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Progress in Chronic Disease Prevention

Chronic Disease Prevention and Control Activities — United States, 1989

Although chronic diseases account for 75% of the mortality and a substantial proportion of serious disability in the United States, data regarding the activities and capacity of public health agencies to control chronic diseases are limited. To assess resources, needs, and priorities in chronic disease prevention and control during fiscal year (FY) 1989, the Association of State and Territorial Chronic Disease Program Directors (ASTCDPD), in cooperation with the Public Health Foundation, recently completed a national survey of all state and territorial health agencies. This report summarizes those findings of the survey that address resources and planning/evaluation activities (*1*).

In June 1990, a questionnaire was mailed to the ASTCDPD voting member in each state and territory. The survey addressed five areas: 1) resources, 2) planning and evaluation, 3) links with other organizations, 4) continuing education needs, and 5) policies and standards. Responses were received from the 50 states, the District of Columbia, Guam, and the Virgin Islands.

During FY 1989, the total reported expenditure for chronic disease control activities in the United States was $245,371,377 (Table 1), less than 3% of FY 1989 expenditures by all surveyed public health agencies. Reported per capita expenditures varied widely, from $3.83 in California to zero in Oregon. Although certain states (e.g., Alaska and Nevada) ranked high in per capita spending, funding from state sources accounted for a small proportion of total expenditures for chronic disease control and prevention activities. Per capita spending for chronic disease control in the continental United States generally was higher in the southwestern and southeastern states and lower in the south central and midwestern states.

Although fewer than half the states and territories had developed health objectives for 1990 for any chronic disease priority area, most had developed or were planning year 2000 objectives in each area except chronic obstructive pulmonary disease and arthritis (Table 2). When asked an open-ended question on their highest chronic

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TABLE 1. Chronic disease prevention and control expenditures — United States, 1989

State/ Territory	Total expenditures ($)*	Per capita expenditures ($)†	Rank§	% State expenditures¶
Alabama	925,968	0.23	47	43
Alaska	1,510,199	2.75	2	13
Arizona	1,743,335	0.48	33	56
Arkansas	553,779	0.24	46	46
California	114,093,489	3.83	1	96
Colorado	2,442,926	0.74	22	11
Connecticut	1,330,897	0.41	37	35
Delaware	580,891	0.87	17	87
District of Columbia	1,200,000	1.98	4	56
Florida	7,828,155	0.61	29	62
Georgia	7,350,877	1.14	12	76
Guam	93,501	0.70	23	0
Hawaii	1,164,199	1.05	13	77
Idaho	624,228	0.62	27	60
Illinois	7,687,379	0.67	25	83
Indiana	1,881,505	0.34	41	47
Iowa	538,793	0.19	48	13
Kansas	448,503	0.18	49	8
Kentucky	2,518,770	0.68	24	81
Louisiana	2,050,000	0.49	32	41
Maine	1,022,000	0.83	19	15
Maryland	1,712,401	0.36	40	41
Massachusetts	1,093,000	0.18	49	36
Michigan	5,759,850	0.62	27	68
Minnesota	3,419,902	0.78	20	69
Mississippi	642,575	0.25	44	54
Missouri	1,712,716	0.34	41	26
Montana	366,000	0.46	34	15
Nebraska	1,956,137	1.24	9	78
Nevada	1,930,737	1.61	5	8
New Hampshire	439,500	0.40	38	55
New Jersey	7,572,266	0.98	16	47
New Mexico	1,498,800	0.99	15	49
New York	9,190,217	0.51	31	67
North Carolina	7,947,351	1.20	10	75
North Dakota	751,533	1.18	11	5
Ohio	1,862,500	0.17	51	37
Oklahoma	2,014,160	0.64	26	24
Oregon	0	0	53	0
Pennsylvania	14,995,000	1.26	7	87
Rhode Island	2,184,301	2.18	3	45
South Carolina	4,359,343	1.25	8	69
South Dakota	201,601	0.29	43	0
Tennessee	3,702,000	0.76	21	80
Texas	2,818,302	0.17	51	59
Utah	1,453,079	0.84	18	54
Vermont	577,000	1.03	14	57
Virginia	2,711,590	0.44	36	29
Virgin Islands	139,008	1.37	6	37
Washington	2,572,500	0.53	30	71
West Virginia	824,720	0.46	34	26
Wisconsin	1,200,000	0.25	44	58
Wyoming	173,894	0.38	39	61
Total	**245,371,377**	**0.99**		**77**

*Public health agency expenditures for chronic disease (state and federal sources) for fiscal year 1989. Expenditures do not include renal dialysis, medication, and transportation or alcohol and drug abuse funding.

†Based on population estimates from 1990 U.S. census data.

§According to per capita expenditures.

¶Percentage of total chronic disease expenditures from state funding sources.

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disease priorities, the most frequently cited responses were cancer, cardiovascular disease, tobacco use, diabetes mellitus, unintentional injuries, and minority health. As of October 31, 1990, most states and territories were routinely collecting data on chronic disease mortality (100%), behavioral risk factors (92%), cancer incidence (72%), and hospital discharges (62%); fewer states obtained data on spinal cord injuries (32%), ambulatory care (23%), and Alzheimer disease (15%).

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Editorial Note: In the United States, six chronic diseases—heart disease, cancer, stroke, diabetes mellitus, chronic obstructive pulmonary disease, and chronic liver disease—are among the major causes of death, disability, and medical expenditures (*2*). In 1988, these six diseases accounted for 71.5% of all deaths in the United States (*3*). Six (27%) of the 22 priority areas of the year 2000 national health objectives (*4*) relate directly to control of chronic diseases (i.e., heart disease and stroke, cancer, and diabetes and other chronic disabling conditions) or major chronic disease risk factors (i.e., tobacco use, poor nutrition, and physical inactivity). Four other priority areas address issues indirectly related to chronic disease control (i.e., prevention of alcohol and other drug abuse, educational and community-based programs, clinical preventive services, and surveillance and data systems).

During FY 1989, programs for maternal and child health accounted for 13% of state public health expenditures; environmental health, 6%; human immunodeficiency

TABLE 2. Percentage of states and territories that have developed or have planned health objectives for selected chronic diseases and chronic disease risk factors — United States, 1990*

		Year 2000 objectives		
Priority area	1990 objectives developed	Developed	Planned	Developed or planned†
Disease				
Cancer	36	47	53	100
Heart disease and stroke	38	38	58	96
Injury§	36	32	62	94
Diabetes mellitus	40	30	55	85
Chronic obstructive pulmonary disease	8	9	19	28
Arthritis	6	8	21	28
Risk factor				
Tobacco use	40	42	57	98
Hypertension	43	30	60	90
High blood cholesterol	26	32	49	81
Poor nutrition	34	28	49	77
Physical inactivity	19	26	45	71
Heavy alcohol use	13	21	36	57

*Reported status as of October 31, 1990.
†May not total because of rounding.
§Although injury is not generally considered a chronic disease, many state chronic disease control programs address injury control; therefore, it was included in the priorities.

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virus infection/acquired immunodeficiency syndrome, 3%; and communicable disease control, 3% (Public Health Foundation, unpublished data). The proportion of expenditures dedicated to chronic diseases is likely to increase with the implementation of several new programs (e.g., the Breast and Cervical Cancer Screening Initiative from CDC and the American Stop Smoking Intervention Study for Cancer Prevention from the National Cancer Institute and the American Cancer Society [Project ASSIST]).

Although a variety of data sets were available for chronic disease surveillance in most jurisdictions, 85% of respondents reported that these data were inadequate, reflecting in part the collection and location of data sets outside the chronic disease unit or an insufficient analytic capacity. In addition, lack of adequate data on minority groups was reported as a major deficiency. Therefore, improved chronic disease surveillance systems are needed, particularly to address the needs of high-risk groups and to measure progress toward year 2000 national health objectives.

