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Current Trends

Coordinated Community Programs for HIV Prevention among Intravenous-Drug Users – California, Massachusetts

This report describes two coordinated communitywide programs that provide education for intravenous-drug users (IVDUs) and their sex partners to reduce the transmission of human immunodeficiency virus (HIV).

Sacramento, California

In 1985, the University of California, Davis (UCD), detected HIV antibody in <1 (0.6%) of 178 IVDUs in two drug-treatment programs in Sacramento (S. Jain, UCD, personal communication, October 1988). Subsequently, UCD collaborated with the Sacramento AIDS Foundation, Sacramento's drug-treatment programs, the Sacramento County health and sheriff's departments, and the Sacramento Police Department to form a task force to slow the spread of HIV among IVDUs in the community. An acquired immunodeficiency syndrome (AIDS) education, prevention, and testing (EPT) program was developed in the spring of 1987 for the estimated 8000 or more IVDUs in the area (*1*) and funded by the State of California and Sacramento County.

The EPT program consists of individual counseling of IVDUs about their risk for HIV infection and AIDS and about practical methods to avoid becoming infected, including stopping drug injections, "safer shooting" for those who would not desist, and "safer sex." After informed consent is obtained, each IVDU is given a standardized, questionnaire-guided interview and a confidential HIV-antibody test. In a second counseling session, HIV test results are given in private to each IVDU, and knowledge of HIV-infection risk-reduction techniques is reassessed. IVDUs are recruited from drug-treatment programs, major public hospitals, correctional facilities, and the county counseling and testing site. Seronegative IVDUs are encouraged to return for follow-up HIV testing and interview 4 months after initial testing. IVDUs are paid for follow-up HIV-antibody tests.

Although most participating IVDUs have been clients of drug-treatment programs, the EPT program recently has been offered to IVDUs receiving medical care at the UCD Medical Center (UCDMC), the primary source of medical care for IVDUs in the county. Serologic testing has been conducted in city and county correctional facilities, but the entire EPT program has not yet been implemented in these sites.

IV-Drug Users — Continued

Overall, 42% of IVDUs offered the EPT program in drug-treatment centers have participated: 235 (24%) of 970 in the outpatient methadone program and 365 (80%) of 459 in drug-free programs (Table 1). Of the 701 IVDUs recruited at drug-treatment programs and the medical-care facilities, 14 (2%) have HIV antibody (Table 1). Of those eligible for retesting after an initial negative test, 116 (24%) of 490 returned to be retested, and none have seroconverted.

Self-reported high-risk drug use has decreased since the beginning of the program. Of 720 IVDUs recruited in 1988, 295 (41%) report that either they did not share or they "usually" or "always" disinfected their paraphernalia with an effective disinfectant ("safer shooting"), compared with 19 (23%) of 83 IVDUs recruited in 1986. Among IVDUs returning for retesting, 44 (57%) of 77 of those still injecting drugs reported using "safer shooting" techniques.

Worcester, Massachusetts

The Worcester AIDS Consortium was established in spring 1987 to provide comprehensive, coordinated communitywide AIDS education and risk-reduction efforts for IVDUs and their sex partners. The Consortium includes the local health and school departments, drug-treatment program, neighborhood health centers, community agencies, AIDS Project Worcester, jail, and the University of Massachusetts. This program, which is funded by the Commonwealth of Massachusetts, the National Institute on Drug Abuse, and CDC and administered through the Massachusetts Department of Public Health, is coordinated with the Worcester Department of Public Health hepatitis B prevention program (*2*).

TABLE 1. Characteristics of intravenous-drug users (IVDUs), by place of recruitment — Sacramento, California, 1987–1988

Characteristic	Drug-treatment program	Medical care*	Correctional facilities	Counseling and testing site†
No. IVDUs tested for HIV	600	101	422	166
No. HIV-positive IVDUs	11	3	15	3
Percentage HIV-positive IVDUs	2%	3%	4%	1.8%
Preferred drug for IV use:				
Heroin	74%	23%	N/A§	N/A
Cocaine	10%	16%		
Amphetamines	16%	59%		
Mean duration of IV-drug use (yrs)	11.1	6.7	N/A	N/A
History of prior drug treatment	85%	28%	N/A	N/A
Use of "safer shooting" techniques¶	48%	53%	N/A	N/A
Estimated no. IVDU clients seen at setting/yr	2000	1000	4000	350

*University of California-Davis Medical Center.
†Included for comparison to study sites.
§Data not available.
¶IVDUs who reported "always" or "usually" not sharing injection equipment, or using bleach or other disinfectant to decontaminate injection equipment.

IV-Drug Users — Continued

The Consortium activities include 1) educational programs in schools and the community and 2) educational/voluntary HIV-antibody testing programs for IVDUs and their sex partners offered at health-care facilities, drug-treatment programs, and the local correctional facility (*3–6*).

An estimated 3000–4000 IVDUs reside in metropolitan Worcester (total population, 175,000). The drug rehabilitation program educates IVDUs in drug-treatment programs and provides interventions to reduce transmission of HIV among IVDUs not in treatment, including distribution of bleach to clean drug paraphernalia and expedited admission of seropositive addicts to drug treatment.

The approximately 600 inmates of the Worcester County House of Corrections are offered weekly educational sessions, voluntary individual HIV/AIDS counseling, and confidential HIV testing, with follow-up support available through the advocacy services of AIDS Project Worcester.

Free voluntary pre- and post-test counseling and HIV-antibody testing have been incorporated into the routine activities of all drug-treatment programs of the rehabilitation program; the two major community health centers serving indigent, disadvantaged minority populations; the Worcester Department of Public Health Hepatitis B/ HIV Clinic; and the Worcester City Hospital.

A standardized interview is used at all sites to obtain demographic data and information on the drug use and sexual behaviors of participants.

As of July 31, 1988, 1081 persons had participated in individual interviews and counseling sessions, including approximately 90% of clients in drug-treatment programs, 85% of persons referred for HIV counseling and testing to clinics, and 50% of inmates who attended group educational sessions (Table 2). Participants were predominantly male (76%) and white (69%); 19% were Hispanic and 9%, black; 29% were 17–24 years of age, 49%, 25–34 years, and 22%, ≥35 years.

