CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

May 6, 1994 / Vol. 43 / No.17

MMWR
MORBIDITY AND MORTALITY WEEKLY REPORT

National Arthritis Month — May 1994

May is National Arthritis Month. During this month, nationwide educational activities are planned to increase awareness of arthritis. Additional information about arthritis and addresses of local chapters are available from the Arthritis Foundation, P.O. Box 19000, Atlanta, GA 30326; telephone (800) 283-7800.

Current Trends

Prevalence of Arthritis — Arizona, Missouri, and Ohio, 1991–1992

Although regional and national data about arthritis can be used to develop synthetically derived measures of prevalence for states (*1*), few state surveys exist for determining the prevalence and impact of arthritis at that level. To measure state-specific prevalences, during 1991–1992 Arizona, Missouri, and Ohio added questions about arthritis to their Behavioral Risk Factor Surveillance System (BRFSS) surveys. This report presents BRFSS-derived estimates of self-reported prevalence of clinically diagnosed arthritis in these states and characteristics of adults who reported this disorder.

The BRFSS is a state-based, random-digit–dialed telephone survey that collects self-reported data from a representative sample of civilian, noninstitutionalized persons aged ≥18 years (*2*). BRFSS data were analyzed from 4688 persons who resided in Arizona (n=1847), Missouri (n=1509), and Ohio (n=1332). In Arizona, respondents were asked if they currently had some form of arthritis, gout, bursitis, tendonitis, or lupus and if they had been told this by a doctor. In Ohio, respondents were asked if they ever had been told by a doctor that they had any of those conditions. In Missouri, respondents were asked if they ever had been told by a health professional that they had arthritis. For the purpose of this report, persons who answered "yes" to any of these questions were considered to have arthritis. Respondents in Arizona and Ohio

TABLE 1. Weighted number and percentage of persons aged ≥18 years who reported arthritis, by selected characteristics — Ohio, 1991, and Arizona and Missouri, 1992

Characteristic	Arizona					Ohio					Missouri				
	Weighted no.*	%	(95% CI†)	Age-adjusted prevalence§	(95% CI)	Weighted no.*	%	(95% CI)	Age-adjusted prevalence§	(95% CI)	Weighted no.*	%	(95% CI)	Age-adjusted prevalence§	(95% CI)
Age group (yrs)															
18–44	176	10.5	(± 2.4%)	—	—	567	12.5	(± 2.7%)	—	—	204	9.7	(±2.2%)	—	—
45–64	192	30.3	(± 6.7%)	—	—	667	31.9	(± 5.7%)	—	—	329	32.8	(±4.9%)	—	—
65–74	103	38.3	(± 9.0%)	—	—	530	53.8	(± 8.4%)	—	—	213	50.4	(±7.4%)	—	—
≥75	99	52.0	(±10.2%)	—	—	194	49.2	(±10.8%)	—	—	153	58.4	(±9.4%)	—	—
Race															
White	541	21.3	(± 2.7%)	21.3	(±2.6%)	1809	25.4	(± 2.7%)	24.3	(±2.6%)	825	24.4	(±2.4%)	22.4	(±2.1%)
Other¶	26	11.1	(± 7.1%)	12.7	(±6.9%)	158	17.8	(± 6.3%)	19.4	(±5.6%)	77	18.6	(±6.9%)	21.4	(±6.4%)
Sex															
Male	232	17.5	(± 3.5%)	18.6	(±3.3%)	729	19.3	(± 3.5%)	19.0	(±3.3%)	303	16.9	(±2.9%)	17.0	(±2.8%)
Female	339	23.2	(± 3.7%)	22.3	(±3.4%)	1237	29.3	(± 3.7%)	27.6	(±3.4%)	599	29.8	(±3.3%)	26.8	(±2.8%)
Body mass index															
Men															
≥27.8	47	19.2	(± 7.3%)	18.9	(±2.9%)	208	22.2	(± 7.4%)	23.7	(±5.6%)	126	23.5	(±6.1%)	23.8	(±5.1%)
<27.8	180	17.1	(± 3.9%)	18.0	(±5.7%)	495	18.0	(± 3.9%)	18.0	(±3.7%)	177	14.4	(±3.3%)	15.1	(±3.3%)
Women															
≥27.3	98	32.6	(± 9.2%)	32.7	(±6.9%)	417	41.5	(± 8.4%)	37.2	(±9.2%)	234	46.5	(±6.9%)	38.4	(±6.0%)
<27.3	218	20.1	(± 3.9%)	19.0	(±3.5%)	738	25.0	(± 4.1%)	25.8	(±3.9%)	341	24.3	(±3.7%)	22.3	(±3.2%)
Education															
≤8th Grade/ Some high school	114	21.4	(± 5.1%)	20.8	(±4.7%)	415	37.6	(± 7.1%)	25.2	(±5.8%)	263	42.2	(±6.5%)	28.9	(±5.6%)
High school graduate/ GED**	142	19.6	(± 4.9%)	18.9	(±4.2%)	896	24.1	(± 3.7%)	22.4	(±3.4%)	311	22.0	(±3.5%)	21.1	(±3.0%)
Some technical school/ Some college	178	18.7	(± 4.1%)	20.6	(±4.2%)	364	20.6	(± 5.1%)	25.8	(±5.6%)	194	19.5	(±4.1%)	22.5	(±4.2%)

College graduate/ Post-graduate/ Professional	137	24.0 (± 6.5%)	22.6	(±4.8%)	288	20.4 (± 5.7%)	23.1	(±6.2%)	133	17.3	(±4.5%)	22.1	(±5.5%)
Activity limitation													
Every day/ Almost every day	76	13.3 (± 4.3%)	10.6	(±4.0%)	276	14.0 (± 3.5%)	9.0	(±2.5%)	—	—	—	—	—
Once a week/ Occasionally	190	33.3 (± 5.9%)	38.0	(±8.3%)	619	31.5 (± 5.5%)	34.4	(±7.8%)	—	—	—	—	—
Never	298	52.1 (± 6.7%)	50.4	(±8.9%)	1011	51.4 (± 5.7%)	52.9	(±7.9%)	—	—	—	—	—
Total	**571**	**20.5 (± 2.5%)**	**20.8**	**(±2.4%)**	**1967**	**24.5 (± 2.5%)**	**23.7**	**(±2.4%)**	**902**	**23.7**	**(±2.4%)**	**22.3**	**(±1.9%)**

*In thousands. For Arizona, sample size=1847; for Ohio, sample size=1332; and for Missouri, sample size=1509.
†Confidence interval=1.96 X standard error.
§Standard population for age, adjusted to the 1980 U.S. census.
¶Numbers for races other than white were too small for separate analysis.
**General Educational Development certificate.

Arthritis — Continued

also were asked how often arthritis prevented them from performing work or participating in social activities.

Prevalence rates of arthritis were 20.5% in Arizona, 23.7% in Missouri, and 24.5% in Ohio (Table 1). Prevalence increased with age, and half of respondents aged ≥75 years were affected. For example, in Missouri, 9.7% of persons aged 18–44 years reported having arthritis, compared with 58.4% of persons aged ≥75 years. Age-adjusted prevalence rates were higher for whites, women, and overweight adults (men: body mass index [BMI] ≥27.8; women: BMI ≥27.3). Of persons who reported having arthritis, 47% in Arizona and 46% in Ohio reported limited activity. Activity limitations occurred every day or almost every day for 13% in Arizona and 14% in Ohio.

Reported by: TJ Flood, MD, J Contreras, PhD, Div of Disease Prevention, Arizona Dept of Health Svcs. J Jackson-Thompson, PhD, J Ronald, MS, RC Brownson, PhD, Div of Chronic Disease Prevention and Health Promotion, Missouri Dept of Health. E Capwell, PhD, Bur of Chronic Diseases, Ohio Dept of Health. Behavioral Risk Factor Surveillance Br, Office of Surveillance and Analysis; Statistics Br and Aging Studies Br, Div of Chronic Disease Control and Community Intervention, National Center for Chronic Disease Prevention and Health Promotion, CDC.

