77	84	51	49	22	27	28	23	39	59	1	2
Kansas [‡]	513	36	84	51	49	36	33	18	11	7	83	4	6
Kentucky**	5,675	NA ^{††}	NA	52	48	54	1	1	44	5	92	1	3
Massachusetts*†	1,907	64	81	50	50	27	23	26	23	3	88	2	6
Mississippi*	4,494	63	83 ^{§§}	52	48	24	25	26	26	50	47	1	2
Nebraska [‡]	2,237	83	NA	50	50	30	31	18	20	6	86	4	5
New Hampshire [‡]	1,629	100	67	51	49	32	30	22	15	1	93	1	5
New Mexico*	3,524	84	80	54	46	29	27	23	21	2	30	36	32
New York ^{†**}	3,878	64	86	50	50	21	27	25	27	6	84	2	7
North Carolina													
9th Grade*	1,871	64	88	50	50	88	5	2	4	24	71	1	4
12th Grade*	1,574	62	90	56	44	3	0	0	96	27	69	1	3
Oklahoma**	652	31	59 ^{§§}	52	48	26	28	26	20	3	80	3	14
Oregon**	2,046	31	63	54	46	25	30	22	21	3	82	3	14
Pennsylvania ^{†**}	2,495	51	91	52	48	24	28	27	21	10	85	1	4
South Carolina**	5,571	57	84	51	49	29	28	22	21	41	55	1	3
South Dakota*	1,495	84	91	52	48	32	20	25	23	1	83	1	15
Tennessee**	1,891	44	78 ^{§§}	51	49	22	26	33	19	25	72	1	2
Utah*	3,488	94	89	51	49	32	27	23	18	1	88	4	7
West Virginia*	1,445	80	84	49	51	40	20	21	20	7	89	0	3
Wisconsin**	1,027	39	80	50	50	34	21	29	17	8	87	1	3
Local surveys													
Dallas*	3,211	100	79	51	49	31	42	18	9	49	17	29	4
Ft. Lauderdale**	1,049	100	54	56	44	26	20	26	28	17	68	9	5
Jersey City*	378	100	80	52	48	29	22	25	24	38	13	32	16
Miami*	1,922	100	79	53	47	26	26	25	23	57	9	28	6
National survey	11,631	74	87	51	49	24	26	25	25	20	54	20	6

*Probability sample, weighted data.

†Survey did not include students from the largest city.

‡Categorized as a state for funding purposes.

§Nonprobability sample, unweighted data.

**Probability sample, unweighted data.

††Not available.

§§Estimated response rate.

High School Students — Continued

5675 students. Students in most samples were distributed evenly across grades and between genders. The racial/ethnic characteristics of the samples varied considerably (Table 1).

Among the state and local surveys, rates varied for current tobacco, alcohol, and drug use during the 30 days preceding the survey (Table 2): 9%–37% of students (median: 31%) reported smoking at least one cigarette; 1%–20% (median: 11%) reported using smokeless tobacco; 28%–64% (median: 54%) reported having at least one drink of alcohol; 17%–47% (median: 35%) reported having five or more drinks on

TABLE 2. Percentage of students reporting current use* of tobacco, alcohol, marijuana, and cocaine — selected U.S. sites and United States, Youth Risk Behavior Surveys, 1990

Site	Tobacco		Alcohol		Other drugs	
	Cigarettes	Smokeless	Any use	≥5 drinks on 1 occasion	Marijuana	Cocaine
State surveys						
Alabama [†]	33	14	50	35	7	2
Colorado ^{†§}	31	13	60	38	16	2
District of Columbia ^{†¶}	9	1	37	17	3	1
Georgia [†]	25	12	50	31	9	1
Kansas ^{**}	31	12	59	41	7	4
Kentucky ^{††}	37	15	51	35	14	2
Massachusetts ^{†§}	29	7	60	38	17	2
Mississippi [†]	28	11	54	37	11	2
Nebraska ^{**}	32	14	56	37	10	2
New Hampshire ^{**}	30	8	56	37	14	3
New Mexico [†]	32	13	61	45	11	3
New York ^{§††}	32	7	64	42	16	2
North Carolina						
9th Grade [†]	27	11	43	26	11	2
12th Grade [†]	32	8	58	41	14	2
Oklahoma ^{††}	34	16	62	47	14	3
Oregon ^{††}	NA ^{§§}	NA	47	30	14	3
Pennsylvania ^{§††}	32	13	54	33	12	2
South Carolina ^{††}	29	9	53	34	11	2
South Dakota [†]	34	19	62	42	12	2
Tennessee ^{††}	31	12	50	31	15	3
Utah [†]	20	8	28	19	8	2
West Virginia [†]	37	20	55	42	17	2
Wisconsin ^{††}	33	10	63	43	10	1
Local surveys						
Dallas [†]	19	3	50	31	8	2
Ft. Lauderdale ^{††}	24	4	56	30	14	1
Jersey City [†]	23	2	46	27	8	2
Miami [†]	14	2	47	25	9	1
National survey	32	10	59	37	14	2

*During the 30 days preceding the survey.

[†]Probability sample, weighted data.

[§]Survey did not include students from the largest city.

[¶]Categorized as a state for funding purposes.

**Nonprobability sample, unweighted data.

^{††}Probability sample, unweighted data.

^{§§}Not available.

High School Students — Continued

one occasion; 3%–17% (median: 12%) reported using marijuana at least once; and 1%–4% (median: 2%) reported using any form of cocaine, including powder, crack, or freebase. At most sites, more male than female students reported these behaviors. The median prevalence estimates from the state and local surveys were similar to the national prevalence estimates (Table 2).

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Editorial Note: Because the quality of the samples varied among the state and local surveys, comparisons of data across sites should be made with caution. Nonetheless, these results can be useful in planning and evaluating broad national, state, and local interventions and monitoring progress toward achieving National Education Goals and health objectives. Goal 6 of the National Education Goals (7) aims to have every school in the United States free of drugs and violence and offer a disciplined environment conducive to learning by the year 2000. The results presented in this report will be incorporated in the first progress report on the status of the National Education Goals to be released September 30, 1991.

Year 2000 national health objectives 3.5, 3.9, 4.5, 4.6, 4.7, 4.8, and 4.11 are to reduce the use of tobacco, alcohol, and other drugs among youth (8). For example, objective 4.6 states that among youth aged 12–17 the prevalence of alcohol use during the previous 30 days should be no more than 12.6%, that of marijuana use no more than 3.2%, and that of cocaine use no more than 0.6%. Prevalence rates from the national YRBS for 9th–12th grade students were four times higher for alcohol and marijuana use and three times higher for cocaine use than these objectives. Furthermore, most states and cities that conducted a YRBS have not reached these national objectives. To meet the National Education Goals and the national health objectives, efforts to help youth reduce current use of tobacco, alcohol, and other drugs will need to increase among federal, state, and local education, health, and drug-control agencies; families; media; legislators; relevant community organizations; and youth themselves.

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Notice to Readers

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CDC's Division of Injury Control, National Center for Environmental Health and Injury Control (NCEHIC), has released *Injury Mortality Atlas of the United States, 1979–1987*. The atlas is a collection of both national and state color-coded maps illustrating the geographic distribution of death rates for eight major causes of injury-related death. In addition, the atlas contains graphic and tabular summaries of trends in injury-related death rates by age, gender, and race and by calendar year. Additional information regarding the atlas is available from: Injury Atlas, Program Development and Implementation Branch, Division of Injury Control, NCEHIC, Mail-stop F-36, CDC, 1600 Clifton Road, NE, Atlanta, GA 30333.

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