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Current Trends

Heterosexual Behaviors and Factors that Influence Condom Use among Patients Attending a Sexually Transmitted Disease Clinic — San Francisco

Because the incidence of human immunodeficiency virus (HIV) infection and other sexually transmitted diseases (STDs) is lower among persons who use condoms regularly, the Public Health Service has promoted the consistent and proper use of condoms by sexually active persons (1). In San Francisco, rates of HIV infection and other STDs among white homosexual men have decreased dramatically since 1982 (2,3); this decrease has been attributed to the use of condoms and the adoption of other sex practices that reduce the risk for transmitting and acquiring these infections. At the same time, however, the incidence of syphilis and other STDs has increased among heterosexuals, especially among minorities (2). This report summarizes findings from a study of heterosexual behaviors and factors that influence condom use among men and women attending an STD clinic in San Francisco.

From October 1 through December 31, 1989, every 10th man and every second woman entering the clinic for care was asked to participate in the study. After obtaining informed consent, an interviewer administered a standardized questionnaire. Patients asked to enroll in the study were 18–65 years of age and reported having had sexual intercourse with a member of the opposite sex within the previous 12 months; 341 were enrolled, including eight men and 11 women who reported having had sexual intercourse with members of both sexes. Persons who reported exchanging sex for money or drugs were also included in the survey. To minimize recall bias, data from those who had not had sexual intercourse with a member of the opposite sex within the previous 2 months were excluded from the final analysis (n=41).

The 341 patients (162 men and 179 women) enrolled in the study ranged in age from 18 to 64 years (mean: 28 years); 88 (54%) of the men and 90 (50%) of the women were either black or Hispanic (Table 1). One hundred fifty-six (46%) reported annual incomes <\$5000. Overall, 149 (46%) of 325 patients were newly diagnosed with an STD on the day of the interview (61 [39%] of 155 men and 88 [52%] of 170 women); diagnoses for the remaining 16 were unknown.

Of the 341 patients, 133 (82%) men and 142 (79%) women knew that HIV could be transmitted through vaginal and anal intercourse and by sharing needles during

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intravenous (IV)-drug administration; 157 (97%) men and 171 (96%) women knew that regular condom use could reduce the likelihood of acquiring HIV infection.

In the final analysis, nearly all (292 [97%] of 300) patients reported they had used a condom sometime in the past (Figure 1): 245 (82%) at least once in the previous 12 months and 180 (60%) at least once during the 2 months before the interview. Seventy-six (25%) reported they had used a condom when they last had intercourse; these patients were less likely to be diagnosed with an STD on the day of the interview (relative risk [RR]=0.6; 95% confidence interval [CI]=0.4–0.9, Mantel-Haenszel chi-square test). This association did not vary by their reasons for the clinic visit. Condom use at last intercourse was reported by five (14%) of 36 Hispanics, 20 (16%) of 126 blacks, and 41 (37%) of 112 whites ($p < 0.001$, chi-square test).

Among men, the likelihood of using a condom at last intercourse was lower for those who reported 1) they had used alcohol or other drugs at last intercourse (RR=1.3; 95% CI=1.1–1.5); 2) they would not use a condom if they were "in love" with their partners (RR=1.2; 95% CI=1.1–1.5); 3) they experienced difficulty in communicating with their partners about condoms (RR=1.3; 95% CI=1.1–1.5); and 4) their partners did not want to use condoms (RR=1.4; 95% CI=1.1–1.8).

TABLE 1. Characteristics of 341 patients interviewed in a sexually transmitted disease (STD) clinic – San Francisco, October–December, 1989

Characteristic	Men		Women	
	No.	(%)	No.	(%)
Mean age \pm SD* (yrs)	29 \pm 7.8		27 \pm 7.6	
Race/Ethnicity				
Black	61	(38)	75	(42)
Hispanic	27	(17)	15	(8)
White	57	(35)	73	(41)
Other	17	(10)	16	(9)
Annual income[†]				
<\$5000	73	(45)	83	(46)
\$5000–\$9999	29	(18)	43	(24)
\geq \$10,000	58	(36)	45	(25)
Reason for visit				
STD symptoms	108	(67)	114	(64)
Reported exposure to sex partner with STD or request for an examination	24	(15)	36	(20)
Follow-up appointment	24	(15)	18	(10)
Other	6	(4)	11	(6)
No. sex partners in past yr[‡]				
1	32	(20)	45	(25)
2 or 3	55	(34)	75	(42)
4 or 5	28	(17)	21	(12)
\geq 6	44	(27)	37	(21)
Total	162	(100)	179	(100)

*Standard deviation.

[†]Income unknown for some patients.

[‡]Number of sex partners unknown for some patients.

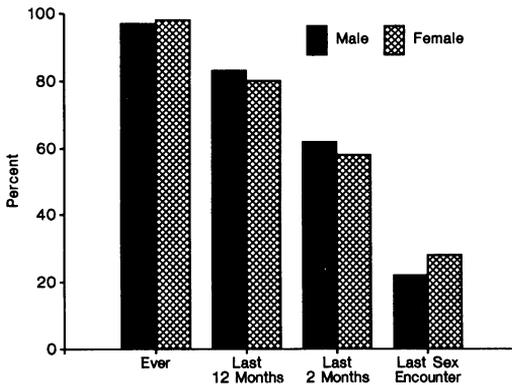
Condom Use – Continued

Among women, condom use at last intercourse was lower for those who 1) were black (RR = 1.3; 95% CI = 1.1–1.6); 2) reported that condoms decrease sexual pleasure (RR = 1.5; 95% CI = 1.2–1.8); 3) reported that they would not use a condom if they were “in love” with their partner (RR = 1.3; 95% CI = 1.1–1.5); and 4) reported that their partners were unwilling to use condoms (RR = 1.5; 95% CI = 1.1–2.0).

Several variables were not statistically associated with condom use, including patients’ prior STD history, age, income, education, total number of sex partners, perceived risk for HIV infection, knowledge about HIV transmission and condom effectiveness, peer endorsement of condoms, and acquaintance with someone with acquired immunodeficiency syndrome (AIDS); whether patients engaged in vaginal or anal intercourse; and whether patients exchanged sex for money or drugs.

Based on multivariate analysis controlled for age, race, income, number of sex partners, and other variables (Table 2), condom use was lowest among men who had used alcohol or other drugs at their most recent sexual intercourse and men who

FIGURE 1. Sexually transmitted disease-clinic patients who reported using condoms at least once, by sex and period within which condom use occurred – San Francisco, October–December 1989



Source: San Francisco Department of Public Health.