Based on recent estimates, eliminating a single risk factor for each of nine key chronic diseases could reduce mortality from these causes by 47%, from 427 per 100,000 persons to 224 per 100,000 (*5*). Preventable risk factors for chronic diseases include cigarette smoking, high blood pressure, high blood cholesterol, overweight, physical inactivity, poor nutrition, heavy alcohol consumption, and failure to use screening tests such as mammography and Papanicolaou smears (*2,5*). However, the well-established public health approaches to controlling these risk factors are underused (*2*). Factors that contribute to the success of public health strategies include targeting high-risk populations, addressing multiple risk factors, and intervening through multiple channels (e.g., schools, health-care settings, worksites, and community settings.)

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Effectiveness in Disease and Injury Prevention

Successful Strategies in Adult Immunization

Safe and effective vaccines are available to prevent pneumococcal disease and influenza and hepatitis B virus (HBV) infections among persons in the United States; however, a substantial number of adults at increased risk for these preventable infections remain unvaccinated. This report describes collaborative public and private efforts to increase the vaccination of adults and highlights National Adult Immunization Awareness Week, October 27–November 2, 1991.

Medicare Influenza Vaccine Demonstration Project

In October 1988, CDC, in collaboration with the Health Care Financing Administration, awarded demonstration grant funds to nine programs to assess the cost-

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effectiveness of providing influenza vaccine to Medicare part B beneficiaries and measure the impact of Medicare coverage on promoting the vaccine as a routine preventive health measure. The addition of a 10th program in 1990 increased the study population to more than 1.9 million Medicare beneficiaries.

Through a variety of promotional and educational efforts directed at providers and patients, the project substantially improved influenza vaccine delivery during the first 3 years of the 4-year study period. Vaccine doses administered increased from 481,000 the first full year to 786,000 the third, representing an overall increase in vaccine coverage of Medicare beneficiaries from 30% to 41%. Descriptions of the programs in Monroe County, New York, and Maricopa County, Arizona, illustrate the approaches that have been used to improve vaccine delivery and coverage.

Monroe County, New York. In 1989, a random sample of private-practice physicians identified all persons ≥65 years of age (who should be vaccinated against influenza). In 28 (62%) of the 45 participating practices, a graph indicating the percentage of such patients in the practice who had been vaccinated was placed on a conspicuous wall in each office and updated weekly during the influenza season. Those practices achieved 30% higher vaccination levels than did those not using the graph (67% vs. 50% of patients vaccinated; $p<0.01$) (*1*). In 1990, this target-based system was expanded countywide and included an incentive of bonuses above the usual vaccine administration fees for practices that vaccinated 70% or more of their target population. Preliminary data indicate that one group of physicians vaccinated 72% of eligible Medicare patients (range: 44%–72% in the different physician practices).

Maricopa County, Arizona. As part of the Medicare demonstration project in Maricopa County, the county health department arranged for nine private-practice physicians to conduct influenza vaccination clinics for Medicare beneficiaries at shopping malls during October 1990–February 1991. Participating physicians were provided free vaccine and an administration fee for each vaccinee in the program. Billboards, newspaper advertisements, and public service announcements were used to promote the clinics. Of the 101,882 Medicare beneficiaries who were vaccinated through the project, 43,617 (43%) were vaccinated in nine mall clinics.

California Influenza/Pneumococcal Vaccination Program

The California Influenza/Pneumococcal Vaccination Program was initiated in 1974 (*2*). Both influenza and pneumococcal vaccines are state-funded and are administered primarily at local health department clinics, community sites, and nursing homes. Local hospitals, senior citizen groups, and local American Red Cross chapters assist by providing facilities, nurses, and volunteers. Promotional efforts by local health departments include press releases, public service announcements, fliers, posters, and close coordination with senior citizen groups.

In fiscal year (FY) 1982, a total of 341,375 doses of influenza vaccine were administered, compared with 653,877 doses in FY 1991—an increase of 92%. In FY 1991, 16% of the total population aged ≥65 years in the state were vaccinated against influenza. In FY 1987, a total of 23,753 doses of pneumococcal vaccine were administered (*2*), compared with 45,548 doses in FY 1990—also an increase of 92%.

Hepatitis B Vaccine in Sexually Transmitted Diseases Clinics

In 1990, CDC initiated a demonstration project to assess the feasibility of offering hepatitis B (HB) vaccination in sexually transmitted diseases (STD) clinics to persons

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at high risk for sexually transmitted HBV infection. New patients who had no history of HBV infection or HB vaccination were offered vaccine. Patients accepting vaccination were tested for HB core antibody (a marker of past HBV infection) and given their first vaccine dose at their initial visit. Those with no evidence of past HBV infection were eligible for subsequent doses and were reminded by mail and telephone to return to complete their primary vaccination series.

During July 1990, in San Francisco, vaccine was offered to 1386 persons, of whom 611 (44%) accepted. Of these, 181 (30%) had prior evidence of HBV infection, and 430 (70%) were susceptible and eligible for subsequent doses. Of those eligible, 210 (49%) persons returned for a second vaccine dose, and 135 (31%) completed a three-dose series.

During a 3-week period in April 1991, in Birmingham, Alabama, vaccine was offered to 1079 persons, of whom 744 (69%) accepted. Of these, 638 (86%) were eligible for subsequent doses. Through September 1991, 249 (39%) of those eligible returned and received a second vaccine dose.

In both San Francisco and Birmingham, among participants having evidence of prior HBV infection, seropositivity was strongly associated with age (8% of persons <20 years of age had evidence of past infection, compared with 39% of persons aged ≥30 years).

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Editorial Note: A substantial proportion of vaccine-preventable diseases occur among adults (Table 1) despite the availability of safe and effective vaccines. Reasons contributing to low vaccination levels among adults are that 1) no comprehensive vaccine delivery systems are available in the public and private sectors; 2) although statutory requirements exist for vaccination of children, no such requirements exist for all adults; 3) vaccination schedules are complicated because of the detailed recommendations that may vary by age, occupation, lifestyle, or health condition; 4) opportunities to vaccinate adults are frequently missed during contacts with health-care providers in offices, outpatient clinics, and hospitals (*3*); 5) vaccination

TABLE 1. Total cases of selected vaccine-preventable diseases* and number and percentage reported among adults aged ≥20 years — United States, 1985–1990

Disease	Total cases	Cases in adults No.	Cases in adults (%)
Diphtheria	15	10	(66.7)
Hepatitis B	146,185	126,349	(86.4)
Measles	62,134	11,338	(18.2)
Mumps	39,490	4,399	(11.1)
Rubella	3,233	1,210	(37.4)
Tetanus	365	338	(92.6)

*Influenza and pneumococcal disease are not included in the national system of notifiable disease reporting.

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programs have not been established in other settings where adults congregate (e.g., the workplace); and 6) patient and provider fears exist concerning adverse events following vaccination.

In the United States, influenza epidemics are often associated with more than 20,000 excess deaths annually, 80%–90% of which occur among persons ≥65 years of age. Although influenza vaccine is estimated to be up to 70% effective in reducing deaths among high-risk elderly persons (*3*), findings from the 1989 National Health Interview Survey (NHIS) indicate that only 30% of persons aged ≥65 years were vaccinated for influenza during the previous year (*4*). Disease caused by *Streptococcus pneumoniae* infection remains a problem in the very young, the elderly, and persons with certain high-risk conditions. Although pneumococcal vaccine is more than 60% effective in preventing invasive pneumococcal infections, data from the 1989 NHIS indicate that only 14% of persons aged ≥65 years reported ever having received pneumococcal vaccine (*4*). The Medicare Influenza Vaccine Demonstration Project and the California Influenza/Pneumococcal Vaccination Program both illustrate how efforts to motivate providers and develop collaborative public and private delivery strategies can improve vaccination coverage against influenza and pneumococcal disease.

