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Epidemiologic Notes and Reports

Jin Bu Huan Toxicity in Children — Colorado, 1993

The consumption of traditional ethnic remedies can have adverse health effects, especially among children (*1,2*). Life-threatening bradycardia with rapid onset and central nervous system (CNS) and respiratory depression developed in three unrelated children in Colorado during 1993 following ingestion of Jin Bu Huan tablets, a Chinese herbal medicine used for relieving pain. This report summarizes the investigations of these cases.

Patient 1. A 13-month-old boy was lethargic and breathing abnormally when found by his mother approximately 20 minutes after he ingested approximately 60 Jin Bu Huan tablets. His initial vital signs measured by an emergency medical team included a blood pressure of 75/50 mm Hg, pulse of 100, and a respiratory rate of 28. The child exhibited CNS depression and was responsive only to painful stimuli. In the emergency department, he was lethargic, with hypotonia, and had a respiratory rate of 44 and transient bradycardia (pulse mid 40s). He was unresponsive to naloxone (3.8 mg), a fingerstick glucose test measured 110 mg/dL, and an extensive toxicologic screen was negative. He was treated with activated charcoal through an orogastric tube. He became more alert during the next 10 hours until his physical examination and mental status were completely normal. Follow-up indicated no permanent sequelae.

Patient 2. A 2½-year-old girl was lethargic and breathing abnormally when found by her mother 30–60 minutes after she ingested approximately 17 Jin Bu Huan tablets. Paramedics found the child unresponsive with respiratory depression. An acute episode of bradycardia (pulse 30–35) was successfully treated with atropine. Initial examination in the emergency department indicated miotic pupils (2 mm and equal), CNS depression, and a disconjugate gaze. Blood pressure was palpated at 100 mm Hg systolic; pulse, 100; and respiratory rate, 24. She was unresponsive to naloxone (0.8 mg). The patient's respiratory rate diminished, requiring intubation within 20 minutes after arrival to the emergency department. During the next hour, the child's condition improved, and during an episode of vomiting, she extubated herself. Gastrointestinal decontamination treatment included performing gastric lavage and administering activated charcoal and a cathartic. She remained intermittently

Jin Bu Huan Toxicity — Continued

lethargic with diffuse muscle weakness until approximately 8 hours following ingestion. Urine and serum toxicologic screens were negative for more than 30 substances including β-blockers, clonidine, and opiates. She was discharged the following day after a complete recovery. Follow-up indicated no permanent sequelae.

Patient 3. A 23-month-old girl was lethargic when found by her parents within 1 hour after she ingested approximately seven Jin Bu Huan tablets. The child was transported to an emergency department 1¼ hours following ingestion. Her blood pressure was 94/64 mm Hg and pulse 130. Gastrointestinal decontamination consisted of performing gastric lavage (resulting in recovery of pill fragments) and administering activated charcoal and a cathartic. Approximately 2 hours after ingestion, the child was awake and talkative. She was observed in the emergency department until 5 hours following ingestion and was discharged. Follow-up indicated no permanent sequelae.

Follow-up investigation. Analysis of Jin Bu Huan tablets retrieved from the parents of the three children was performed at Colorado State University using nuclear magnetic resonance and gas chromatography/mass spectroscopy; the tablets were 36% concentrated weight-by-weight levo-tetrahydropalmatine (L-THP), a substance present in the plant genus *Stephania* but not in the genus *Polygala*—the plant of origin indicated on the product package insert (*2–4*). Each tablet contained 28.8 mg L-THP; no other plant alkaloids were present in tablets tested from multiple bottles of Jin Bu Huan. Extensive toxicologic analysis of the Jin Bu Huan tablets and of urine and serum from patients 1 and 2 did not detect other drugs or pharmaceutical products. As a result of this investigation, Jin Bu Huan anodyne tablets and their active ingredient (L-THP) were entered into the update of Poisindex®*, an international toxicologic data base.

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Editorial Note: Traditional Chinese herbal products are widely available in the United States. However, because they are not marketed as a drug, these products have not been subjected to standard tests for safety and effectiveness. Jin Bu Huan is manufactured in China, and the stated ingredients are Polygla Chinensis L. alkaloid (30%) and starch (70%) (*5,6*). The insert accompanying Jin Bu Huan anodyne tablets describes its action to be anodyne (analgesic), sedative, antispasmodic, and hypnotic and states it to be "a particularly good remedy for the patient suffering from insomnia due to pain." In addition, it lists specific medical indications for the product including "gastric ulcer, duodenal ulcer pains, stomachic [sic] neuralgia, pain in shrunken womb after childbirth, nervous insomnia, spasmodic cough, etc." Although this product was sold as a dietary supplement in health food stores, claims on the labeling that the product

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*Use of trade names and commercial sources is for identification only and does not imply endorsement by the Public Health Service or the U.S. Department of Health and Human Services.

Jin Bu Huan Toxicity — Continued

is for the treatment, prevention, mitigation, or cure of a disease make it subject to regulation as a drug.

The clinical presentations of and findings in the three children described in this report are consistent with those detected in animals exposed to L-THP (*7,8*). In particular, exposure of animals to L-THP results in sedation, analgesia, neuromuscular blockade, and dopamine receptor antagonism. These studies also have documented L-THP to be naloxone resistant with no affinity for opiate receptors.

As part of this investigation, the Rocky Mountain Poison Center found Jin Bu Huan tablets for sale in health food stores in the Denver metropolitan area. The investigation has not detected evidence of pharmaceutical contamination of this product. However, its potential toxicity may result from a combination of factors, including the extreme potency of L-THP, the misidentification of the plant from which the product was derived, the false and potentially misleading medical claims, the availability of the product, and lack of childproof packaging.

The public health implications associated with the use of herbal products in the United States are potentially great because many persons use such herbs and other unconventional products. For example, a recent study of the prevalence and frequency of use of unconventional therapy in the United States indicated that 3% of adult respondents reported using an herbal medicine during the preceding year (*9*). In addition, a study in the United States of dietary supplement advertising indicated that 22% of these products did not list ingredients in their advertisements (*10*). The investigation of the three cases in this report does not provide an adequate basis for assessing the health impact of these products; however, the severity of the adverse health effects in these three cases underscores the potential health risks associated with use of these herbal and other botanical products.

To prevent cases of unintentional poisoning associated with herbal and other botanical products, such products should be sold in childproof packaging and kept in childproof containers, and parents should be informed about the potential toxicity of these products. In addition, accurate labeling of the active ingredient is critical to enable prompt and proper medical treatment for unintentional poisoning.