TABLE 2. Persons reporting selected risk behaviors, by site of recruitment — Worcester, Massachusetts, September 1987–July 1988

	Jail		Drug treatment		Clinics		Total	
Risk behavior*	**No.**	**(%)**	**No.**	**(%)**	**No.**	**(%)**	**No.**	**(%)**
Recent† needle use	175	(38)	263	(76)	38	(14)	476	(44)
Recent sexual contact with needle user	25	(6)	6	(2)	34	(12)	65	(6)
Former§ needle use	65	(14)	20	(6)	23	(8)	108	(10)
Former sexual contact with needle user	21	(5)	10	(3)	21	(8)	52	(5)
No needle use, no sexual contact with needle user¶	173	(38)	49	(14)	158	(58)	380	(35)
Total	**459**	**(100)**	**348**	**(100)**	**274**	**(100)**	**1081**	**(100)**

*Persons are counted only once in a hierarchy of risk behaviors. Persons reporting >1 risk behavior are included in the risk behavior listed first in the hierarchy.

†Injections during the most recent period of 1–12 weeks of "free living" (not living in a residential drug-treatment program or being in jail).

§Injections at some time but not meeting the criteria for recent needle use.

¶Includes some persons with risk factors that are not related to IV-drug use or sexual contact with IVDUs.

IV-Drug Users — Continued

Recent needle use was reported by 263 (76%) of 348 clients in drug treatment and 175 (38%) of 459 jail inmates*, compared with 38 (14%) of 274 clinic patients interviewed (*4*). One hundred fifty-eight (58%) of 274 clinic patients and 173 (38%) of 459 jail inmates interviewed reported no needle use and no sexual contact with needle users at any time.

Among the reported recent needle users, 122 (70%) of 175 of jail inmates, 28 (74%) of 38 of clinic patients, and 157 (60%) of 263 current drug-treatment clients reported they had never been in a drug-treatment program. Among recent needle users, 144 (48%) of 301 in drug-treatment programs and medical clinics had previously been in jail, in contrast to 144 (82%) of 175 prisoners. In addition, 365 (77%) of the 476 recent needle users reported recent sharing of needles; 37% had shared drug injection equipment in a "shooting gallery" and 8% had shared drug injection equipment in New York City.

Of the 792 (73%) persons for whom HIV-antibody test results were available, 71 (9%) were seropositive. Seropositivity prevalences were proportionate to reported risk activities: three (10%) of 31 persons with no needle use or sexual contact with IVDUs; two (5%) of 42 former sex partners of IVDUs; two (4%) of 52 recent sex partners of IVDUs; nine (11%) of 81 former needle users; and 55 (18%) of 304 recent needle users.

HIV seropositivity in recent needle users was higher among Hispanics (23 [36%] of 64) and blacks (nine [35%] of 26) than among whites (22 [12%] of 183) ($p<0.001$). HIV seropositivity among recent needle users also varied by site of recruitment: eight (10%) positive of 80 in the drug-treatment programs, 36 (21%) of 169 in jail, and 11 (30%) of 37 in clinics ($p=0.02$). However, because the proportion of all those interviewed who agreed to HIV testing varied from 119 (34%) of 348 in the drug-treatment programs to 434 (95%) of 459 at the jail, the overall HIV seropositivity prevalences among persons in these institutions are unknown.

Among recent needle users, there was no statistically significant association between HIV seropositivity and age, sex, marital status, previous drug treatment, and previous incarceration (*5,6*). Of the reported drug-use behaviors among recent needle users, only sharing drug injection equipment in a "shooting gallery" was associated with HIV seropositivity (27% vs. 15%) ($p=0.009$).

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Editorial Note: In 1988, 30% of U.S. adults with AIDS reported only IV-drug use (24%) or both IV-drug use and male homosexual/bisexual behavior (6%) as risk factors. This represents an increase from 25% in previous years (in part due to revision of the AIDS case definition in 1987 [*7*]). In addition, 55% of AIDS cases in the heterosexual-contact exposure category in 1988 were attributed to HIV infections acquired from IVDUs.

*Since drug-treatment clients are interviewed on entry into treatment, recent needle use for them would be before admission to drug treatment. For jail inmates, recent needle use refers to the period before incarceration.

IV-Drug Users — Continued

The programs in Sacramento and Worcester represent coordinated efforts to educate IVDUs about HIV/AIDS and to change their sexual and drug-use behaviors. These programs have coordinated the HIV prevention activities of universities, health departments, correctional facilities, police departments, health-care institutions, and drug-treatment programs. Because only 10%–15% of IVDUs are in drug-treatment programs at any time, HIV counseling and testing of IVDUs in health-care facilities and in correctional/criminal justice facilities are also important. Data from Sacramento and Worcester suggest that different populations of IVDUs were reached at each of the different institutions.

The Worcester program illustrates the potential impact of HIV prevention programs on IVDUs in correctional institutions. More than half of the recent needle users recruited at medical clinics and drug-treatment programs had previously been in jail. In addition, among the recent needle users recruited in jail, 83% had been in jail at least once before the current incarceration.

Although street/community outreach teams are important elements of comprehensive HIV prevention programs for IVDUs, such teams were not part of the initial Worcester and Sacramento programs. A street outreach program will be added in Sacramento.

The changes in the behaviors reported by IVDUs participating in the educational programs were modest. In Sacramento, the proportion of IVDUs reporting "safer shooting" drug-use practices increased from 23% in 1986 to 41% in 1988 (*8*). Among IVDUs returning for follow-up interviews and HIV testing, 57% of those using drugs reported using "safer shooting" techniques. While these results suggest that some IVDUs will adopt lower risk behaviors, many of the IVDUs interviewed did not report adoption of safer behaviors.

Programs to prevent HIV transmission among IVDUs and their sex partners should be carefully evaluated with follow-up surveys of self-reports of drug use and sexual behaviors; admission to and success of drug-treatment; follow-up serologic testing of IVDUs who are seronegative; and monitoring of other infections (e.g., hepatitis B virus, bacterial endocarditis).

Among IVDUs, seroprevalence of HIV antibody is highest in New York City and Puerto Rico (45%–60%), high in the Northeast, and low in the Central and Southwestern United States (*9,10*). The high seropositivity levels in the New York City area and Puerto Rico indicate the potential for rapid transmission of HIV to uninfected IVDUs, unless effective HIV education and prevention programs are developed for IVDUs in areas of the United States where seroprevalence is presently low.

Worcester and Sacramento are medium-sized cities (populations of 175,000 and 330,000, respectively) with an estimated 3000–4000 and at least 8000 IVDUs, respectively. Similar efforts in larger cities with larger numbers of IVDUs may be more difficult to achieve. Nevertheless, attempts to coordinate efforts through integration of educational activities in health-care institutions, correctional/criminal justice facilities, health department clinics, and drug-treatment programs (combined with street outreach) are important in reducing the risk of transmission of HIV among IVDUs and their sex partners.