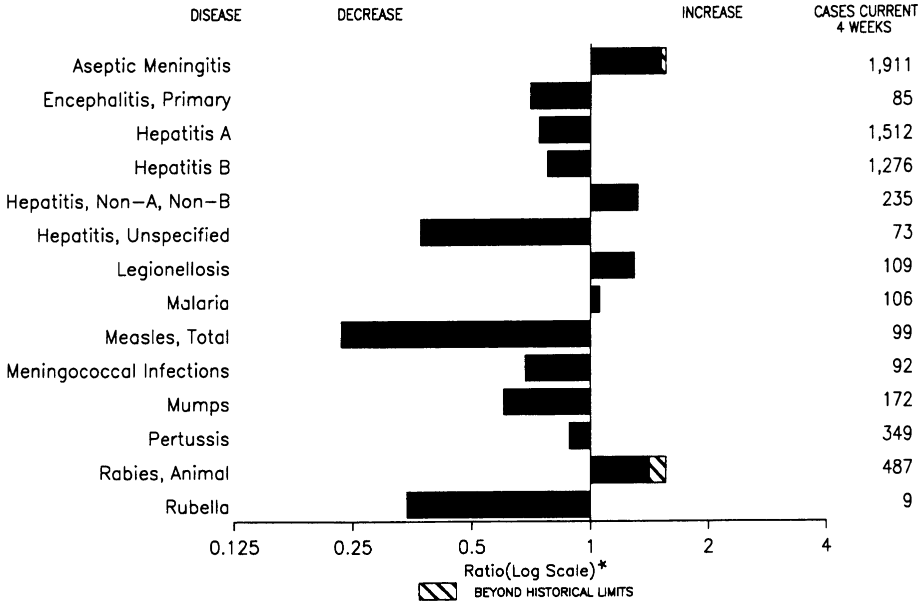
Each year HBV infection occurs in an estimated 300,000 persons, primarily young adults; 6%–10% of these persons become chronic HBV carriers. Heterosexuals with multiple sex partners are one category of persons at increased risk for HBV infection (*5*); the proportion of HBV infections in the United States accounted for by persons with only heterosexual activity as a risk factor increased from 14.7% in 1982 to 26.0% in 1988 (*6*). The findings in San Francisco and Birmingham, as well as in other sites (*7*), indicate that STD clinics may be opportune sites to vaccinate persons in this risk group against HBV infection. However, strategies to improve completion rates are needed: only half of susceptible persons have received at least two doses of vaccine through these programs, even though 70% or more of those receiving two doses will develop detectable protective antibody (*8*). Although universal vaccination of infants and adolescents is the optimal long-term strategy to prevent HBV infection, until then the continued targeting of high-risk groups is necessary to reduce disease incidence.

Of the 19 national health objectives for the year 2000 that target vaccination and infectious diseases, 10 are related to vaccination of adults (*9*). The objectives include 1) reduction of epidemic-related pneumonia and influenza deaths and provision of influenza and pneumococcal vaccines to at least 60% of noninstitutionalized high-risk populations and at least 80% of institutionalized chronically ill or older persons and 2) increasing HB vaccination among high-risk populations to at least 90%. The proportion of primary-care providers and public health departments that provide adult vaccinations for influenza, pneumococcal disease, and HBV should increase to 90% (*9*).

Vaccination programs have markedly reduced the incidence of vaccine-preventable diseases among children, but many adults remain susceptible because they are inadequately immunized. Improving vaccine use among adults and reaching the year 2000 national health objectives for immunization (*9*) require multifaceted strategies involving collaboration of public and private organizations to improve awareness and vaccine delivery, publicly supported delivery mechanisms that remove cost and accessibility constraints, and special surveys to assess current

(Continued on page 709)

FIGURE I. Notifiable disease reports, comparison of 4-week totals ending October 12, 1991, with historical data — United States



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

TABLE I. Summary — cases of specified notifiable diseases, United States, cumulative, week ending October 12, 1991 (41st Week)

	Cum. 1991		Cum. 1991
AIDS	34,636	Measles: imported	188
Anthrax	-	indigenous	8,435
Botulism: Foodborne	12	Plague	8
Infant	60	Poliomyelitis, Paralytic*	-
Other	6	Psittacosis	67
Brucellosis	67	Rabies, human	2
Cholera	21	Syphilis, primary & secondary	32,078
Congenital rubella syndrome	15	Syphilis, congenital, age < 1 year†	684
Diphtheria	2	Tetanus	39
Encephalitis, post-infectious	63	Toxic shock syndrome	230
Gonorrhea	467,361	Trichinosis	60
Haemophilus influenzae (invasive disease)	2,246	Tuberculosis	17,725
Hansen Disease	113	Tularemia	154
Leptospirosis	47	Typhoid fever	349
Lyme Disease	7,140	Typhus fever, tickborne (RMSF)	543

*Four suspected cases of poliomyelitis have been reported in 1991; none of the 8 suspected cases in 1990 have been confirmed to date. Five of 13 suspected cases in 1989 were confirmed and all were vaccine associated.
†Includes updates for first three quarters of 1991.

TABLE II. Cases of selected notifiable diseases, United States, weeks ending October 12, 1991, and October 13, 1990 (41st Week)

Reporting Area	AIDS	Aseptic Meningitis	Encephalitis		Gonorrhea		Hepatitis (Viral), by type				Legionellosis	Lyme Disease
			Primary	Post-infectious			A	B	NA,NB	Unspecified		
	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1990	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1991
UNITED STATES	34,636	11,267	722	63	467,361	533,485	18,636	13,240	2,369	972	948	7,140
NEW ENGLAND	1,390	1,318	26	1	11,506	14,561	465	676	56	26	63	1,286
Maine	51	140	3	-	127	170	18	18	2	-	2	-
N.H.	33	157	5	-	160	195	28	29	6	-	8	32
Vt.	17	217	4	-	42	44	23	13	6	-	4	7
Mass.	797	421	11	1	4,927	6,083	223	468	29	23	44	236
R.I.	71	376	1	-	993	918	86	22	11	3	5	118
Conn.	421	7	2	-	5,257	7,151	87	126	2	-	-	893
MID. ATLANTIC	9,210	2,147	54	11	55,297	70,215	1,864	1,282	276	16	274	4,377
Upstate N.Y.	1,223	1,126	26	7	10,664	11,404	706	484	157	10	94	2,884
N.Y. City	5,229	314	1	-	20,305	28,804	657	195	8	-	46	-
N.J.	1,842	-	-	-	9,225	11,930	211	303	69	-	29	721
Pa.	916	707	27	4	15,103	18,077	290	300	42	6	105	772
E.N. CENTRAL	2,490	2,186	222	7	86,892	101,267	2,383	1,537	372	56	193	217
Ohio	476	831	77	2	26,492	30,351	309	333	145	17	93	123
Ind.	231	164	21	1	9,434	9,053	316	173	1	1	16	10
Ill.	1,194	350	71	4	26,310	32,385	1,013	232	60	7	18	21
Mich.	417	729	48	-	19,420	22,387	243	498	107	31	38	63
Wis.	172	112	5	-	5,236	7,091	502	301	59	-	28	-
W.N. CENTRAL	889	548	54	7	22,949	27,364	1,835	556	239	21	49	269
Minn.	179	111	32	-	2,409	3,405	322	61	11	2	11	76
Iowa	84	120	-	4	1,574	1,941	46	38	9	4	11	17
Mo.	504	219	12	3	14,184	16,396	499	365	212	10	13	157
N. Dak.	4	8	2	-	49	110	37	4	4	1	1	1
S. Dak.	3	10	4	-	291	217	674	7	1	-	3	1
Nebr.	45	22	2	-	1,474	1,326	182	34	1	-	8	-
Kans.	70	58	2	-	2,968	3,969	75	47	1	4	2	17
S. ATLANTIC	8,188	1,972	139	28	139,442	152,130	1,425	2,755	304	201	144	550
Del.	58	60	2	-	2,270	2,508	7	43	5	2	2	50
Md.	768	239	21	1	15,511	18,794	231	320	44	14	31	227
D.C.	568	60	2	-	7,267	10,403	65	125	1	1	6	2
Va.	558	323	33	3	14,340	14,591	137	175	25	134	12	114
W. Va.	47	37	22	-	991	1,009	20	50	2	13	1	35
N.C.	423	273	29	-	27,970	23,562	140	428	101	-	16	70
S.C.	276	41	-	-	11,776	12,197	34	570	16	3	29	10
Ga.	1,159	261	9	2	31,030	32,659	182	421	53	-	13	26
Fla.	4,331	678	21	22	28,287	36,407	609	623	57	34	34	16
E.S. CENTRAL	800	703	31	-	45,187	46,284	201	1,088	327	3	46	92
Ky.	132	161	8	-	4,773	5,243	43	146	6	2	17	39
Tenn.	257	207	15	-	16,026	14,429	113	800	296	-	14	40
Ala.	255	265	8	-	13,024	15,299	35	131	21	1	14	13
Miss.	156	70	-	-	11,364	11,313	10	11	4	-	1	-
W.S. CENTRAL	3,359	1,149	84	2	53,953	58,412	2,621	1,787	101	190	40	67
Ark.	147	56	24	-	6,359	6,955	232	102	3	6	7	26
La.	570	117	16	-	12,302	10,821	108	245	6	8	7	3
Okla.	161	4	3	1	5,557	5,086	228	169	43	16	16	29
Tex.	2,481	972	41	1	29,735	35,550	2,053	1,271	49	160	10	9
MOUNTAIN	974	219	17	2	9,479	11,274	2,895	805	149	121	67	17
Mont.	24	18	1	-	77	162	72	62	4	5	5	-
Idaho	20	-	-	-	124	111	74	61	2	1	3	2
Wyo.	15	-	-	-	83	141	102	11	3	-	-	8
Colo.	339	85	7	1	2,655	3,272	488	117	76	23	14	-
N. Mex.	89	18	-	-	809	998	713	192	11	29	3	-
Ariz.	192	53	9	1	3,551	4,289	925	145	16	52	27	-
Utah	84	16	-	-	255	321	245	62	13	11	4	1
Nev.	211	29	-	-	1,925	1,980	276	155	24	-	11	6
PACIFIC	7,336	1,025	95	5	42,656	51,978	4,947	2,754	545	338	72	265
Wash.	416	-	8	1	3,634	4,549	441	353	117	19	8	3
Oreg.	219	-	-	-	1,621	1,987	321	243	101	8	2	-
Calif.	6,551	942	85	4	36,083	43,997	4,059	2,095	310	310	60	262
Alaska	16	40	2	-	708	942	86	27	13	1	-	-
Hawaii	134	43	-	-	610	503	40	36	4	-	2	-
Guam	2	-	-	-	-	246	-	-	-	-	-	-
P.R.	1,336	205	2	3	437	584	80	393	152	42	-	-
V.I.	13	-	-	-	309	349	1	9	-	-	-	-
Amer. Samoa	-	-	-	-	-	73	-	-	-	-	-	-
C.N.M.I.	-	-	-	-	-	162	-	-	-	-	-	-