Editorial Note: Although there are few comparable state surveys to verify the validity of these results, at least two observations can be made by comparing these findings with national results. First, the patterns of arthritis prevalence presented in this report within age and sex groups are consistent with those in national studies (*3*). Second, when prevalence estimates for self-reported arthritis from the 1989–1991 National Health Interview Survey (NHIS) for persons aged ≥18 years are applied to the three state populations (after adjustment for region, age, sex, race, and Hispanic origin), the prevalences are lower than those in this report (Arizona, 19.8% versus 20.5%; Missouri, 19.9% versus 23.7%; and Ohio, 19.5% versus 24.5%). Possible reasons for these differences are that the surveys' or the respondents' definitions of arthritis differ across states or across surveys or because the BRFSS is more likely than the face-to-face interviews of the NHIS to result in overreporting. In addition, Ohio's and Missouri's BRFSS questions on arthritis asked about lifetime occurrence of arthritis, whereas the NHIS asked about the preceding 12 months.

Possible reasons for state-specific differences include sampling error; differences in demographic composition; or variation in the unmeasured demographic, occupational, or other characteristics of respondents. For example, some respondents may have moved to a state because they believed the climate and/or available services might improve their health. The variation may also reflect differences in the way the questions were asked; a standardized questionnaire would resolve this problem.

Data collected at the state level will help focus appropriate interventions and prevention measures (*4*). Such interventions should include state arthritis programs that make diagnostic, treatment, education, and rehabilitation services accessible to persons with arthritis (*5*) and that promote primary-prevention measures based on knowledge of risk factors, such as avoiding joint trauma, preventing obesity, and modifying occupationally related joint stress through ergonomic approaches (*6*). These services can reduce musculoskeletal damage, pain, and disability and substantially improve health (*7*).

States have used the BRFSS to measure the prevalence and impact of self-reported risk behaviors (e.g., smoking) and chronic diseases (e.g., diabetes and hypertension). The BRFSS questions about arthritis may have the same utility and can provide

Arthritis — Continued

arthritis data about special populations (e.g., Hispanics and other minority groups) that may have different disease frequency than the general population. State health departments can use such data to develop a health plan for arthritis and to set arthritis-related health objectives (*4,8,9*).

References

1. CDC. Prevalence of arthritic conditions—United States, 1987. MMWR 1990;39:99–102.
2. Siegel PZ, Waller MN, Frazier EL, Mariolis P. Behavioral Risk Factor Surveillance System: summary of data for 1991. In: CDC surveillance summaries (August). MMWR 1993;42(no. SS-4): 23–30.
3. Cunningham LS, Kelsey JL. Epidemiology of musculoskeletal impairments and associated disability. Am J Public Health 1984;74:574–9.
4. US Committee for the Study of the Future of Public Health, Institute of Medicine. The future of public health. Washington, DC: National Academy Press, 1988.
5. CDC. Arthritis program—Missouri. MMWR 1988;37:85–7.
6. Scott JC, Hochberg MC. Arthritis and other musculoskeletal diseases. In: Brownson RC, Remington PL, David JR, eds. Chronic disease epidemiology and control. Washington, DC: American Public Health Association, 1993:295–305.
7. Fries JF, Spitz PW. The hierarchy of patient outcomes. In: Spilken B, ed. Quality of life assessment for clinical trials. New York: Raven Press, 1990:25–35.
8. Sharp GC, Signsen BH, Hazelwood SE, Hall PJ, Oliver CL, Smith C. The Missouri Arthritis Program—legislation, implementation, and funding a regional centers program. Mo Med 1988; 85:79–83.
9. CDC. Chronic disease prevention and control activities—United States, 1989. MMWR 1991; 40:697–700.

Epidemiologic Notes and Reports

Tetanus — Kansas, 1993

In 1993, two tetanus cases* were reported to the Kansas Department of Health and Environment—the first cases reported in the state since 1987. This report summarizes the findings of the case investigations.

Patient 1

On May 16, an 82-year-old man with a history of chronic obstructive pulmonary disease and recurrent pneumonia was taken to a hospital emergency department because of shortness of breath and inability to get out of bed. On May 15, he had had difficulty chewing and swallowing. Examination noted trismus ("lockjaw") and an abrasion on the right elbow, which resulted from a fall on May 14. The patient was admitted to the hospital with a diagnosis of tetanus. He had not been previously vaccinated with tetanus toxoid. Treatment included tetanus toxoid (0.5 cc) and tetanus immune globulin (TIG) (10,000 units).

While hospitalized, the patient experienced generalized tetanic spasms, followed by respiratory failure and pneumonia. He was placed on mechanical ventilation and

*Both met the Council of State and Territorial Epidemiologists/CDC clinical case definition for public health surveillance of tetanus: "acute onset of hypertonia and/or painful muscular contractions (usually of the muscles of the jaw and neck) and generalized muscle spasms without other apparent medical cause (as reported by a health professional)" (*1*).

Tetanus — Continued

treated with antibiotics, diuretics, and neuromuscular blocking agents. He recovered and was discharged on June 23. Inpatient hospital charges and physician fees totaled $151,492.

Patient 2

On August 15, a 57-year-old man with noninsulin-dependent diabetes sought treatment at an emergency department for a puncture wound to his foot that occurred when he stepped on a rusty nail earlier that day. Treatment in the emergency department included wound cleaning and administration of tetanus toxoid (0.5 cc).

On August 19, the man returned to the emergency department, reporting onset on August 18 of severe pain in the affected foot, fever, chills, and vomiting. He was hospitalized and treated for cellulitis. On August 20, he complained of pain and stiffness in his neck; he subsequently had a cardiopulmonary arrest, was resuscitated, and was placed on mechanical ventilation. Tetanus was diagnosed, and the patient was transferred to a tertiary-care facility. On August 21, he received TIG (500 units) and, on August 23, underwent additional wound debridement. During hospitalization, the patient experienced labile hypertension and cardiac arrhythmia. He remained on mechanical ventilation and died following a cardiac arrest on September 16.

Family members reported the patient had not previously been vaccinated with tetanus toxoid. Medical costs for treatment, transportation, and physician fees from the August 15 emergency department visit through the time of death totaled $145,329.

Reported by: J Hansen, M Goldsberry, Immunization Section, Bur of Disease Control, A Pelletier, MD, Acting State Epidemiologist, Kansas Dept of Health and Environment. National Immunization Program; Div of Field Epidemiology, Epidemiology Program Office, CDC.

Editorial Note: Despite the availability of effective and inexpensive tetanus toxoid vaccines, cases of tetanus continue to occur in the United States. During 1989–1990, 117 tetanus cases were reported in the United States; of the 106 cases with known outcomes, 25 (24%) were fatal. All deaths occurred among persons aged ≥40 years (*1*). Of 110 patients with known vaccination status, 34 (31%) were unvaccinated, and 53 (48%) had received an unknown number of doses of tetanus toxoid (*1*). The two tetanus cases described in this report are consistent with previous cases reported nationwide, which indicate that tetanus occurs primarily among older adults who typically are unvaccinated or have an unknown vaccination history (*1–3*).

Primary prevention of tetanus is accomplished through vaccination with diphtheria and tetanus toxoids and pertussis vaccine (DTP). For persons aged <7 years, the recommended vaccination schedule comprises doses at ages 2, 4, 6, and 12–18 months and 4–6 years (*4*); diphtheria and tetanus toxoids and acellular pertussis vaccine should be used for the fourth and fifth doses at age 15 months or older (*4*). For persons aged ≥7 years, three doses of tetanus and diphtheria toxoids (Td) are recommended at an interval of 1–2 months between the first and second doses and 6–12 months between the second and third doses. Booster doses of Td should be administered every 10 years (*4*). Serologic surveys have demonstrated that 31%–71% of older adults lack protective levels of tetanus antibody (*1*).

Secondary prevention of tetanus, which varies with previous vaccination history, is accomplished postexposure through wound prophylaxis and administration of TIG and/or Td (*4*). Wounds should be cleaned and debrided as indicated. Persons with unknown or uncertain vaccination histories should be considered unvaccinated and

Tetanus — Continued

should receive TIG (250 units intramuscularly) unless the wound is clean and minor (*4*). Tertiary treatment of tetanus includes appropriate medical care and the prompt administration of TIG (3000–6000 units) (*5*). The findings of the case investigations in this report suggest that 1) opportunities are being missed to review tetanus vaccination status of adults and administer appropriate vaccinations and 2) recommendations should be followed for appropriate postexposure treatment of severe puncture wounds.

The high costs of hospitalization for tetanus reflect the need for prolonged intensive care. In Kansas, public health clients pay an average of $3.30 per dose of Td; this charge comprises total vaccine and administration costs (Bureau of Disease Control, Kansas Department of Health and Environment, unpublished data, 1992). Based on the total hospitalization costs of the two tetanus cases reported in Kansas in 1993, nearly 90,000 doses of Td vaccine could have been administered in the state; however, this comparison does not constitute a cost-benefit analysis.