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IV-Drug Users — Continued

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TABLE I. Summary — cases of specified notifiable diseases, United States

Disease	21st Week Ending			Cumulative, 21st Week Ending		
	May 27, 1989	May 28, 1988	Median 1984-1988	May 27, 1989	May 28, 1988	Median 1984-1988
Acquired Immunodeficiency Syndrome (AIDS)	969	U*	152	13,886	12,481	5,090
Aseptic meningitis	77	85	95	1,630	1,657	1,657
Encephalitis: Primary (arthropod-borne & unspec)	9	17	16	241	280	331
Post-infectious	1	2	4	33	42	42
Gonorrhea: Civilian	8,825	13,765	15,999	253,265	267,827	323,106
Military	123	190	380	4,320	4,969	6,823
Hepatitis: Type A	761	467	457	13,593	9,920	8,985
Type B	466	506	445	8,660	8,789	9,948
Non A, Non B	45	48	80	919	1,061	1,413
Unspecified	50	51	82	1,026	863	1,932
Legionellosis	11	16	14	319	360	258
Leprosy	6	1	5	61	74	91
Malaria	22	10	18	412	270	298
Measles: Total†	466	107	107	4,858	1,273	1,416
Indigenous	448	98	98	4,596	1,141	1,275
Imported	18	9	7	262	132	141
Meningococcal infections	65	57	54	1,379	1,506	1,424
Mumps	206	94	94	2,375	2,424	1,712
Pertussis	95	13	21	829	872	841
Rubella (German measles)	4	9	15	130	91	210
Syphilis (Primary & Secondary): Civilian	616	890	548	15,545	15,236	11,351
Military	1	4	4	106	78	84
Toxic Shock syndrome	6	7	7	147	132	149
Tuberculosis	380	502	444	7,698	7,775	8,044
Tularemia	2	10	8	25	48	47
Typhoid Fever	10	5	4	167	142	123
Typhus fever, tick-borne (RMSF)	17	15	15	69	70	87
Rabies, animal	66	68	112	1,808	1,584	2,047

TABLE II. Notifiable diseases of low frequency, United States

	Cum. 1989		Cum. 1989
Anthrax	-	Leptospirosis	51
Botulism: Foodborne	6	Plague	-
Infant (Ohio 1)	4	Poliomyelitis, Paralytic	-
Other	4	Psittacosis (Ohio 1, Iowa 1)	34
Brucellosis (Calif. 3)	25	Rabies, human	-
Cholera	-	Tetanus (Calif. 1)	18
Congenital rubella syndrome	1	Trichinosis	12
Congenital syphilis, ages < 1 year	-		
Diphtheria	-		

*Because AIDS cases are not received weekly from all reporting areas, comparison of weekly figures may be misleading.
†Seven of the 466 reported cases for this week were imported from a foreign country or can be directly traceable to a known internationally imported case within two generations.

TABLE III. Cases of specified notifiable diseases, United States, weeks ending May 27, 1989 and May 28, 1988 (21st Week)

Reporting Area	AIDS	Aseptic Meningitis	Encephalitis		Gonorrhea (Civilian)		Hepatitis (Viral), by type				Legionellosis	Leprosy
			Primary	Post-infectious			A	B	NA,NB	Unspecified		
	Cum. 1989	Cum. 1989	Cum. 1989	Cum. 1989	Cum. 1989	Cum. 1988	Cum. 1989	Cum. 1989	Cum. 1989	Cum. 1989	Cum. 1989	Cum. 1989
UNITED STATES	13,886	1,630	241	33	253,265	267,827	13,593	8,660	919	1,026	319	61
NEW ENGLAND	541	73	7	2	7,623	8,093	293	452	39	42	24	4
Maine	33	3	3	-	113	177	4	18	3	1	3	-
N.H.	15	5	-	-	69	124	30	25	7	3	-	-
Vt.	7	1	-	-	25	65	17	37	4	-	-	-
Mass.	262	30	2	2	2,898	2,906	98	283	17	31	15	3
R.I.	30	23	-	-	556	736	17	38	3	3	6	-
Conn.	194	11	2	-	3,962	4,085	127	51	5	4	-	1
MID. ATLANTIC	4,150	211	44	4	35,473	42,645	1,801	1,338	85	141	83	7
Upstate N.Y.	532	94	13	3	6,593	5,042	440	302	37	5	27	1
N.Y. City	2,159	32	2	1	15,586	19,793	151	470	14	118	8	4
N.J.	972	-	29	-	5,619	6,008	180	229	11	5	14	1
Pa.	487	85	-	-	7,675	11,802	1,030	337	23	13	34	1
E.N. CENTRAL	1,023	245	70	1	44,140	42,419	718	1,030	91	36	85	1
Ohio	179	53	15	-	11,676	9,941	166	230	15	4	49	-
Ind.	185	55	19	-	3,174	3,273	45	167	14	13	17	1
Ill.	424	46	12	1	13,931	12,087	322	257	21	11	-	-
Mich.	187	81	19	-	12,853	13,487	138	281	29	8	15	-
Wis.	48	10	5	-	2,506	3,631	47	95	12	-	4	-
W.N. CENTRAL	298	66	10	2	12,059	10,602	434	374	38	8	13	1
Minn.	61	5	-	1	1,244	1,456	50	46	7	2	2	-
Iowa	26	15	2	-	1,021	806	31	18	9	-	3	-
Mo.	151	21	-	-	7,083	5,986	222	252	12	4	2	-
N. Dak.	3	4	1	-	48	75	3	12	3	-	-	-
S. Dak.	4	4	1	-	109	202	3	5	3	-	-	-
Nebr.	11	5	2	-	702	635	51	14	-	-	2	1
Kans.	42	12	4	1	1,852	1,442	74	27	4	2	4	-
S. ATLANTIC	2,836	347	31	7	72,638	75,214	1,156	1,734	132	149	39	-
Del.	41	10	1	-	1,152	1,089	20	62	1	2	3	-
Md.	282	37	7	1	8,101	7,716	263	320	15	15	10	-
D.C.	247	5	-	-	4,508	5,250	2	12	1	-	-	-
Va.	229	63	14	-	6,076	5,334	129	117	24	94	2	-
W. Va.	19	3	5	-	528	554	10	34	2	2	-	-
N.C.	157	44	-	1	11,097	11,036	214	439	41	-	12	-
S.C.	121	11	-	-	6,420	5,554	17	197	3	5	2	-
Ga.	390	23	1	-	14,403	14,935	140	169	9	5	4	-
Fla.	1,350	151	3	5	20,353	23,746	361	384	36	26	6	-
E.S. CENTRAL	332	153	13	1	21,537	20,535	142	605	66	1	11	-
Ky.	48	37	4	1	2,032	1,977	52	172	22	-	3	-
Tenn.	113	19	-	-	7,067	6,786	38	297	16	-	5	-
Ala.	94	74	9	-	6,897	6,675	31	90	25	1	3	-
Miss.	77	23	-	-	5,541	5,097	21	46	3	-	-	-
W.S. CENTRAL	1,319	135	27	2	27,847	29,925	1,577	820	66	233	18	12
Ark.	33	3	-	-	2,809	2,757	88	28	2	1	1	-
La.	196	14	5	-	5,969	6,228	118	146	7	1	4	-
Okla.	67	20	7	-	2,406	2,762	158	74	14	8	10	-
Tex.	1,023	98	15	2	16,663	18,178	1,213	572	43	223	3	12
MOUNTAIN	448	61	8	1	5,367	5,789	1,970	554	96	81	18	1
Mont.	4	2	-	-	89	178	17	18	1	1	2	1
Idaho	10	-	-	-	87	172	79	41	6	2	-	-
Wyo.	8	1	-	-	47	91	15	1	-	-	-	-
Colo.	169	21	2	1	1,232	1,370	278	87	33	35	2	-
N. Mex.	31	6	1	-	561	545	240	86	22	2	-	-
Ariz.	117	24	2	-	1,785	2,009	1,044	194	18	37	8	-
Utah	26	5	1	-	178	244	128	41	10	3	3	-
Nev.	83	2	2	-	1,388	1,180	169	86	6	1	3	-
PACIFIC	2,939	339	31	13	26,581	32,605	5,502	1,753	306	335	28	35
Wash.	270	-	-	1	2,418	2,707	1,139	338	85	19	5	2
Oreg.	100	-	-	-	1,164	1,228	986	172	36	7	1	1
Calif.	2,519	315	27	12	22,416	27,949	2,930	1,220	180	305	20	28
Alaska	5	3	3	-	375	430	386	21	5	2	1	-
Hawaii	45	21	1	-	208	291	61	2	-	2	1	4
Guam	1	-	-	-	-	56	-	-	-	-	-	-
P.R.	654	38	1	-	409	604	40	76	5	7	-	7
V.I.	18	-	-	-	255	162	-	4	-	-	-	-
Amer. Samoa	-	-	-	-	-	35	-	-	-	-	-	-
C.N.M.I.	-	-	-	-	-	22	-	-	-	-	-	-

