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Current Trends

Trends in Prostate Cancer — United States, 1980–1988

Among men, carcinoma of the prostate is the second most common cancer and the second most common cause of death from cancer in the United States (*1*). During 1992, an estimated 132,000 men will be diagnosed with and 34,000 will die from prostate cancer (*2*). This report describes trends in prostate cancer incidence and mortality by patients' age, race, and state of residence from 1980 through 1988.

Incident cases* by age and race for 1980–1988 were determined using data from the National Cancer Institute's Surveillance, Epidemiology, and End Results (SEER) program. The age, race, and state of residence of persons who died during 1980–1988 were determined using the underlying cause of death† from the multiple cause-of-death data files compiled by CDC's National Center for Health Statistics. The denominators for both rates were derived from intercensal population estimates. Rates were standardized to the 1970 age distribution of the U.S. male population. To obtain statistically stable rates, age- and race-specific incidence and death rates were computed for a 5-year period by using annual data aggregated during the most recent 5-year period (1984–1988). Race-specific rates are not reported for races other than white and black because sufficient denominators were not available.

From 1980 through 1988, age-adjusted prostate cancer incidence rates increased steadily for both black and white men (8% and 30%, respectively) (Figure 1). During this period, although the incidence rate was higher for black men than for white men, the rate ratio decreased from 1.6 in 1980 to 1.3 in 1988. For men of both races, incidence rates varied directly with age (Figure 2); the highest age-specific incidence rates occurred for white men aged ≥85 years and black men aged 80–84 years. The difference in annual age-specific incidence rates by race was greatest for the youngest age group (i.e., 50–54 years); for black men, the rate was 2.1 times greater than for white men (63.9 per 100,000 population versus 30.2 per 100,000).

International Classification of Diseases for Oncology, code 185.9.
†*International Classification of Diseases, Ninth Revision*, code 185.

Prostate Cancer — Continued

From 1980 through 1988, death rates increased 2.5% for white men and 5.7% for black men. For each year, the age-adjusted prostate cancer death rate for black men was approximately two times higher than that for white men. However, for men of both races, death rates increased with age and were higher for men aged ≥85 years. The age-specific difference was greatest for men aged 50–54 years: in this age group, the death rate for black men was 3.1 times higher than that for white men (12.2 per 100,000 versus 3.9 per 100,000). This difference varied inversely with age; the rate ratio was 1.3 in the oldest age group (i.e., ≥85 years).

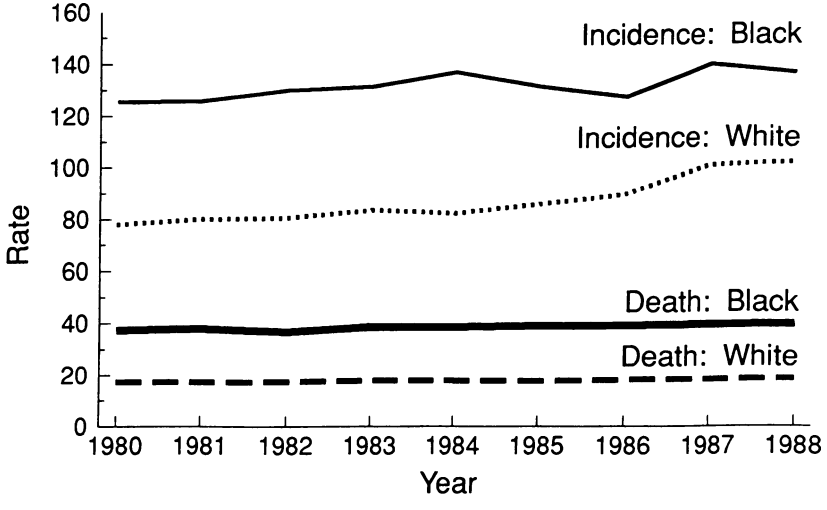
Prostate cancer death rates varied by state (Table 1). For white men, rates ranged from 18.9 per 100,000 in Arkansas to 28.0 per 100,000 in Vermont. For black men, rates ranged from 29.8 per 100,000 in Minnesota to 55.5 per 100,000 in the District of Columbia and North Carolina.

Reported by: Office of Surveillance and Analysis, and Div of Cancer Prevention and Control, Center for Chronic Disease Prevention and Health Promotion, CDC.

Editorial Note: The findings in this report indicate that the incidence of prostate cancer in the United States has increased steadily since 1980, especially for white men; however, both the incidence and death rates remain higher for black men. Although the magnitude of this difference in incidence has diminished since 1980, the twofold higher death rate for black men has persisted, and the disparity by race has been greatest for younger age groups. One potential explanation for this difference is that prostate cancer has been more likely to be diagnosed at a later disease stage for black men than for white men (*3*). When stratified by pathologic stage, however, survival differences have been similar by race (*4*).

Although the etiology of prostate cancer is not clearly understood, age, genetic influences, and environmental conditions may be important risk factors (*2*). The

FIGURE 1. Age-adjusted prostate cancer incidence* and death† rates§, by race — United States, 1980–1988



*Source: National Cancer Institute, Surveillance, Epidemiology, and End Results program.
†Source: CDC's National Center for Health Statistics, multiple cause-of-death data files.
§Per 100,000 men.

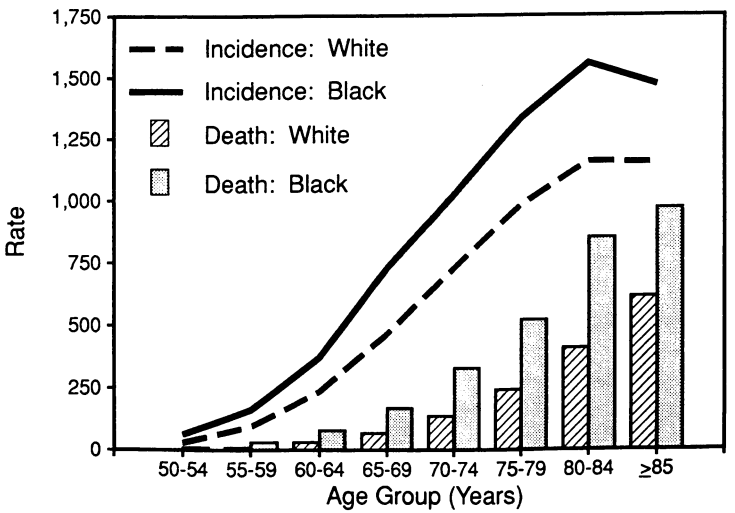
Prostate Cancer — Continued

increasing incidence of prostate cancer may reflect, in part, an increase in the frequency of screening. Recent studies have demonstrated that the use of prostate-specific antigen (PSA) and transrectal ultrasound (TRUS) in conjunction with digital rectal examination (DRE) may be useful for early detection of prostate cancer (*5–7*). Therefore, the increasing incidence rate of prostate cancer for white men since 1984 may be associated, in part, with the greater availability and use of these new diagnostic methods (*8*). In addition, because blacks may seek health care later or have less access to medical care, the availability of case information for whites may have been more complete than that for blacks in the SEER program.