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

TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending October 12, 1991, and October 13, 1990 (41st Week)

Reporting Area	Malaria	Measles (Rubeola)					Meningococcal Infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported*		Total									
	Cum. 1991	1991	Cum. 1991	1991	Cum. 1991	Cum. 1990	Cum. 1991	1991	Cum. 1991	1991	Cum. 1991	Cum. 1990	1991	Cum. 1991	Cum. 1990
UNITED STATES	957	17	8,435	7	188	23,347	1,642	36	3,229	57	2,057	3,234	1	1,273	992
NEW ENGLAND	62	1	59	1	16	290	130	-	24	2	242	344	-	4	8
Maine	1	-	5	-	-	30	11	-	-	-	51	16	-	-	1
N.H.	2	-	-	-	-	8	12	-	4	-	18	47	-	1	1
Vt.	4	-	5	-	-	1	13	-	4	-	4	7	-	-	-
Mass.	29	-	25	-	10	29	74	-	1	2	146	246	-	2	2
R.I.	7	1	3	1§	1	30	1	-	3	-	-	4	-	-	1
Conn.	19	-	21	-	5	192	19	-	12	-	23	24	-	1	3
MID. ATLANTIC	167	1	4,373	-	6	1,464	179	6	245	5	163	465	-	561	11
Upstate N.Y.	42	-	334	-	4	317	92	1	90	5	112	299	-	539	10
N.Y. City	66	-	1,710	-	-	408	12	-	-	-	-	-	-	-	-
N.J.	48	-	791	-	1	355	37	-	55	-	1	34	-	-	-
Pa.	11	1	1,538	-	1	384	38	5	100	-	50	132	-	22	1
E.N. CENTRAL	73	-	71	-	15	3,533	267	1	305	3	336	825	-	317	162
Ohio	17	-	1	-	2	537	83	-	69	-	87	139	-	283	131
Ind.	3	-	1	-	5	418	27	-	8	-	64	117	-	2	-
Ill.	28	-	25	-	1	1,353	75	-	116	-	55	335	-	6	19
Mich.	22	-	42	-	-	473	59	1	92	3	37	73	-	25	9
Wis.	3	-	2	-	7	752	23	-	20	-	93	161	-	1	3
W.N. CENTRAL	34	-	39	-	16	859	92	2	102	4	172	165	-	17	14
Minn.	11	-	12	-	15	374	20	1	20	4	69	21	-	6	9
Iowa	6	-	17	-	-	26	11	-	20	-	20	18	-	6	4
Mo.	7	-	-	-	1	100	31	1	29	-	56	95	-	5	-
N. Dak.	1	-	-	-	-	-	1	-	2	-	3	2	-	-	1
S. Dak.	2	-	-	-	-	23	2	-	1	-	4	1	-	-	-
Nebr.	1	-	1	-	-	106	6	-	6	-	9	7	-	-	-
Kans.	6	-	9	-	-	230	21	-	24	-	11	21	-	-	-
S. ATLANTIC	197	8	476	-	22	1,291	292	10	1,153	3	213	274	-	10	20
Del.	2	-	21	-	-	11	2	-	6	-	-	8	-	-	-
Md.	52	-	173	-	3	212	29	-	217	1	54	60	-	3	2
D.C.	13	-	-	-	-	22	13	-	23	-	1	14	-	1	1
Va.	44	-	25	-	5	86	31	-	53	-	18	18	-	-	1
W. Va.	3	-	-	-	-	6	12	-	18	-	9	24	-	-	-
N.C.	13	-	41	-	3	30	50	6	238	2	34	72	-	2	-
S.C.	9	-	13	-	-	4	28	-	375	-	11	5	-	-	-
Ga.	18	-	10	-	5	358	58	-	40	-	42	32	-	-	1
Fla.	43	8	193	-	6	562	69	4	183	-	44	41	-	4	15
E.S. CENTRAL	20	1	8	-	3	199	104	3	161	3	87	141	-	100	4
Ky.	2	-	1	-	1	43	37	-	-	-	-	-	-	-	1
Tenn.	11	-	6	-	1	104	33	3	131	2	36	70	-	100	3
Ala.	7	1	1	-	1	25	32	-	10	1	49	63	-	-	-
Miss.	-	-	-	-	-	27	2	-	20	-	2	8	-	-	-
W.S. CENTRAL	69	-	184	-	14	4,268	125	7	325	8	116	152	-	7	66
Ark.	8	-	-	-	5	42	18	-	43	2	9	17	-	1	3
La.	17	-	-	-	-	10	30	2	28	3	16	30	-	-	-
Okla.	7	-	-	-	-	174	13	1	15	3	37	46	-	-	1
Tex.	37	-	184	-	9	4,042	64	4	239	-	54	59	-	6	62
MOUNTAIN	38	-	1,191	-	19	929	63	2	269	11	277	272	-	22	109
Mont.	1	-	-	-	-	1	10	-	-	-	4	32	-	-	14
Idaho	2	-	432	-	2	26	7	-	8	-	26	48	-	-	49
Wyo.	-	-	1	-	2	15	1	-	4	-	3	-	-	-	-
Colo.	10	-	1	-	5	138	12	2	126	-	113	93	-	2	4
N. Mex.	6	-	117	-	5	93	8	N	N	2	39	17	-	2	-
Ariz.	15	-	402	-	-	303	19	-	105	-	57	49	-	2	32
Utah	3	-	220	-	4	128	-	-	13	9	33	29	-	11	2
Nev.	1	-	18	-	1	225	6	-	13	-	2	4	-	5	8
PACIFIC	297	6	2,034	6	77	10,514	390	5	645	18	451	596	1	235	598
Wash.	21	-	46	-	15	254	53	-	166	5	123	161	-	8	-
Oreg.	11	3	52	5§	38	212	48	N	N	-	60	76	-	3	73
Calif.	261	3	1,929	1	14	9,940	278	4	444	12	212	299	1	218	512
Alaska	-	-	2	-	3	80	9	1	11	-	13	5	-	1	-
Hawaii	4	-	5	-	7	28	2	-	24	1	43	55	-	5	13
Guam	-	U	-	U	-	1	-	U	-	U	-	1	U	-	-
P.R.	1	-	93	-	1	1,656	16	-	10	2	50	10	-	1	-
V.I.	2	U	-	U	2	24	-	U	9	U	-	-	U	-	-
Amer. Samoa	-	U	-	U	-	566	-	U	-	U	-	-	U	-	-
C.N.M.I.	-	U	-	U	-	4	-	U	-	U	-	4	U	-	-