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

TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending May 27, 1989 and May 28, 1988 (21st Week)

Reporting Area	Malaria	Measles (Rubeola)					Menin-gococcal Infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported*		Total									
	Cum. 1989	1989	Cum. 1989	1989	Cum. 1989	Cum. 1988	Cum. 1989	1989	Cum. 1989	1989	Cum. 1989	Cum. 1988	1989	Cum. 1989	Cum. 1988
UNITED STATES	412	448	4,596	18	262	1,273	1,379	206	2,375	95	829	872	4	130	91
NEW ENGLAND	24	78	126	2	16	64	101	5	24	81	183	78	1	5	1
Maine	-	-	-	-	-	-	14	-	-	-	4	11	-	-	-
N.H.	1	1	2	-	-	56	11	-	10	-	5	22	1	3	-
Vt.	-	-	1	-	-	-	6	-	-	-	5	2	-	1	-
Mass.	15	5	14	-	12	1	47	5	13	81	164	33	-	1	-
R.I.	5	-	35	-	2	-	1	-	-	-	2	1	-	-	1
Conn.	3	72	74	2†	2	7	22	-	1	-	3	9	-	-	-
MID. ATLANTIC	68	24	354	9	120	431	197	21	122	-	45	36	-	7	8
Upstate N.Y.	16	-	23	-	81	6	60	18	65	-	25	21	-	1	1
N.Y. City	22	6	36	-	13	25	25	2	12	-	2	1	-	6	5
N.J.	13	-	218	-	-	15	41	-	11	-	14	4	-	-	1
Pa.	17	18	77	9§	26	385	71	1	34	-	4	10	-	-	1
E.N. CENTRAL	19	58	746	-	41	93	166	6	215	1	36	109	-	16	21
Ohio	6	57	457	-	35	6	69	-	8	-	1	21	-	3	-
Ind.	3	-	17	-	-	19	19	-	18	-	8	47	-	-	-
Ill.	4	1	272	-	-	51	44	-	95	-	-	6	-	12	17
Mich.	4	-	-	-	4	17	27	6	81	1	20	18	-	-	4
Wis.	2	-	-	-	2	-	7	-	13	-	7	17	-	1	-
W.N. CENTRAL	13	-	294	-	2	10	39	27	303	1	21	37	-	4	-
Minn.	5	-	-	-	-	10	10	-	-	-	-	6	-	-	-
Iowa	2	-	-	-	1	-	-	2	17	1	9	14	-	-	-
Mo.	4	-	213	-	-	-	11	-	42	-	10	6	-	3	-
N. Dak.	1	-	-	-	-	-	-	-	-	-	-	6	-	-	-
S. Dak.	-	-	-	-	-	-	4	-	-	-	1	2	-	-	-
Nebr.	1	-	6	-	-	-	10	1	3	-	-	-	-	-	-
Kans.	-	-	75	-	1	-	4	24	241	-	1	3	-	1	-
S. ATLANTIC	72	32	285	1	16	222	232	71	398	3	71	88	-	4	3
Del.	1	-	35	-	1	-	2	-	-	1	1	3	-	-	-
Md.	14	20	26	-	6	7	34	67	218	-	6	17	-	2	-
D.C.	3	-	5	-	3	-	10	2	64	-	-	-	-	-	-
Va.	11	7	8	1†	3	116	29	-	57	-	4	11	-	-	-
W. Va.	1	-	-	-	-	6	8	-	9	1	10	-	-	-	-
N.C.	10	5	164	-	-	1	31	1	13	1	17	25	-	1	-
S.C.	3	-	-	-	-	-	14	1	16	-	-	-	-	-	-
Ga.	4	-	-	-	-	-	44	-	5	-	9	17	-	-	-
Fla.	25	-	47	-	3	92	60	-	16	-	24	15	-	1	3
E.S. CENTRAL	4	-	52	-	-	55	38	2	86	4	34	14	-	1	-
Ky.	-	-	2	-	-	32	22	-	9	-	1	-	-	-	-
Tenn.	-	-	21	-	-	-	2	1	26	-	8	8	-	1	-
Ala.	2	-	29	-	-	-	11	-	6	4	25	4	-	-	-
Miss.	2	-	-	-	-	23	3	N	N	-	-	2	-	-	-
W.S. CENTRAL	18	238	2,319	4	27	9	92	73	945	-	23	63	-	12	6
Ark.	-	-	-	-	-	-	4	9	93	-	10	5	-	1	2
La.	1	-	6	-	-	-	21	21	332	-	4	7	-	5	-
Okla.	1	44	67	-	-	8	11	3	154	-	9	24	-	1	1
Tex.	16	194	2,246	4†§	27	1	56	40	366	-	-	27	-	5	3
MOUNTAIN	15	18	86	-	17	115	35	-	97	1	303	301	-	3	3
Mont.	-	-	12	-	1	-	1	-	2	-	-	1	-	1	-
Idaho	2	-	-	-	1	1	-	-	6	-	37	237	-	1	-
Wyo.	1	-	-	-	-	-	-	-	6	-	-	1	-	-	-
Colo.	2	2	32	-	1	114	14	-	11	-	18	7	-	-	1
N. Mex.	1	1	13	-	14	-	-	N	N	-	4	2	-	-	-
Ariz.	6	15	29	-	-	-	18	-	65	1	237	31	-	-	-
Utah	-	-	-	-	-	-	2	-	3	-	6	21	-	-	1
Nev.	3	-	-	-	-	-	-	-	4	-	1	1	-	1	1
PACIFIC	179	-	334	2	23	274	479	1	185	4	113	146	3	78	49
Wash.	11	-	6	-	10	1	45	1	18	-	23	32	-	-	-
Oreg.	8	-	-	2§	6	3	33	N	N	1	5	6	-	1	-
Calif.	156	-	322	-	3	266	397	-	158	3	83	85	-	57	39
Alaska	2	-	-	-	-	-	3	-	-	-	-	3	-	-	-
Hawaii	2	-	6	-	4	4	1	-	9	-	2	20	3	20	10
Guam	-	U	-	U	-	1	-	U	-	U	-	-	U	-	1
P.R.	-	U	303	U	-	158	3	U	1	U	2	6	U	4	1
V.I.	-	-	2	-	-	-	-	-	8	-	-	-	-	-	-
Amer. Samoa	-	U	-	U	-	-	-	U	-	U	-	-	U	-	-
C.N.M.I.	-	U	-	U	-	-	-	U	-	U	-	-	U	-	-