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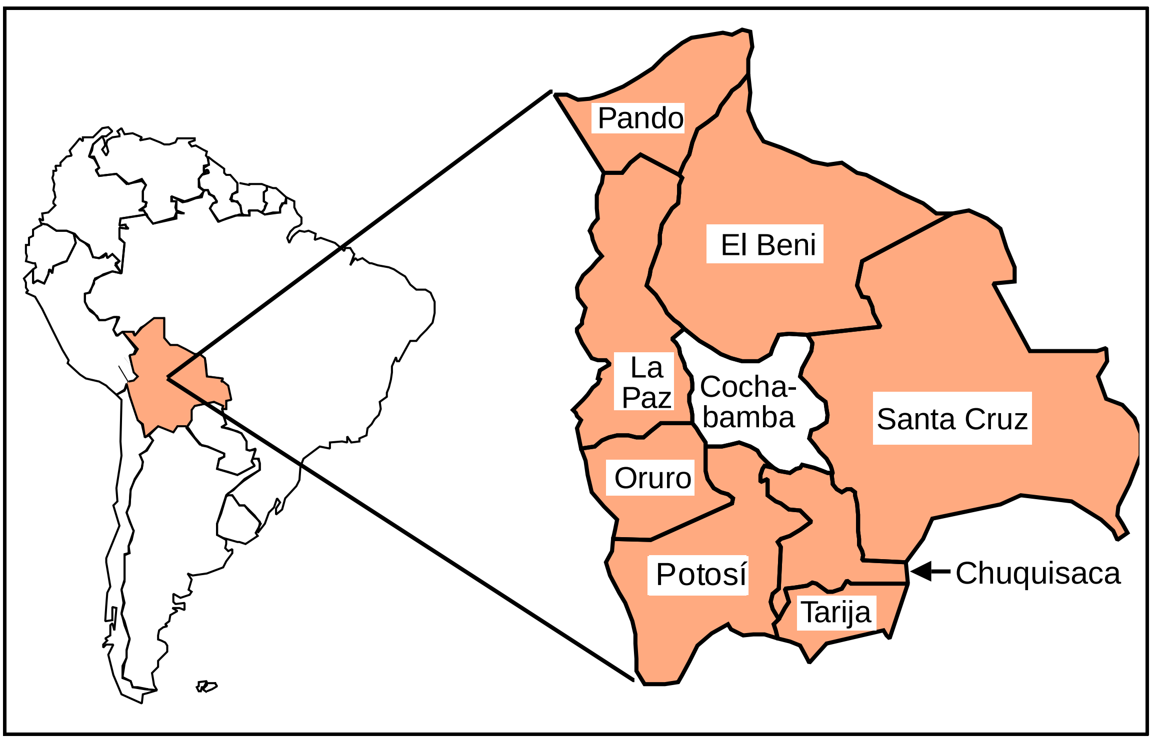
International Notes

Surveillance for Cholera — Cochabamba Department, Bolivia, January–June 1992

Following the epidemic spread of cholera in Peru (*1*), in April 1991, health officials in neighboring Bolivia established a surveillance system to detect the appearance and monitor the spread of cholera in their country. The first confirmed case in Bolivia was reported on August 26, 1991; by December 31, 1991, a total of 206 cases had been reported, and 21,324 probable and confirmed cases were reported during 1992. This report summarizes cholera surveillance in Cochabamba department (1992 population: 1,070,000) in central Bolivia (Figure 1) for January–June 1992; the assessment was one element of the Data for Decision Making (DDM) Project conducted by the Child and Community Health Project, Bolivia's Ministry of Social Security and Public Health (MSSPH), the U.S. Agency for International Development (USAID), and CDC.

In April 1991, the MSSPH established three categories of case definitions for cholera surveillance: 1) suspected—acute diarrhea in a person living in an area where *Vibrio cholerae* O1 had not been reported previously (stool cultures were obtained from patients with suspected cases); 2) probable—diarrhea with dehydration, vomiting, and leg cramps in a person living in an area with reported cholera cases or related

FIGURE 1. Location of Cochabamba department, Bolivia



Cholera — Continued

epidemiologically to another person with cholera (stool cultures were not recommended for patients with probable cases); and 3) confirmed—diarrhea in a person with a stool culture positive for *V. cholerae* O1. A two-page case-report form was designed for tabulating and investigating each case and was distributed to all health units in the country. In July 1992, the two-page cholera surveillance form was replaced by a quarter-page surveillance form that collected data on fewer variables.

Cases reported during January 1–June 30, 1992, were analyzed. During this period, 4087 cholera cases in residents of Cochabamba department were reported to the MSSPH; surveillance forms were submitted for 2962 (72%) and oral reports for 1125 (28%) cases. Data about the 2962 cases reported on the surveillance form were used to evaluate the form and to characterize the epidemiology of cholera in Cochabamba department. Of the forms received, data on patient's age, sex, address, and outcome were available for 97% of reported cases; however, information on signs and symptoms of illness was reported for approximately 63% of cases.

The 2962 reported cases included 2667 classified as probable and 295 classified as confirmed and represented an incidence of 2.8 per 1000 population in Cochabamba department. Of the 2962 persons, 1527 (52%) were male (Table 1); 2539 (86%) were aged ≥15 years, and 157 (5%) were aged <5 years. A total of 1621 (55%) cases occurred in residents of urban areas and 1341 (45%) in residents of rural areas. Of 2878 patients for whom hospitalization status was known, 2449 (85%) were hospitalized; hospitalization rates were similar in urban (83%) and rural (87%) areas. Forty-three persons died (overall case-fatality rate [CFR]=1.4%). Thirteen deaths occurred among all urban cases (CFR=0.8% for urban areas), and 30 deaths occurred among 1328 reported rural cases (CFR=2.2% for rural areas).

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TABLE 1. Number of reported cholera cases, by patient age group, sex, and age-specific incidence rates* — Cochabamba department, Bolivia, January 1–June 30, 1992

Age group (yrs)	Female	Male	Total	Age-specific incidence rate
<1	7	11	**18**	0.4
1– 4	63	76	**139**	1.1
5–14	86	108	**194**	0.7
15–29	327	391	**718**	2.5
30–44	326	352	**678**	4.2
45–59	277	281	**558**	5.3
≥60	309	271	**580**	6.5
Unknown	40	37	**77**	—
Total	**1435**	**1527**	**2962**	**2.7**

*Per 1000 persons.

Cholera — Continued

Editorial Note: Features of the cholera epidemic in Bolivia have been similar to those in neighboring countries: the disease has predominantly affected adults in both rural and urban areas (*1*). The overall CFR for cholera in Latin America has been approximately 1% (*2*)—lower than that in other epidemics (*3*). The CFR has been higher in rural areas of Latin America (as demonstrated in Cochabamba department), reflecting factors such as lack of access to health care, inadequate distribution of oral rehydration salts, and delays in providing prevention and treatment education outside urban areas (*4*).

The challenges associated with cholera surveillance in Bolivia are similar to those in other Latin American countries that initiated cholera prevention and control programs after the epidemic began in Peru. For example, surveillance systems established to detect and investigate the earliest cases initially were effective; however, as the number of cases increased, available resources for reporting were strained because 1) complex case definitions constrained reporting and interpretation of data; 2) lengthy and detailed surveillance forms that were useful in investigating the earliest cases were subsequently unnecessary and cumbersome (in Cochabamba department, reporting using the two-page form was considered incomplete, inefficient, and was often delayed for cases in rural areas; essential data elements could be listed on the quarter-page form, and since its introduction, all cholera cases reported to the MSSPH have been reported with the form); and 3) laboratories in areas of intense cholera activity were inundated by requests for cultures to confirm suspect cases. CDC and the Pan American Health Organization have recommended measures to simplify cholera surveillance and facilitate rapid dissemination of surveillance information for Latin America and the Caribbean (see box) (*5*).