Public health surveillance efforts at the state and local levels (e.g., physician-based surveillance systems, ambulatory-care surveys, hospitalization data, and cancer registries) may assist in further explaining the trends. Legislation to improve state cancer registration is pending; improved population-based cancer registries should enable state and local health departments to monitor the impact of early detection efforts on incidence rates and stage at diagnosis.

The primary goal of any cancer-screening test and subsequent program should be to reduce disease-specific mortality. Despite the improved effectiveness of PSA, TRUS, and DRE to detect disease at earlier stages, these methods have not yet been associated with a reduction in prostate cancer mortality (*9*). Although the likelihood of 5-year survival with prostate cancer has increased, death rates for prostate cancer have not been reduced substantially (*10*). Thus, the value of both mass screening for prostate cancer and screening targeted to younger black men is unclear. Continued surveillance of cause-specific mortality should assist in determining whether screening efforts are successful in detecting earlier disease and whether early treatment of disease is effective.

FIGURE 2. Age-specific prostate cancer incidence* and death† rates§, by race — United States, 1984–1988



*Source: National Cancer Institute, Surveillance, Epidemiology, and End Results program.
†Source: CDC's National Center for Health Statistics, multiple cause-of-death data files.
§Per 100,000 men.

Prostate Cancer — Continued

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TABLE 1. Age-adjusted prostate cancer death rates* for men, by state and race — United States, 1984–1988

State	Rate			State	Rate		
	White	Black	Ratio		White	Black	Ratio
Alabama	21.5	44.9	2.1	Missouri	20.2	42.2	2.1
Alaska	23.6	†	—	Montana	27.5	†	—
Arizona	21.2	42.2	2.0	Nebraska	21.2	45.1	2.1
Arkansas	18.9	34.6	1.8	Nevada	22.2	49.8	2.2
California	22.6	48.7	2.2	New Hampshire	24.1	†	—
Colorado	22.5	49.2	2.2	New Jersey	22.5	48.9	2.2
Connecticut	22.0	42.7	1.9	New Mexico	22.5	44.2	2.0
Delaware	24.8	48.5	2.0	New York	21.5	46.6	2.2
District of Columbia	26.1	55.5	2.1	North Carolina	21.8	55.5	2.5
Florida	19.9	52.9	2.7	North Dakota	27.4	†	—
Georgia	22.8	51.6	2.3	Ohio	22.3	50.5	2.3
Hawaii	22.9	†	—	Oklahoma	21.5	39.4	1.8
Idaho	24.1	†	—	Oregon	24.3	48.4	2.0
Illinois	21.2	47.8	2.3	Pennsylvania	22.7	44.8	2.0
Indiana	22.4	51.7	2.3	Rhode Island	23.0	48.5	2.1
Iowa	23.6	41.0	1.7	South Carolina	23.2	52.4	2.3
Kansas	21.5	41.4	1.9	South Dakota	23.8	†	—
Kentucky	20.2	42.7	2.1	Tennessee	20.6	45.9	2.2
Louisiana	20.8	43.6	2.1	Texas	19.1	38.3	2.0
Maine	22.5	†	—	Utah	23.9	†	—
Maryland	23.4	52.2	2.2	Vermont	28.0	†	—
Massachusetts	23.0	41.3	1.8	Virginia	23.0	53.0	2.3
Michigan	22.7	44.0	1.9	Washington	24.4	42.2	1.7
Minnesota	23.8	29.8	1.3	West Virginia	21.1	32.9	1.6
Mississippi	20.8	39.0	1.9	Wisconsin	23.8	44.2	1.9
				Wyoming	24.6	†	—

*Per 100,000 men.
†Less than two reported cases per year.

Epidemiologic Notes and Reports

Silicosis Among Pottery Workers — New Jersey

In March 1985, two cases of silicosis in former employees of a sanitary-ware pottery (i.e., a manufacturer of china plumbing fixtures) were identified from death certificates by the New Jersey State Department of Health (NJSDH). A site visit to the pottery in January 1987 revealed potential overexposure of employees to crystalline silica throughout the plant. This report summarizes the investigation of employee exposure to silica.

During June 1988, CDC's National Institute for Occupational Safety and Health (NIOSH) and the NJSDH conducted a joint study at this facility to assess both crystalline silica exposures and the adequacy of control measures (*1*). Forty-seven percent of personal breathing-zone samples exceeded the Occupational Safety and Health Administration's (OSHA) permissible exposure limit (PEL) of 100 $\mu g/m^3$ for crystalline silica; 53% exceeded the NIOSH recommended exposure limit (REL) of 50 $\mu g/m^3$. Based on these findings, specific engineering controls and work practices were recommended to reduce exposures and prevent additional cases of silicosis.

During October 1988, NJSDH conducted an on-site medical screening of all 120 pottery employees and obtained employee medical and work histories, chest radiographs, and spirometry. The radiographs were evaluated by three NIOSH-certified "B" readers* (*2*). Radiographs of five (4%) current employees who were not previously known to have pneumoconiosis had readings of 1/0 or greater, generally regarded as positive for pneumoconiosis (*3*). Based on these findings, the company agreed to institute a surveillance program to continue medical monitoring of all plant employees.

During October 1988, a follow-up environmental survey by NJSDH to assess the extent of compliance with the recommended controls and work practices determined that, although the company had implemented many of these recommendations, some problems persisted. For example, respirator use remained sporadic despite documentation of substantial exposures to crystalline silica dust throughout the plant. NJSDH recommended that a comprehensive respirator program be vigorously enforced until these exposure levels are reduced below the NIOSH REL through appropriate engineering controls and work practices.