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

TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending May 27, 1989 and May 28, 1988 (21st Week)

Reporting Area	Syphilis (Civilian) (Primary & Secondary)		Toxic-shock Syndrome	Tuberculosis		Tula-remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1989	Cum. 1988	Cum. 1989	Cum. 1989	Cum. 1988	Cum. 1989	Cum. 1989	Cum. 1989	Cum. 1989
UNITED STATES	15,545	15,236	147	7,698	7,775	25	167	69	1,808
NEW ENGLAND	664	399	5	198	153	-	10	1	2
Maine	5	5	2	3	3	-	-	-	1
N.H.	2	4	-	16	-	-	-	-	-
Vt.	-	1	-	4	1	-	-	-	-
Mass.	197	168	1	97	96	-	5	-	-
R.I.	14	13	-	26	11	-	4	1	-
Conn.	446	208	2	52	42	-	1	-	1
MID. ATLANTIC	2,885	3,121	25	1,544	1,445	1	46	5	234
Upstate N.Y.	327	207	3	112	230	-	5	3	4
N.Y. City	1,331	2,018	2	913	693	-	30	-	-
N.J.	549	344	7	216	257	-	8	-	-
Pa.	678	552	13	303	265	1	3	2	230
E.N. CENTRAL	600	478	18	894	868	2	18	8	37
Ohio	44	45	8	169	158	-	7	7	-
Ind.	26	21	4	77	86	1	1	1	2
Ill.	282	240	-	382	364	-	6	-	5
Mich.	228	156	6	220	208	-	3	-	4
Wis.	20	16	-	46	52	1	1	-	26
W.N. CENTRAL	135	90	23	218	202	5	5	6	237
Minn.	10	8	6	45	33	-	1	-	55
Iowa	16	10	4	30	15	-	2	1	63
Mo.	72	52	4	88	104	4	1	5	21
N. Dak.	1	1	-	8	4	-	-	-	14
S. Dak.	-	-	3	12	17	1	-	-	40
Nebr.	16	13	5	10	7	-	-	-	18
Kans.	20	6	1	25	22	-	1	-	26
S. ATLANTIC	5,944	5,419	14	1,651	1,703	2	11	27	559
Del.	72	55	-	19	18	-	2	-	13
Md.	317	299	-	147	184	-	1	6	153
D.C.	381	237	-	67	76	-	2	-	2
Va.	224	172	4	148	184	2	1	-	114
W. Va.	7	5	-	33	34	-	-	-	27
N.C.	370	314	4	180	127	-	2	14	-
S.C.	298	253	3	173	173	-	-	4	95
Ga.	1,266	871	2	230	262	-	-	3	91
Fla.	3,009	3,213	1	654	645	-	3	-	64
E.S. CENTRAL	1,091	837	3	687	642	3	1	7	177
Ky.	23	28	1	156	171	1	1	4	83
Tenn.	469	364	1	200	183	1	-	2	47
Ala.	368	238	1	203	198	-	-	1	47
Miss.	231	207	-	128	90	1	-	-	-
W.S. CENTRAL	2,156	1,662	12	930	969	7	7	10	296
Ark.	138	86	1	98	98	3	-	1	39
La.	487	321	-	125	150	-	1	-	3
Okla.	32	72	6	79	89	4	1	8	42
Tex.	1,499	1,183	5	628	632	-	5	1	212
MOUNTAIN	273	296	17	194	202	3	3	4	82
Mont.	-	2	-	8	-	-	-	3	34
Idaho	-	-	2	7	-	-	-	-	-
Wyo.	1	1	-	-	1	-	-	-	24
Colo.	49	41	4	12	30	1	1	1	-
N. Mex.	12	22	2	33	41	-	-	-	11
Ariz.	73	74	8	93	97	-	1	-	11
Utah	10	9	-	19	10	2	1	-	1
Nev.	128	147	1	22	23	-	-	-	1
PACIFIC	1,797	2,934	30	1,382	1,591	2	66	1	184
Wash.	91	98	2	79	91	-	3	-	-
Oreg.	113	115	-	56	53	-	4	1	-
Calif.	1,584	2,697	27	1,165	1,367	2	57	-	129
Alaska	3	6	-	17	14	-	-	-	55
Hawaii	6	18	1	65	66	-	2	-	-
Guam	-	3	-	-	7	-	-	-	-
P.R.	209	266	-	91	91	-	-	-	21
V.I.	1	1	-	3	3	-	-	-	-
Amer. Samoa	-	-	-	-	3	-	-	-	-
C.N.M.I.	-	1	-	-	9	-	-	-	-

U: Unavailable

TABLE IV. Deaths in 121 U.S. cities,* week ending May 27, 1989 (21st Week)