TABLE 2. Logistic regression analysis of characteristics associated with failure of patients at a sexually transmitted disease clinic to use condoms – San Francisco, October–December 1989

Characteristic	Men		Women	
	Odds ratio	(95% CI)*	Odds ratio	(95% CI)
Drug/alcohol use at last sexual encounter	3.6	(1.2–11.1)	1.5	(0.6–3.3)
Lack of partner endorsement	2.9	(1.1–7.7)	2.4	(1.0–5.6)
Belief that condom use decreases sexual pleasure	1.4	(0.5–4.3)	3.0	(1.3–7.1)
Black race	1.6	(0.6–4.8)	3.7	(1.5–9.1)
Steady sex partner	1.1	(0.3–3.5)	2.6	(1.0–6.9)

*Confidence interval.

Condom Use – Continued

stated that their partners did not want to use condoms. Condom use was lowest among women who reported that their partners did not want to use condoms, believed condoms reduce sexual pleasure, reported having had sex with a steady partner, or were black.

Overall, 30 (27%) of 113 men and 41 (31%) of 132 women who had used condoms during the previous 12 months reported at least one episode of condom breakage. Rates of condom breakage in the previous 2 months were calculated as the proportion of times condoms broke while being used during vaginal or anal intercourse. The breakage rates for condoms during vaginal and anal intercourse were 4.3% and 4.2%, respectively. However, condom use was reported for only 24 episodes of anal intercourse.

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Editorial Note: Because the San Francisco STD clinic emphasizes health education and distributes condoms free of charge, the participants in this study may have overstated their use of condoms despite being assured of confidentiality. This study focused on patients' last episode of sexual intercourse because less recall was required and because patients who used condoms at that time were less likely to be diagnosed with an STD on the day of the interview. Nonetheless, the interpretation of these findings may be limited by recall and reporting bias.

In this study population, overall reported condom use was low. Although infrequent use of condoms can be expected in an STD-patient population, substantial differences were reported in condom use between whites and minorities. These data also indicate lower condom use among women who had sex with "steady" partners than among those with casual partners—a finding consistent with studies among homosexual male partners (4), female prostitutes (5), and women attending reproductive health clinics (6).

Patient reports of condom use decreasing sexual pleasure are consistent with other reports among homosexual men and IV-drug users (7,8), although in this study the association of this variable with not using a condom was statistically significant only among women. Other factors associated with lower condom use reported in this study included lack of partner endorsement of condoms and use of alcohol or other drugs at the time of sexual intercourse, which are consistent with findings in other population groups (7–9).

Condom breakage generally has been reported in association with anal intercourse among homosexual men. In the STD-patient population in this report, a large proportion of heterosexual men and women reported condom breakage during vaginal intercourse; this finding is consistent with a previous study of heterosexual men and women attending a genitourinary medicine clinic in London (10). In San Francisco, however, the breakage rates were higher than those reported by prostitutes in a prospective study in Australia (0.5% breakage during anal intercourse; 0.8% vaginal intercourse) (11). Factors related to condom breakage may include improper use, improper storage, or poor manufacture.

Data from this study and another ongoing study of patients' sex partners will be used by the San Francisco Department of Public Health and collaborating organizations to develop and evaluate interventions to increase condom use.

*Condom Use – Continued**References*

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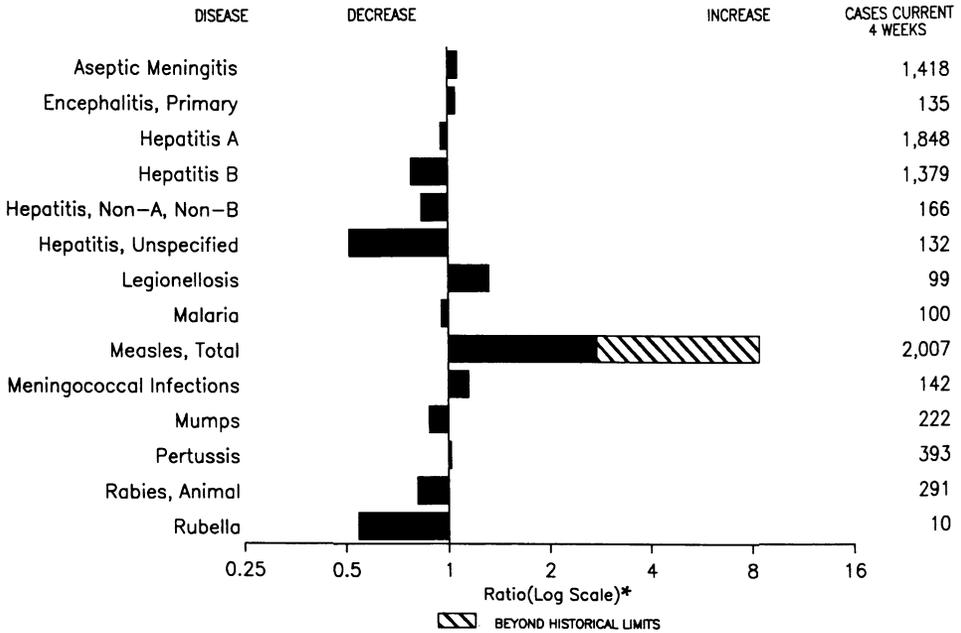
*Health Objectives for the Nation****Healthy People 2000: National Health Promotion
and Disease Prevention Objectives for the Year 2000***

On September 6, 1990, the U.S. Department of Health and Human Services released the report *Healthy People 2000*, the national public health goals and objectives for the 1990s (1). *Healthy People 2000* outlines three broad goals for public health over the next 10 years: 1) to increase the span of healthy life, 2) to reduce disparities in health status among different populations, and 3) to provide access to preventive health-care services for all persons. To help meet these goals, 298 specific objectives have been identified in 22 priority areas (Table 1, page 695). *Healthy People 2000* succeeds both the 1979 report *Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention* (2) and the 1990 health objectives published in *Promoting Health/Preventing Disease: Objectives for the Nation* in 1980 (3).^{*} This report summarizes the major goals and priority areas of *Healthy People 2000*.

^{*}Of the 226 objectives set for achievement by 1990, nearly half have been achieved or are likely to be achieved by the end of 1990, and one quarter are unlikely to be achieved; the status of the remaining objectives is uncertain because of lack of appropriate data to track their progress (4,5).

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FIGURE I. Notifiable disease reports, comparison of 4-week totals ending September 29, 1990, with historical data — United States



*Ratio of current 4-week total to mean of 15 4-week totals (from comparable, previous, and subsequent 4-week periods for past 5 years).