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Editorial Note: Since 1984, the NJSDH has conducted surveillance of silicosis under several NIOSH Capacity Building Programs (*4*). This surveillance system uses both morbidity (i.e., hospital discharge) and mortality (i.e., death certificate) data to identify cases of silicosis. In addition, NJSDH participates in the Sentinel Event Notification System for Occupational Risks (SENSOR) program for surveillance of occupational asthma and silicosis, which includes physician reporting of cases of silicosis and combines surveillance with retrospective investigation (*5*). In conjunction with the

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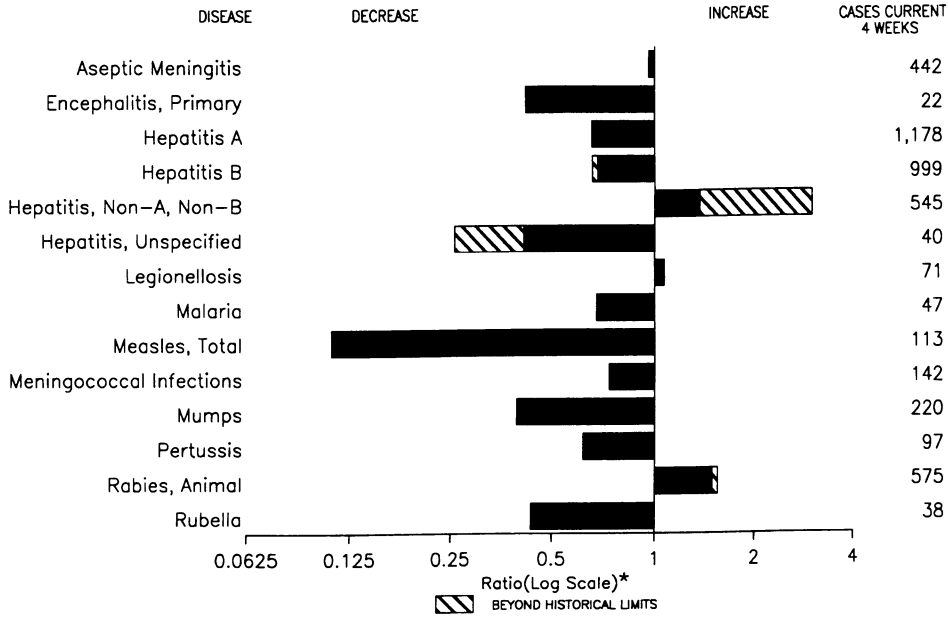
*A physician certified by NIOSH to interpret chest radiographs to detect pneumoconiosis using the 1980 International Labour Office guidelines.

FIGURE I. Notifiable disease reports, comparison of 4-week totals ending June 6, 1992, with historical data — United States



*Ratio of current 4-week total to the 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 June 6, 1992 (23rd Week)

	Cum. 1992		Cum. 1992
AIDS*	20,284	Measles: imported	65
Anthrax	-	indigenous	970
Botulism: Foodborne	8	Plague	2
Infant	24	Poliomyelitis, Paralytic†	-
Other	-	Psittacosis	39
Brucellosis	23	Rabies, human	-
Cholera	33	Syphilis, primary & secondary	14,998
Congenital rubella syndrome	5	Syphilis, congenital, age < 1 year	-
Diphtheria	3	Tetanus	6
Encephalitis, post-infectious	55	Toxic shock syndrome	107
Gonorrhea	205,441	Trichinosis	15
Haemophilus influenzae (invasive disease)	717	Tuberculosis	8,726
Hansen Disease	66	Tularemia	31
Leptospirosis	15	Typhoid fever	138
Lyme Disease	1,662	Typhus fever, tickborne (RMSF)	80

*Updated monthly; last update May 30, 1992.
†Two cases of suspected poliomyelitis have been reported in 1992; nine suspected cases were reported in 1991; 4 of the 8 suspected cases in 1990 were confirmed, and all were vaccine associated.

TABLE II. Cases of selected notifiable diseases, United States, weeks ending June 6, 1992, and June 8, 1991 (23rd Week)

Reporting Area	AIDS*	Aseptic Meningitis	Encephalitis		Gonorrhea		Hepatitis (Viral), by type				Legionellosis	Lyme Disease
			Primary	Post-infectious			A	B	NA,NB	Unspecified		
	Cum. 1992	Cum. 1992	Cum. 1992	Cum. 1992	Cum. 1992	Cum. 1991	Cum. 1992	Cum. 1992	Cum. 1992	Cum. 1992	Cum. 1992	Cum. 1992
UNITED STATES	20,284	2,231	217	55	205,441	248,443	8,362	6,955	3,386	293	552	1,662
NEW ENGLAND	681	118	15	-	4,446	6,386	268	263	26	15	34	152
Maine	27	10	-	-	39	58	28	12	4	-	1	-
N.H.	22	5	2	-	1	154	20	19	9	1	3	9
Vt.	9	5	2	-	12	17	4	6	2	-	2	2
Mass.	382	43	8	-	1,578	2,698	133	198	8	14	18	40
R.I.	41	55	3	-	341	511	55	15	3	-	10	43
Conn.	200	-	-	-	2,475	2,948	28	13	-	-	-	58
MID. ATLANTIC	4,844	243	12	5	20,875	30,743	649	896	166	12	168	1,183
Upstate N.Y.	642	112	-	-	4,243	5,236	166	210	103	6	69	802
N.Y. City	2,651	39	2	1	6,858	12,455	216	140	3	-	3	-
N.J.	1,041	-	-	-	2,764	4,442	100	238	43	-	22	109
Pa.	510	92	10	4	7,010	8,610	167	308	17	6	74	272
E.N. CENTRAL	1,911	308	63	10	38,481	45,771	1,015	1,039	601	17	119	46
Ohio	388	84	23	1	10,653	14,593	207	114	51	2	61	21
Ind.	194	36	5	-	3,777	4,542	335	391	304	5	12	15
Ill.	808	62	16	4	12,832	13,341	203	84	22	3	6	3
Mich.	401	121	18	5	9,722	10,137	66	290	186	7	30	7
Wis.	120	5	1	-	1,497	3,158	204	160	38	-	10	-
W.N. CENTRAL	585	145	13	4	9,633	12,587	1,011	367	189	16	35	50
Minn.	101	11	1	-	1,281	1,277	289	28	10	2	2	3
Iowa	46	20	-	2	640	841	20	15	3	2	7	7
Mo.	306	72	8	-	5,169	7,671	327	277	161	11	13	34
N. Dak.	1	1	1	-	33	28	52	1	3	1	1	1
S. Dak.	3	3	-	1	79	152	165	3	-	-	-	-
Nebr.	19	11	1	1	8	872	76	13	4	-	11	1
Kans.	109	27	2	-	2,423	1,746	82	30	8	-	1	4
S. ATLANTIC	4,849	466	38	25	67,658	74,309	516	1,112	444	41	82	104
Del.	53	19	4	-	695	1,046	17	111	82	1	15	49
Md.	561	58	9	-	6,437	7,564	104	169	19	5	14	16
D.C.	387	7	-	-	3,330	4,385	7	41	197	-	7	-
Va.	275	77	10	6	7,999	7,315	47	81	15	15	10	21
W. Va.	25	2	2	-	384	525	4	26	-	7	-	1
N.C.	306	45	10	-	10,630	13,848	32	149	38	-	10	6
S.C.	165	6	-	-	4,750	5,425	10	24	3	-	16	-
Ga.	641	58	1	-	21,726	18,982	57	144	39	-	-	1
Fla.	2,436	194	2	19	11,707	15,219	238	367	51	13	10	10
E.S. CENTRAL	622	131	8	-	20,626	22,859	136	599	975	1	25	19
Ky.	82	43	5	-	2,249	2,453	37	36	1	-	14	6
Tenn.	190	39	1	-	6,396	8,871	61	505	968	-	9	11
Ala.	229	35	1	-	7,076	5,645	22	56	6	1	2	2
Miss.	121	14	1	-	4,905	5,890	16	2	-	-	-	-
W.S. CENTRAL	1,812	253	19	4	20,286	28,218	814	866	57	68	9	29
Ark.	95	4	7	-	3,547	3,141	38	34	5	3	-	4
La.	320	16	2	1	3,028	6,779	54	70	23	2	-	1
Okla.	100	-	1	2	2,053	2,859	88	93	18	2	4	13
Tex.	1,297	233	9	1	11,658	15,439	634	669	11	61	5	11
MOUNTAIN	595	73	10	3	4,651	5,146	1,244	315	120	28	39	2
Mont.	9	-	1	1	46	48	38	20	25	-	5	-
Idaho	13	11	-	-	54	69	30	38	1	-	3	1
Wyo.	2	-	-	-	25	48	1	2	5	-	1	-
Colo.	217	18	5	1	1,482	1,428	364	49	38	12	7	-
N. Mex.	52	6	3	-	388	489	118	95	11	7	2	-
Ariz.	159	22	1	-	1,721	1,928	529	52	13	4	11	-
Utah	46	-	-	1	103	151	129	8	16	5	2	1
Nev.	97	16	-	-	832	985	35	51	11	-	8	-
PACIFIC	4,385	494	39	4	18,785	22,424	2,709	1,498	808	95	41	77
Wash.	217	-	-	-	1,649	1,987	289	143	56	6	4	2
Oreg.	130	-	-	-	669	899	163	137	32	6	-	-
Calif.	3,971	444	36	3	15,930	18,922	2,133	1,207	578	78	36	75
Alaska	8	3	3	-	330	319	14	6	2	1	-	-
Hawaii	59	47	-	1	207	297	110	5	140	4	1	-
Guam	-	-	-	-	36	-	5	1	-	2	-	1
P.R.	735	66	1	-	72	297	8	163	26	13	1	-
V.I.	2	-	-	-	48	243	2	4	-	-	-	-
Amer. Samoa	-	-	-	-	17	22	-	1	-	-	-	-
C.N.M.I.	-	-	-	-	22	27	-	-	-	-	-	-