Reporting Area	All Causes, By Age (Years)						P&I**
	All Ages	≥65	45-64	25-44	1-24	<1	Total
NEW ENGLAND	645	450	127	37	15	14	42
Boston, Mass.	161	103	31	18	3	4	14
Bridgeport, Conn.	34	25	5	3	-	1	2
Cambridge, Mass.	12	8	3	1	-	-	1
Fall River, Mass.	25	18	7	-	-	-	-
Hartford, Conn.	77	56	15	3	2	1	5
Lowell, Mass.	31	22	7	-	1	1	1
Lynn, Mass.	13	11	1	-	1	-	1
New Bedford, Mass.	19	19	-	-	-	-	1
New Haven, Conn.	66	44	14	4	2	2	3
Providence, R.I.	53	38	8	5	1	1	1
Somerville, Mass.	3	3	-	-	-	-	-
Springfield, Mass.	51	31	12	2	3	3	4
Waterbury, Conn.	38	29	7	-	2	-	4
Worcester, Mass.	62	43	17	1	-	1	5
MID. ATLANTIC	2,651	1,681	510	320	53	85	153
Albany, N.Y.	48	33	11	2	-	2	7
Allentown, Pa.	27	20	3	4	-	-	1
Buffalo, N.Y.	165	105	20	30	8	2	7
Camden, N.J.	21	13	6	-	1	1	-
Elizabeth, N.J.	21	16	2	3	-	-	1
Erie, Pa.†	40	33	5	1	1	-	4
Jersey City, N.J.	48	29	9	10	-	-	1
N.Y. City, N.Y.	1,431	867	284	205	27	48	64
Newark, N.J.	52	22	15	9	1	4	3
Paterson, N.J.	34	18	6	6	-	4	-
Philadelphia, Pa.	296	198	69	16	5	7	20
Pittsburgh, Pa.†	76	55	12	6	-	3	9
Reading, Pa.	26	21	3	2	-	-	6
Rochester, N.Y.	144	102	19	12	7	4	15
Schenectady, N.Y.	18	15	2	-	-	1	2
Scranton, Pa.†	28	23	3	1	1	-	4
Syracuse, N.Y.	92	60	22	4	1	5	2
Trenton, N.J.	43	25	9	4	1	4	3
Utica, N.Y.	17	11	3	3	-	-	2
Yonkers, N.Y.	24	15	7	2	-	-	2
E.N. CENTRAL	2,303	1,499	514	144	53	93	106
Akron, Ohio	74	58	14	1	1	-	-
Canton, Ohio	32	22	8	1	-	1	3
Chicago, Ill.§	564	362	125	45	10	22	16
Cincinnati, Ohio	100	62	28	7	-	3	14
Cleveland, Ohio	153	88	33	14	2	16	4
Columbus, Ohio	191	106	51	14	10	10	3
Dayton, Ohio	105	67	24	11	1	2	6
Detroit, Mich.	213	128	53	12	8	12	3
Evansville, Ind.	65	43	15	4	-	3	4
Fort Wayne, Ind.	47	35	11	-	1	-	3
Gary, Ind.	24	11	7	5	-	1	-
Grand Rapids, Mich.	74	53	11	3	3	4	6
Indianapolis, Ind.	169	113	42	5	3	6	7
Madison, Wis.	39	24	9	2	3	1	5
Milwaukee, Wis.	147	109	25	8	2	3	3
Peoria, Ill.	53	41	6	1	1	4	4
Rockford, Ill.	47	29	14	2	2	-	3
South Bend, Ind.	58	42	14	-	-	2	7
Toledo, Ohio	85	62	15	5	2	1	6
Youngstown, Ohio	63	44	9	4	4	2	9
W.N. CENTRAL	742	540	130	37	16	19	44
Des Moines, Iowa	57	41	5	5	2	4	6
Duluth, Minn.	29	20	5	2	1	1	2
Kansas City, Kans.	34	21	8	3	1	1	2
Kansas City, Mo.	134	87	35	6	5	1	6
Lincoln, Nebr.	34	28	5	1	-	-	8
Minneapolis, Minn.	139	101	28	6	2	2	10
Omaha, Nebr.	91	74	14	2	1	-	4
St. Louis, Mo.	119	89	16	6	2	6	3
St. Paul, Minn.	71	49	10	6	2	4	3
Wichita, Kans.§	34	30	4	-	-	-	-
S. ATLANTIC	1,212	718	268	142	42	39	56
Atlanta, Ga.	162	88	38	23	3	10	7
Baltimore, Md.	149	89	38	17	3	2	8
Charlotte, N.C.	52	36	10	4	2	-	6
Jacksonville, Fla.	114	73	19	15	6	1	10
Miami, Fla.	118	65	25	20	3	3	-
Norfolk, Va.	59	36	14	3	4	2	3
Richmond, Va.	81	50	21	5	2	3	4
Savannah, Ga.	47	26	12	6	2	1	2
St. Petersburg, Fla.	79	60	13	4	1	1	5
Tampa, Fla.	100	61	23	7	5	4	7
Washington, D.C.	230	120	51	36	11	12	4
Wilmington, Del.	21	14	4	2	-	-	-
E.S. CENTRAL	823	546	170	54	31	22	43
Birmingham, Ala.	142	96	24	14	4	4	3
Chattanooga, Tenn.	72	53	10	3	2	4	3
Knoxville, Tenn.	93	66	17	5	2	3	4
Louisville, Ky.	106	74	23	4	4	1	3
Memphis, Tenn.§	185	123	41	13	6	2	17
Mobile, Ala.	90	58	21	6	4	1	3
Montgomery, Ala.	40	23	10	-	3	4	-
Nashville, Tenn.	95	53	24	9	6	3	10
W.S. CENTRAL	1,759	1,082	387	184	61	45	77
Austin, Tex.	58	32	15	8	2	1	-
Baton Rouge, La.	75	48	14	7	4	2	3
Corpus Christi, Tex.§	45	35	8	2	-	-	1
Dallas, Tex.	185	106	46	23	7	3	1
El Paso, Tex.	86	51	21	11	-	3	9
Fort Worth, Tex	79	48	16	6	4	5	8
Houston, Tex.§	734	436	169	89	24	16	18
Little Rock, Ark.	68	49	8	2	5	4	4
New Orleans, La.	98	54	25	11	7	1	-
San Antonio, Tex.	184	115	35	18	7	9	20
Shreveport, La.	44	30	12	2	-	-	4
Tulsa, Okla.	103	78	18	5	1	1	9
MOUNTAIN	644	400	148	63	15	18	35
Albuquerque, N. Mex.	79	48	21	6	3	1	1
Colo. Springs, Colo.	42	25	9	6	1	1	6
Denver, Colo.	107	69	25	11	-	2	4
Las Vegas, Nev.	103	54	30	13	4	2	6
Ogden, Utah	21	11	7	3	-	-	4
Phoenix, Ariz.	120	74	23	14	2	7	4
Pueblo, Colo.	20	12	5	1	1	1	2
Salt Lake City, Utah	52	28	11	5	4	4	-
Tucson, Ariz.	100	79	17	4	-	-	8
PACIFIC	2,134	1,356	405	233	78	54	114
Berkeley, Calif.	24	15	5	2	-	2	-
Fresno, Calif.	72	50	13	3	5	1	4
Glendale, Calif.	32	28	3	1	-	-	1
Honolulu, Hawaii	67	43	17	3	3	1	9
Long Beach, Calif.§	83	53	17	9	2	2	9
Los Angeles Calif.	723	441	140	98	30	9	25
Oakland, Calif.§	93	62	18	9	2	2	5
Pasadena, Calif.	25	12	5	2	4	2	1
Portland, Oreg.	148	111	22	9	3	3	4
Sacramento, Calif.	147	92	31	14	5	4	15
San Diego, Calif.	159	99	25	18	8	7	17
San Francisco, Calif.	160	84	34	30	3	9	6
San Jose, Calif.	148	95	29	15	7	2	6
Seattle, Wash.	146	94	25	14	6	7	2
Spokane, Wash.	62	43	13	4	-	2	4
Tacoma, Wash.	45	34	8	2	-	1	6
TOTAL	12,913††	8,272	2,659	1,214	364	389	670