TABLE I. Summary — cases of specified notifiable diseases, United States, cumulative, week ending September 29, 1990 (39th Week)

	Cum. 1990		Cum. 1990
AIDS	32,542	Plague	1
Anthrax	-	Poliomyelitis, Paralytic*	-
Botulism: Foodborne	15	Psittacosis	86
Infant	47	Rabies, human	1
Other	5	Syphilis: civilian	36,196
Brucellosis	62	military	178
Cholera	4	Syphilis, congenital, age < 1 year	685
Congenital rubella syndrome	3	Tetanus	43
Diphtheria	2	Toxic shock syndrome	231
Encephalitis, post-infectious	74	Trichinosis	22
Gonorrhea: civilian	493,299	Tuberculosis	17,431
military	6,675	Tularemia	104
Leprosy	162	Typhoid fever	356
Leptospirosis	35	Typhus fever, tickborne (RMSF)	506
Measles: imported	1,040		
indigenous	21,697		

*Three cases of suspected poliomyelitis have been reported in 1990; five of 13 suspected cases in 1989 were confirmed and all were vaccine-associated.

TABLE II. Cases of specified notifiable diseases, United States, weeks ending September 29, 1990, and September 30, 1989 (39th Week)

Reporting Area	AIDS	Aseptic Meningitis	Encephalitis		Gonorrhea (Civilian)		Hepatitis (Viral), by type				Legionellosis	Leprosy
			Primary	Post-infectious			A	B	NA,NB	Unspecified		
			Cum. 1990	Cum. 1990	Cum. 1990	Cum. 1989	Cum. 1990	Cum. 1990	Cum. 1990	Cum. 1990		
UNITED STATES	32,542	6,817	663	74	493,299	520,133	21,399	15,040	1,686	1,257	928	162
NEW ENGLAND	1,150	279	21	-	13,899	15,055	455	808	54	53	44	10
Maine	50	9	3	-	155	215	7	24	4	1	4	-
N.H.	53	28	-	-	119	128	7	35	4	3	4	-
Vt.	13	27	2	-	44	49	5	40	4	-	5	-
Mass.	639	96	10	-	5,857	5,763	310	504	32	47	24	9
R.I.	61	88	1	-	859	1,094	45	35	-	2	7	1
Conn.	334	31	5	-	6,865	7,806	81	170	10	-	-	-
MID. ATLANTIC	9,692	644	37	6	66,393	77,027	3,011	1,996	177	84	297	20
Upstate N.Y.	1,202	360	30	1	10,572	12,511	865	552	60	22	114	1
N.Y. City	5,959	115	3	2	27,232	31,006	454	539	23	43	77	14
N.J.	1,959	-	1	-	11,292	11,527	342	434	35	-	43	4
Pa.	936	169	3	3	17,297	21,983	1,350	471	59	19	63	1
E.N. CENTRAL	2,182	1,626	178	13	91,182	93,851	1,691	1,747	163	74	220	2
Ohio	505	336	57	4	26,475	24,328	154	307	59	12	74	-
Ind.	227	223	6	7	8,476	6,891	116	302	10	15	34	-
Ill.	847	316	57	2	29,085	30,349	846	342	37	15	15	1
Mich.	416	605	46	-	21,436	24,246	291	481	26	32	62	1
Wis.	187	146	12	-	5,710	8,037	284	315	31	-	35	-
W.N. CENTRAL	842	359	67	2	26,188	23,779	1,282	702	106	31	48	1
Minn.	147	50	31	1	3,254	2,613	177	88	22	1	2	-
Iowa	42	64	5	-	1,882	2,006	238	48	10	4	4	-
Mo.	489	156	7	1	15,760	14,532	382	436	49	20	25	-
N. Dak.	2	16	3	-	76	109	14	5	2	1	1	-
S. Dak.	3	6	3	-	192	207	205	7	4	-	1	-
Nebr.	43	28	7	-	1,306	1,072	76	30	4	-	9	1
Kans.	116	39	11	-	3,718	3,240	190	88	15	5	6	-
S. ATLANTIC	7,085	1,315	156	21	141,118	140,141	2,547	2,908	246	195	140	5
Del.	75	33	4	-	2,303	2,422	98	74	6	2	10	-
Md.	914	175	17	1	16,833	16,360	849	412	41	11	54	3
D.C.	584	8	-	-	9,794	8,599	13	31	4	-	-	-
Va.	586	234	41	1	13,098	12,050	232	187	33	141	11	-
W. Va.	59	47	41	-	903	1,062	17	64	4	7	3	-
N.C.	411	142	29	-	21,607	21,087	555	823	91	-	21	1
S.C.	259	15	1	-	11,355	12,785	34	463	14	8	16	-
Ga.	776	229	4	1	31,181	26,973	294	341	9	7	16	-
Fla.	3,421	432	19	18	34,044	38,803	455	513	44	19	9	1
E.S. CENTRAL	828	529	49	2	43,098	41,288	291	1,178	140	7	49	-
Ky.	147	128	21	-	4,507	4,050	69	414	40	5	20	-
Tenn.	261	104	21	2	13,238	13,814	132	628	81	-	16	-
Ala.	182	211	7	-	14,554	13,129	89	132	17	1	13	-
Miss.	238	86	-	-	10,799	10,295	1	4	2	1	-	-
W.S. CENTRAL	3,557	579	36	7	53,879	54,318	2,259	1,558	74	205	42	32
Ark.	168	17	1	-	6,744	6,199	402	63	9	19	9	-
La.	580	77	6	-	9,396	11,764	146	248	4	7	13	-
Okla.	158	61	3	6	4,535	4,719	450	125	22	21	13	-
Tex.	2,651	424	26	1	33,204	31,636	1,261	1,122	39	158	7	32
MOUNTAIN	856	294	19	2	9,878	11,019	3,460	1,139	165	96	35	2
Mont.	11	4	-	-	142	145	134	56	7	4	3	-
Idaho	20	7	-	-	106	138	78	65	8	-	3	-
Wyo.	2	2	1	-	117	77	48	13	5	1	1	-
Colo.	263	74	4	-	2,245	2,289	221	129	37	32	6	-
N. Mex.	75	14	-	-	967	1,016	699	152	9	7	3	-
Ariz.	265	143	7	-	4,041	4,538	1,625	398	62	37	10	2
Utah	83	25	3	-	304	360	399	84	21	5	3	-
Nev.	137	25	4	2	1,956	2,456	256	242	16	10	6	-
PACIFIC	6,350	1,192	100	21	47,664	63,655	6,403	3,004	561	512	53	90
Wash.	476	-	6	1	3,945	4,952	1,056	437	92	28	11	5
Oreg.	241	-	-	-	1,884	2,355	668	312	44	7	-	-
Calif.	5,483	1,022	87	19	40,671	55,232	4,454	2,150	410	468	40	70
Alaska	23	101	6	-	799	703	160	49	5	4	-	-
Hawaii	127	69	1	1	365	413	65	56	10	5	2	15
Guam	2	2	-	-	167	125	12	2	-	10	-	-
P.R.	1,284	47	6	-	523	812	117	249	5	22	-	6
V.I.	10	-	-	-	330	497	1	11	-	-	-	-
Amer. Samoa	-	1	-	-	49	41	26	-	-	-	-	10
C.N.M.I.	-	-	-	-	150	75	10	9	-	15	-	4