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

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

TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending October 12, 1991, and October 13, 1990 (41st Week)

Reporting Area	Syphilis (Primary & Secondary)		Toxic-shock Syndrome	Tuberculosis		Tula-remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1991	Cum. 1990	Cum. 1991	Cum. 1991	Cum. 1990	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1991
UNITED STATES	32,078	38,608	230	17,725	18,323	154	349	543	5,088
NEW ENGLAND	823	1,344	12	505	440	4	32	9	98
Maine	1	7	4	30	12	-	1	-	-
N.H.	12	46	1	5	3	-	1	-	2
Vt.	2	1	-	9	8	-	-	-	-
Mass.	387	535	7	261	225	4	27	8	14
R.I.	44	18	-	69	58	-	-	-	-
Conn.	377	737	-	131	134	-	3	1	82
MID. ATLANTIC	4,989	7,510	37	4,030	4,366	1	83	23	1,736
Upstate N.Y.	103	707	17	259	314	1	15	12	668
N.Y. City	2,535	3,525	2	2,513	2,742	-	46	1	-
N.J.	1,034	1,207	-	702	734	-	16	6	798
Pa.	1,317	2,071	18	556	576	-	6	4	270
E.N. CENTRAL	3,945	2,794	43	1,737	1,771	7	27	41	141
Ohio	525	413	20	270	315	1	3	24	16
Ind.	138	77	-	175	163	-	-	10	14
Ill.	1,850	1,167	15	884	891	4	10	4	32
Mich.	1,008	821	8	322	336	2	10	3	32
Wis.	424	316	-	86	66	-	4	-	47
W.N. CENTRAL	585	419	35	406	476	44	5	35	699
Minn.	56	74	7	80	89	1	2	-	248
Iowa	60	61	7	54	44	-	-	1	139
Mo.	420	222	12	181	248	35	1	23	17
N. Dak.	-	1	-	6	17	-	-	-	79
S. Dak.	1	2	1	28	11	5	-	1	154
Nebr.	12	9	1	15	16	1	2	5	14
Kans.	36	50	7	42	51	2	-	5	48
S. ATLANTIC	9,599	12,357	22	3,360	3,375	4	61	240	1,191
Del.	140	146	1	25	33	-	-	-	135
Md.	777	942	1	296	254	-	10	25	447
D.C.	595	887	1	148	124	-	2	-	12
Va.	710	713	5	277	282	-	8	16	208
W. Va.	24	18	-	56	54	-	1	4	45
N.C.	1,560	1,393	9	443	451	1	4	132	18
S.C.	1,212	840	2	333	386	1	4	31	86
Ga.	2,334	3,143	-	661	567	1	5	29	212
Fla.	2,247	4,275	3	1,121	1,224	1	27	3	28
E.S. CENTRAL	3,565	3,567	9	1,224	1,319	18	2	90	137
Ky.	82	80	4	282	302	4	2	25	40
Tenn.	1,204	1,476	5	388	372	13	-	49	29
Ala.	1,278	1,082	-	298	393	1	-	16	68
Miss.	1,001	929	-	256	252	-	-	-	-
W.S. CENTRAL	5,860	6,553	14	2,193	2,201	46	23	94	497
Ark.	478	447	3	185	277	34	-	22	37
La.	2,111	2,069	-	197	251	-	5	-	5
Okla.	159	200	4	137	160	11	3	71	143
Tex.	3,112	3,837	7	1,674	1,513	1	15	1	312
MOUNTAIN	490	715	28	456	442	25	11	8	211
Mont.	6	-	1	6	22	9	-	6	38
Idaho	4	6	-	6	10	-	-	-	5
Wyo.	9	3	-	4	5	1	-	-	77
Colo.	66	42	5	33	42	7	2	2	24
N. Mex.	26	35	6	58	86	2	2	-	4
Ariz.	293	512	5	251	194	2	6	-	38
Utah	6	16	11	40	32	4	-	-	17
Nev.	80	101	-	58	51	-	1	-	8
PACIFIC	2,222	3,349	30	3,814	3,933	5	105	3	378
Wash.	139	316	4	232	219	2	6	2	1
Oreg.	66	108	-	99	101	2	4	1	5
Calif.	2,006	2,893	26	3,281	3,427	1	91	-	368
Alaska	4	16	-	47	46	-	-	-	3
Hawaii	7	16	-	155	140	-	4	-	1
Guam	-	2	-	-	36	-	-	-	-
P.R.	340	260	-	203	88	-	9	-	54
V.I.	85	12	-	2	4	-	-	-	-
Amer. Samoa	-	-	-	-	15	-	-	-	-
C.N.M.I.	-	3	-	-	48	-	-	-	-

U: Unavailable

TABLE III. Deaths in 121 U.S. cities,* week ending October 12, 1991 (41st Week)