Analysis of surveillance information at levels below the national level provides health authorities with more immediate information on local disease activity, allowing appropriate decisions to be made regarding the distribution of treatment supplies and/or support personnel. The evaluation of cholera surveillance in Cochabamba department for January–June 1992 is a component of the DDM Project in Bolivia. The USAID-funded DDM Project, in which Bolivia is one of five countries collaborating with CDC, aims to increase data-based decision making in public health for formulating health policies and for program planning, monitoring, and evaluation. In 1992, the MSSPH requested assistance from USAID/Bolivia and CDC to provide training to 41 national, regional, and district program managers, epidemiologists, and other health officials in applied epidemiology, management, biostatistics, and communication skills. The evaluation of cholera surveillance in Cochabamba department was one of the 41 applied epidemiology projects conducted as part of this training program. The results of the evaluation described in this report have been used to strengthen cholera surveillance efforts and prevention activities in Bolivia.

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Cholera — Continued

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Recommended Measures for Cholera Surveillance and Rapid Surveillance Information Dissemination for Latin America and the Caribbean

Case definitions. Two categories should be used in case definitions in areas with epidemic cholera: clinical and laboratory-confirmed. A clinical case should be defined as acute, watery diarrhea in a person aged ≥5 years; a laboratory-confirmed case, as culture-confirmed *Vibrio cholerae* O1 infection in a person with diarrhea.

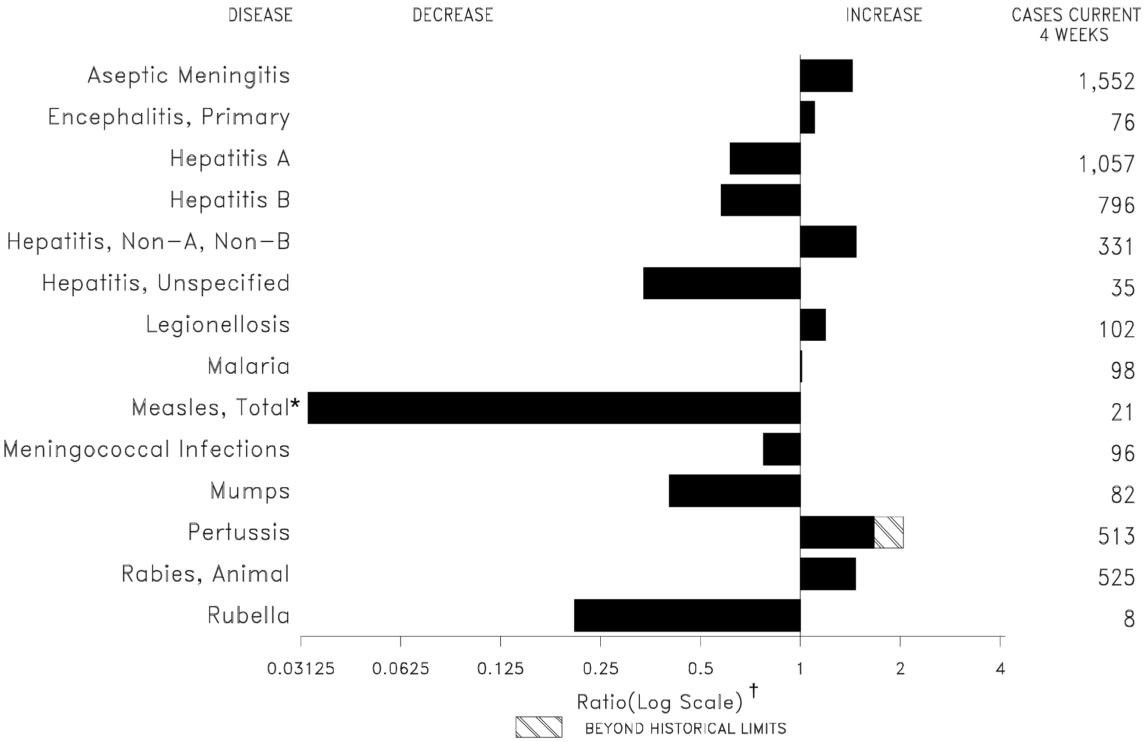
Report forms. Lengthy surveillance forms should not be used. Basic data (e.g., age, sex, address, date of onset or treatment, hospitalization, and outcome) can be collected using short forms and kept for analysis at the local level.

Laboratory confirmation of cases. Cultures should be performed for clinical cholera cases in a cholera-threatened area. After cholera has become established in an area, stool cultures should be performed at a reduced frequency (e.g., 10 cultures per month) to confirm the continuing presence of *V. cholerae* O1 and to monitor antimicrobial resistance.

Surveillance during an evolving epidemic. In areas threatened by cholera, acute dehydrating diarrhea in persons aged ≥5 years should be investigated and cultured. When small numbers of cases are being confirmed, only laboratory-confirmed cases should be reported. When the number of laboratory-confirmed cases increases, the clinical case definition should be used for reporting, and culturing should be used only on a limited basis to confirm the continuing presence of cholera. As the number of cholera cases decreases, the definition for clinical cases should be used for at least 1 year to detect seasonal recurrences of the epidemic. To determine routes of cholera transmission and the potential for prevention, case-control investigations should be conducted at outbreak sites.

Analysis and communication of surveillance data. Surveillance data (e.g., numbers of cases, hospitalizations, and deaths) should be transmitted weekly to the central level and analyzed in a timely manner. Summary reports should be disseminated regularly to all components of and levels within the surveillance system and to the Pan American Health Organization.

FIGURE I. Notifiable disease reports, comparison of 4-week totals ending August 21, 1993, with historical data — United States



*The large apparent decrease in reported cases of measles(total) reflects dramatic fluctuations in the historical baseline.

† 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 thehatched 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 August 21, 1993 (33rd Week)

	Cum. 1993		Cum. 1993
AIDS*	67,732	Measles: imported	30
Anthrax	-	indigenous	192
Botulism: Foodborne	8	Plague	7
Infant	25	Poliomyelitis, Paralytic§	-
Other	2	Psittacosis	35
Brucellosis	60	Rabies, human	1
Cholera	15	Syphilis, primary & secondary	16,264
Congenital rubella syndrome	7	Syphilis, congenital, age < 1 year¶	677
Diphtheria	-	Tetanus	25
Encephalitis, post-infectious	107	Toxic shock syndrome	157
Gonorrhea	240,441	Trichinosis	9
Haemophilus influenzae (invasive disease)†	791	Tuberculosis	12,950
Hansen Disease	105	Tularemia	86
Leptospirosis	25	Typhoid fever	199
Lyme Disease	3,946	Typhus fever, tickborne (RMSF)	239

*Updated monthly; last update July 31, 1993.
†Of 732 cases of known age, 240 (33%) were reported among children less than 5 years of age.
§Two (2) cases of suspected poliomyelitis have been reported in 1993; 4 of the 5 suspected cases with onset in 1992 were confirmed; the confirmed cases were vaccine associated.
¶Reports through first quarter of 1993.