N: Not notifiable

U: Unavailable

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

TABLE II. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending September 29, 1990, and September 30, 1989 (39th Week)

Reporting Area	Malaria	Measles (Rubeola)					Meningococcal Infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported*		Total		1990	Cum. 1990	1990	Cum. 1990	Cum. 1989	1990	Cum. 1990	Cum. 1989
		1990	Cum. 1990	1990	Cum. 1990	Cum. 1989									
UNITED STATES	877	721	21,697	1	1,040	12,994	1,889	48	4,118	73	2,739	2,699	6	802	306
NEW ENGLAND	76	3	259	-	25	322	144	-	37	10	318	289	-	8	6
Maine	1	-	27	-	2	1	12	-	-	-	10	17	-	1	-
N.H.	4	-	-	-	8	15	10	-	9	4	48	6	-	1	4
Vt.	6	-	-	-	1	3	11	-	1	-	6	6	-	-	1
Mass.	40	3	22	-	7	49	67	-	11	6	232	233	-	2	1
R.I.	8	-	27	-	3	41	12	-	5	-	4	11	-	1	-
Conn.	17	-	183	-	4	213	32	-	11	-	18	16	-	3	-
MID. ATLANTIC	190	20	1,171	-	154	944	297	3	266	16	431	180	-	11	31
Upstate N.Y.	40	-	200	-	110	140	106	1	116	5	293	78	-	10	13
N.Y. City	68	20	362	-	21	107	42	-	-	-	-	5	-	-	15
N.J.	59	-	234	-	14	434	63	-	63	-	21	31	-	-	3
Pa.	23	-	375	-	9	263	86	2	87	11	117	66	-	1	-
E.N. CENTRAL	52	1	3,244	-	143	4,424	248	1	441	10	518	371	-	31	25
Ohio	7	-	549	-	3	1,244	78	-	89	-	154	45	-	1	3
Ind.	3	1	328	-	1	78	26	1	21	10	100	19	-	-	-
Ill.	22	-	1,274	-	10	2,543	64	-	153	-	100	126	-	18	20
Mich.	16	-	348	-	125	321	59	-	132	-	70	37	-	9	1
Wis.	4	-	745	-	4	238	21	-	46	-	94	144	-	3	1
W.N. CENTRAL	16	-	853	-	13	654	60	3	134	5	159	187	-	22	6
Minn.	4	-	392	-	3	23	12	-	14	-	31	51	-	17	-
Iowa	2	-	25	-	1	10	1	1	19	-	18	14	-	4	1
Mo.	9	-	96	-	-	368	24	-	54	3	82	111	-	-	4
N. Dak.	-	-	-	-	-	-	2	-	-	-	2	2	-	1	-
S. Dak.	-	-	15	-	8	-	1	-	-	-	1	1	-	-	-
Nebr.	-	-	97	-	1	113	5	-	5	-	7	5	-	-	-
Kans.	1	-	228	-	-	140	15	2	42	2	18	3	-	-	1
S. ATLANTIC	174	2	888	1	355	598	332	20	1,711	3	241	274	-	18	10
Del.	3	-	8	-	3	40	3	-	4	-	5	1	-	-	-
Md.	49	-	194	-	18	88	38	16	965	-	59	52	-	2	2
D.C.	10	-	15	-	7	40	11	-	33	-	14	-	-	1	-
Va.	43	2	84	-	2	22	42	2	97	-	17	30	-	1	-
W. Va.	2	-	6	-	-	53	13	1	42	3	20	25	-	-	-
N.C.	13	-	9	-	15	187	50	-	281	-	64	55	-	-	1
S.C.	-	-	4	-	-	3	23	-	50	-	5	-	-	-	-
Ga.	15	-	82	-	239	2	56	-	82	-	24	37	-	-	-
Fla.	39	-	486	11	71	163	96	1	157	-	33	74	-	14	7
E.S. CENTRAL	19	-	181	-	3	230	114	1	88	3	138	180	-	5	3
Ky.	2	-	40	-	1	41	34	-	-	-	-	1	-	1	-
Tenn.	9	-	92	-	-	139	48	-	49	2	66	109	-	4	2
Ala.	8	-	23	-	2	50	30	-	14	1	65	59	-	-	1
Miss.	-	-	26	-	-	-	2	1	25	-	7	11	-	-	-
W.S. CENTRAL	48	-	4,182	-	91	3,149	133	3	618	3	149	265	-	66	36
Ark.	3	-	16	-	28	19	16	-	134	1	15	21	-	3	-
La.	4	-	10	-	-	11	29	1	103	2	28	16	-	-	5
Okla.	9	-	177	-	-	107	21	-	111	-	47	46	-	1	1
Tex.	32	-	3,979	-	63	3,012	67	2	270	-	59	182	-	62	30
MOUNTAIN	22	1	824	-	100	407	62	-	309	1	241	566	-	109	35
Mont.	1	-	-	-	1	13	10	-	1	-	32	33	-	14	1
Idaho	4	-	16	-	10	6	6	-	142	1	38	66	-	49	32
Wyo.	1	-	-	-	15	-	-	-	2	-	-	-	-	-	1
Colo.	2	-	91	-	47	94	18	-	21	-	74	61	-	4	-
N. Mex.	4	-	81	-	12	31	9	N	N	-	17	24	-	-	-
Ariz.	9	-	291	-	12	145	5	-	119	-	49	362	-	32	-
Utah	-	-	127	-	-	114	7	-	9	-	27	19	-	2	-
Nev.	1	1	218	-	3	4	7	-	15	-	4	1	-	8	1
PACIFIC	280	69410095	-	156	2,266	499	17	514	22	544	387	6	532	154	-
Wash.	21	-	202	-	69	54	62	-	44	3	145	154	-	-	-
Oreg.	12	-	168	-	44	29	55	N	N	4	67	14	1	11	4
Calif.	241	687	9,631	-	37	2,154	368	17	447	4	279	197	5	508	128
Alaska	2	-	78	-	2	1	9	-	4	-	4	1	-	-	-
Hawaii	4	7	16	-	4	31	5	-	19	11	49	21	-	13	22
Guam	3	U	-	U	1	4	-	U	4	U	-	1	U	-	-
P.R.	2	10	1,650	-	-	525	10	-	7	1	7	4	-	-	8
V.I.	-	-	21	-	3	4	-	1	10	-	-	-	-	-	-
Amer. Samoa	35	U	190	U	-	-	-	U	19	U	-	-	U	-	-
C.N.M.I.	-	U	-	U	-	-	-	U	8	U	4	-	U	-	-

*For measles only, imported cases includes both out-of-state and international importations.