N: Not notifiable U: Unavailable C.N.M.I.: Commonwealth of the Northern Mariana Islands
*Updated monthly; last update May 30, 1992.

TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending June 6, 1992, and June 8, 1991 (23rd Week)

Reporting Area	Malaria	Measles (Rubeola)					Menin-gococcal Infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported*		Total									
	Cum. 1992	1992	Cum. 1992	1992	Cum. 1992	Cum. 1991	Cum. 1992	1992	Cum. 1992	1992	Cum. 1992	Cum. 1991	1992	Cum. 1992	Cum. 1991
UNITED STATES	327	30	970	2	65	6,521	1,128	51	1,374	21	581	952	12	97	941
NEW ENGLAND	17	8	14	-	7	47	66	1	9	4	59	164	-	5	2
Maine	-	-	-	-	-	-	6	-	-	-	2	42	-	-	-
N.H.	2	8	9	-	-	-	5	-	1	-	18	12	-	-	1
Vt.	-	-	-	-	-	5	2	-	-	-	-	3	-	-	-
Mass.	8	-	5	-	3	17	28	-	2	3	29	94	-	-	1
R.I.	4	-	-	-	-	2	-	-	-	-	-	-	-	4	-
Conn.	3	-	-	-	4	23	25	1	6	1	10	13	-	1	-
MID. ATLANTIC	92	2	159	-	3	3,969	123	1	95	1	65	98	1	15	528
Upstate N.Y.	14	-	74	-	2	287	63	1	44	1	22	56	1	11	507
N.Y. City	47	2	36	-	-	1,325	11	-	12	-	7	8	-	-	2
N.J.	17	-	44	-	1	961	17	-	11	-	14	8	-	3	-
Pa.	14	-	5	-	-	1,396	32	-	28	-	22	26	-	1	19
E.N. CENTRAL	19	-	23	-	8	74	164	2	163	1	41	177	-	5	163
Ohio	3	-	2	-	3	1	40	-	64	-	18	60	-	-	147
Ind.	4	-	19	-	-	1	26	-	6	1	12	37	-	-	1
Ill.	4	-	1	-	4	24	48	-	44	-	4	37	-	5	4
Mich.	7	-	1	-	-	39	43	2	47	-	1	21	-	-	11
Wis.	1	-	-	-	1	9	7	-	2	-	6	22	-	-	-
W.N. CENTRAL	20	-	5	-	3	32	64	1	49	3	43	65	-	4	15
Minn.	6	-	3	-	2	8	7	-	7	-	15	24	-	-	6
Iowa	2	-	-	-	1	15	7	-	7	-	1	7	-	-	5
Mo.	9	-	1	-	-	-	32	1	28	3	17	22	-	-	4
N. Dak.	-	U	-	U	-	-	-	U	2	U	5	1	U	-	-
S. Dak.	1	-	-	-	-	-	1	-	-	-	2	1	-	-	-
Nebr.	-	-	-	-	-	-	8	-	3	-	2	4	-	-	-
Kans.	2	-	1	-	-	9	9	-	2	-	1	6	-	4	-
S. ATLANTIC	65	6	102	-	8	407	191	13	550	1	64	67	7	11	5
Del.	4	-	3	-	-	21	2	-	4	-	-	-	-	-	-
Md.	17	-	3	-	7	161	20	1	43	-	14	12	7	7	1
D.C.	5	-	-	-	-	-	-	-	2	-	-	-	-	1	1
Va.	13	-	5	-	1	22	34	-	20	-	4	10	-	-	-
W. Va.	-	-	-	-	-	-	14	-	20	-	3	6	-	-	-
N.C.	6	4	25	-	-	31	28	-	124	-	13	12	-	-	-
S.C.	-	-	29	-	-	12	17	-	46	-	9	-	-	-	-
Ga.	3	-	-	-	-	14	28	-	54	-	6	16	-	-	-
Fla.	17	2	37	-	-	146	48	12	237	1	15	11	-	3	3
E.S. CENTRAL	9	7	404	1	17	1	77	-	36	1	12	23	-	1	83
Ky.	1	7	402	1†	1	-	26	-	-	-	-	-	-	-	-
Tenn.	4	-	-	-	-	1	21	-	12	-	5	11	-	1	83
Ala.	4	-	-	-	-	-	24	-	6	1	7	12	-	-	-
Miss.	-	-	2	-	16	-	6	-	18	-	-	-	-	-	-
W.S. CENTRAL	4	-	183	-	-	38	86	30	245	-	21	21	-	-	1
Ark.	-	-	-	-	-	5	8	-	6	-	9	2	-	-	1
La.	-	-	-	-	-	-	19	1	15	-	-	8	-	-	-
Okla.	2	-	9	-	-	-	11	-	13	-	12	11	-	-	-
Tex.	2	-	174	-	-	33	48	29	211	-	-	-	-	-	-
MOUNTAIN	10	-	1	-	5	567	61	2	76	3	99	116	-	3	4
Mont.	-	-	-	-	-	-	12	1	2	-	1	-	-	-	-
Idaho	-	-	-	-	-	158	8	-	3	-	14	19	-	1	-
Wyo.	-	-	1	-	-	-	2	-	-	-	-	3	-	-	-
Colo.	4	-	-	-	5	5	10	1	5	-	19	61	-	-	1
N. Mex.	1	-	-	-	-	89	4	N	N	3	22	10	-	-	1
Ariz.	4	-	-	-	-	260	13	-	46	-	37	8	-	1	-
Utah	-	-	-	-	-	39	4	-	15	-	5	13	-	1	-
Nev.	1	-	-	-	-	16	8	-	5	-	1	2	-	-	2
PACIFIC	91	7	79	1	14	1,386	296	1	151	7	177	221	4	53	140
Wash.	6	-	-	-	10	4	36	-	8	-	47	53	-	6	-
Oreg.	8	-	4	-	1	42	45	N	N	1	13	37	-	2	2
Calif.	71	1	42	-	-	1,326	204	1	132	2	107	90	-	34	133
Alaska	1	-	8	-	1	1	6	-	1	-	-	10	-	-	-
Hawaii	5	6	25	1†	2	13	5	-	10	4	10	31	4	11	5
Guam	1	U	10	U	-	-	-	U	6	U	-	-	U	1	-
P.R.	-	-	5	-	-	63	3	-	1	-	8	14	-	-	1
V.I.	-	-	-	-	-	2	-	-	13	-	-	-	-	-	-
Amer. Samoa	-	U	-	U	-	24	-	U	-	U	6	-	U	-	-
C.N.M.I.	-	U	-	U	-	-	-	U	-	U	1	-	U	-	-