TABLE II. Cases of selected notifiable diseases, United States, weeks ending August 21, 1993, and August 15, 1992 (33rd Week)

Reporting Area	AIDS*	Aseptic Menin-gitis	Encephalitis		Gonorrhea		Hepatitis (Viral), by type				Legionel-losis	Lyme Disease
			Primary	Post-in-fectious			A	B	NA,NB	Unspeci-fied		
	Cum. 1993	Cum. 1993	Cum. 1993	Cum. 1993	Cum. 1993	Cum. 1992	Cum. 1993	Cum. 1993	Cum. 1993	Cum. 1993	Cum. 1993	Cum. 1993
UNITED STATES	67,732	6,117	407	107	240,441	310,008	13,296	7,723	2,971	384	732	3,946
NEW ENGLAND	3,232	160	11	5	5,180	6,461	305	351	332	9	31	1,049
Maine	94	20	1	-	55	60	10	9	2	-	4	5
N.H.	67	24	-	2	43	80	16	57	264	2	1	36
Vt.	14	20	3	-	17	16	3	7	2	-	-	3
Mass.	1,818	69	5	3	1,864	2,353	157	218	57	7	22	109
R.I.	219	27	2	-	253	457	56	16	7	-	4	158
Conn.	1,020	-	-	-	2,948	3,495	63	44	-	-	-	738
MID. ATLANTIC	15,598	435	35	7	28,398	33,647	691	915	216	4	147	2,115
Upstate N.Y.	2,373	212	24	4	4,993	6,745	231	265	134	1	45	1,188
N.Y. City	8,289	104	1	-	7,880	11,698	177	121	1	-	3	3
N.J.	2,991	-	-	-	4,774	4,698	190	269	56	-	23	457
Pa.	1,945	119	10	3	10,751	10,506	93	260	25	3	76	467
E.N. CENTRAL	5,419	912	106	20	46,209	57,853	1,478	940	430	10	200	31
Ohio	938	350	36	4	14,005	17,507	196	139	32	-	105	18
Ind.	634	122	12	8	4,893	5,453	469	142	8	1	37	5
Ill.	1,939	158	21	2	13,022	18,679	373	159	39	3	10	2
Mich.	1,379	254	27	6	10,739	13,488	132	278	320	6	40	6
Wis.	529	28	10	-	3,550	2,726	308	222	31	-	8	-
W.N. CENTRAL	2,428	371	18	-	12,390	16,482	1,570	404	94	11	48	93
Minn.	511	61	7	-	1,614	1,845	284	46	3	4	1	50
Iowa	141	67	1	-	602	1,066	29	17	6	1	7	7
Mo.	1,374	107	-	-	7,087	9,112	988	288	67	6	11	7
N. Dak.	1	10	3	-	29	54	60	-	-	-	1	2
S. Dak.	22	12	5	-	173	110	13	-	-	-	-	-
Nebr.	135	7	-	-	476	1,070	135	11	8	-	23	4
Kans.	244	107	2	-	2,409	3,225	61	42	10	-	5	23
S. ATLANTIC	14,279	1,428	80	46	64,233	95,329	783	1,453	405	48	130	521
Del.	253	40	3	-	884	1,102	8	112	86	-	10	251
Md.	1,630	139	18	-	10,204	9,775	112	180	9	5	29	101
D.C.	896	26	-	-	3,106	4,266	6	33	-	-	13	2
Va.	1,049	137	27	6	7,390	10,808	96	94	22	20	3	42
W. Va.	46	17	18	-	387	572	9	27	17	-	1	4
N.C.	790	134	12	-	16,270	15,811	40	200	48	-	16	60
S.C.	933	20	-	-	6,740	7,097	10	33	3	1	13	7
Ga.	1,854	84	1	-	4,660	28,700	66	132	55	-	26	29
Fla.	6,828	831	1	40	14,592	17,198	436	642	165	22	19	25
E.S. CENTRAL	1,796	407	15	7	27,883	29,812	165	808	568	1	31	13
Ky.	213	153	7	6	2,988	3,042	79	59	10	-	11	3
Tenn.	731	91	5	-	8,363	9,820	33	673	544	-	13	8
Ala.	531	114	1	-	10,119	9,695	35	71	4	1	2	2
Miss.	321	49	2	1	6,413	7,255	18	5	10	-	5	-
W.S. CENTRAL	6,957	640	26	2	28,302	33,675	1,289	1,021	173	115	20	29
Ark.	267	34	1	-	5,428	4,866	34	36	2	2	2	1
La.	921	44	1	-	7,393	9,888	52	134	65	2	2	-
Okla.	590	1	6	-	2,191	3,407	95	189	64	7	11	16
Tex.	5,179	561	18	2	13,290	15,514	1,108	662	42	104	5	12
MOUNTAIN	2,948	389	16	4	6,901	7,730	2,600	375	199	56	52	16
Mont.	22	-	-	1	47	67	57	4	2	-	5	-
Idaho	52	7	-	-	108	67	122	33	-	1	1	2
Wyo.	31	5	-	-	57	35	11	15	55	-	5	8
Colo.	985	110	6	-	2,118	2,818	636	51	35	32	6	-
N. Mex.	240	70	3	2	584	562	242	142	66	2	3	-
Ariz.	992	127	5	-	2,588	2,662	925	58	10	9	10	-
Utah	197	25	1	-	219	198	536	37	24	11	7	2
Nev.	429	45	1	1	1,180	1,321	71	35	7	1	15	4
PACIFIC	15,075	1,375	100	16	20,945	29,019	4,415	1,456	554	130	73	79
Wash.	1,008	-	1	-	2,445	2,562	498	143	124	8	9	3
Oreg.	575	-	-	-	1,079	1,090	63	22	10	-	-	2
Calif.	13,233	1,290	95	16	16,735	24,618	3,302	1,266	409	119	58	73
Alaska	47	14	3	-	339	445	498	8	9	-	-	-
Hawaii	212	71	1	-	347	304	54	17	2	3	6	1
Guam	-	2	-	-	38	48	2	2	-	1	-	-
P.R.	1,950	35	-	-	318	129	52	239	41	2	-	-
V.I.	34	-	-	-	71	67	-	2	-	-	-	-
Amer. Samoa	-	-	-	-	34	27	13	-	-	-	-	-
C.N.M.I.	-	2	-	-	55	56	-	1	-	1	-	-

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

*Updated monthly; last update July 31, 1993.

TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending August 21, 1993, and August 15, 1992 (33rd Week)