This report emphasizes the importance of preexposure tetanus prophylaxis, especially for older adults who may have never received a primary vaccination series of DTP or the recommended 10-year booster doses, and the importance of appropriate wound management. Because wounds that can result in tetanus often do not require a physician or emergency department visit, health-care providers should review the vaccination status of their patients at each contact and administer Td along with other indicated vaccines as appropriate (*4*).

References

1. Prevots R, Sutter RW, Strebel PM, Cochi SL, Hadler S. Tetanus surveillance—United States, 1989–1990. In: CDC surveillance summaries (December). MMWR 1992;41(no. SS-8):1–9.
2. CDC. Tetanus—Rutland County, Vermont, 1992. MMWR 1992;41:721–2.
3. CDC. Tetanus fatality—Ohio, 1991. MMWR 1993;42:148–9.
4. ACIP. Diphtheria, tetanus, and pertussis: recommendations for vaccine use and other preventive measures—recommendations of the Immunization Practices Advisory Committee (ACIP). MMWR 1991;40(no. RR-10):2–6,16–7.
5. Committee on Infectious Diseases, American Academy of Pediatrics. Tetanus (lockjaw). In: Peter G, Lepow ML, McCracken GH, Phillips CF, eds. Report of the Committee on Infectious Diseases. Elk Grove Village, Illinois: American Academy of Pediatrics, 1991:465–70.

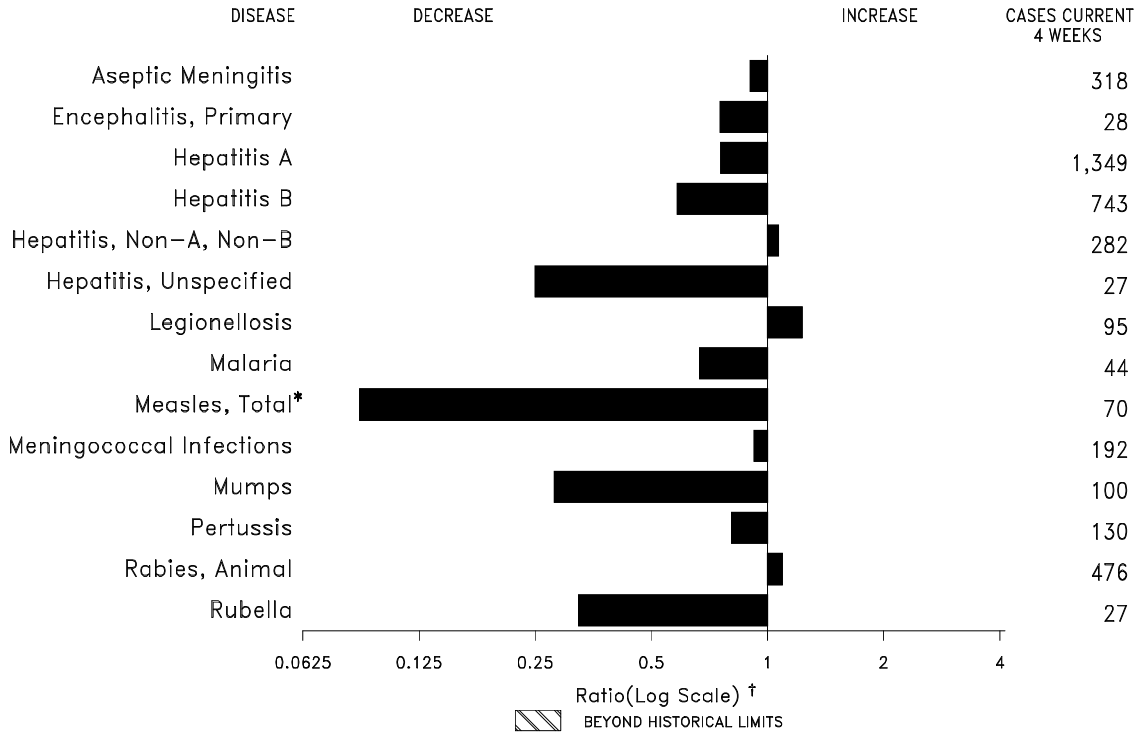
Epidemiologic Notes and Reports

Maternal Hepatitis B Screening Practices — California, Connecticut, Kansas, and United States, 1992–1993

Each year in the United States, an estimated 22,000 infants are born to women with chronic hepatitis B virus (HBV) infection. These infants are at high risk for perinatal HBV infection and chronic liver disease as adults. The American College of Obstetrics and Gynecology, the American Academy of Pediatrics, the American Academy of Family Practice, and the Advisory Committee on Immunization Practices each have recommended that all pregnant women be routinely tested for hepatitis B surface antigen (HBsAg) during an early prenatal visit in each pregnancy to identify newborns who require immunoprophylaxis for the prevention of perinatal HBV infection (*1–4*). To evaluate progress in implementing this recommendation, surveys were conducted

(Continued on page 317)

FIGURE I. Notifiable disease reports, comparison of 4-week totals ending April 30, 1994, 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 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 April 30, 1994 (17th Week)

	Cum. 1994		Cum. 1994
AIDS*	26,335	Measles: imported	14
Anthrax	-	indigenous	173
Botulism: Foodborne	10	Plague	1
Infant	23	Poliomyelitis, Paralytic§	-
Other	7	Psittacosis	7
Brucellosis	19	Rabies, human	-
Cholera	4	Syphilis, primary & secondary	6,593
Congenital rubella syndrome	3	Syphilis, congenital, age < 1 year	-
Diphtheria	-	Tetanus	10
Encephalitis, post-infectious	40	Toxic shock syndrome	83
Gonorrhea	119,123	Trichinosis	24
Haemophilus influenzae (invasive disease)†	369	Tuberculosis	5,627
Hansen Disease	36	Tularemia	3
Leptospirosis	11	Typhoid fever	94
Lyme Disease	1,057	Typhus fever, tickborne (RMSF)	41

*Updated monthly; last update April 26, 1994.
†Of 345 cases of known age, 103 (30%) were reported among children less than 5 years of age.
§No cases of suspected poliomyelitis have been reported in 1994; 3 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.