*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.

§Data not available. Figures are estimates based on average of past available 4 weeks.

Epidemiologic Notes and Reports

Lead Poisoning Following Ingestion of Homemade Beverage Stored in a Ceramic Jug – New York

In the summer of 1987, seven persons living in Westchester County, New York, developed lead poisoning after ingesting a homemade beverage stored in a ceramic bean jug. The six adults and one child were relatives and lived at or frequently visited the home where the jug was kept.

The 140-ounce brown ceramic jug had been obtained in Mexico and is of a type commonly used to cook beans. The first person to experience illness used the jug to store a beverage he prepared frequently from sugar, water, and mara, a grain imported from Colombia. After the beverage fermented, family members consumed it several times daily throughout the summer.

In October 1987, the first patient—a 67-year-old man—consulted a physician because of severe abdominal pain, fatigue, and weight loss. The physician initially suspected gastric carcinoma. However, because severe anemia (hemoglobin 8 gm) and red blood cells with basophilic stippling were detected, a blood-lead level was obtained. Both the blood-lead level (70 μg/dL) and the erythrocyte protoporphyrin (EP) (382 μg/dL) were markedly elevated. He received chelation treatment for lead during a 2-week hospitalization.

After the initial case was diagnosed, a public health sanitarian visited the home to search for the source of lead. Interviews and a search of the premises identified the bean jug, which was severely corroded on the inside. Analysis of the jug by the New York State Department of Health (NYSDH) detected a lead content of 730 ppm, 100 times the normal value for a hollow vessel of this size.

Other household members were tested for lead. Six persons, aged 8–90 years, had elevated blood-lead levels (range: 35–70 μg/dL). An 8-year-old child had a lead level of 35 μg/dL and an EP of 152 μg/dL (CDC risk classification III [high risk]).* One of the five adults was also hospitalized.

Investigation by NYSDH revealed other earthenware with high lead contents in shops and bodegas in this town. The Westchester County Department of Health distributed bilingual fliers in ethnic communities in the county warning of the possible hazards from the use of ceramic ware.

No additional cases have been identified. All patients have been followed by their personal physician, and their blood values have returned to normal.

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Editorial Note: Because of industrialization, lead is ubiquitous in the human environment. Common sources of lead exposure include lead-based paints (present on the interior surfaces of an estimated 30–40 million U.S. homes), airborne lead from combusted lead additives in gasolines or from factories using lead, occupations such as the production or repair of lead-acid storage batteries or automobile radiators, and

*CDC defines an elevated blood-lead level in children as a confirmed concentration of lead in whole blood of ≥25 μg/dL; lead toxicity is defined by an elevated blood level with an EP in whole blood of ≥35 μg/dL (*1*).

Lead Poisoning — Continued

a variety of ethnic remedies, particularly those used by Asian and South American groups (*1–3*). Although lead-glazed pottery is not a widespread source of lead, it can release large amounts of lead into food and drink (*1,4,5*). Lead-glazed pottery has been responsible for outbreaks of serious poisoning; in several episodes similar to this one, imported pottery has been implicated (*1,5*). Homemade or craft pottery and porcelain-glazed vessels can release large quantities of lead, particularly if the glaze is chipped, cracked, or improperly applied. If the vessels are repeatedly washed, the glaze may deteriorate, and pottery previously tested as safe can become unsafe. Acidic foods, beverages, or even water can leach lead from the containers.

Excessive absorption of lead is one of the most prevalent and preventable childhood environmental health problems in the United States (*1*). Once thought to be a problem confined to poor urban children, lead poisoning is now known to involve children in all socioeconomic strata (*1,6*). Although the toxic properties of lead affect all age groups, attention is generally focused on the serious consequences of elevated lead exposure on the developing central nervous system of children <6 years of age (*1,6–8*). The level in children at which further diagnostic follow-up is recommended is 25 μg/dL of lead in whole blood; however, recent studies have shown that blood-lead levels as low as 10 μg/dL may adversely affect childhood neurobehavioral function and development (*1,7*).

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Current Trends

Exposure Trends in Silica Flour Plants — United States, 1975–1986

A 1979 National Institute for Occupational Safety and Health (NIOSH) investigation of excessive free silica exposures identified 23 cases of acute silicosis in employees at two Illinois silica flour plants (*1*). This led to a NIOSH report (*2*) emphasizing the hazards of silica exposure in the silica flour industry. NIOSH subsequently issued a description (*3*) of engineering controls designed to reduce exposures, and has followed this in 1988 by an analysis of the exposure levels and exposure trends in all U.S. silica flour producers for 1975–1986.

Silica Flour Plants – Continued

The data used for the analysis were collected by the Mine Safety and Health Administration (MSHA). MSHA measured respirable quartz exposures at 28 plants while conducting routine inspections for compliance with safety and health regulations promulgated under the 1977 Federal Mine Safety and Health Act. Quartz is a form of crystalline free silica, the principal agent responsible for silicosis. The dust samples were collected using personal breathing-zone air samplers. The quartz content in each respirable dust sample is used in computing the permissible exposure limit (PEL) for that sample (*4*). For samples with a high percentage of respirable quartz, as is typically the case in the silica flour industry, this computation results in an effective PEL of approximately 0.1 mg/m^3.