Reporting Area	Malaria	Measles (Rubeola)					Menin-gococcal Infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported*		Total									
	Cum. 1993	1993	Cum. 1993	1993	Cum. 1993	Cum. 1992	Cum. 1993	1993	Cum. 1993	1993	Cum. 1993	Cum. 1992	1993	Cum. 1993	Cum. 1992
UNITED STATES	684	6	192	-	30	2,098	1,626	16	1,095	146	2,467	1,403	2	140	128
NEW ENGLAND	52	2	55	-	4	55	93	-	8	6	475	105	-	1	6
Maine	1	1	1	-	-	3	5	-	-	1	11	4	-	1	1
N.H.	6	-	1	-	-	13	12	-	-	-	214	30	-	-	-
Vt.	1	-	30	-	1	-	4	-	-	1	55	3	-	-	-
Mass.	25	1	14	-	2	14	52	-	2	-	148	45	-	-	-
R.I.	2	-	-	-	1	21	1	-	2	3	6	-	-	-	4
Conn.	17	-	9	-	-	4	19	-	4	1	41	23	-	-	1
MID. ATLANTIC	107	-	7	-	3	196	196	2	86	23	293	65	-	41	10
Upstate N.Y.	38	-	-	-	1	111	89	2	31	9	119	31	-	8	7
N.Y. City	24	-	2	-	-	49	19	-	-	-	7	9	-	15	-
N.J.	29	-	5	-	2	36	31	-	8	-	35	25	-	13	3
Pa.	16	-	-	-	-	-	57	-	47	14	132	-	-	5	-
E.N. CENTRAL	43	-	14	-	2	48	258	1	151	32	439	196	1	4	9
Ohio	9	-	5	-	-	6	76	1	59	25	199	42	-	1	-
Ind.	3	-	-	-	-	20	43	-	3	4	46	19	-	-	-
Ill.	24	-	5	-	-	15	69	-	37	-	53	26	-	-	8
Mich.	7	-	4	-	1	4	42	-	49	3	27	8	1	2	1
Wis.	-	-	-	-	1	3	28	-	3	-	114	101	-	1	-
W.N. CENTRAL	18	-	1	-	2	11	108	1	33	11	197	112	-	1	7
Minn.	4	-	-	-	-	10	6	-	1	-	83	33	-	-	-
Iowa	1	-	-	-	-	1	18	-	7	7	11	3	-	-	2
Mo.	5	-	1	-	-	-	43	1	19	3	72	49	-	1	1
N. Dak.	2	-	-	-	-	-	3	-	5	-	3	11	-	-	-
S. Dak.	2	-	-	-	-	-	3	-	-	1	7	5	-	-	-
Nebr.	3	U	-	U	-	-	8	U	1	U	8	5	U	-	-
Kans.	1	U	-	U	2	-	27	U	-	U	13	6	U	-	4
S. ATLANTIC	191	4	21	-	3	119	308	5	349	11	279	93	-	8	13
Del.	2	-	-	-	-	1	11	-	4	1	8	3	-	2	-
Md.	21	-	-	-	2	16	37	3	65	8	98	14	-	2	5
D.C.	6	-	-	-	-	-	5	-	-	-	2	1	-	-	-
Va.	19	-	-	-	1	14	26	-	17	-	35	6	-	-	-
W. Va.	2	-	-	-	-	-	11	1	12	-	10	6	-	-	1
N.C.	89	-	-	-	-	24	55	-	195	-	44	22	-	-	-
S.C.	1	-	-	-	-	29	28	-	14	-	8	9	-	-	2
Ga.	11	-	-	-	-	-	69	-	14	2	14	8	-	-	-
Fla.	40	4	21	-	-	35	66	1	28	-	60	24	-	4	5
E.S. CENTRAL	21	-	1	-	-	460	101	2	39	-	110	20	-	-	1
Ky.	4	-	-	-	-	443	19	-	-	-	8	-	-	-	-
Tenn.	7	-	-	-	-	-	24	-	11	-	54	5	-	-	1
Ala.	6	-	1	-	-	-	34	1	21	-	42	13	-	-	-
Miss.	4	-	-	-	-	17	24	1	7	-	6	2	-	-	-
W.S. CENTRAL	15	-	2	-	3	1,079	140	4	160	8	87	168	1	17	6
Ark.	2	-	-	-	-	-	16	-	4	-	7	8	-	-	-
La.	2	-	1	-	-	-	27	-	12	-	6	4	-	1	-
Okla.	4	-	-	-	-	11	23	-	8	5	52	27	-	1	-
Tex.	7	-	1	-	3	1,068	74	4	136	3	22	129	1	15	6
MOUNTAIN	25	-	3	-	-	25	131	-	43	15	228	230	-	6	5
Mont.	2	-	-	-	-	-	11	-	-	1	2	3	-	-	-
Idaho	1	-	-	-	-	-	9	-	5	-	67	27	-	1	1
Wyo.	-	-	-	-	-	1	2	-	2	-	1	-	-	-	-
Colo.	15	-	2	-	-	20	23	-	12	6	69	27	-	-	-
N. Mex.	5	-	-	-	-	2	4	N	N	2	28	54	-	-	-
Ariz.	-	-	-	-	-	2	63	-	7	1	38	94	-	2	2
Utah	-	-	-	-	-	-	12	-	3	4	22	24	-	2	1
Nev.	2	-	1	-	-	-	7	-	14	1	1	1	-	1	1
PACIFIC	212	-	88	-	13	105	291	1	226	40	359	414	-	62	71
Wash.	21	-	-	-	-	10	50	1	10	6	33	123	-	-	6
Oreg.	4	-	-	-	-	3	22	N	N	1	10	23	-	2	1
Calif.	182	-	77	-	4	54	198	-	192	33	303	246	-	35	43
Alaska	1	-	-	-	1	9	13	-	6	-	3	5	-	1	-
Hawaii	4	-	11	-	8	29	8	-	18	-	10	17	-	24	21
Guam	1	U	2	U	-	10	1	U	6	U	-	-	U	-	1
P.R.	-	-	224	-	-	293	7	-	2	-	2	9	-	-	-
V.I.	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-
Amer. Samoa	-	-	1	-	-	-	-	-	-	-	2	6	-	-	-
C.N.M.I.	-	-	-	-	1	2	-	-	12	-	-	1	-	-	-

*For measles only, imported cases include 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 August 21, 1993, and August 15, 1992 (33rd Week)