TABLE II. Cases of selected notifiable diseases, United States, weeks ending April 30, 1994, and May 1, 1993 (17th 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. 1994	Cum. 1994	Cum. 1994	Cum. 1994	Cum. 1994	Cum. 1993	Cum. 1994	Cum. 1994	Cum. 1994	Cum. 1994	Cum. 1994	Cum. 1994
UNITED STATES	26,335	1,550	173	40	119,123	126,009	6,240	3,626	1,397	123	464	1,057
NEW ENGLAND	994	57	6	2	2,631	2,605	106	169	43	15	15	111
Maine	30	6	1	-	21	32	11	4	-	-	-	-
N.H.	24	2	-	1	-	21	3	7	6	-	-	4
Vt.	15	10	-	-	8	11	-	-	-	-	-	2
Mass.	513	18	4	-	975	963	48	134	27	14	11	52
R.I.	93	21	1	1	143	121	12	3	10	1	4	19
Conn.	319	-	-	-	1,484	1,457	32	21	-	-	-	34
MID. ATLANTIC	7,735	155	21	11	15,263	12,839	334	342	179	4	69	696
Upstate N.Y.	582	62	8	1	2,866	2,918	158	123	88	-	16	401
N.Y. City	4,921	3	1	-	4,459	3,894	21	12	-	-	-	-
N.J.	1,532	-	-	-	1,665	1,984	82	109	70	-	7	89
Pa.	700	90	12	10	6,273	4,043	73	98	21	4	46	206
E.N. CENTRAL	1,859	278	47	8	21,821	25,080	551	364	99	2	116	11
Ohio	346	76	15	-	7,878	7,616	181	68	4	-	66	10
Ind.	285	57	2	-	2,674	2,572	114	65	2	-	14	-
Ill.	768	38	15	2	4,817	7,945	130	54	7	1	4	-
Mich.	342	103	15	6	5,528	4,850	85	124	84	1	26	1
Wis.	118	4	-	-	924	2,097	41	53	2	-	6	-
W.N. CENTRAL	550	104	8	1	6,450	6,480	274	191	68	3	55	18
Minn.	134	6	1	-	1,068	877	61	18	5	-	-	7
Iowa	22	36	-	-	454	600	10	11	6	2	20	1
Mo.	237	31	-	-	3,588	3,461	137	139	50	1	24	8
N. Dak.	5	1	2	-	7	17	1	-	-	-	2	-
S. Dak.	9	-	1	-	45	68	13	-	-	-	-	-
Nebr.	31	5	3	1	-	194	29	10	3	-	8	-
Kans.	112	25	1	-	1,288	1,263	23	13	4	-	1	2
S. ATLANTIC	5,517	345	29	12	33,063	34,609	428	903	315	11	122	169
Del.	78	1	-	-	597	452	7	11	19	-	1	40
Md.	489	54	6	1	6,174	5,745	57	111	13	4	30	46
D.C.	422	12	-	-	2,270	1,783	9	16	-	-	2	1
Va.	414	50	10	5	4,361	3,426	40	32	15	2	2	13
W. Va.	10	7	-	-	228	197	3	7	10	-	1	3
N.C.	455	52	12	-	7,994	7,510	35	101	24	-	8	20
S.C.	444	10	-	-	3,984	3,067	11	14	1	-	2	-
Ga.	684	13	1	-	-	4,660	34	383	150	-	58	42
Fla.	2,521	146	-	6	7,455	7,769	232	228	83	5	18	4
E.S. CENTRAL	714	102	17	1	14,407	12,960	149	381	272	1	23	9
Ky.	126	38	6	1	1,436	1,527	67	26	8	-	3	5
Tenn.	213	22	7	-	4,239	3,262	44	331	261	1	13	3
Ala.	210	30	4	-	5,288	4,955	21	24	3	-	5	1
Miss.	165	12	-	-	3,444	3,216	17	-	-	-	2	-
W.S. CENTRAL	2,841	115	9	-	13,191	15,259	898	369	113	29	11	19
Ark.	78	6	-	-	2,186	2,877	20	7	3	-	4	-
La.	306	4	2	-	4,142	3,636	32	44	27	1	-	-
Okla.	91	-	-	-	494	1,156	73	115	60	-	7	11
Tex.	2,366	105	7	-	6,369	7,590	773	203	23	28	-	8
MOUNTAIN	846	47	3	-	2,895	3,838	1,288	164	121	8	26	4
Mont.	10	-	-	-	29	15	10	7	2	-	10	-
Idaho	15	1	-	-	22	46	110	27	37	1	-	1
Wyo.	10	-	-	-	30	27	6	6	35	-	1	-
Colo.	362	7	1	-	850	1,242	78	8	7	3	1	-
N. Mex.	59	6	-	-	332	316	373	70	21	3	1	3
Ariz.	208	18	-	-	967	1,441	492	17	4	-	1	-
Utah	52	4	-	-	109	98	145	11	11	-	1	-
Nev.	130	11	2	-	556	653	74	18	4	1	11	-
PACIFIC	5,279	347	33	5	9,402	12,339	2,212	743	187	50	27	20
Wash.	324	-	-	-	986	1,212	135	29	26	-	5	-
Oreg.	225	-	-	-	328	492	104	15	2	1	-	-
Calif.	4,636	284	32	4	7,564	10,317	1,883	673	155	47	20	20
Alaska	15	12	1	-	290	156	76	6	-	-	-	-
Hawaii	79	51	-	1	234	162	14	20	4	2	2	-
Guam	1	6	-	-	44	39	3	-	-	4	2	-
P.R.	719	10	-	-	161	174	20	103	22	3	-	-
V.I.	7	-	-	-	8	26	-	1	-	-	-	-
Amer. Samoa	-	-	-	-	12	9	4	-	-	-	-	-
C.N.M.I.	1	-	-	-	17	23	2	-	-	-	-	-

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

*Updated monthly; last update April 26, 1994.

TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending April 30, 1994, and May 1, 1993 (17th Week)

Reporting Area	Malaria	Measles (Rubeola)					Menin-gococcal Infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported*		Total									
	Cum. 1994	1994	Cum. 1994	1994	Cum. 1994	Cum. 1993	Cum. 1994	1994	Cum. 1994	1994	Cum. 1994	Cum. 1993	1994	Cum. 1994	Cum. 1993
UNITED STATES	293	9	173	-	14	103	1,068	41	445	26	1,024	972	9	125	65
NEW ENGLAND	26	-	11	-	1	53	65	-	10	4	106	202	7	86	1
Maine	1	-	-	-	-	-	10	-	3	-	2	5	-	-	1
N.H.	3	-	-	-	-	-	3	-	4	-	29	52	-	-	-
Vt.	2	-	-	-	1	30	2	-	-	-	20	38	-	-	-
Mass.	8	-	3	-	-	14	27	-	-	4	46	96	7	86	-
R.I.	4	-	5	-	-	1	-	-	1	-	2	3	-	-	-
Conn.	8	-	3	-	-	8	23	-	2	-	7	8	-	-	-
MID. ATLANTIC	39	3	25	-	2	9	109	2	54	3	310	151	1	7	19
Upstate N.Y.	13	2	5	-	-	1	37	2	9	1	89	52	1	7	1
N.Y. City	2	-	1	-	-	2	3	-	-	-	62	5	-	-	12
N.J.	14	-	18	-	1	6	25	-	-	-	-	29	-	-	5
Pa.	10	1	1	-	1	-	44	-	45	2	159	65	-	-	1
E.N. CENTRAL	30	-	11	-	2	4	168	11	78	2	145	223	-	7	2
Ohio	5	-	6	-	-	-	40	11	19	2	61	80	-	-	1
Ind.	6	-	-	-	1	-	41	-	5	-	31	12	-	-	-
Ill.	8	-	-	-	-	4	56	-	31	-	20	38	-	2	-
Mich.	10	-	3	-	-	-	15	-	20	-	21	14	-	5	-
Wis.	1	-	2	-	1	-	16	-	3	-	12	79	-	-	1
W.N. CENTRAL	16	-	-	-	1	2	76	1	20	-	39	53	-	-	1
Minn.	4	-	-	-	-	-	7	-	4	-	16	20	-	-	-
Iowa	3	-	-	-	-	-	6	-	4	-	3	1	-	-	-
Mo.	7	-	-	-	-	1	39	1	9	-	11	16	-	-	1
N. Dak.	-	-	-	-	-	-	-	-	1	-	1	2	-	-	-
S. Dak.	-	-	-	-	-	-	6	-	-	-	-	1	-	-	-
Nebr.	1	-	-	-	1	-	6	-	2	-	2	4	-	-	-
Kans.	1	-	-	-	-	1	12	-	-	-	6	9	-	-	-
S. ATLANTIC	68	-	4	-	-	17	178	3	77	7	134	74	-	5	5
Del.	2	-	-	-	-	-	-	-	-	-	-	1	-	-	2
Md.	30	-	-	-	-	4	13	1	18	3	46	28	-	-	1
D.C.	7	-	-	-	-	-	1	-	-	-	3	-	-	-	-
Va.	8	-	1	-	-	1	25	1	18	-	13	6	-	-	-
W. Va.	-	-	-	-	-	-	8	-	3	-	2	2	-	-	-
N.C.	2	-	-	-	-	-	32	1	25	4	39	11	-	-	-
S.C.	2	-	-	-	-	-	6	-	5	-	8	5	-	-	-
Ga.	8	-	-	-	-	-	35	-	3	-	7	9	-	-	-
Fla.	9	-	3	-	-	12	58	-	5	-	16	12	-	5	2
E.S. CENTRAL	8	1	28	-	-	-	75	-	5	-	24	42	-	-	-
Ky.	2	-	-	-	-	-	15	-	-	-	3	8	-	-	-
Tenn.	4	1	28	-	-	-	20	-	-	-	13	20	-	-	-
Ala.	1	-	-	-	-	-	34	-	-	-	7	10	-	-	-
Miss.	1	-	-	-	-	-	6	-	5	-	1	4	-	-	-
W.S. CENTRAL	7	-	7	-	4	1	135	18	107	1	32	15	-	7	8
Ark.	-	-	-	-	-	-	20	-	-	1	1	1	-	-	-
La.	-	-	-	-	1	1	20	1	9	-	4	4	-	-	-
Okla.	2	-	-	-	-	-	11	-	21	-	20	10	-	4	1
Tex.	5	-	7	-	3	-	84	17	77	-	7	-	-	3	7
MOUNTAIN	9	5	81	-	1	2	72	-	10	5	57	62	1	2	4
Mont.	-	-	-	-	-	-	2	-	-	-	2	-	-	-	-
Idaho	2	-	-	-	-	-	11	-	3	-	22	11	-	1	1
Wyo.	-	-	-	-	-	-	2	-	-	-	-	1	-	-	-
Colo.	1	2	12	-	1	2	6	-	-	5	14	22	-	-	-
N. Mex.	2	-	-	-	-	-	5	N	N	-	6	14	-	-	-
Ariz.	1	-	-	-	-	-	31	-	-	-	9	8	-	-	-
Utah	3	3	69	-	-	-	11	-	3	-	4	6	1	1	2
Nev.	-	-	-	-	-	-	4	-	3	-	-	-	-	-	1
PACIFIC	90	-	6	-	3	15	190	6	84	4	177	150	-	11	25
Wash.	3	-	-	-	-	-	16	1	3	1	12	12	-	-	-
Oreg.	6	-	-	-	-	-	29	N	N	1	22	-	-	-	1
Calif.	71	-	6	-	2	4	139	5	72	2	139	131	-	10	15
Alaska	-	-	-	-	-	-	1	-	2	-	-	1	-	-	1
Hawaii	10	-	-	-	1	11	5	-	7	-	4	6	-	1	8
Guam	-	U	44	U	-	1	-	U	2	U	-	-	U	1	-
P.R.	-	-	13	-	-	153	3	-	2	-	1	-	-	-	-
V.I.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amer. Samoa	-	-	-	-	-	1	-	-	1	-	1	2	-	-	-
C.N.M.I.	1	U	26	U	-	-	-	U	-	U	-	-	U	-	-