Reporting Area	All Causes, By Age (Years): All Ages	≥65	45-64	25-44	1-24	<1	P&I† Total
NEW ENGLAND	583	425	91	42	12	13	43
Boston, Mass.	161	107	25	16	6	7	17
Bridgeport, Conn.	37	24	8	4	1	-	2
Cambridge, Mass.	17	16	1	-	-	-	-
Fall River, Mass.	19	16	3	-	-	-	-
Hartford, Conn.	66	46	12	1	3	4	1
Lowell, Mass.	27	21	4	2	-	-	1
Lynn, Mass.	17	12	4	1	-	-	1
New Bedford, Mass.	18	14	3	1	-	-	-
New Haven, Conn.	31	26	4	1	-	-	3
Providence, R.I.	47	36	4	6	1	-	2
Somerville, Mass.	9	6	2	1	-	-	-
Springfield, Mass.	45	33	7	4	-	1	8
Waterbury, Conn.	36	27	5	3	1	-	-
Worcester, Mass.	53	41	9	2	-	1	8
MID. ATLANTIC	1,277	889	226	88	34	39	74
Albany, N.Y.	55	45	5	4	1	-	2
Allentown, Pa.	29	26	2	-	1	-	1
Buffalo, N.Y.	112	83	19	5	3	2	3
Camden, N.J.	44	31	6	4	-	3	2
Elizabeth, N.J.	19	11	7	-	-	1	-
Erie, Pa.§	40	27	8	5	-	-	2
Jersey City, N.J.	36	14	9	7	4	2	-
New York City, N.Y.	U	U	U	U	U	U	U
Newark, N.J.	85	51	13	11	4	5	2
Paterson, N.J.	22	11	6	3	1	1	1
Philadelphia, Pa.	393	259	80	28	11	15	21
Pittsburgh, Pa.§	89	61	19	4	1	4	9
Reading, Pa.	39	34	4	-	1	-	10
Rochester, N.Y.	116	85	18	8	4	1	12
Schenectady, N.Y.	27	24	1	2	-	-	-
Scranton, Pa.§	26	21	3	1	1	-	2
Syracuse, N.Y.	61	41	16	1	1	2	4
Trenton, N.J.	28	18	4	3	-	3	1
Utica, N.Y.	24	21	1	1	1	-	2
Yonkers, N.Y.	32	26	5	1	-	-	-
E.N. CENTRAL	2,153	1,372	371	217	110	81	89
Akron, Ohio	71	51	15	2	1	2	3
Canton, Ohio	29	22	5	2	-	-	3
Chicago, Ill.	464	204	88	91	66	15	7
Cincinnati, Ohio	133	86	25	9	4	9	11
Cleveland, Ohio	124	87	15	13	2	7	3
Columbus, Ohio	161	118	28	11	2	2	3
Dayton, Ohio	106	72	22	8	3	1	3
Detroit, Mich.	245	139	50	26	13	17	8
Evansville, Ind.	43	36	6	-	1	-	-
Fort Wayne, Ind.	53	32	11	5	1	4	3
Gary, Ind.	22	13	6	1	-	1	1
Grand Rapids, Mich.	65	51	8	-	2	4	8
Indianapolis, Ind.	185	133	30	13	2	7	9
Madison, Wis.	46	29	7	5	5	-	2
Milwaukee, Wis.	98	73	17	5	-	3	3
Peoria, Ill.	54	42	5	6	-	1	4
Rockford, Ill.	46	30	7	6	2	1	6
South Bend, Ind.	48	38	2	4	3	-	2
Toledo, Ohio	99	70	17	4	2	6	7
Youngstown, Ohio	61	46	7	6	1	1	3
W.N. CENTRAL	800	562	139	54	22	23	26
Des Moines, Iowa	83	61	15	1	3	3	4
Duluth, Minn.	36	28	3	5	-	-	1
Kansas City, Kans.	22	13	7	1	1	-	-
Kansas City, Mo.	118	76	32	6	2	2	3
Lincoln, Nebr.	36	29	3	2	1	1	2
Minneapolis, Minn.	154	108	26	11	4	5	7
Omaha, Nebr.	97	71	15	6	3	2	4
St. Louis, Mo.	139	88	21	17	7	6	2
St. Paul, Minn.	50	41	3	1	1	4	2
Wichita, Kans.	65	47	14	4	-	-	1

Reporting Area	All Causes, By Age (Years): All Ages	≥65	45-64	25-44	1-24	<1	P&I† Total
S. ATLANTIC	1,051	665	196	116	34	40	55
Atlanta, Ga.	157	88	34	23	5	7	2
Baltimore, Md.	133	71	26	23	2	11	12
Charlotte, N.C.	87	58	14	11	1	3	8
Jacksonville, Fla.	122	76	22	13	6	5	12
Miami, Fla.	112	70	25	13	3	1	1
Norfolk, Va.	57	39	8	5	3	2	4
Richmond, Va.	74	41	14	10	7	2	3
Savannah, Ga.	67	42	17	5	1	2	4
St. Petersburg, Fla.	58	46	10	1	1	-	1
Tampa, Fla.	151	108	22	11	5	5	8
Washington, D.C.	U	U	U	U	U	U	U
Wilmington, Del.	33	26	4	1	-	2	-
E.S. CENTRAL	673	432	127	63	30	21	42
Birmingham, Ala.	93	58	17	7	2	9	2
Chattanooga, Tenn.	72	51	8	7	5	1	9
Knoxville, Tenn.	93	62	22	6	3	-	10
Louisville, Ky.	59	36	10	7	4	2	3
Memphis, Tenn.	150	91	31	12	10	6	10
Mobile, Ala.	40	24	10	5	1	-	2
Montgomery, Ala.	48	32	9	4	2	1	-
Nashville, Tenn.	118	78	20	15	3	2	6
W.S. CENTRAL	1,276	779	276	138	48	35	77
Austin, Tex.	62	35	11	11	4	1	3
Baton Rouge, La.	38	24	8	4	1	1	-
Corpus Christi, Tex.	50	34	11	3	1	1	4
Dallas, Tex.	179	117	37	16	6	3	6
El Paso, Tex.	68	37	16	8	6	1	2
Ft. Worth, Tex.	97	65	17	13	2	-	3
Houston, Tex.	329	181	71	46	17	14	38
Little Rock, Ark.	79	48	12	11	1	7	1
New Orleans, La.	56	33	15	7	-	1	-
San Antonio, Tex.	175	98	49	13	9	6	10
Shreveport, La.	45	29	12	4	-	-	3
Tulsa, Okla.	98	78	17	2	1	-	7
MOUNTAIN	700	450	138	68	26	18	35
Albuquerque, N.M.	83	52	22	3	4	2	5
Colo. Springs, Colo.	45	33	7	3	1	1	5
Denver, Colo.	132	90	13	20	3	6	10
Las Vegas, Nev.	117	67	34	11	3	2	2
Ogden, Utah	22	18	1	1	1	1	2
Phoenix, Ariz.	143	79	38	17	5	4	3
Pueblo, Colo.	19	15	4	-	-	-	3
Salt Lake City, Utah	45	31	5	6	2	1	2
Tucson, Ariz.	94	65	14	7	7	1	3
PACIFIC	1,776	1,115	336	198	68	52	89
Berkeley, Calif.	19	12	5	2	-	-	1
Fresno, Calif.	90	56	19	7	4	2	5
Glendale, Calif.	25	19	2	4	-	-	1
Honolulu, Hawaii	94	61	18	10	3	2	6
Long Beach, Calif.	85	50	20	9	3	3	10
Los Angeles, Calif.	504	306	98	58	28	9	15
Oakland, Calif.	U	U	U	U	U	U	U
Pasadena, Calif.	27	17	5	1	1	3	5
Portland, Oreg.	94	66	15	10	1	2	2
Sacramento, Calif.	157	101	32	15	5	4	14
San Diego, Calif.	75	44	10	8	5	8	6
San Francisco, Calif.	180	86	37	45	6	6	4
San Jose, Calif.	171	112	33	11	6	9	12
Seattle, Wash.	127	91	21	11	2	2	1
Spokane, Wash.	44	32	7	3	2	-	4
Tacoma, Wash.	84	62	14	4	2	2	3
TOTAL	10,289¶	6,689	1,900	984	384	322	530

*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

Adult Immunization — Continued

programs. The goal of National Adult Immunization Awareness Week is to emphasize the importance of appropriately vaccinating all adults by focusing attention on efforts that promote prevention and control of vaccine-preventable diseases. The National Coalition for Adult Immunization (telephone [301] 656-0003) and CDC offer more information on the week's activities.

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Current Trends

Update: Influenza Activity — Worldwide, 1990–91, and Influenza Vaccination — United States

During the 1990–91 influenza season, influenza occurred at relatively low levels throughout much of the world. All reporting countries (except Brazil and Papua New Guinea, which reported epidemic levels) indicated either sporadic cases, small local outbreaks, or regional outbreaks. This report summarizes worldwide influenza activity reported from April through September 1991.

Asia. From April through August, sporadic isolations of influenza B were reported from Hong Kong, Japan, Singapore, and Thailand; influenza A(H3N2), from southern China, India, and Singapore; and influenza A(H1N1), from China, Hong Kong, Japan, Singapore, and Taiwan.

Europe. Influenza activity decreased in Europe during April and May, with only sporadic isolations of influenza B, A(H3N2), and A(H1N1) reported in 10 countries.

Canada and the United States. Canada reported continued sporadic isolation of influenza A and influenza B from April through July; most influenza A isolates were subtype A(H3N2). In the United States, influenza A(H3N2) activity increased during late February, was associated with culture-confirmed outbreaks in a military facility and nursing homes from March through May, and continued to be reported sporadically through June.

Influenza – Continued

Central and South America. From June through August, sporadic isolations of influenza B were reported in Argentina, Brazil, Chile, and Uruguay. During May, an outbreak of influenza A(H3N2) was reported in Guayaquil, Ecuador; during July, epidemic levels of influenza A(H3N2) were reported in Brazil. During June, influenza A(H1N1) virus was reported from Brazil.