N: Not notifiable U: Unavailable ¹International ³Out-of-state

TABLE II. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending September 29, 1990, and September 30, 1989 (39th Week)

Reporting Area	Syphilis (Civilian) (Primary & Secondary)		Toxic- shock Syndrome	Tuberculosis		Tula- remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1990	Cum. 1989	Cum. 1990	Cum. 1990	Cum. 1989	Cum. 1990	Cum. 1990	Cum. 1990	Cum. 1990
UNITED STATES	36,196	32,338	231	17,431	15,816	104	356	506	3,206
NEW ENGLAND	1,295	1,292	18	416	439	3	22	16	5
Maine	7	11	7	6	12	-	-	-	-
N.H.	40	11	1	3	19	-	-	-	2
Vt.	1	1	-	8	8	-	-	-	-
Mass.	514	389	8	218	234	3	21	14	-
R.I.	17	26	1	54	47	-	-	-	-
Conn.	716	854	1	127	119	-	1	2	3
MID. ATLANTIC	7,042	6,677	23	4,164	3,109	1	77	23	708
Upstate N.Y.	664	725	8	304	244	-	16	12	91
N.Y. City	3,314	2,941	5	2,611	1,725	-	44	-	-
N.J.	1,171	1,057	-	691	616	1	14	7	239
Pa.	1,893	1,954	10	558	524	-	3	4	378
E.N. CENTRAL	2,601	1,374	52	1,678	1,609	2	26	41	142
Ohio	399	112	19	297	285	1	6	31	9
Ind.	70	49	1	145	148	1	1	1	9
Ill.	986	584	8	850	741	-	13	2	25
Mich.	883	505	24	322	343	-	5	7	46
Wis.	263	124	-	64	92	-	1	-	53
W.N. CENTRAL	392	252	25	448	405	37	5	45	504
Minn.	71	39	2	78	72	-	-	-	190
Iowa	57	29	6	44	43	-	1	1	17
Mo.	211	131	8	235	187	28	3	29	23
N. Dak.	1	3	-	16	12	-	-	-	72
S. Dak.	1	1	-	10	24	4	-	2	160
Nebr.	9	21	3	14	18	3	-	1	4
Kans.	42	28	6	51	49	2	1	12	38
S. ATLANTIC	12,261	11,474	21	3,268	3,364	3	60	213	902
Del.	138	147	1	28	31	-	-	1	22
Md.	884	587	1	233	292	-	30	16	335
D.C.	831	622	1	122	139	-	-	1	-
Va.	659	431	2	283	265	1	5	19	152
W. Va.	62	14	-	53	59	-	1	1	33
N.C.	1,285	796	10	430	422	1	2	125	8
S.C.	788	628	2	359	371	1	1	35	105
Ga.	3,048	2,835	1	555	526	-	2	13	167
Fla.	4,566	5,414	3	1,205	1,259	-	19	2	80
E.S. CENTRAL	3,400	2,285	12	1,279	1,218	7	2	68	138
Ky.	72	43	2	294	303	1	1	10	37
Tenn.	1,440	1,032	8	360	354	6	-	49	27
Ala.	1,021	686	2	383	355	-	1	9	71
Miss.	867	524	-	242	206	-	-	-	3
W.S. CENTRAL	5,415	4,426	11	2,029	1,903	34	11	81	387
Ark.	443	272	-	266	191	26	-	17	44
La.	1,176	1,075	1	170	249	-	-	2	28
Okla.	193	84	7	151	173	8	2	56	109
Tex.	3,603	2,995	3	1,442	1,290	-	9	6	206
MOUNTAIN	685	516	25	420	348	13	19	10	176
Mont.	-	1	-	22	11	-	-	4	42
Idaho	6	1	2	11	21	-	-	-	6
Wyo.	-	6	2	5	-	3	-	-	46
Colo.	38	58	7	27	39	3	-	1	13
N. Mex.	35	25	3	84	66	4	-	1	10
Ariz.	494	240	7	188	148	-	17	1	28
Utah	11	13	4	32	27	3	-	3	14
Nev.	101	172	-	51	36	-	2	-	17
PACIFIC	3,105	4,042	44	3,729	3,421	4	134	9	244
Wash.	252	350	4	211	185	1	20	1	-
Oreg.	107	184	2	95	107	-	4	1	1
Calif.	2,723	3,495	37	3,248	2,948	-	104	2	221
Alaska	15	3	-	31	48	3	-	-	22
Hawaii	8	10	1	144	133	-	6	5	-
Guam	2	4	-	33	61	-	-	-	-
P.R.	233	415	-	66	217	-	-	-	33
V.I.	10	8	-	4	4	-	-	-	-
Amer. Samoa	-	-	-	11	7	-	1	-	-
C.N.M.I.	3	8	-	40	22	-	4	-	-

U: Unavailable

TABLE III. Deaths in 121 U.S. cities,* week ending September 29, 1990 (39th Week)