*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 April 30, 1994, and May 1, 1993 (17th Week)

Reporting Area	Syphilis (Primary & Secondary)		Toxic-Shock Syndrome	Tuberculosis		Tula-remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1994	Cum. 1993	Cum. 1994	Cum. 1994	Cum. 1993	Cum. 1994	Cum. 1994	Cum. 1994	Cum. 1994
UNITED STATES	6,593	9,048	83	5,627	6,393	3	94	41	1,918
NEW ENGLAND	62	152	2	113	113	-	10	2	611
Maine	1	2	-	-	7	-	-	-	-
N.H.	-	14	-	7	7	-	-	-	72
Vt.	-	-	-	-	1	-	-	-	60
Mass.	19	70	2	50	47	-	6	2	233
R.I.	5	3	-	11	19	-	1	-	5
Conn.	37	63	-	45	32	-	3	-	241
MID. ATLANTIC	477	786	13	1,019	1,300	-	20	-	239
Upstate N.Y.	54	83	7	68	178	-	5	-	45
N.Y. City	218	490	-	628	785	-	7	-	-
N.J.	65	142	-	204	113	-	8	-	114
Pa.	140	71	6	119	224	-	-	-	80
E.N. CENTRAL	783	1,449	20	591	688	-	22	5	11
Ohio	344	376	9	80	98	-	1	2	-
Ind.	83	130	1	48	62	-	1	-	1
Ill.	186	544	4	317	363	-	11	1	3
Mich.	112	235	6	131	139	-	3	2	4
Wis.	58	164	-	15	26	-	6	-	3
W.N. CENTRAL	406	586	10	145	112	3	-	1	51
Minn.	16	33	-	34	8	-	-	-	5
Iowa	16	32	6	10	9	-	-	1	23
Mo.	349	448	3	68	65	3	-	-	6
N. Dak.	-	-	-	1	4	-	-	-	-
S. Dak.	-	-	-	9	6	-	-	-	2
Nebr.	-	8	1	4	5	-	-	-	-
Kans.	25	65	-	19	15	-	-	-	15
S. ATLANTIC	1,933	2,420	5	853	1,305	-	17	26	623
Del.	7	50	-	-	12	-	1	-	6
Md.	88	127	-	105	127	-	3	-	200
D.C.	80	143	-	40	58	-	1	-	2
Va.	242	208	-	111	141	-	1	1	133
W. Va.	7	1	-	28	24	-	-	-	22
N.C.	611	633	1	130	131	-	-	10	62
S.C.	228	400	-	127	122	-	-	-	59
Ga.	363	426	-	290	246	-	-	15	131
Fla.	307	432	4	22	444	-	11	-	8
E.S. CENTRAL	1,290	1,058	1	289	418	-	-	3	33
Ky.	80	95	-	100	107	-	-	-	2
Tenn.	318	220	1	1	92	-	-	2	-
Ala.	234	273	-	126	143	-	-	-	31
Miss.	658	470	-	62	76	-	-	1	-
W.S. CENTRAL	1,304	2,017	-	666	532	-	4	3	248
Ark.	174	377	-	85	53	-	-	1	11
La.	616	801	-	-	-	-	2	-	30
Okla.	15	123	-	63	51	-	-	2	17
Tex.	499	716	-	518	428	-	2	-	190
MOUNTAIN	96	82	4	131	170	-	6	1	25
Mont.	-	-	-	-	5	-	-	-	-
Idaho	1	-	1	6	3	-	-	-	-
Wyo.	-	2	-	2	1	-	-	1	6
Colo.	52	23	1	1	28	-	2	-	-
N. Mex.	5	14	-	26	18	-	-	-	-
Ariz.	22	36	-	67	70	-	1	-	18
Utah	5	2	2	-	9	-	1	-	-
Nev.	11	5	-	29	36	-	2	-	1
PACIFIC	242	498	28	1,820	1,755	-	15	-	77
Wash.	14	20	-	69	83	-	1	-	-
Oreg.	3	26	-	43	28	-	-	-	-
Calif.	223	448	25	1,620	1,528	-	13	-	54
Alaska	1	2	-	21	18	-	-	-	23
Hawaii	1	2	3	67	98	-	1	-	-
Guam	1	-	-	7	25	-	-	-	-
P.R.	93	175	-	21	64	-	-	-	21
V.I.	17	17	-	-	2	-	-	-	-
Amer. Samoa	-	-	-	2	1	-	1	-	-
C.N.M.I.	1	-	-	14	7	-	1	-	-

U: Unavailable

TABLE III. Deaths in 121 U.S. cities,* week ending April 30, 1994 (17th Week)

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	594	428	90	49	16	11	52
Boston, Mass.	148	89	31	15	7	6	17
Bridgeport, Conn.	25	19	2	3	-	1	2
Cambridge, Mass.	19	17	1	1	-	-	1
Fall River, Mass.	27	20	5	2	-	-	-
Hartford, Conn.	65	44	9	8	3	1	1
Lowell, Mass.	23	18	2	3	-	-	-
Lynn, Mass.	14	11	2	1	-	-	2
New Bedford, Mass.	21	18	2	1	-	-	2
New Haven, Conn.	38	26	5	4	2	1	-
Providence, R.I.	50	41	6	2	1	-	6
Somerville, Mass.	3	3	-	-	-	-	-
Springfield, Mass.	42	31	5	3	1	2	5
Waterbury, Conn.	43	32	10	1	-	-	7
Worcester, Mass.	76	59	10	5	2	-	9
MID. ATLANTIC	2,661	1,728	517	300	58	58	136
Albany, N.Y.	42	28	10	2	1	1	1
Allentown, Pa.	22	19	3	-	-	-	-
Buffalo, N.Y.	121	83	31	3	3	1	4
Camden, N.J.	36	20	8	1	2	5	3
Elizabeth, N.J.	23	17	3	2	1	-	-
Erie, Pa.§	36	22	9	2	2	1	1
Jersey City, N.J.	29	20	7	2	-	-	1
New York City, N.Y.	1,327	805	272	199	28	23	49
Newark, N.J.	73	23	22	18	5	5	2
Paterson, N.J.	24	14	3	5	-	2	1
Philadelphia, Pa.	499	357	86	39	8	9	38
Pittsburgh, Pa.§	56	32	13	4	4	3	4
Reading, Pa.	15	14	-	1	-	-	3
Rochester, N.Y.	143	106	25	8	1	3	14
Schenectady, N.Y.	22	18	3	1	-	-	-
Scranton, Pa.§	32	30	1	1	-	-	5
Syracuse, N.Y.	68	57	2	5	1	3	6
Trenton, N.J.	40	22	11	4	1	2	-
Utica, N.Y.	21	15	5	1	-	-	1
Yonkers, N.Y.	32	26	3	2	1	-	3
E.N. CENTRAL	2,432	1,497	511	213	138	73	122
Akron, Ohio	62	49	7	5	-	1	1
Canton, Ohio	37	26	11	-	-	-	3
Chicago, Ill.	635	272	142	101	104	16	23
Cincinnati, Ohio	206	134	41	16	1	14	17
Cleveland, Ohio	143	84	42	8	1	8	7
Columbus, Ohio	213	135	56	16	3	3	7
Dayton, Ohio	106	69	22	12	1	2	7
Detroit, Mich.	219	126	55	19	10	9	8
Evansville, Ind.	52	40	12	-	-	-	-
Fort Wayne, Ind.	44	31	8	1	-	4	3
Gary, Ind.	17	12	3	2	-	-	1
Grand Rapids, Mich.	65	47	8	4	3	3	7
Indianapolis, Ind.	131	97	19	8	3	4	4
Madison, Wis.	64	43	18	3	-	-	8
Milwaukee, Wis.	128	95	24	6	1	2	10
Peoria, Ill.	46	37	6	1	1	1	3
Rockford, Ill.	40	29	6	2	1	2	4
South Bend, Ind.	69	54	10	1	4	-	4
Toledo, Ohio	89	68	11	3	4	3	5
Youngstown, Ohio	66	49	10	5	1	1	-
W.N. CENTRAL	664	465	116	50	16	17	38
Des Moines, Iowa	59	44	9	3	2	1	3
Duluth, Minn.	15	11	3	1	-	-	3
Kansas City, Kans.	22	13	5	3	1	-	1
Kansas City, Mo.	109	79	14	11	2	3	6
Lincoln, Nebr.	26	22	4	-	-	-	4
Minneapolis, Minn.	113	79	18	8	1	7	7
Omaha, Nebr.	67	47	11	5	3	1	5
St. Louis, Mo.	137	91	29	10	2	5	6
St. Paul, Minn.	63	42	15	5	1	-	1
Wichita, Kans.	53	37	8	4	4	-	2