Reporting Area	Syphilis (Primary & Secondary)		Toxic-Shock Syndrome	Tuberculosis		Tula-remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1993	Cum. 1992	Cum. 1993	Cum. 1993	Cum. 1992	Cum. 1993	Cum. 1993	Cum. 1993	Cum. 1993
UNITED STATES	16,264	21,596	157	12,950	14,062	86	199	239	5,232
NEW ENGLAND	260	417	10	290	242	-	18	2	905
Maine	3	2	2	15	17	-	-	-	-
N.H.	25	29	2	9	3	-	1	-	58
Vt.	1	1	1	3	4	-	-	-	19
Mass.	99	203	4	156	106	-	12	2	348
R.I.	11	21	1	34	23	-	-	-	-
Conn.	121	161	-	73	89	-	5	-	480
MID. ATLANTIC	1,512	3,116	28	3,026	3,401	1	44	22	1,980
Upstate N.Y.	130	231	15	313	426	1	9	4	1,506
N.Y. City	781	1,745	1	1,782	2,003	-	26	-	-
N.J.	210	403	-	484	572	-	6	10	264
Pa.	391	737	12	447	400	-	3	8	210
E.N. CENTRAL	2,432	3,219	41	1,242	1,393	4	21	10	60
Ohio	753	506	19	204	213	1	5	6	4
Ind.	202	165	1	135	104	1	1	1	5
Ill.	814	1,419	5	569	709	1	10	1	9
Mich.	387	629	16	274	307	1	4	2	8
Wis.	276	500	-	60	60	-	1	-	34
W.N. CENTRAL	1,010	893	9	302	343	28	2	13	235
Minn.	51	55	2	38	99	-	-	1	34
Iowa	32	35	5	36	25	-	-	4	41
Mo.	820	688	-	161	153	10	2	6	8
N. Dak.	1	1	-	5	5	-	-	-	49
S. Dak.	1	-	-	11	14	14	-	2	32
Nebr.	10	21	-	14	14	1	-	-	7
Kans.	95	93	2	37	33	3	-	-	64
S. ATLANTIC	4,425	5,965	18	2,248	2,573	2	27	108	1,293
Del.	83	137	1	30	25	-	1	1	106
Md.	250	428	-	251	203	-	5	8	387
D.C.	237	268	-	112	84	-	-	-	13
Va.	420	489	6	281	195	-	3	6	231
W. Va.	8	13	-	51	62	-	-	4	58
N.C.	1,238	1,530	3	324	318	1	1	57	54
S.C.	643	823	-	263	253	-	-	8	104
Ga.	745	1,195	2	485	565	-	1	19	298
Fla.	801	1,082	6	451	868	1	16	5	42
E.S. CENTRAL	2,472	2,749	8	836	916	4	4	25	70
Ky.	208	94	2	244	249	-	1	5	10
Tenn.	690	764	3	144	244	3	1	13	-
Ala.	547	1,006	2	305	252	1	2	3	60
Miss.	1,027	885	1	143	171	-	-	4	-
W.S. CENTRAL	3,427	3,722	2	1,471	1,474	33	2	53	365
Ark.	530	571	-	120	103	19	-	1	18
La.	1,589	1,606	-	-	107	-	1	1	4
Okla.	265	177	2	171	95	11	-	50	54
Tex.	1,043	1,368	-	1,180	1,169	3	1	1	289
MOUNTAIN	153	242	9	296	373	9	7	6	104
Mont.	1	7	-	15	-	5	-	1	16
Idaho	-	1	1	8	14	-	-	-	5
Wyo.	6	3	-	2	-	2	-	5	13
Colo.	41	36	2	8	30	-	5	-	9
N. Mex.	21	27	-	35	52	1	-	-	6
Ariz.	68	120	1	140	172	-	2	-	46
Utah	4	7	4	17	51	1	-	-	2
Nev.	12	41	1	71	54	-	-	-	7
PACIFIC	573	1,273	32	3,239	3,347	5	74	-	220
Wash.	36	62	6	149	191	1	4	-	-
Oreg.	50	27	-	72	82	2	-	-	-
Calif.	478	1,175	26	2,819	2,873	2	67	-	203
Alaska	6	4	-	33	44	-	-	-	17
Hawaii	3	5	-	166	157	-	3	-	-
Guam	1	3	-	28	54	-	-	-	-
P.R.	348	203	-	152	135	-	-	-	28
V.I.	31	43	-	2	3	-	-	-	-
Amer. Samoa	-	-	-	2	-	-	-	-	-
C.N.M.I.	3	5	-	19	42	-	-	-	-

U: Unavailable

TABLE III. Deaths in 121 U.S. cities,* week ending August 21, 1993 (33rd Week)

Reporting Area	All Causes, By Age (Years): All Ages	≥65	45-64	25-44	1-24	<1	P&I† Total
NEW ENGLAND	568	371	107	58	16	16	37
Boston, Mass.	158	88	39	18	6	7	16
Bridgeport, Conn.	43	33	4	6	-	-	-
Cambridge, Mass.	19	14	3	2	-	-	-
Fall River, Mass.	27	19	6	2	-	-	-
Hartford, Conn.	55	37	6	9	1	2	1
Lowell, Mass.	23	16	4	2	-	1	-
Lynn, Mass.	13	8	3	2	-	-	-
New Bedford, Mass.	24	18	3	2	-	1	-
New Haven, Conn.	39	27	8	2	2	-	3
Providence, R.I.	41	27	11	3	-	-	6
Somerville, Mass.	4	3	1	-	-	-	-
Springfield, Mass.	39	22	7	4	3	3	-
Waterbury, Conn.	27	14	8	3	2	-	4
Worcester, Mass.	56	45	4	3	2	2	7
MID. ATLANTIC	2,111	1,374	380	261	57	38	97
Albany, N.Y.	40	30	6	3	-	1	3
Allentown, Pa.	23	16	6	1	-	-	-
Buffalo, N.Y.	100	68	19	8	3	2	3
Camden, N.J.	40	32	4	1	1	2	5
Elizabeth, N.J.	25	20	4	-	-	1	1
Erie, Pa.§	35	26	7	1	1	-	2
Jersey City, N.J.	39	25	5	5	-	4	-
New York City, N.Y.	1,357	858	252	192	35	20	51
Newark, N.J.	46	18	11	12	4	1	10
Paterson, N.J.	32	12	9	9	1	1	1
Philadelphia, Pa.	U	U	U	U	U	U	U
Pittsburgh, Pa.§	94	61	20	6	5	2	6
Reading, Pa.	5	4	-	1	-	-	-
Rochester, N.Y.	108	78	15	9	2	4	8
Schenectady, N.Y.	12	10	1	1	-	-	-
Scranton, Pa.§	25	21	3	1	-	-	-
Syracuse, N.Y.	69	49	11	6	3	-	5
Trenton, N.J.	21	15	4	2	-	-	-
Utica, N.Y.	16	12	1	-	2	-	2
Yonkers, N.Y.	24	19	2	3	-	-	-
E.N. CENTRAL	2,260	1,386	400	261	154	59	115
Akron, Ohio	76	56	13	5	-	2	-
Canton, Ohio	34	25	7	2	-	-	5
Chicago, Ill.	550	204	100	124	105	17	22
Cincinnati, Ohio	125	93	21	9	2	-	10
Cleveland, Ohio	118	74	21	11	4	8	3
Columbus, Ohio	176	122	24	16	6	8	13
Dayton, Ohio	119	87	21	5	2	4	8
Detroit, Mich.	222	123	54	25	14	6	6
Evansville, Ind.	37	29	6	1	1	-	2
Fort Wayne, Ind.	59	42	11	4	-	2	2
Gary, Ind.	20	10	4	3	-	3	1
Grand Rapids, Mich.	47	35	6	5	-	1	1
Indianapolis, Ind.	206	139	40	15	10	2	12
Madison, Wis.	42	33	3	4	1	1	4
Milwaukee, Wis.	119	92	19	8	-	-	9
Peoria, Ill.	58	34	13	5	4	2	4
Rockford, Ill.	49	37	8	3	-	1	6
South Bend, Ind.	54	43	6	4	-	1	6
Toledo, Ohio	104	70	22	8	3	1	-
Youngstown, Ohio	45	38	1	4	2	-	1
W.N. CENTRAL	754	517	148	50	24	15	32
Des Moines, Iowa	99	76	15	4	4	-	6
Duluth, Minn.	33	26	5	1	1	-	-
Kansas City, Kans.	33	23	7	2	1	-	-
Kansas City, Mo.	108	70	19	14	2	3	10
Lincoln, Nebr.	31	25	5	1	-	-	1
Minneapolis, Minn.	136	91	29	7	5	4	5
Omaha, Nebr.	87	58	24	-	2	3	1
St. Louis, Mo.	128	84	18	13	8	5	7
St. Paul, Minn.	52	30	16	6	-	-	2
Wichita, Kans.	47	34	10	2	1	-	-