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

IIIIII N: Not notifiable U: Unavailable †International §Out-of-state

TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending June 6, 1992, and June 8, 1991 (23rd Week)

Reporting Area	Syphilis (Primary & Secondary)		Toxic-shock Syndrome	Tuberculosis		Tula-remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1992	Cum. 1991	Cum. 1992	Cum. 1992	Cum. 1991	Cum. 1992	Cum. 1992	Cum. 1992	Cum. 1992
UNITED STATES	14,998	18,904	107	8,726	9,212	31	138	80	3,505
NEW ENGLAND	271	496	10	256	262	-	13	2	333
Maine	-	-	-	46	25	-	-	-	-
N.H.	-	12	6	-	-	-	1	-	1
Vt.	1	1	-	2	3	-	-	-	13
Mass.	135	240	3	64	126	-	9	1	2
R.I.	15	22	1	92	33	-	-	1	-
Conn.	120	221	-	52	75	-	3	-	317
MID. ATLANTIC	2,191	3,505	13	1,977	2,198	-	40	3	1,015
Upstate N.Y.	139	316	5	142	228	-	6	1	583
N.Y. City	1,154	1,648	-	1,225	1,306	-	16	1	-
N.J.	302	629	-	339	359	-	12	-	314
Pa.	596	912	8	271	305	-	6	1	118
E.N. CENTRAL	2,146	1,995	29	899	957	-	14	7	49
Ohio	283	271	8	142	139	-	3	5	4
Ind.	134	66	7	77	71	-	-	1	3
Ill.	1,016	887	4	444	509	-	10	-	9
Mich.	454	543	10	199	198	-	1	-	5
Wis.	259	228	-	37	40	-	-	1	28
W.N. CENTRAL	538	310	16	174	234	12	2	4	612
Minn.	40	38	3	38	43	-	-	-	96
Iowa	12	27	4	18	30	-	-	-	96
Mo.	403	201	3	64	108	10	2	4	8
N. Dak.	1	1	1	2	5	-	-	-	57
S. Dak.	-	1	-	15	17	1	-	-	60
Nebr.	1	7	3	12	8	1	-	-	5
Kans.	81	35	2	25	23	-	-	-	290
S. ATLANTIC	4,204	5,579	12	1,669	1,641	2	12	19	745
Del.	93	69	3	15	14	-	-	3	113
Md.	319	465	1	111	151	1	3	1	226
D.C.	196	343	-	54	85	-	1	-	10
Va.	320	450	1	116	143	1	-	-	121
W. Va.	7	14	1	25	37	-	1	-	21
N.C.	1,033	840	3	222	195	-	-	11	2
S.C.	556	668	1	178	177	-	1	2	57
Ga.	885	1,358	1	385	312	-	-	-	160
Fla.	795	1,372	1	563	527	-	6	2	35
E.S. CENTRAL	1,955	2,040	-	532	610	5	2	15	60
Ky.	48	35	-	174	148	1	-	1	33
Tenn.	518	713	-	105	161	4	-	13	-
Ala.	809	734	-	179	170	-	-	1	27
Miss.	580	558	-	74	131	-	2	-	-
W.S. CENTRAL	2,683	3,430	1	836	1,024	7	4	28	381
Ark.	352	289	-	67	96	2	-	5	19
La.	1,120	1,100	-	56	63	-	-	-	-
Okla.	114	79	-	41	67	5	-	23	187
Tex.	1,097	1,962	1	672	798	-	4	-	175
MOUNTAIN	178	262	10	234	225	5	2	1	69
Mont.	2	2	-	-	-	2	-	-	10
Idaho	1	3	1	12	3	-	1	-	-
Wyo.	1	3	-	-	2	1	-	-	24
Colo.	21	40	4	16	6	-	1	-	2
N. Mex.	17	14	1	34	22	2	-	-	4
Ariz.	90	172	2	110	132	-	-	-	27
Utah	5	4	2	33	25	-	-	1	1
Nev.	41	24	-	29	35	-	-	-	1
PACIFIC	832	1,287	16	2,149	2,061	-	49	1	241
Wash.	42	81	-	133	132	-	3	-	-
Oreg.	23	32	-	42	46	-	-	-	-
Calif.	761	1,167	16	1,837	1,757	-	43	1	229
Alaska	2	3	-	29	34	-	-	-	12
Hawaii	4	4	-	108	92	-	3	-	-
Guam	2	-	-	34	-	-	1	-	-
P.R.	125	217	-	83	71	-	1	-	23
V.I.	24	60	-	3	1	-	-	-	-
Amer. Samoa	-	-	-	-	2	-	1	-	-
C.N.M.I.	4	-	-	12	4	-	1	-	-