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	≥65	45-64	25-44	1-24	<1	
S. ATLANTIC	1,309	790	279	156	45	39	101
Atlanta, Ga.	160	102	29	19	4	6	10
Baltimore, Md.	279	157	55	49	10	8	31
Charlotte, N.C.	111	56	29	12	1	13	8
Jacksonville, Fla.	136	91	25	14	5	1	10
Miami, Fla.	100	62	25	11	2	-	-
Norfolk, Va.	72	47	15	6	2	2	7
Richmond, Va.	62	31	13	7	8	3	4
Savannah, Ga.	61	41	10	5	4	1	9
St. Petersburg, Fla.	45	30	7	5	1	2	1
Tampa, Fla.	165	114	39	10	2	-	16
Washington, D.C.	107	51	29	18	6	3	5
Wilmington, Del.	11	8	3	-	-	-	-
E.S. CENTRAL	792	519	129	62	30	35	73
Birmingham, Ala.	124	77	25	14	3	5	5
Chattanooga, Tenn.	61	40	13	5	1	2	3
Knoxville, Tenn.	93	64	8	1	-	3	15
Lexington, Ky.	72	46	10	9	4	3	8
Memphis, Tenn.	216	140	30	15	17	14	24
Mobile, Ala.	56	33	13	5	2	3	7
Montgomery, Ala.	44	33	8	2	-	1	-
Nashville, Tenn.	126	86	22	11	3	4	11
W.S. CENTRAL	1,496	896	293	187	65	53	87
Austin, Tex.	73	47	14	10	1	1	7
Baton Rouge, La.	65	42	14	3	4	2	4
Corpus Christi, Tex.	39	23	10	1	3	2	1
Dallas, Tex.	190	102	42	30	9	7	1
El Paso, Tex.	84	52	14	10	3	5	11
Ft. Worth, Tex.	88	56	20	7	1	4	4
Houston, Tex.	354	206	67	58	13	10	34
Little Rock, Ark.	90	51	26	8	3	2	2
New Orleans, La.	136	70	14	23	19	8	-
San Antonio, Tex.	227	146	40	27	5	9	16
Shreveport, La.	35	25	9	1	-	-	2
Tulsa, Okla.	115	76	23	9	4	3	5
MOUNTAIN	884	550	169	78	60	27	63
Albuquerque, N.M.	107	75	13	10	5	4	2
Colo. Springs, Colo.	44	30	10	3	1	-	7
Denver, Colo.	99	78	12	7	1	1	11
Las Vegas, Nev.	175	95	45	21	9	5	7
Ogden, Utah	15	12	2	-	-	1	7
Phoenix, Ariz.	209	104	38	22	38	7	15
Pueblo, Colo.	U	U	U	U	U	U	U
Salt Lake City, Utah	89	53	22	7	4	3	5
Tucson, Ariz.	146	103	27	8	2	6	9
PACIFIC	1,933	1,259	352	229	51	37	138
Berkeley, Calif.	23	15	4	2	-	2	1
Fresno, Calif.	74	46	10	11	5	2	8
Glendale, Calif.	22	15	6	1	-	-	2
Honolulu, Hawaii	87	61	15	11	-	-	7
Long Beach, Calif.	75	47	14	7	4	3	6
Los Angeles, Calif.	535	318	112	79	15	6	32
Pasadena, Calif.	26	20	3	3	-	-	6
Portland, Oreg.	158	114	25	13	3	3	4
Sacramento, Calif.	165	110	34	10	5	6	16
San Diego, Calif.	166	108	29	18	6	5	19
San Francisco, Calif.	154	83	32	33	5	1	3
San Jose, Calif.	179	137	21	15	3	3	18
Santa Cruz, Calif.	32	24	5	1	-	2	3
Seattle, Wash.	125	85	23	12	2	3	3
Spokane, Wash.	42	30	6	6	-	-	4
Tacoma, Wash.	70	46	13	7	3	1	6
TOTAL	12,765¶	8,132	2,456	1,324	479	350	810

*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.

Hepatitis B — Continued

to assess the effectiveness of maternal HBsAg screening in three states—California, Connecticut, and Kansas—and a sample of hospitals in the United States.

California

Since 1991, universal prenatal HBsAg screening and reporting have been required by law in California. In January 1993, the California Department of Health Services (CDHS) assessed prenatal HBsAg screening and reporting of pregnant women with chronic HBV infection in Merced and Stanislaus counties. CDHS personnel reviewed the medical records of 994 (97%) of the 1027 births that occurred in the seven hospitals with obstetric services in those two counties during September 1992. Charts of each mother and her infant were reviewed for documentation of maternal HBsAg screening.

Documentation of maternal HBsAg screening was present for 979 (98%) women, of whom 10 (1%) were HBsAg-positive. All 10 HBsAg-positive women had been reported to CDHS, and all infants received hepatitis B immune globulin (HBIG) and hepatitis B vaccine at birth.

Connecticut

To evaluate the perinatal hepatitis B prevention program in Connecticut, a systematic sample of women who delivered during January 1–February 15, 1993, was selected from the birth log of each of the seven hospitals with obstetric services in Bridgeport, Hartford, and New Haven; 80 women were selected from each hospital. Charts of each mother and her infant were reviewed for written evidence of maternal HBsAG screening results, the number and provider source of prenatal-care visits, and selected risk factors for prior HBV infection (e.g., drug use and country of birth). Of the 560 selected births, charts were available and reviewed for 538 (96%) mothers, 529 (94%) infants, and 515 (92%) mother-infant pairs.

Documentation of maternal HBsAg screening was present in 484 (90%) maternal records (range by hospital: 86%–99%), 344 (65%) infant charts, and 112 (29%) of the 385 infant discharge summaries included in the infants' charts. Women without evidence of prenatal care were more likely to have no screening results (26%) than those with evidence of prenatal care (8%) (Table 1). Of 533 mothers for whom residence was known, those who resided outside of the three cities were more likely to lack screening results (12%) than city residents (6%) (Table 1). Lack of screening was not associated with source of prenatal health care or maternal risk factors for prior HBV infection.

Kansas

To determine maternal HBsAg screening practices of physicians in Kansas, birth certificates were obtained for 454 (74%) of 613 newborns randomly selected from 3984 state public health laboratory reports on screening for metabolic diseases for infants born during May 1992. A questionnaire was mailed to the 210 physicians responsible for the 454 deliveries; 204 (97%) physicians responded and returned questionnaires with usable data for 412 births.