Reporting Area	All Causes, By Age (Years): All Ages	≥65	45-64	25-44	1-24	<1	P&I† Total
S. ATLANTIC	1,185	706	248	148	45	37	61
Atlanta, Ga.	130	73	26	23	2	6	4
Baltimore, Md.	159	98	28	21	4	8	14
Charlotte, N.C.	95	51	27	14	3	-	2
Jacksonville, Fla.	126	87	25	8	4	2	8
Miami, Fla.	109	57	26	20	3	3	-
Norfolk, Va.	60	33	14	5	6	2	8
Richmond, Va.	U	U	U	U	U	U	U
Savannah, Ga.	81	49	16	11	3	2	6
St. Petersburg, Fla.	49	34	9	2	2	2	2
Tampa, Fla.	164	113	29	15	4	3	14
Washington, D.C.	203	105	45	29	14	9	3
Wilmington, Del.	9	6	3	-	-	-	-
E.S. CENTRAL	700	441	143	59	31	26	47
Birmingham, Ala.	103	67	20	10	3	3	4
Chattanooga, Tenn.	56	38	10	5	1	2	5
Knoxville, Tenn.	83	58	18	3	4	-	5
Lexington, Ky.	67	46	10	5	2	4	6
Memphis, Tenn.	178	111	34	16	6	11	19
Mobile, Ala.	52	36	9	4	3	-	4
Montgomery, Ala.	38	26	5	4	2	1	2
Nashville, Tenn.	123	59	37	12	10	5	2
W.S. CENTRAL	1,413	882	299	143	52	37	68
Austin, Tex.	63	45	12	4	1	1	3
Baton Rouge, La.	36	22	8	3	2	1	-
Corpus Christi, Tex.	43	32	11	-	-	-	3
Dallas, Tex.	184	120	34	22	4	4	4
El Paso, Tex.	74	45	14	12	2	1	4
Ft. Worth, Tex.	100	68	19	7	2	4	2
Houston, Tex.	346	187	86	47	13	13	30
Little Rock, Ark.	67	44	16	4	3	-	5
New Orleans, La.	137	76	35	16	5	5	-
San Antonio, Tex.	186	121	37	15	9	4	7
Shreveport, La.	65	50	5	4	5	1	6
Tulsa, Okla.	112	72	22	9	6	3	4
MOUNTAIN	796	507	165	83	25	15	45
Albuquerque, N.M.	100	65	19	10	3	2	4
Colo. Springs, Colo.	39	30	3	4	1	1	4
Denver, Colo.	96	54	19	14	6	3	4
Las Vegas, Nev.	127	67	36	20	4	-	6
Ogden, Utah	21	16	4	1	-	-	3
Phoenix, Ariz.	192	117	45	21	5	4	12
Pueblo, Colo.	15	11	3	-	-	1	-
Salt Lake City, Utah	89	60	17	6	4	2	5
Tucson, Ariz.	117	87	19	7	2	2	7
PACIFIC	1,870	1,200	329	234	63	33	120
Berkeley, Calif.	18	10	5	2	-	1	1
Fresno, Calif.	123	77	27	9	8	2	17
Glendale, Calif.	22	16	4	1	1	-	-
Honolulu, Hawaii	57	35	10	8	2	2	2
Long Beach, Calif.	66	42	11	12	1	-	4
Los Angeles, Calif.	551	342	90	82	21	9	30
Pasadena, Calif.	28	20	3	3	1	1	3
Portland, Oreg.	129	92	19	9	4	5	5
Sacramento, Calif.	165	107	32	19	5	2	12
San Diego, Calif.	148	85	32	24	3	-	13
San Francisco, Calif.	111	59	30	15	3	4	2
San Jose, Calif.	145	91	27	15	6	6	14
Santa Cruz, Calif.	21	12	5	3	1	-	1
Seattle, Wash.	145	101	17	21	5	1	6
Spokane, Wash.	59	48	8	3	-	-	5
Tacoma, Wash.	82	63	9	8	2	-	5
TOTAL	11,657¶	7,384	2,219	1,297	467	276	622

*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.

Current Trends

Cigarette Smoking-Attributable Mortality and Years of Potential Life Lost — United States, 1990

Cigarette smoking is the single most preventable cause of premature death in the United States (*1*). An estimated 390,000 smoking-attributable deaths in the United States occurred in 1985 (*1*), and more than 434,000 deaths occurred in 1988 (*2*); in 1988, an estimated 1,198,887 years of potential life lost (YPLL) before age 65 were attributed to smoking (*2*). To estimate the national impact of cigarette smoking on mortality and YPLL, calculations were performed using the Smoking-Attributable Mortality, Morbidity, and Economic Cost (SAMMEC) software (*3*). This report summarizes the results of this analysis.

SAMMEC uses attributable risk formulas to estimate the number of deaths from neoplastic, cardiovascular, respiratory, and pediatric diseases associated with cigarette smoking (*3*). Estimates for adults (aged ≥35 years) and infants (aged <1 year) were based on 1990 mortality data, the 1990 prevalence of cigarette smoking among adults, and 1989 data on smoking prevalence among pregnant women from CDC's National Center for Health Statistics (*4,5*; CDC, unpublished data, 1993). The number of burn deaths was obtained from the National Fire Protection Association (*6*), and estimates of lung cancer deaths from environmental tobacco smoke (ETS) among nonsmokers were obtained from an Environmental Protection Agency report (*7*). The YPLL to age 65 years and to life expectancy were calculated using standard methodology (*3*), and smoking-attributable mortality (SAM) and YPLL rates were age-adjusted to the 1980 U.S. population to allow more accurate comparisons with 1988 SAM and YPLL.

During 1990, 418,690 U.S. deaths (approximately 20% of all deaths) were attributed to smoking (Table 1). Overall, approximately twice as many deaths occurred among males as among females. A total of 179,820 of these deaths resulted from cardiovascular diseases; 151,322*, neoplasms; 84,475, respiratory diseases; and 1711, diseases among infants. Lung cancer (119,920 deaths*), ischemic heart disease (98,921 deaths), and chronic airway obstruction (48,982 deaths) accounted for the most deaths; combined, these conditions were responsible for 64.0% of all SAM.

Cigarette smoking resulted in 1,152,635 YPLL before age 65 years and 5,048,740 YPLL to life expectancy (Table 2). Compared with SAM and YPLL during 1988 (*2*), SAM declined by 3.6% and YPLL to age 65 years by 3.9% during 1990. SAM rates, total YPLL, and YPLL rates were higher for males than for females.

Reported by: Public Health Practice Program Office; Epidemiology Br, Office on Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion, CDC.

Editorial Note: The slight decline in SAM during 1990 compared with 1988 primarily reflects the 10.4% decline in deaths from cardiovascular disease. The rate of these deaths in the United States has decreased substantially since 1968 (*8*). In contrast, deaths from lung cancer increased by 4.4% and deaths from chronic obstructive pulmonary disease by 4.8%. SAM from these two conditions continue to increase

*Includes deaths from ETS.