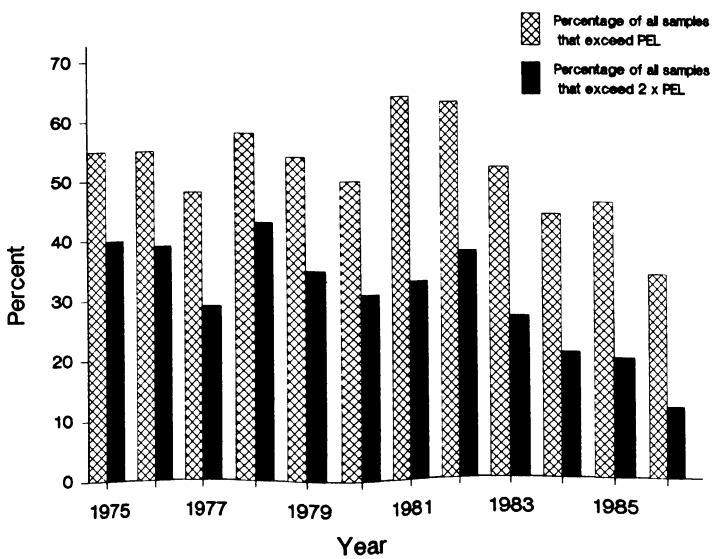
Free silica levels in 52% of the samples tested exceeded the corresponding MSHA PEL. Although the percentage of samples exceeding the PEL decreased from 1982 to 1986, 32% still exceeded the PEL in 1986 (Figure 1). The proportion of the samples exceeding twice the PEL followed a similar pattern; the highest concentration recorded in 1986 was 11.3 times the PEL.

At one of the two Illinois plants investigated by NIOSH (*1,5*), 14% of environmental samples exceeded the PEL in 1984, 29% in 1985, and 30% in 1986. Overexposures in the other plant (*1,6*) were 60% in 1984, 50% in 1985, and 30% in 1986.

Reported by: Div of Respiratory Disease Studies, National Institute for Occupational Safety and Health, CDC.

Editorial Note: Silicosis is a debilitating fibrotic disease of the lungs that is caused by inhalation, retention, and pulmonary reaction to respirable particles of crystalline free silica. Chronic silicosis is pathologically and radiologically characterized by the silicotic nodule. In early stages, the nodules remain isolated, but as the disease progresses the nodules coalesce to form mass lesions, or progressive massive

FIGURE 1. Percentage of silica samples exceeding the permissible exposure limit (PEL) in 28 silica flour producers – United States, 1975–1986*



*Data source: Mine Safety and Health Administration.

Silica Flour Plants — Continued

fibrosis. Acute and accelerated forms of silicosis may develop after shorter and more intense exposures to crystalline silica. Silicosis may be associated with pulmonary infections (particularly tuberculosis), restrictive ventilatory impairment, cor pulmonale, respiratory failure, and premature death.

Despite long recognition of the cause of silicosis and the means to prevent it, this disease remains an important source of occupational morbidity and mortality. Reliable morbidity statistics are not available, but NIOSH has used death certificate data to estimate that 2152 silicosis-attributable deaths among men ≥25 years of age occurred in the United States during 1975–1986 (*7,8*).

"Silica flour" is produced by the drying and milling of mined quartz and consists of fine particles, a large percentage of which are respirable. The very small particle size makes this one of the most hazardous forms of silica. Despite some exposure reduction since 1982, the continued overexposures to respirable free silica in silica flour plants indicate a continued need for control measures in the silica flour industry. When compared with all metal and nonmetal mines regulated by MSHA, silica flour plants had a frequency of overexposure to free silica more than three times that of the other facilities during 1975–1986.

The data on which these analyses were based have limitations. First, the data do not represent a randomized or systematic sample of workers' exposures and are not subject to rigorous statistical treatment. Second, the data set does not provide information on the level of plant activity at the time of sampling. Third, exposures to individual workers may actually be less than those reported here because of the use of respirators. Despite these limitations, the data confirm the continued existence of overexposure to free silica at levels associated with adverse health effects.

Prevention of silicosis was targeted as a 1990 health objective for the United States (*9*). NIOSH has recommended a 10-hour, time-weighted average level of 0.05 mg/m^3 (free silica) as the level required to prevent silicosis (*10*). Silicosis is reportable under the Sentinel Event Notification System for Occupational Risks (SENSOR) program. As a cooperative program between NIOSH and 10 state health departments*, SENSOR is designed to improve state and local capacity to conduct surveillance of selected occupational illnesses. Unless efforts to achieve a work environment within the NIOSH-recommended level are increased, the 1990 objective will not be met, and respirable free silica exposures will continue to constitute a health hazard in the silica flour industry.

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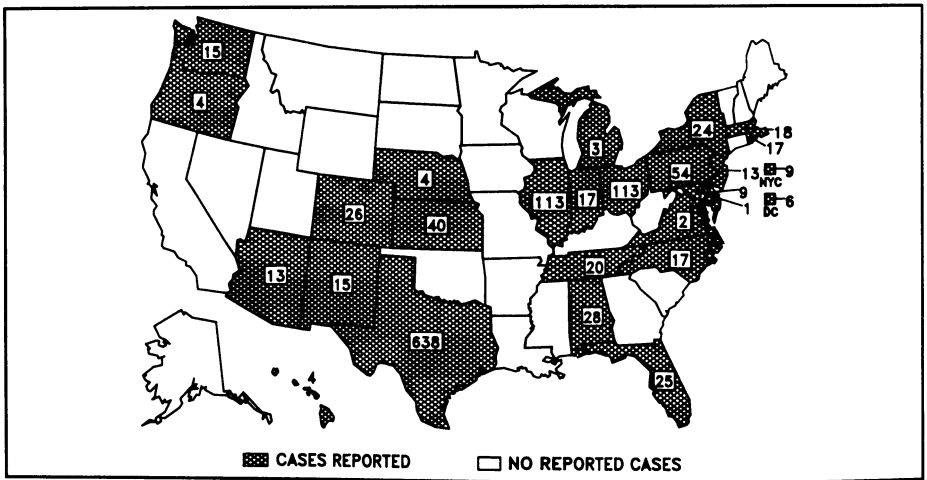
FIGURE I. Reported measles cases – United States, weeks 17–20, 1989



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The data in this report are provisional, based on weekly reports to CDC by state health departments. The reporting week concludes at close of business on Friday; compiled data on a national basis are officially released to the public on the succeeding Friday. The editor welcomes accounts of interesting cases, outbreaks, environmental hazards, or other public health problems of current interest to health officials. Such reports and any other matters pertaining to editorial or other textual considerations should be addressed to: Editor, *Morbidity and Mortality Weekly Report*, Centers for Disease Control, Atlanta, Georgia 30333; telephone (404) 332-4555.

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