Reporting Area	All Causes, By Age (Years)						P&I** Total	Reporting Area	All Causes, By Age (Years)						P&I** Total
	All Ages	≥65	45-64	25-44	1-24	<1			All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	723	465	160	54	9	35	48	S. ATLANTIC	1,138	652	244	164	37	39	64
Boston, Mass.	177	100	45	15	3	14	11	Atlanta, Ga.	154	82	31	33	5	3	5
Bridgeport, Conn.	49	38	3	7	1	-	1	Baltimore, Md.	220	129	52	32	5	2	12
Cambridge, Mass.	27	23	2	2	-	-	5	Charlotte, N.C.	44	23	17	4	-	-	4
Fall River, Mass.	22	16	3	3	-	-	1	Jacksonville, Fla.	106	58	22	19	4	3	7
Hartford, Conn.	43	29	12	2	-	-	4	Miami, Fla.	125	62	25	22	9	7	-
Lowell, Mass.	34	23	8	3	-	-	1	Norfolk, Va.	77	41	17	11	2	6	3
Lynn, Mass.	19	11	7	1	-	-	1	Richmond, Va.	82	49	24	6	3	-	12
New Bedford, Mass.	26	21	5	-	-	-	1	Savannah, Ga.	41	26	10	4	-	1	7
New Haven, Conn.	42	29	5	4	1	3	2	St. Petersburg, Fla.	60	49	6	-	-	5	4
Providence, R.I.‡	34	26	6	1	1	-	2	Tampa, Fla.	75	43	15	12	2	3	6
Somerville, Mass.	1	-	-	1	-	-	-	Washington, D.C.	130	72	22	19	6	9	4
Springfield, Mass.	42	25	13	-	-	4	7	Wilmington, Del.	24	18	3	2	1	-	-
Waterbury, Conn.	30	24	6	-	-	-	2	E.S. CENTRAL	676	425	151	58	27	15	35
Worcester, Mass.	177	100	45	15	3	14	11	Birmingham, Ala.	144	85	40	12	1	6	6
MID. ATLANTIC	2,680	1,707	512	307	79	73	147	Chattanooga, Tenn.	74	53	10	7	3	1	7
Albany, N.Y.	39	31	3	1	2	2	1	Knoxville, Tenn.	76	52	11	4	7	2	7
Allentown, Pa.	18	16	1	1	-	-	-	Louisville, Ky.	42	26	7	5	3	1	2
Buffalo, N.Y.	100	52	21	18	4	4	6	Memphis, Tenn.	115	69	28	13	4	1	4
Camden, N.J.	34	25	7	1	-	1	1	Mobile, Ala.	88	49	25	6	5	3	-
Elizabeth, N.J.	29	20	4	2	1	2	1	Montgomery, Ala.§	35	28	5	1	-	1	1
Erie, Pa.†	59	43	12	3	-	1	4	Nashville, Tenn.	102	63	25	10	4	-	8
Jersey City, N.J.	55	34	8	7	2	4	2	W.S. CENTRAL	1,699	1,077	349	175	47	51	74
N.Y. City, N.Y.	1,312	804	265	180	39	24	65	Austin, Tex.	44	27	11	4	1	1	7
Newark, N.J.	62	31	13	14	4	-	4	Baton Rouge, La.	53	43	7	2	1	-	4
Paterson, N.J.	29	17	6	3	1	2	-	Corpus Christi, Tex.	43	33	6	3	-	1	3
Philadelphia, Pa.	503	308	110	52	17	16	29	Dallas, Tex.	184	104	39	27	8	6	4
Pittsburgh, Pa.†	70	50	12	3	1	3	3	El Paso, Tex.	61	33	14	7	2	5	4
Reading, Pa.	40	30	7	1	1	1	8	Fort Worth, Tex.‡	81	56	15	8	1	1	6
Rochester, N.Y.	120	89	12	3	6	10	9	Houston, Tex.§	734	436	169	89	24	16	18
Schenectady, N.Y.	26	20	4	2	-	-	1	Little Rock, Ark.	55	41	9	1	-	4	1
Scranton, Pa.†	42	35	5	2	-	-	4	New Orleans, La.	65	31	20	8	2	4	-
Syracuse, N.Y.	67	48	11	6	-	2	3	San Antonio, Tex.	202	160	25	14	2	1	14
Trenton, N.J.	34	19	6	7	1	1	1	Shreveport, La.	74	47	12	3	5	7	6
Utica, N.Y.	13	10	3	-	-	-	2	Tulsa, Okla.	103	66	22	9	1	5	7
Yonkers, N.Y.	28	25	2	1	-	-	3	MOUNTAIN	645	415	130	60	14	26	35
E.N. CENTRAL	2,251	1,508	444	157	62	80	108	Albuquerque, N. Mex.	71	41	15	9	1	5	3
Akron, Ohio	67	46	9	4	3	5	3	Colo. Springs, Colo.	42	30	6	5	1	-	7
Canton, Ohio	34	27	3	2	2	-	2	Denver, Colo.	110	59	22	16	2	11	4
Chicago, Ill.§	564	362	125	45	10	22	16	Las Vegas, Nev.	117	75	27	13	1	1	4
Cincinnati, Ohio	141	88	38	6	8	1	18	Ogden, Utah	20	16	-	2	2	-	4
Cleveland, Ohio	177	114	34	14	7	8	4	Phoenix, Ariz.	123	84	21	9	4	5	7
Columbus, Ohio	150	95	30	14	5	6	3	Pueblo, Colo.	21	18	2	1	-	-	1
Dayton, Ohio	110	83	11	10	4	2	7	Salt Lake City, Utah	44	23	14	2	1	4	-
Detroit, Mich.	223	131	54	22	4	12	6	Tucson, Ariz.	97	69	23	3	2	-	5
Evansville, Ind.	38	23	5	4	-	6	3	PACIFIC	1,886	1,204	373	193	77	34	131
Fort Wayne, Ind.	52	36	11	4	-	1	3	Berkeley, Calif.	15	9	4	1	1	-	-
Gary, Ind.	10	7	1	1	1	-	-	Fresno, Calif.	56	37	9	5	5	-	3
Grand Rapids, Mich.	66	45	14	2	1	4	10	Glendale, Calif.	39	34	3	1	1	-	5
Indianapolis, Ind.	168	106	36	11	9	6	3	Honolulu, Hawaii	89	54	22	9	1	3	16
Madison, Wis.	35	24	5	3	2	1	3	Long Beach, Calif.§	80	53	14	9	2	2	10
Milwaukee, Wis.	115	85	24	4	1	1	4	Los Angeles, Calif.	574	363	114	59	26	10	19
Peoria, Ill.	38	32	6	-	-	-	3	Oakland, Calif.	58	37	9	6	2	4	7
Rockford, Ill.	50	41	5	2	1	1	5	Pasadena, Calif.	42	30	8	2	2	-	3
South Bend, Ind.	51	36	9	3	2	1	3	Portland, Ore.	121	76	29	10	5	1	6
Toledo, Ohio	107	84	13	5	2	3	9	Sacramento, Calif.	137	82	36	10	4	5	11
Youngstown, Ohio§	55	43	11	1	-	-	3	San Diego, Calif.	144	81	27	23	10	2	19
W.N. CENTRAL	764	530	125	55	25	29	38	San Francisco, Calif.	155	83	28	33	7	2	6
Des Moines, Iowa	82	57	16	5	2	2	4	San Jose, Calif.	137	96	31	5	2	3	12
Duluth, Minn.	34	31	2	-	1	-	3	Seattle, Wash.	139	97	24	12	4	2	4
Kansas City, Kans.	20	14	4	2	-	-	-	Spokane, Wash.	56	40	5	7	4	-	7
Kansas City, Mo.	128	84	25	11	3	5	9	Tacoma, Wash.	44	32	10	1	1	-	3
Lincoln, Nebr.	18	11	5	2	-	-	2	TOTAL	12,462	7,983	2,488	1,223	377	382	680
Minneapolis, Minn.	192	133	30	16	9	4	9								
Omaha, Nebr.	80	57	12	2	5	4	9								
St. Louis, Mo.	116	78	14	9	4	11	1								
St. Paul, Minn.	45	36	4	5	-	-	-								
Wichita, Kans.	49	29	13	3	1	3	1								

*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.