Cigarette Smoking — Continued

TABLE 1. Relative risks* (RR) for death attributed to smoking and smoking-attributable mortality (SAM) for current and former smokers, by disease category and sex — United States, 1990

	Male			Female			
	RR			RR			
Disease category (ICD-9 code)†	Current smokers	Former smokers	SAM	Current smokers	Former smokers	SAM	Total SAM
Adult diseases (persons aged ≥35 yrs)							
Neoplasms							
Lip, oral cavity, pharynx (140–149)	27.5	8.8	5,033	5.6	2.9	1,442	**6,475**
Esophagus (150)	7.6	5.8	5,668	10.3	3.2	1,616	**7,284**
Pancreas (157)	2.1	1.1	2,667	2.3	1.8	3,447	**6,114**
Larynx (161)	10.5	5.2	2,379	17.8	11.9	611	**2,990**
Trachea, lung, bronchus (162)	22.4	9.4	81,179	11.9	4.7	35,741	**116,920**
Cervix uteri (180)	NA§	NA	NA	2.1	1.9	1,294	**1,294**
Urinary bladder (188)	2.9	1.9	3,046	2.6	1.9	980	**4,026**
Kidney, other urinary (189)	3.0	2.0	2,866	1.4	1.2	353	**3,219**
Cardiovascular diseases							
Hypertension (401–404)	1.9	1.3	3,299	1.7	1.2	2,151	**5,450**
Ischemic heart disease (410–414)							
Persons aged 35–64 yrs	2.8	1.8	26,431	3.0	1.4	7,701	**34,132**
Persons aged ≥65 yrs	1.6	1.3	38,918	1.6	1.3	25,871	**64,789**
Other heart diseases (390–398, 415–417, 420–429)	1.9	1.3	23,295	1.7	1.2	12,019	**35,314**
Cerebrovascular diseases (430–438)							
Persons aged 35–64 yrs	3.7	1.4	4,557	4.8	1.4	4,114	**8,671**
Persons aged ≥65 yrs	1.9	1.3	10,421	1.5	1.0	4,189	**14,610**
Atherosclerosis (440)	4.1	2.3	3,737	3.0	1.3	2,675	**6,412**
Aortic aneurysm (441)	4.1	2.3	5,913	3.0	1.3	1,382	**7,295**
Other arterial disease (442–448)	4.1	2.3	2,032	3.0	1.3	1,115	**3,147**
Respiratory diseases							
Pneumonia and influenza (480–487)	2.0	1.6	11,292	2.2	1.4	7,881	**19,173**
Bronchitis, emphysema (491–492)	9.7	8.8	9,324	10.5	7.0	5,541	**14,865**
Chronic airway obstruction (496)	9.7	8.8	30,385	10.5	7.0	18,597	**48,982**
Other respiratory diseases (010–012, 493)	2.0	1.6	787	2.2	1.4	668	**1,455**
Pediatric diseases (persons aged <1 yr)							
Short gestation, low birth weight (765)	1.8		285	1.8		222	**507**
Respiratory distress syndrome (769)	1.8		219	1.8		141	**360**
Other respiratory conditions of newborn (770)	1.8		214	1.8		160	**374**
Sudden infant death syndrome (798)	1.5		288	1.5		182	**470**
Burn deaths¶			863			499	**1,362**
Environmental tobacco smoke deaths*			1,055			1,945	**3,000**
Total			**276,153**			**142,537**	**418,690**

*Relative to never smokers.
†*International Classification of Diseases, Ninth Revision*.
§Not applicable.
¶Source: National Fire Protection Association, 1993 (*6*).
**Deaths among nonsmokers from lung cancer attributable to environmental tobacco smoke (Environmental Protection Agency, 1992 [*7*]).

TABLE 2. Estimated number and age-adjusted rates* of smoking-attributable mortality (SAM) and smoking-attributable years of potential life lost (YPLL), by sex and age† — United States, 1990§

	SAM		Smoking-attributable YPLL before age 65 yrs		Smoking-attributable YPLL to life expectancy	
Category	**Estimated no.**	**Rate**	**Estimated no.**	**Rate**	**Estimated no.**	**Rate**
Men	275,147	527.8	732,389	1,919.1	3,124,208	6,233.7
Women	141,832	224.8	308,801	764.6	1,797,024	3,070.7
Infants	1,711	NA¶	111,445	NA	127,508	NA
Total	**418,690**	**364.5**	**1,152,635**	**1,325.8**	**5,048,740**	**4,541.3**

*Per 100,000 persons aged ≥35 years, adjusted to the 1980 U.S. population.
†Men and women=aged ≥35 years; infants=aged <1 year.
§SAM rates and YPLL estimates and rates do not include 3000 deaths from passive smoking because such data were not available.
¶Not available.

Cigarette Smoking — Continued

because of the long latency period between the onset of smoking and the development of disease.

The higher SAM and larger number of YPLL among males is consistent with previous reports (*1,2*). Men in the United States are more likely to smoke and to smoke more cigarettes per day than women (*1,4*). However, the smoking prevalence among men has declined substantially since 1965 (*1*). The smoking prevalence among women, after increasing in the 1960s, also has declined since the late 1970s (*1*). Therefore, future estimates of SAM and YPLL will most likely indicate a smaller difference between men and women.

The SAM and YPLL described in this report may be underestimated for at least four reasons. First, these estimates are based on current smoking prevalence data, whereas most smoking-attributable deaths during 1990 resulted from the higher smoking prevalence during earlier decades (*2*). Second, the SAM estimate for infants may be substantially underestimated because previous research suggests that approximately 10% of the 38,351 infant deaths that occurred during 1990 may be attributable to smoking (*1,9*). Third, the SAM estimates do not include deaths from other conditions, such as leukemia (*2*) and peptic ulcer disease (*1*), that also may be associated with smoking. Finally, these estimates do not include mortality caused by cigar smoking, pipe smoking, or smokeless tobacco use. The SAM and YPLL estimates in this report are not adjusted for confounders (e.g., alcohol), which may lower the estimates for laryngeal and certain upper gastrointestinal cancers (*1*).

The decrease in the prevalence of cigarette smoking since the 1960s has contributed to the decline in SAM (*1,4*). Maintaining this decline will require continued reduction in the prevalence of smoking. The human and economic costs associated with smoking require continued vigorous efforts to prevent the initiation of smoking, to encourage smoking cessation, and to protect nonsmokers from the adverse effects of ETS. Because many factors influence both smoking initiation and smoking cessation, multiple approaches are necessary (*1*) including 1) school-based health education; 2) reducing minors' access to tobacco products; 3) more extensive counseling by health-care providers about smoking cessation; 4) developing and enacting strong, clean indoor air policies and laws; 5) restricting or eliminating advertising targeted toward persons aged <18 years (*10*); and 6) increasing tobacco excise taxes.

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Notice to Readers

Announcement of Eighth National Conference on Chronic Disease Prevention and Control

CDC, the Association of State and Territorial Health Officials, and the Association of State and Territorial Chronic Disease Program Directors will cosponsor the Eighth National Conference on Chronic Disease Prevention and Control, “The Role of Chronic Disease Prevention and Control in a Changing Health Environment.” The conference will be November 17–19, 1993, in Kansas City, Missouri, and is open to the public.

The conference will emphasize interactions among federal, state, and local health departments; voluntary health agencies; and professional organizations. Topics will include worksite health promotion, nutrition and health, chronic disease and young persons, diabetes epidemiology, cancer epidemiology, older adults and their health, cardiovascular disease epidemiology, tobacco and health, use of local data for decision making, building community partnerships for healthy behavioral change in schools, and pitfalls of community intervention.

Additional information is available from CDC’s National Center for Chronic Disease Prevention and Health Promotion, Mailstop K-43, 4770 Buford Highway, NE, Atlanta, GA 30341-3724; telephone (404) 488-5390; fax (404) 488-5962.

Erratum: Vol. 42, No. SS-3

In the *CDC Surveillance Summaries* report, “Surveillance for Gonorrhea and Primary and Secondary Syphilis Among Adolescents—United States, 1981–1991,” the last column of Table 2 (page 4) contained an error. In the column “Total Population, Female,” the rate for the South should be *1479.4*.

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