U: Unavailable

TABLE III. Deaths in 121 U.S. cities,* week ending June 6, 1992 (23rd Week)

Reporting Area	All Causes, By Age (Years)						P&I†
	All Ages	≥65	45-64	25-44	1-24	<1	Total
NEW ENGLAND	615	429	112	44	16	14	31
Boston, Mass.	167	99	32	21	5	10	12
Bridgeport, Conn.	42	30	8	2	2	-	1
Cambridge, Mass.	25	20	3	2	-	-	2
Fall River, Mass.	18	15	1	1	1	-	-
Hartford, Conn.	74	47	15	8	3	1	3
Lowell, Mass.	27	18	7	2	-	-	-
Lynn, Mass.	16	13	3	-	-	-	-
New Bedford, Mass.	27	26	-	-	1	-	1
New Haven, Conn.	48	31	12	2	3	-	2
Providence, R.I.	35	27	7	1	-	-	-
Somerville, Mass.	9	8	1	-	-	-	-
Springfield, Mass.	32	20	8	2	1	1	4
Waterbury, Conn.	37	28	7	2	-	-	-
Worcester, Mass.	58	47	8	1	-	2	6
MID. ATLANTIC	2,589	1,659	513	287	66	64	87
Albany, N.Y.	44	32	9	1	1	1	2
Allentown, Pa.	32	25	5	1	1	-	2
Buffalo, N.Y.	103	74	22	3	2	2	3
Camden, N.J.	44	26	4	5	7	2	2
Elizabeth, N.J.	30	20	7	3	-	-	1
Erie, Pa.§	48	36	7	2	2	1	-
Jersey City, N.J.	43	29	10	4	-	-	-
New York City, N.Y.	1,368	854	259	196	34	25	43
Newark, N.J.	59	28	20	8	1	2	3
Paterson, N.J.	35	20	5	4	4	2	2
Philadelphia, Pa.	397	242	87	41	11	16	9
Pittsburgh, Pa.§	51	35	6	5	-	5	1
Reading, Pa.	7	5	2	-	-	-	1
Rochester, N.Y.	98	67	20	6	2	3	5
Schenectady, N.Y.	19	13	5	1	-	-	-
Scranton, Pa.§	33	27	5	1	-	-	2
Syracuse, N.Y.	130	93	30	3	1	3	5
Trenton, N.J.	33	20	8	3	-	2	4
Utica, N.Y.	15	13	2	-	-	-	2
Yonkers, N.Y.	U	U	U	U	U	U	U
E.N. CENTRAL	2,139	1,301	441	207	124	66	109
Akron, Ohio	82	60	13	3	3	3	5
Canton, Ohio	38	25	8	4	1	-	2
Chicago, Ill.	418	162	79	84	75	18	15
Cincinnati, Ohio	151	105	27	11	5	3	15
Cleveland, Ohio	164	96	38	16	7	7	2
Columbus, Ohio	176	107	43	16	5	5	10
Dayton, Ohio	99	77	16	4	1	1	6
Detroit, Mich.	212	116	48	28	8	12	3
Evansville, Ind.	49	41	4	3	-	1	1
Fort Wayne, Ind.	75	54	16	3	2	-	5
Gary, Ind.	21	13	4	3	1	-	2
Grand Rapids, Mich.	49	34	10	2	2	1	3
Indianapolis, Ind.	162	107	38	11	3	3	6
Madison, Wis.	32	20	9	-	3	-	4
Milwaukee, Wis.	125	90	28	4	1	2	11
Peoria, Ill.	45	30	7	3	2	3	9
Rockford, Ill.	41	26	9	4	1	1	2
South Bend, Ind.	48	39	6	2	-	1	3
Toledo, Ohio	86	54	23	5	2	2	3
Youngstown, Ohio	66	45	15	1	2	3	2
W.N. CENTRAL	784	568	128	45	17	25	36
Des Moines, Iowa	47	38	8	1	-	-	2
Duluth, Minn.	32	22	6	3	-	1	2
Kansas City, Kans.	52	32	12	4	3	1	1
Kansas City, Mo.	104	72	16	8	3	5	7
Lincoln, Nebr.	31	27	4	-	-	-	-
Minneapolis, Minn.	159	120	26	7	4	2	13
Omaha, Nebr.	85	57	17	4	1	6	5
St. Louis, Mo.	145	105	23	8	3	6	-
St. Paul, Minn.	63	43	10	6	1	3	4
Wichita, Kans.	66	52	6	4	2	1	2