Of the 412 mothers, 346 (84% [95% confidence interval=80%–88%]) had been screened for HBsAg. White women were more likely to lack screening results than women of races other than white (Table 1). Maternal factors not associated with lack of prenatal HBsAg screening included age, gravidity, level of education, timing of

Hepatitis B — Continued

initial prenatal visit, and number of prenatal visits. Women cared for by family or general practitioners were more likely to lack screening results than women receiving care from obstetricians (Table 1). Physician factors not associated with prenatal HBsAg screening practices included age and board certification.

United States

In 1993, a random sample of 183 hospitals with obstetric services from the 1992 member list of the American Hospital Association were surveyed to evaluate hospital policies for maternal HBsAg screening, determine the prevalence of screening on a sample of births, identify risk factors for lack of screening, and determine the

TABLE 1. Characteristics associated with lack of maternal hepatitis B surface antigen screening — Connecticut, Kansas, and United States, 1992–1993

		Not screened			
Area/Characteristic	**Total**	**No.**	**(%)**	**Relative risk**	**(95% CI*)**
CONNECTICUT (n=538)					
Prenatal care					
No†	**61**	16	(26)	3.4	(2.0– 5.7)
Yes	**477**	37	(8)	Referent	(1.2– 4.2)
City resident§					
No	**335**	41	(12)	2.2	(1.2– 4.2)
Yes	**198**	11	(6)	Referent	
KANSAS (n=412)					
Race					
White	**374**	65	(17)	6.6	(0.9–46.5)
Other¶	**38**	1	(3)	Referent	
Obstetric provider**					
Family/General practitioner	**98**	35	(36)	3.5	(2.3– 5.4)
Obstetrician	**307**	31	(10)	Referent	
UNITED STATES (n=3982)					
Hospital Policy					
No policy	**998**	384	(39)	6.6	(5.4– 8.2)
Nonwritten	**1364**	162	(12)	2.1	(1.6– 2.6)
Written	**1620**	94	(6)	Referent	
State law requiring screening					
No	**2945**	553	(19)	2.2	(1.8– 2.8)
Yes	**1037**	87	(8)	Referent	
Infant's medical-care provider					
Family practitioner	**1166**	259	(22)	1.7	(1.5– 2.0)
Other	**344**	63	(18)	1.4	(1.1– 1.8)
Pediatrician	**2472**	318	(13)	Referent	
Hospital location					
Rural	**1536**	305	(20)	1.5	(1.3– 1.7)
Urban	**2446**	335	(14)	Referent	

*Confidence interval.
†No mention in mother's chart.
§Information for five women is unknown.
¶Includes blacks, American Indians/Alaskan Natives, and Asians/Pacific Islanders.
**Information for seven women is unknown.

Hepatitis B — Continued

treatment given to infants of HBsAg-positive women. Medical records of 3982 infants were reviewed to identify written evidence of maternal HBsAg screening; if information was missing from the infant's record, maternal records were reviewed.

Overall, 138 (75%) hospitals had policies that maternal HBsAg screening be done before or at the time of all deliveries; 70 (51%) of these hospitals had written policies. Of the 50 hospitals located in states with laws requiring maternal HBsAg screening, 27 (54%) had written policies to screen all pregnant women. In contrast, of the 133 hospitals located in states without such laws, 32% had screening policies ($p<0.05$).

Maternal HBsAg screening results were identified for 84% of infants and were present on 60% of infant's medical records. HBsAg results were present more often in the medical records of infants born in hospitals with policies requiring maternal screening compared with hospitals that had no such policies and in states with screening laws compared with states without such laws (Table 1). Other factors associated with lack of maternal HBsAg screening results included specialty of the infant's medical-care provider and birth in a rural hospital (Table 1).

Among 3342 women who had HBsAg screening, 12 (0.4%) had chronic HBV infection. Of the 12 infants born to these women, eight received hepatitis B vaccine and HBIG at birth, two received hepatitis B vaccine alone, and two received no treatment to prevent perinatal HBV transmission.

Reported by: L Burd, M Chiang, GW Rutherford, III, MD, State Epidemiologist, California Dept of Health Svcs. A Banaie, S Dutta, M Faruqi, C Ho, A Richman, K Riester, C Rohr, H Yusuf, Yale Univ Dept of Epidemiology and Public Health; A Roome, JL Hadler, MD, State Epidemiologist, Connecticut Dept of Public Health and Addiction Svcs. R Carlson, PhD, W Craft, C Keeling, L Phillips, PhD, R Ryan, PhD, C Satzler, J Schmid, M Ummel, A Pelletier, MD, Acting State Epidemiologist, Kansas Dept of Health and Environment. Div of Field Epidemiology, Epidemiology Program Office; Epidemiology and Surveillance Div, National Immunization Program; Hepatitis Br, Div of Viral and Rickettsial Diseases, National Center for Infectious Diseases, CDC.

Editorial Note: The findings in this report indicate that, although maternal HBsAg screening is well integrated into routine prenatal care, screening of pregnant women and reporting of results to health-care providers is not complete in many geographic areas. In addition, these surveys suggest that perinatal screening of mothers who, on admission, do not have screening results is not consistently practiced. The prevalence of chronic HBV infection is higher among women who have not been screened or who have not received prenatal care (*5*). The failure to document maternal screening results in the delivery room record has been associated with inadequate immunoprophylaxis of infants born to HBsAg-positive women (*6*). When maternal HBsAg status is unknown at the time of delivery, infants should receive the dose of hepatitis B vaccine recommended for infants born to HBsAg-positive women within 12 hours of birth and the recommended second and third dose at ages 1 month and 6 months (*2*). To ensure appropriate follow-up of all infants and linkage of the hospital records with those of well-child care providers, HBsAg status should be documented on infants' discharge summaries or vaccination records. In addition, infants born to HBsAg-positive mothers should be reported to the local health department to ensure they are tracked and receive all three doses of hepatitis B vaccine.

Universal screening and treatment of exposed infants have not been achieved for at least three reasons. First, providers may be unaware of the effects of perinatal HBV infections because newborns with HBV infection are usually asymptomatic and the adverse outcomes (e.g., chronic hepatitis, cirrhosis, and hepatocellular carcinoma) oc-

Hepatitis B — Continued

cur when they are adults. Second, laws requiring maternal HBsAg screening have been enacted in only nine states, and the national survey suggests that state laws improve HBsAg screening practices. Third, some practitioners may be selectively screening patients based on the Advisory Committee on Immunization Practices recommendations made in 1984; selective screening of pregnant women for HBsAg based on race/ethnicity or other risk group criteria listed in those recommendations can miss a substantial proportion of HBsAg-positive women (*7,8*).

Although routine infant hepatitis B vaccination is recommended in the United States, prevention of perinatal HBV transmission requires sustained efforts to screen pregnant women for HBsAg. The findings in this report suggest several strategies for assisting in the prevention of perinatal HBV transmission. Educational efforts for health-care providers in rural areas and for primary-care providers should emphasize the importance of screening all women for HBsAg. Hospitals should develop policies to ensure that all women are screened for HBsAg before delivery, perinatal screening is conducted for women without previous HBsAg screening results, and infants born to HBsAg-positive women receive appropriate medical treatment and are reported to the local health department. In addition, hospital policies should ensure that maternal screening results are documented in the infants' medical records and conveyed to well-child care providers. Finally, legislators should be provided information that could be used in drafting laws requiring HBsAg screening of all pregnant women.

References

1. Committee on Obstetrics, Maternal and Fetal Medicine. Guidelines for hepatitis B virus screening and vaccination during pregnancy. Washington, DC: American College of Obstetrics and Gynecology, 1990.
2. CDC. Protection against viral hepatitis: recommendations of the Immunization Practices Advisory Committee (ACIP). MMWR 1990;39(no. RR-2).
3. Committee on Infectious Diseases, American Academy of Pediatrics. Report of the Committee on Infectious Diseases. 22nd ed. Elk Grove Village, Illinois: American Academy of Pediatrics, 1991:238–55.
4. American Academy of Family Physicians. Recommendations for hepatitis B preexposure vaccination and postexposure prophylaxis. Kansas City, Missouri: American Academy of Family Physicians, 1992.
5. Silverman NS, Darby MJ, Ronkin SL, Wapner RJ. Hepatitis B prevalence in an unregistered prenatal population: implications for neonatal therapy. JAMA 1991;266:2852–5.
6. Birnbaum JM, Bromberg K. Evaluation of prophylaxis against hepatitis B in a large municipal hospital. Am J Infect Control 1992;20:172–6.
7. Kumar ML, Dawson NV, McCullagh AJ, et al. Should all pregnant women be screened for hepatitis B. Ann Intern Med 1987;107:273–7.
8. Summers PR, Biswas MK, Pastorek JG, Perroll ML, Smith LG, Bean BE. The pregnant hepatitis B carrier: evidence favoring comprehensive antepartum screening. Obstet Gynecol 1987;69: 701–4.