Healthy People 2000 – *Continued*

At least two themes distinguish the year 2000 objectives from the 1990 objectives. First, greater emphasis is placed on quality of life. This emphasis is evident through the parallel targets of 1) preventing morbidity and disability and 2) preserving functional capacity. Second, the year 2000 health objectives place greater emphasis on targeting high-risk groups. Separate targets have been established to improve the risk and health profile of population groups (e.g., minorities, persons with low

TABLE 1. Priority areas of the year 2000 national health objectives and Public Health Service lead agencies

Priority area	Lead agency
HEALTH PROMOTION	
1. Physical Activity and Fitness	President's Council on Physical Fitness and Sports
2. Nutrition	National Institutes of Health Food and Drug Administration
3. Tobacco	Centers for Disease Control
4. Alcohol and Other Drugs	Alcohol, Drug Abuse, and Mental Health Administration
5. Family Planning	Office of Population Affairs
6. Mental Health and Mental Disorders	Alcohol, Drug Abuse, and Mental Health Administration
7. Violent and Abusive Behavior	Centers for Disease Control
8. Educational and Community-Based Programs	Centers for Disease Control Health Resources and Services Administration
HEALTH PROTECTION	
9. Unintentional Injuries	Centers for Disease Control
10. Occupational Safety and Health	Centers for Disease Control
11. Environmental Health	National Institutes of Health Centers for Disease Control
12. Food and Drug Safety	Food and Drug Administration
13. Oral Health	National Institutes of Health Centers for Disease Control
PREVENTIVE SERVICES	
14. Maternal and Infant Health	Health Resources and Services Administration
15. Heart Disease and Stroke	National Institutes of Health
16. Cancer	National Institutes of Health
17. Diabetes and Chronic Disabling Conditions	National Institutes of Health Centers for Disease Control
18. HIV Infection	National AIDS Program Office
19. Sexually Transmitted Diseases	Centers for Disease Control
20. Immunization and Infectious Diseases	Centers for Disease Control
21. Clinical Preventive Services	Health Resources and Services Administration Centers for Disease Control
SURVEILLANCE	
22. Surveillance and Data Systems	Centers for Disease Control

Healthy People 2000 — *Continued*

incomes, and persons in certain age groups) who have a disproportionate share of illness, injury, disability, and premature death.

Development Process

The year 2000 objectives represent a collaborative effort of the Institute of Medicine of the National Academy of Sciences, more than 300 national organizations, state and territorial health departments, and the Public Health Service. In 1987 and 1988, 25 public hearings were held to solicit public and professional testimony before the drafting of the objectives (6).

Criteria for objectives were that they 1) address issues of highest priority, 2) target improvements in health status, risk reduction, prevention services, and health protection, 3) be quantifiable and measurable, and 4) be scientifically based and attainable. The objectives were also to address disparities in rates of morbidity and mortality among different populations.

In early 1989, a draft of the objectives was sent to panels of reviewers for comment and to ensure that the needs of special populations were being addressed. In September 1989, 13,000 copies of the full set of draft objectives were circulated for public and professional review (7).

Priority Areas

Of the 22 priority areas, 21 are grouped into three broad categories: health promotion, health protection, and preventive services. The remaining priority area addresses surveillance and data systems, including improved data collection at every level to ensure accurate monitoring of progress toward each of the objectives.

Health Promotion. Although health promotion strategies target risk behaviors, objectives in these priority areas also address environmental factors that influence personal choices. Priorities include physical activity and fitness, nutrition, tobacco, alcohol and other drugs, family planning, mental health and mental disorders, violent and abusive behavior, and educational and community-based programs. For example, objectives in these areas target substantial increases in the level of physical activity throughout the population, worksite health promotion programs, and school health education in kindergarten through 12th grade.

Health Protection. Health protection objectives primarily relate to environmental or regulatory measures that confer broad-based protection. Priority areas include unintentional injuries, occupational safety and health, environmental health, food and drug safety, and oral health. Objectives in these areas include increases in the use of automobile safety restraints and radon testing of homes and decreases in *Salmonella* outbreaks and dental caries in children.

Preventive Services. Priority areas for preventive services are maternal and infant health, heart disease and stroke, cancer, diabetes and chronic disabling conditions, human immunodeficiency virus infection, sexually transmitted diseases, immunization and infectious diseases, and clinical preventive services. These areas target a range of interventions (e.g., counseling, screening, immunization, and chemoprophylaxis), as well as access and delivery considerations.

Reported by: Office of Disease Prevention and Health Promotion, Office of the Assistant Secretary for Health, US Dept of Health and Human Svcs.

Editorial Note: Some states (e.g., Oregon and Wisconsin [8,9]) have developed or are developing their own year 2000 health objectives. To assist states and communities, a companion report, *Healthy Communities 2000: Model Standards*, is being

Healthy People 2000 – Continued

prepared for release in early 1991. This report is being drafted by the American Public Health Association, the Association of State and Territorial Health Officials, the National Association of County Health Officials, the United States Conference of Local Health Officers, and CDC.

Copies of *Healthy People 2000* (stock number 017-001-00474-0) and/or the summary report (stock number 017-001-00473-1) are available from the Superintendent of Documents, Government Printing Office, Washington, DC 20402-9235. The full report is \$31; the summary report is \$9.

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*Notices to Readers***National AIDS Information Clearinghouse**

The National AIDS Information Clearinghouse is a comprehensive information service for persons working with human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS). As a service of the U.S. Department of Health and Human Services, Public Health Service, CDC, the Clearinghouse collects, classifies, and distributes up-to-date information and provides expert reference assistance to HIV- and AIDS-prevention professionals.