Reporting Area	All Causes, By Age (Years)						P&I†
	All Ages	≥65	45-64	25-44	1-24	<1	Total
S. ATLANTIC	1,306	782	299	132	50	40	51
Atlanta, Ga.	195	117	48	24	3	3	2
Baltimore, Md.	138	79	29	23	4	3	10
Charlotte, N.C.	76	43	22	4	4	3	4
Jacksonville, Fla.	113	78	23	7	3	2	6
Miami, Fla.	95	55	28	8	1	3	-
Norfolk, Va.	73	40	16	7	5	5	5
Richmond, Va.	75	38	28	5	2	2	2
Savannah, Ga.	47	39	6	1	-	1	-
St. Petersburg, Fla.	58	39	10	2	1	6	1
Tampa, Fla.	120	80	18	6	11	5	19
Washington, D.C.	290	152	68	44	16	7	2
Wilmington, Del.	26	22	3	1	-	-	-
E.S. CENTRAL	776	500	155	74	30	17	49
Birmingham, Ala.	113	67	23	8	6	9	1
Chattanooga, Tenn.	51	31	12	6	2	-	2
Knoxville, Tenn.	62	39	16	7	-	-	1
Louisville, Ky.	U	U	U	U	U	U	U
Memphis, Tenn.	322	214	58	36	10	4	26
Mobile, Ala.	69	49	11	4	4	1	8
Montgomery, Ala.	38	28	6	2	2	-	-
Nashville, Tenn.	121	72	29	11	6	3	11
W.S. CENTRAL	1,501	929	295	166	60	50	87
Austin, Tex.	64	44	12	6	2	-	7
Baton Rouge, La.	44	29	8	5	2	-	2
Corpus Christi, Tex.	44	35	5	3	1	-	3
Dallas, Tex.	222	115	40	36	18	13	7
El Paso, Tex.	68	55	5	4	4	-	4
Ft. Worth, Tex.	122	73	23	16	4	6	5
Houston, Tex.	366	203	89	39	20	15	36
Little Rock, Ark.	84	54	18	9	-	3	6
New Orleans, La.	115	68	22	16	3	5	-
San Antonio, Tex.	221	147	47	20	2	5	9
Shreveport, La.	43	34	5	2	1	1	4
Tulsa, Okla.	108	72	21	10	3	2	4
MOUNTAIN	807	512	154	82	32	26	58
Albuquerque, N.M.	80	49	16	11	2	2	2
Colo. Springs, Colo.	51	29	9	7	2	4	2
Denver, Colo.	113	79	17	10	7	-	16
Las Vegas, Nev.	115	62	30	12	9	2	4
Ogden, Utah	27	18	7	1	-	1	2
Phoenix, Ariz.	167	98	37	17	5	9	18
Pueblo, Colo.	19	16	1	1	1	-	1
Salt Lake City, Utah	94	66	11	11	3	3	5
Tucson, Ariz.	141	95	26	12	3	5	8
PACIFIC	2,192	1,432	381	248	75	43	122
Berkeley, Calif.	18	15	3	-	-	-	-
Fresno, Calif.	92	54	13	12	10	3	3
Glendale, Calif.	37	28	7	1	1	-	4
Honolulu, Hawaii	72	56	9	6	-	1	7
Long Beach, Calif.	81	48	17	8	6	2	13
Los Angeles, Calif.	760	478	152	80	28	9	31
Pasadena, Calif.	43	31	5	5	1	1	4
Portland, Oreg.	141	101	26	7	3	4	3
Sacramento, Calif.	166	101	35	17	6	7	13
San Diego, Calif.	155	103	21	24	4	3	14
San Francisco, Calif.	153	81	17	49	2	4	1
San Jose, Calif.	179	121	36	13	7	2	16
Santa Cruz, Calif.	18	15	2	1	-	-	-
Seattle, Wash.	151	107	21	16	2	5	3
Spokane, Wash.	52	42	5	2	2	1	4
Tacoma, Wash.	74	51	12	7	3	1	6
TOTAL	12,709¶	8,112	2,478	1,285	470	345	630

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

†Pneumonia and influenza.

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

¶Total includes unknown ages.

U: Unavailable

Silicosis – Continued

SENSOR program, NIOSH has published surveillance guidelines for state healthdepartments to use in promoting physicians' recognition and reporting of silicosis (*6*).

The sanitary-ware pottery industry is classified under standard industrial classification (SIC) 3261—vitreous china plumbing fixtures and china and earthenware fittings and bathroom accessories. In the United States, 34 manufacturing facilities have a primary SIC of 3261 (*7*); located in 14 states, half are concentrated in three states—California, Ohio, and Texas.† Of an estimated 6400 persons employed in this industry, approximately 4300 have occupational exposure to crystalline silica (NIOSH, unpublished data, 1991). In New Jersey, the predominant industries in which persons with silicosis have worked include sand and gravel mines, foundries, and ceramics (both china and sanitary ware).

Persons with silicosis are at substantially increased risk for other pulmonary diseases, particularly tuberculosis, bronchitis, and emphysema (*8*). In the United States, each year approximately 250 workers are reported with (*9*) and 135 die from silicosis (*10*).

The investigation described in this report underscores the potential health hazards associated with the use of crystalline silica in manufacturing sanitary ware. Assessments of similar facilities have detected the same problems and conditions (i.e., use of raw materials high in crystalline silica content, poor or inadequate ventilation to control dust sources, poor housekeeping practices, and lack of effective respiratory-protection programs for workers). Full implementation of recommended control measures should reduce the risk for silicosis among workers in this industry.

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†This listing appears to be incomplete because it does not include the pottery in this report.

Current Trends

Changes in Sexual Behavior and Condom Use Associated with a Risk-Reduction Program — Denver, 1988–1991

Human immunodeficiency virus (HIV) risk-reduction programs have been developed to discourage homosexual/bisexual men (i.e., men who have sex with men) from engaging in anal and oral sexual intercourse with partners who are infected with HIV or whose infection status is unknown (*1*). The consistent and proper use of latex condoms with adequate lubrication may reduce the risk for HIV transmission during intercourse (*2*). To assist these men in understanding and following "safer" sexual behaviors, the Denver Disease Control Service conducted a longitudinal cohort study as part of CDC's Demonstration Projects for HIV Prevention and Risk Reduction. This report describes the effects of individual counseling sessions—including a basic introduction to the availability and proper use of condoms and lubricants—on short- and long-term behavior change among a group of homosexual/bisexual men in Denver during 1988–1991.

Participants were recruited from June 1, 1988, through January 31, 1991, through referrals from community-based organizations, public clinics, and other health-care providers; advertising campaigns; and word-of-mouth communication. Study participants made two visits at study entry, then made follow-up visits every 6 months. During initial visits, participants 1) completed self-administered questionnaires regarding knowledge, attitudes, beliefs, and sexual behaviors (including condom use); 2) underwent HIV-antibody testing; 3) received extensive counseling on the natural history of HIV infection, modes of HIV transmission, and ways to prevent infection; and 4) received skills-provision training, which included placing and removing condoms on and off a rubber phallus with lubricant and reviewing a poster about condoms and lubricants. The poster reemphasized the risk for transmission of HIV associated with anal intercourse; encouraged the use of latex condoms and water-based lubricants, including those with nonoxynol-9 spermicide; and discouraged anal intercourse without condoms, rectal douching before and after anal intercourse, and the use of "natural membrane" condoms and petroleum-based lubricants. At each follow-up visit, participants completed questionnaires and received HIV-antibody testing and reinforcement of educational messages. Skills-provision training was not systematically repeated unless requested by the participant or the project staff identified a need for repeat training during risk assessment.

From 1988 through 1991, 298 men completed questionnaires at both initial and 12-month visits. Of the participants, 268 (90%) were white; 18 (6%), Hispanic; 9 (3%), black; and 3 (1%), unknown. Ninety-five (32%) were HIV seropositive. Respondents reported on sexual behaviors in the previous 90 days with primary, occasional, and one-time partners.* Completed questionnaires from both initial and 12-month visits were available for 180 (60%) to 216 (72%) study participants (Table 1).