Notice to Readers

International Decade for Natural Disaster Reduction

Since 1975, natural disasters (e.g., earthquakes, floods, tropical cyclones, and volcanic eruptions) have caused approximately 3 million deaths worldwide, adversely affected the lives of at least 800 million additional persons (of whom 47 million were left homeless [*1*]), and caused more than $50 billion in property damage (*2*). To promote internationally coordinated efforts to reduce material losses and social and economic disruption caused by natural disasters, especially in developing countries (*3*), on December 11, 1987, a United Nations General Assembly Resolution declared the 1990s as the "International Decade for Natural Disaster Reduction" (IDNDR). The goal of the IDNDR is to improve each country's capacity to prevent or diminish adverse effects from natural disasters and to establish guidelines for the application of existing science and technology to reduce the impact of natural disasters. During May 23–27, 1994, the United Nations will convene the World Conference on Natural Disaster Reduction in Yokohama, Japan, to review progress toward reducing the adverse effects of disasters during the IDNDR.

Many efforts to minimize the consequences of natural disasters have emphasized scientific and technologic advances unrelated to public health (e.g., development of satellite-based warning systems that predict hurricane landfall, design of buildings to withstand earthquake-related ground shaking, and improvement of radar systems to detect newly formed tornadoes). However, findings from epidemiologic studies following disasters are helping to establish strategies to decrease morbidity and mortality from such events (*4,5*). For example, during the past 15–20 years, the number of tornado-related deaths in the United States has declined, in part, because of the findings of epidemiologic studies used to develop effective tornado safety guidelines (*6*). In addition, since 1985, the frequency and magnitude of disaster-related measles outbreaks in refugee camps in Africa and Asia have declined as a result of effective measles vaccination campaigns (*7*). These findings demonstrate the role of public health in reducing the impact of natural disasters.

Objectives of the IDNDR related to preventing or reducing the public health impact of natural disasters in each country include 1) strengthening human resources and building institutional capacity (e.g., incorporating key principles of emergency preparedness and response into the curricula of institutions such as schools of medicine and public health); 2) integrating key emergency preparedness principles and procedures into ongoing public and primary health programs (e.g., environmental health, public health surveillance, and vaccination programs); 3) improving collaboration on preparedness and response (e.g., strengthening relations between health programs and other sectors involved in emergency preparation); 4) conducting community-based epidemiologic research immediately following natural disasters on the public health consequences of such events (e.g., developing models that predict the public's vulnerability to different types of natural disasters or identifying populations at increased risk from disasters); 5) improving technology- and information-transfer strategies; 6) improving communication between communities at risk before, during, and after a disaster (e.g., coordinating between public health agencies and other key response organizations to streamline communication procedures, exploring technologic

Notice to Readers — Continued

alternatives for improved data retrieval, and developing databases about natural hazards specific to each country and information about regional and international resources available for immediate emergency assistance); and 7) developing early-warning systems.

Reported by: Disaster Assessment and Epidemiology Section, Health Studies Br, Div of Environmental Hazards and Health Effects, National Center for Environmental Health, CDC.

References

1. International Red Cross. International Federation of Red Cross and Red Crescent societies: world disasters report. Dordrecht, Netherlands: Martinus Nijhoff Publishers, 1993.
2. National Research Council. Confronting natural disasters: an International Decade for Natural Disaster Reduction. Washington, DC: National Academy Press, 1987.
3. United Nations. The International Decade for Natural Disaster Reduction. New York: United Nations, December 1987. (United Nations General Assembly Resolution 42/160.A/RES/42/169.11).
4. Binder S, Sanderson LM. The role of the epidemiologist in natural disasters. Ann Emerg Med 1987;16:1081–4.
5. Noji EK. The role of epidemiology in natural disaster reduction. In: Proceedings of the U.S.-Japan natural disaster reduction workshop. Tokyo: Japan Science & Technology Agency, 1992: 327–45.
6. Glass RI, Craven RB, Bregman DJ, et al. Injuries from the Wichita Falls tornado: implications for prevention. Science 1980;207:734–8.
7. Toole MJ, Waldman RJ. Prevention of excess mortality in refugee and displaced populations in developing countries. JAMA 1990;263:3296–302.

Notice to Readers

Fifth International Conference on Coccidioidomycosis

CDC is a cosponsor of the Centennial Conference on Coccidioidomycosis—5th International Conference—hosted by the Stanford University School of Medicine in Stanford, California, August 24–27, 1994. The conference will present new information on the epidemiology, pathogenesis, diagnosis, and treatment of coccidioidomycosis, including information on coccidioidomycosis in HIV-infected persons, and review the history of this disease. The conference is targeted toward physicians, scientists, nurses, pharmacists, technologists, and other health-care workers. Information about registration and submission of abstracts is available from Complete Conference Management, 1660 Hotel Circle North, No. 220, San Diego, CA 92108; telephone (619) 299-6673; fax (619) 299-6675.

Erratum: Vol. 43, No. 14

In the article "Motor-Vehicle–Related Deaths Involving Intoxicated Pedestrians—United States, 1982–1992," the first sentence of the second paragraph contains an error. The sentence should read "NHTSA considers a fatal crash to be alcohol related if either the driver or a nonoccupant (e.g., a pedestrian) had a blood alcohol concentration (BAC) ≥*0.01 g/dL* in a police-reported motor-vehicle crash."

Monthly Immunization Table

To track progress toward achieving the goals of the Childhood Immunization Initiative (CII), CDC publishes monthly a tabular summary of the number of cases of all diseases preventable by routine childhood vaccination reported during the previous month and year-to-date (provisional data). In addition, the table compares provisional data with final data for the previous year and highlights the number of reported cases among children aged ≤5 years, who are the primary focus of CII. Data in the table are derived from CDC's National Notifiable Diseases Surveillance System.

Number of reported cases of diseases preventable by routine childhood vaccination — United States, March 1994 and 1993–1994*

Disease	No. cases, March 1994	Total cases		No. cases among children aged <5 years†	
		1993	1994	1993	1994
Congenital rubella syndrome (CRS)	1	**3**	**3**	1	3
Diphtheria	0	**0**	**0**	0	0
Haemophilus influenzae§	95	**347**	**269**	100	75
Hepatitis B¶	947	**2628**	**2585**	19	44
Measles	69	**83**	**105**	30	29
Mumps	101	**406**	**290**	71	33
Pertussis	217	**660**	**734**	298	410
Poliomyelitis, paralytic**	—	**—**	**—**	—	—
Rubella	46	**45**	**82**	10	6
Tetanus	4	**3**	**7**	0	1

*Data for 1993 are final and for 1994, provisional.
†For 1993 and 1994, age data were available for 85% or more cases, except for 1993 CRS, which were available for 33%, and 1994 pertussis, which were available for 82% of cases.
§Invasive disease; *H. influenzae* serotype is not routinely reported to the National Notifiable Diseases Surveillance System.
¶Because most hepatitis B virus infections among infants and children aged <5 years are asymptomatic (although likely to become chronic), acute disease surveillance does not reflect the incidence of this problem in this age group or the effectiveness of hepatitis B vaccination in infants.
**No cases of suspected poliomyelitis have been reported in 1994; three cases of suspected poliomyelitis have been reported in 1993; four of the five suspected cases with onset in 1992 were confirmed; the confirmed cases were vaccine associated.

The *Morbidity and Mortality Weekly Report (MMWR)* Series is prepared by the Centers for Disease Control and Prevention (CDC) and is available on a paid subscription basis from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402; telephone (202) 783-3238.

The data in the weekly *MMWR* are provisional, based on weekly reports to CDC by state health departments. The reporting week concludes at close of business on Friday; compiled data on a national basis are officially released to the public on the succeeding Friday. Inquiries about the *MMWR* Series, including material to be considered for publication, should be directed to: Editor, *MMWR* Series, Mailstop C-08, Centers for Disease Control and Prevention, Atlanta, GA 30333; telephone (404) 332-4555.

☆**U.S. Government Printing Office: 1994-533-178/05002 Region IV**