Oceania. Influenza B outbreaks occurred in Papua New Guinea from May through August and throughout the South Island of New Zealand in May and June. Australia reported sporadic influenza B activity from April through July. From May through June, Papua New Guinea reported epidemic levels of influenza A(H3N2) in one highland region community (estimated attack rate: 45%). During July, influenza A(H3N2) was isolated sporadically in Australia, and influenza A(H1N1) was isolated sporadically in New Zealand.

South Africa. Influenza B (32 isolates) and influenza A(H3N2) (42 isolates) were identified from May through August.

Characterization of influenza virus isolates. During the 1990–91 worldwide influenza season, 812 isolates were antigenically characterized by the World Health Organization (WHO) Collaborating Center for Surveillance, Epidemiology, and Control of Influenza at CDC; of these, 584 (72%) were from the United States. Of 450 influenza B viruses characterized, 4% were B/Victoria/02/87-like and 96%, B/Yamagata/16/88-like. Most (66%) of the B/Yamagata-like viruses were most closely related to B/Panama/45/90, a minor variant of B/Yamagata/16/88. A total of 188 influenza A(H3N2) viruses were characterized antigenically, and 168 (89%) of these were A/Beijing/353/89-like; all 145 influenza A(H1N1) viruses analyzed were A/Taiwan/1/86-like.

Reported by: National Influenza Centers. Communicable Diseases Div, World Health Organization, Geneva, Switzerland. Epidemiology Activity, and WHO Collaborating Center for Surveillance, Epidemiology, and Control of Influenza, Influenza Br, Div of Viral and Rickettsial Diseases, National Center for Infectious Diseases, CDC.

Editorial Note: Both influenza A and influenza B circulated at low levels worldwide from October 1990 through September 1991. An increase in the proportion of U.S. isolates subtyped as influenza A(H3N2) after March 1991 and the identification of sporadic isolates of influenza A(H1N1) and influenza A (not subtyped) in mid-September 1991 suggest that influenza A may predominate in the United States during the 1991–92 influenza season.

Morbidity and mortality associated with influenza can be reduced by annual vaccination of persons at increased risk for influenza-related complications and their contacts (*1*). However, in the United States, only 30% of persons belonging to groups at high risk for influenza-related complications are vaccinated each year (*2*). One of the year 2000 national health objectives is to achieve influenza vaccination levels of at least 80% in institutionalized older or chronically ill persons, and at least 60% in noninstitutionalized high-risk persons (*3*). Persons at increased risk for complications from influenza include those ≥65 years of age; all residents of nursing homes or chronic-care facilities; persons with chronic pulmonary or cardiovascular disorders (including children with asthma); persons requiring medical follow-up during the past year for chronic metabolic diseases, renal dysfunction, hemoglobinopathies, or immunosuppression; and children and teenagers on long-term aspirin therapy, who are at increased risk for Reye syndrome if infected with influenza. In addition, *Influenza — Continued*

vaccination is recommended for all persons who provide care for or live with high-risk persons, including health-care providers and household members.

Antibody titers that are protective against influenza infection are achieved approximately 2 weeks following vaccination and begin to decline after approximately 4–6 months. The 1991–92 trivalent influenza vaccine contains hemagglutinin antigens from A/Beijing/353/89-like(H3N2), A/Taiwan/1/86-like(H1N1), and B/Panama/45/90-like viruses, which closely resemble recently identified strains. Because substantial influenza activity in the United States rarely occurs before December, November is the optimal time for vaccination campaigns. When influenza surveillance indicates the occurrence of regional influenza activity before December, vaccination programs should be initiated as soon as the currently recommended vaccine is available. Age-specific vaccination recommendations for the 1991–92 U.S. influenza season have been published (Table 1) (*1*).

Amantadine is an adjunct to vaccination for prevention and control of influenza A, particularly in institutional settings. Advanced contingency planning (e.g., individualized standing orders for amantadine that can be implemented at the start of an influenza A outbreak) can facilitate rapid implementation of chemoprophylaxis. Amantadine can provide effective prophylaxis for persons who are unvaccinated and, because a full protective response from vaccination requires 2 weeks to develop, for those vaccinated after influenza A is already circulating in the community. Because amantadine is ineffective against influenza B, culturing pharyngeal or nasal secretions of persons with an influenza-like illness can be helpful in guiding influenza control measures (i.e., by detecting and identifying specific influenza types/subtypes in the community).

From October through May, surveillance information is updated weekly at CDC and is available by telephone (CDC Voice Information System [influenza update]

TABLE 1. Influenza vaccine* dosage, by patient age — United States, 1991–92 season

Age group	Product†	Dosage	No. doses	Route§
6–35 mos	Split virus only	0.25 mL	1 or 2¶	IM
3–8 yrs	Split virus only	0.50 mL	1 or 2¶	IM
9–12 yrs	Split virus only	0.50 mL	1	IM
>12 yrs**	Whole or split virus	0.50 mL	1	IM

*Contains 15 µg each of A/Beijing/353/89-like(H3N2), A/Taiwan/1/86-like(H1N1), and B/Panama/45/90-like hemagglutinin antigens in each 0.5 mL. Manufacturers include: Connaught Laboratories, Inc. (distributed by E.R. Squibb & Sons, Inc.) (Fluzone® whole or split); Evans Medical Ltd.-Lederle Laboratories (distributed by Lederle Laboratories) (Flu-Imune® purified surface antigen vaccine); Parke-Davis (Fluogen® split); and Wyeth-Ayerst Laboratories (Influenza Virus Vaccine, Trivalent® split). Further product information is available from Connaught, (800) 822-2463; Lederle, (800) 533-3753; Parke-Davis, (800) 223-0432; and Wyeth-Ayerst, (800) 950-5099.

†Because of the lower potential for causing febrile reactions, only split-virus vaccines should be used for children. They may be labeled as "split," "subvirion," or "purified-surface-antigen" vaccine. Immunogenicity and side effects of split- and whole-virus vaccines are similar for adults when vaccines are used at the recommended dosage.

§The recommended site of vaccination is the deltoid muscle for adults and older children. The preferred site for infants and young children is the anterolateral aspect of the thigh.

¶Two doses are recommended for children <9 years of age who are receiving influenza vaccine for the first time.

**Corrected from *MMWR Recommendations and Reports* published May 24, 1991 (*1*).

Influenza — Continued

[404] 332-4555) or through the CDC Information Service on the Public Health Network electronic bulletin board. In addition, periodic updates about influenza are published in *MMWR*. Additional information on local influenza activity is available from state and local health departments.

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Cigarette Smoking Among Youth — United States, 1989

In 1988, an estimated 434,000 persons in the United States died as a result of cigarette smoking (*1*). About three fourths of adults who have ever been regular cigarette smokers reported trying their first cigarette before their 18th birthday (National Institute on Drug Abuse [NIDA], unpublished data), and about half of them had become regular smokers by that time (*2*; NIDA, unpublished data). This report, based on the Teenage Attitudes and Practices Survey (TAPS), presents the prevalence of self-reported smoking among U.S. adolescents aged 12–18 years during 1989.

In 1989, the TAPS focused on adolescents' knowledge, attitudes, and practices regarding tobacco use. The sample described in this report includes all youth aged 12–18 years who were living in households. Questionnaires were administered by computer-assisted telephone interviewing and mail (for homes without telephones and for initial nonrespondents). Adolescents were sampled from households that had participated in the second half of the 1988 National Health Interview Survey (NHIS) and the first half of the 1989 NHIS. During this period, the household participation rate was 95%. Data were obtained from 9965 (82.4%) of 12,097 adolescents in the NHIS households and were adjusted to provide national estimates. Confidence intervals (CIs) were calculated by using the Software for Survey Data Analysis (*3*). Participants were asked the following questions about cigarette smoking behavior: "Think about the last 30 days. On how many of these days did you smoke?" and "Now, think carefully about the last SEVEN days. Did you smoke cigarettes on any of THOSE days?"