The Clearinghouse maintains information data bases that are accessed by reference specialists on request. The data bases contain descriptions of >12,000 organizations that provide HIV- and AIDS-related services and resources and >6000 AIDS-related educational materials. Reference specialists also have access to the AIDS School Health Education Database (produced by CDC's Center for Chronic Disease Prevention and Health Promotion, Division of Adolescent and School Health),

AIDS Information – Continued

which describes resources for education of children and youth about HIV infection and AIDS. A funding database, now under development, will provide information on funding opportunities for community-based HIV and AIDS service organizations.

The Clearinghouse is a direct source of materials to help professionals keep up to date on scientific data and guidelines issued by CDC. The Clearinghouse distributes selected HIV/AIDS reprints from the *MMWR* and all issues of CDC's *HIV/AIDS Surveillance*. Educational materials for use by the general public, including all brochures and posters from the "America Responds to AIDS" program, are also available. All Clearinghouse services are free and can be reached at (800) 458-5231. The Clearinghouse has Spanish-speaking staff, TTY/TDD access ([800] 243-7012), and an international telephone line ([301] 217-0023). The Clearinghouse also operates the AIDS Clinical Trials Information Service (ACTIS) to provide current information on federally and privately sponsored clinical trials on HIV/AIDS. ACTIS is sponsored by CDC, the Food and Drug Administration, the National Institute of Allergy and Infectious Diseases, National Institutes of Health, and the National Library of Medicine. ACTIS can be reached through the Clearinghouse or by dialing (800) TRIALS-A ([800] 874-2572).

Symposium on Statistical Methods for Evaluation of Intervention and Prevention Strategies

CDC and the Agency for Toxic Substances and Disease Registry will cosponsor the Symposium on Statistical Methods for Evaluation of Intervention and Prevention Strategies, December 4–6, 1990, in Atlanta. There is no registration fee. The symposium will provide a forum for current research in 1) statistical methods for evaluation and 2) innovative applications of methods for evaluation of health program intervention and disease prevention strategies.

For registration and other information, contact Gladys H. Reynolds, Ph.D., Chair, 1990 Symposium on Statistical Methods for Evaluation of Intervention and Prevention Strategies, Office of the Director, Mailstop A50, CDC, Atlanta, GA 30333.

Food and Drug Administration Approval of Use of Haemophilus b Conjugate Vaccine for Infants

The Food and Drug Administration has approved the Haemophilus b Conjugate Vaccine (Diphtheria CRM₁₉₇ Protein Conjugate) manufactured by Praxis Biologics, Inc., and distributed as HibTITER™ by Lederle Laboratories (Pearl River, New York) for use in infants in a three-dose immunization series at 2, 4, and 6 months of age. Previously unvaccinated infants 7–11 months of age should receive two doses 2 months apart. Previously unvaccinated children 12–14 months of age should receive one dose; a booster dose after 15 months of age is recommended for these children. Previously unvaccinated children 15–60 months of age should receive a single dose and do not require a booster.

In the United States, *Haemophilus influenzae* type b is the major cause of bacterial meningitis in children <5 years of age, with the peak incidence in children <1 year of age (1). The principal efficacy trial for this vaccine was conducted in approximately 60,000 infants in the Northern California Kaiser Permanente Health Plan (2);

Use of Haemophilus b Conjugate Vaccine – Continued

approximately half of those children received the vaccine. Twelve cases of *H. influenzae* type b invasive disease occurred in unvaccinated children, compared with no cases in fully vaccinated children, indicating an efficacy of 100%, with the lower limit of the 95% confidence interval equal to 68%. The Immunization Practices Advisory Committee (ACIP) is planning to issue a complete statement.

Reported by: Center for Biologics Evaluation and Research, Food and Drug Administration. Center for Infectious Diseases; Center for Prevention Svcs, CDC.

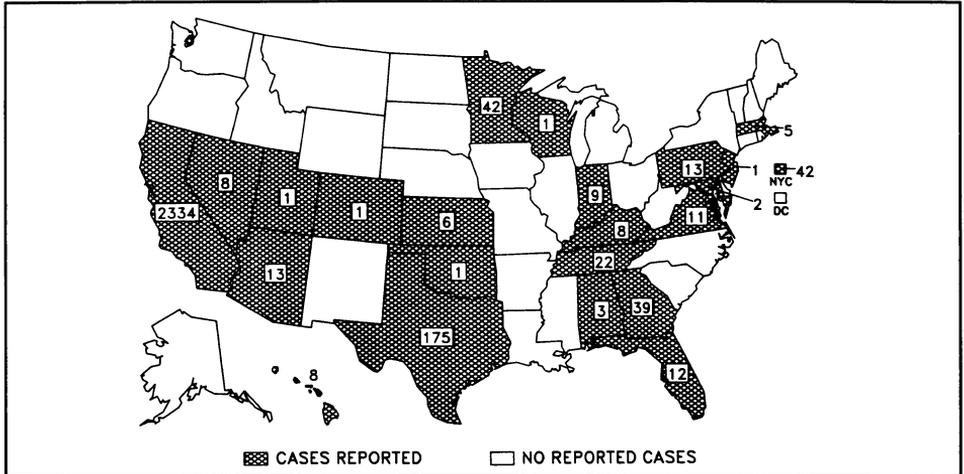
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1. Schlech WF, Ward JI, Band JD, et al. Bacterial meningitis in the United States, 1978 through 1981: the National Bacterial Meningitis Surveillance Study. JAMA 1985;253:1749–54.
2. Black SB, Shinefield HR, Hiatt RA, et al. Efficacy of HbOC conjugate *Haemophilus influenzae* type b vaccine in a study population of 48,000 infants [Abstract]. In: Program and abstracts of the 30th Interscience Conference on Antimicrobial Agents and Chemotherapy. Washington, DC: American Society for Microbiology, 1990.

Addendum: Vol. 39, No. 36

In the article "Summary of a Workshop on Screening for Hepatocellular Carcinoma," the National Cancer Institute should be added to the first paragraph of the report (page 619) as a sponsor of the workshop.

Reported cases of measles, by state – United States, weeks 36–39, 1990



The *Morbidity and Mortality Weekly Report* is prepared by the Centers for Disease Control, Atlanta, Georgia, and is available on a paid subscription basis from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, (202) 783-3238.

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. Accounts of interesting cases, outbreaks, environmental hazards, or other public health problems of current interest to health officials, as well as matters pertaining to editorial or other textual considerations should be addressed to: Editor, *Morbidity and Mortality Weekly Report*, Mailstop C-08, Centers for Disease Control, Atlanta, Georgia 30333; telephone (404) 332-4555.

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