Because there were no substantial differences in sexual behavior or condom use between HIV-seropositive and HIV-seronegative men at either initial or 12-month visits, the data for these two groups were combined. Paired analysis indicated significantly higher rates of discontinuation than relapse for insertive and receptive

*Respondents were allowed to indicate whether they considered any particular sex partner a primary, occasional, or one-time sex partner.

Sexual Behavior and Condom Use — Continued

anal intercourse with one-time and occasional partners (Table 1). A decrease was observed among men who engaged in insertive anal intercourse with primary partners ($p = 0.11$); the percentage of men engaging in receptive anal intercourse with a primary partner remained the same.

Among 252 (85%) men who reported condom use, any condom use in the previous 90 days increased significantly, from 63% at initial visits to 71% after 12 months ($p < 0.05$). Based on a 5-point Likert scale, changes in frequency of condom use were analyzed for the small proportions of participants who reported insertive or receptive anal intercourse at both initial and 12-month visits (Table 2). Paired analysis indicated a trend toward increased condom use for men engaging in insertive anal intercourse with one-time partners ($p = 0.07$). At both initial and 12-month visits, participants reported using condoms more frequently with one-time and occasional partners than with primary partners ($p < 0.01$).

To evaluate the possibility of early changes followed by relapse, interim data for 6-month visits were also analyzed. For men who engaged in insertive anal intercourse with primary partners, condom use increased from 2.6 at the initial visit to 3.2 at 6 months ($p < 0.05$), followed by a decrease to 3.0 after 12 months. The pattern was similar for men having receptive anal intercourse with primary partners: an increase from 2.8 to 3.5 at 6 months ($p \leq 0.05$), followed by a decrease to 3.0 at 12 months ($p < 0.05$).

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Editorial Note: The findings in this report indicate that, among study participants in Denver, it was possible to achieve a substantial decrease in anal intercourse with one-time and occasional partners; these findings may be attributable to the emphasis the intervention program placed on the high risks associated with unprotected anal intercourse in transmitting HIV (*3*). In addition, factors outside the risk-reduction program may have accounted for some of the reported changes in behavior. For example, sexual behavior changes in this group of self-selected men

TABLE 1. Selected self-reported sexual behaviors in a cohort of homosexual/bisexual men at initial and 12-month follow-up visits — Denver, 1988–1991

		Men engaging in behavior							
		Abstained, both visits		Discontinued, 12-month visit		Relapsed,* 12-month visit		Present, both visits	
Sexual behavior†	No.	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Insertive anal intercourse									
One-time partner§	201	111	(55)	46	(23)	19	(10)	25	(12)
Occasional partner§	187	102	(53)	51	(29)	12	(8)	22	(10)
Primary partner	208	103	(49)	34	(17)	22	(11)	49	(23)
Receptive anal intercourse									
One-time partner§	200	125	(62)	33	(17)	16	(8)	26	(13)
Occasional partner§	180	113	(63)	36	(20)	8	(4)	23	(13)
Primary partner	216	110	(50)	24	(12)	25	(12)	57	(26)

*Based on data from 6-month visit.

†Reported for the 90 days preceding visit.

§For these sexual behaviors, significantly more men discontinued than relapsed during the interval ($p < 0.05$, paired t-test).

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may have been influenced by changes in community norms or by an increasing awareness of the modes of HIV transmission through sources other than the intervention project (e.g., national campaigns or other AIDS intervention activities in the community) (*4*).

Findings in this study also documented an increase in overall condom use between the initial and 12-month visits. However, no significant changes occurred in condom use by partner types for the small group of men who reported continuing insertive or receptive anal intercourse. Consequently, the relatively small change in prevalence of reported condom use for anal intercourse may reflect either limited statistical power or selection of a subgroup of less motivated men who persisted in these activities.

The finding that participants were more likely to discontinue anal sex or to use condoms with one-time and occasional rather than primary partners may reflect decisions in primary partnerships based on knowledge of HIV serologic status (*5,6*). Although this possibility was not evaluated in the current study, other studies among HIV-infected patients seeking health care in the same public clinics in Denver have documented lower condom use with sero-identical partners (C.A.M. Rietmeijer, Denver Disease Control Service, unpublished data, 1992). The initial increase in condom use for both insertive and receptive anal intercourse with primary partners at 6 months followed by a decrease at 12 months may also have been the result of the absence of standardized reinforcement of skills-provision training for all study participants at the 6-month visit. The increasing use of condoms for insertive anal intercourse for one-time partners may be a result of the relative effectiveness of interventions in changing active (insertive) behavior compared with an insufficient provision of skills in men who engage in receptive intercourse.

The effects of HIV counseling and testing on sexual behavior of men who have sex with men have varied; knowledge of seropositivity has often been associated with subsequent decreases in risk behaviors (*7*). Skills-provision training increases condom use for insertive anal intercourse (*8*) and is important in teaching basic skills

TABLE 2. Likert scale value* of condom use in a cohort of homosexual/bisexual men who self-reported engaging in selected sexual behaviors at initial and 12-month follow-up visits — Denver, 1988–1991

Sexual behavior†	No.§	Mean value	
		Initial visit	12-month visit
Insertive anal intercourse			
One-time partner	25	3.8	4.5
Occasional partner	22	3.9	3.9
Primary partner	49	3.0¶	3.0¶
Receptive anal intercourse			
One-time partner	26	4.3	4.3
Occasional partner	23	4.4	4.3
Primary partner	57	2.9¶	3.2¶

*Likert scale for condom use: 1=never, 2=seldom, 3=about half the time, 4=usually, 5=always.

†Reported for the 90 days preceding visit.

§Number of men who reported selected sexual behaviors by type of partner at both initial and 12-month visits.

¶Comparison of Likert scale values between partner types at initial and 12-month visits; $p<0.01$ for primary partners versus one-time and occasional partners (t-test).

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for condom use and proper choice of lubricants (*9*). Condom use is a relatively complex behavior that involves personality types (e.g., men who have assertive communication styles may be more successful in changing condom-use behavior with partners) and psychological adjustment that may be facilitated by reinforced skills-provision training (*10*). In addition, learning how to negotiate safer sex skills is especially important for men who continue to have sex with occasional and one-time partners; counseling and skills-provision training assists men who have sex with men to discontinue or decrease anal intercourse and increase condom use. These findings suggest the need for HIV prevention counseling and skills-provision training in programs providing HIV-prevention intervention for men who have sex with men.

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Clarification: Vol. 41, No. 22

In the article, "HIV Seroprevalence in U.S. Correctional Systems, 1991," the sixth line of the first paragraph on page 389 should read "in federal and 45 state *prison systems*."

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