Respondents who were still in school or who had already graduated from high school were classified as "school attenders/high school (HS) graduates." Respondents who were not attending school at the time of the survey and who had not completed the 12th grade were classified as "dropouts." Among youth 17–18 years of age, 2355 (80.8%) were enrolled in school, 489 (16.8%) were dropouts, and 69 (2.4%) had completed high school and were not currently in school.

Overall, 15.7% of respondents reported smoking on 1 or more days during the month, and 11.5% reported smoking on 1 or more days during the week before the survey (Table 1). Patterns were similar by gender in all categories, except among persons 18 years of age. The prevalence of smoking was higher among white youth than among black youth. Although the prevalence of smoking in the past month was lower among Hispanic (11.7%) than among non-Hispanic (16.1%) youth, the preva-

Cigarette Smoking – Continued

TABLE 1. Percentage of youth aged 12–18 years* who reported cigarette use during the 30 days and the week preceding the survey, by gender, race, Hispanic ethnicity, and age – United States, Teenage Attitudes and Practices Survey,† 1989

Characteristic	Smoked during preceding 30 days		Smoked during preceding week	
	%	(95% CI§)	%	(95% CI)
Gender				
Male	16.0	(±1.1)	11.8	(±1.0)
Female	15.3	(±1.2)	11.2	(±1.1)
Race				
White	17.6	(±0.9)	13.1	(±0.9)
Male	17.9	(±1.3)	13.4	(±1.1)
Female	17.4	(±1.3)	12.8	(±1.2)
Black	6.1	(±1.2)	3.5	(±0.8)
Male	7.2	(±1.8)	4.2	(±1.3)
Female	5.0	(±1.5)	2.7	(±1.1)
Other	12.1	(±4.7)	10.0	(±4.3)
Male	11.1	(±6.7)	8.9	(±6.7)
Female	13.4	(±5.5)	11.3	(±5.0)
Hispanic origin				
Hispanic	11.7	(±2.1)	9.3	(±2.0)
Male	11.8	(±3.0)	9.3	(±2.7)
Female	11.7	(±3.2)	9.3	(±2.9)
Non-Hispanic	16.1	(±0.9)	11.8	(±0.8)
Male	16.5	(±1.2)	12.1	(±1.0)
Female	15.8	(±1.2)	11.4	(±1.1)
Age (yrs)				
12	2.4	(±0.8)	0.7	(±0.4)
Male	2.2	(±1.0)	0.8	(±0.6)
Female	2.6	(±1.3)	0.6	(±0.5)
13	5.2	(±1.2)	2.5	(±0.9)
Male	4.6	(±1.5)	1.6	(±0.9)
Female	5.7	(±1.9)	3.5	(±1.5)
14	10.4	(±1.8)	7.1	(±1.5)
Male	9.7	(±2.3)	5.9	(±1.8)
Female	11.1	(±2.6)	8.5	(±2.4)
15	16.0	(±2.0)	11.6	(±1.8)
Male	16.4	(±2.7)	11.9	(±2.4)
Female	15.7	(±2.9)	11.3	(±2.5)
16	19.0	(±2.1)	13.7	(±1.9)
Male	18.9	(±2.8)	13.2	(±2.5)
Female	19.0	(±3.0)	14.1	(±2.7)
17	24.3	(±2.5)	17.9	(±2.1)
Male	23.6	(±3.1)	18.2	(±2.8)
Female	25.1	(±3.7)	17.5	(±3.2)
18	30.6	(±2.7)	25.4	(±2.6)
Male	34.6	(±3.8)	29.1	(±3.7)
Female	26.2	(±3.4)	21.3	(±3.2)
Total	**15.7**	**(±0.8)**	**11.5**	**(±0.7)**

*As of November 1, 1989.
†Estimates based on weighted data; sample size = 9965 respondents.
§Confidence interval.

Cigarette Smoking — Continued

lence of smoking in the past week was similar in each group (9.3% and 11.8%, respectively). Prevalence of smoking in the past month and in the past week increased directly by age.

Among youth 17–18 years of age, the prevalence of smoking during the previous week was substantially higher among dropouts (43.3% [95% CI= ±4.9%]) than among school attenders/HS graduates (17.1% [95% CI= ±1.7%]). Among school attenders/HS graduates, the prevalence of smoking during the previous week was similar by gender (males: 17.5% [95% CI= ±2.3%]; females: 16.7% [95% CI= ±2.3%]). However, dropouts who were male (51.7% [95% CI= ±6.6%]) were more likely to report having smoked during the previous week than were dropouts who were female (33.3% [95% CI= ±6.5%]). Among school attenders/HS graduates, 19.3% (95% CI= ±1.9%) of whites and 5.7% (95% CI= ±2.8%) of blacks reported smoking during the previous week. Similarly, dropouts who were white (46.1% [95% CI= ±5.2%]) were more likely to report having smoked during the previous week than were dropouts who were black (17.1% [95% CI= ±9.3%]).

Reported by: CW Heath, MD, RD Corcoran, EdD, American Cancer Society. SL Mills, MD, DR Shopland, National Cancer Institute; SE Marcus, PhD, National Institute of Dental Research, National Institutes of Health. JP Pierce, PhD, Univ of California at San Diego. Office on Smoking and Health and Div of Adolescent and School Health, National Center for Chronic Disease Prevention and Health Promotion; Div of Health Interview Statistics, National Center for Health Statistics, CDC.

Editorial Note: The findings in this report are consistent with findings from three other recent national surveys that measure smoking by youth: rates of smoking are similar for males and females and higher for whites than blacks (*4,5*; J.G. Bachman, L.D. Johnston, P.M. O'Malley, University of Michigan, unpublished data, 1990). In addition, the findings from TAPS confirm previous reports of higher smoking rates among dropouts (*6*) and suggest gender and racial differences in smoking prevalence among dropouts. Differences in overall prevalence estimates between surveys may be explained by the mode of data collection (i.e., household interview vs. school-based, self-administered questionnaire) (*7*), composition of the samples, varying response rates, and the wording of questions (*8*).

Cigarette use among U.S. youth appears to have declined sharply in the late 1970s and stabilized in the 1980s (*9,10*), especially among white youth (*2*). The findings from TAPS underscore the need for interventions that focus on both in-school and out-of-school youth. The national health objectives for the year 2000 have established four relevant targets for this problem:

- establish tobacco-free environments in all elementary, middle, and secondary schools and include tobacco use prevention programs in school curricula (objective 3.10);
- enact and enforce state laws nationwide prohibiting the sale and distribution of tobacco products to youth aged <19 years (objective 3.13);
- implement state plans nationwide to reduce tobacco use, especially among youth (objective 3.14); and
- eliminate or severely restrict all forms of tobacco product advertising and promotion to which youth ≤18 years of age are likely to be exposed (objective 3.15) (*11*).

To help achieve these and other smoking-related objectives, the Public Health Service has developed and implemented several programs. For example, the National Cancer Institute and the American Cancer Society have recently initiated the American Stop

Cigarette Smoking — Continued

Smoking Intervention Study for Cancer Prevention (Project ASSIST) in 17 states. This demonstration project is designed to disseminate various interventions to prevent and stop tobacco use among adults and youth throughout the nation. CDC provides states with technical assistance to develop and conduct targeted interventions to reduce tobacco consumption among youth. During the 1990s, intensive collaborative efforts will be necessary to reduce tobacco use among U.S. youth.

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Notice to Readers

Unavailability of Streptomycin and Para-Aminosalicylic Acid in the United States

Streptomycin (SM) and para-aminosalicylic acid (PAS), antimicrobial agents used to treat tuberculosis (TB), are currently unavailable in the United States. Because of problems in the supply of bulk SM, which is produced outside the United States, the U.S. manufacturer has ceased production of the finished product. The U.S. manufacturer of PAS has voluntarily discontinued production on a temporary basis. Although CDC and the Food and Drug Administration are attempting to reestablish production of these drugs, health-care providers should be prepared for an interruption in their supply. For guidance in selecting appropriate alternatives to SM and PAS for the treatment of TB, health-care providers should contact their state or local TB control program.

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