CENTER FOR DISEASE CONTROL

Morbidity and Mortality

Vol. 24, No. 8

WEEKLY REPORT

For Week Ending February 22, 1975

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE PUBLIC HEALTH SERVICE

DATE OF RELEASE: FEBRUARY 28, 1975 – ATLANTA, GEORGIA 30333

RECOMMENDATION OF THE PUBLIC HEALTH SERVICE ADVISORY COMMITTEE ON IMMUNIZATION PRACTICES

BCG VACCINES

INTRODUCTION

Tuberculosis cases and deaths in the United States have declined steadily since reporting began in the 19th century. Preliminary data for 1974 show approximately 30,000 new cases and 3,600 deaths, for rates of approximately 14.3 (new cases) and 1.8 (deaths) per 100,000 population. These rates are 46% and 58% lower than the corresponding rates for 1964. The rate of infection, judged by the prevalence of positive tuberculin skin tests, has also declined, particularly for susceptible groups, such as young children. The prevalence of positive reactors among 6-year-olds entering school is now about 0.2% and among adolescents about 0.7%, a decline for both age groups of approximately 75% in the last 10 years. The current infection rate is estimated to be 0.03%, based on the prevalence among 6-year-olds.

The incidence of tuberculosis cases varies broadly among different segments of the population and in different localities. Cases occur twice as frequently in males as in females. Rates increase sharply with age in both sexes and all races. More than 80% of reported new cases are in persons over 25 years of age, most of whom were infected in the past. Reported cases are generally typical post-primary pulmonary disease. The risk of infection is greatest for those who have repeated exposure to persons with unrecognized or untreated sputum-positive pulmonary tuberculosis. Chemotherapy rapidly reduces the infectivity of cases.

Efforts to control tuberculosis in the United States are directed toward the early identification and treatment of cases and preventive therapy with isoniazid for infected persons at high risk of developing active disease. Here, BCG has been used mainly for selected groups of persons who live or work where they have an unavoidable risk of exposure to tuberculosis.

BCG VACCINES

The Bacillus of Calmette and Guérin (BCG) was derived from a strain of *Mycobacterium bovis* attenuated through years of serial passage in culture by Calmette and Guérin at the Pasteur Institute, Lille, France. It was first administered to humans in 1921.

There are many BCG vaccines available in the world today; all are derived from the original strain, but they vary in immunogenicity, efficacy, and reactogenicity. Variation probably has been the result of genetic changes in the bacterial strains, differences in techniques of production, methods and routes of vaccine administration, and characteristics of the populations and environments in which vaccine has been studied. Controlled trials—all conducted prior to 1955—of liquid vaccines prepared from different BCG strains showed protection ranging from 0 to 80%.

The vaccines now available in the United States differ from products used in the field trials in that many culture passages have since taken place, and there have been various modifications in methods of preparation and preservation. The efficacy of these current vaccines has not been demonstrated directly and can only be inferred.

Production standards for BCG vaccines (Bureau of Biologics, Food and Drug Administration) specify that they be freeze-dried products containing live bacteria from a documented strain of the Bacillus of Calmette and Guérin. The strain must demonstrate various specified characteristics of safety and potency and be capable of inducing tuberculin sensitivity in guinea pigs and humans. (The assumed relationship between sensitivity and immunity has not been proven.)

BCG has been associated with adverse reactions including severe or prolonged ulceration at the vaccination site, lymphadenitis, osteomyelitis, lupoid reactions, disseminated BCG infection, and death. However, available data, mostly from other countries, do not necessarily pertain to the vaccines currently licensed in the United States; and the reported frequency of complications has varied greatly, depending in part on the extent of the surveillance effort. For example, the frequency of ulceration and lymphadenitis has been reported to range from 1% to 10%, depending on the vaccine, the dosage, and the age of vaccinees. Osteomyelitis has been reported to occur in 0.1 per 100,000 vaccinees, although recent information indicates that with newborns it may be as high

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BCG VACCINES – Continued

as 5 per 100,000. Disseminated BCG infection and death are very rare, ranging from 0.008 to 0.1 per 100,000 vaccinees, and occur almost exclusively in children with impaired immune response.

GENERAL RECOMMENDATIONS

Thorough application of modern methods of case detection, chemotherapy, and preventive treatment can be highly successful in controlling tuberculosis. Nevertheless, an effective BCG vaccine may be useful under certain circumstances. In particular, BCG may benefit uninfected persons with repeated exposure to infective cases who cannot or will not obtain or accept treatment.

To assure confidence in using BCG vaccines, it would be desirable to develop a reproducible animal model for assessing their effectiveness. Correlation of the results of human BCG vaccine trials with such an *in vivo* model would provide a means of evaluating the effectiveness in man of the many BCG strains used in vaccines throughout the world.

Specific Recommendations

1. BCG vaccination should be seriously considered for persons who are tuberculin skin-test negative and who have repeated exposure to persistently untreated or ineffectively-treated, sputum-positive pulmonary tuberculosis.

2. BCG vaccination should be considered for well-defined communities or groups if an excessive rate of new infections can be demonstrated and the usual surveillance and treatment programs have failed or have been shown not to be applicable. Such groups might exist among the socially disaffiliated and those without a regular source of health care, possibly including some alcoholics, drug addicts, and migrants. Groups such as health workers who may be at particular risk of exposure to unrecognized pulmonary tuberculosis should, where possible, be kept under surveillance for evidence of newly acquired tuberculous infection. It must be recognized that only the occurrence of new infections reflects whether transmission is actually occurring.

SCHEDULE

BCG should be reserved for persons who are skin-test negative to 5TU of tuberculin, PPD. Those who receive BCG should have a repeat tuberculin skin test 2-3 months later. If that skin test is negative and the indications for BCG remain, the vaccination should be repeated. Dosage is that indicated by the manufacturer in the package labeling. If a newborn is to be vaccinated, one half of the usual dose should be given. If the indications for BCG remain, revaccination with a full dose can be given after the child is 1-year-old.

The World Health Organization recommends that BCG be given by the intradermal route in order to provide uniformity and reliability of dosage. In the United States, however, vaccines for intradermal and for percutaneous administration are licensed; and vaccination should be only by the route indicated in the package labeling.

Freeze-dried vaccine should be reconstituted, protected from direct sunlight, and used within 8 hours.

PRECAUTIONS AND CONTRAINDICATIONS

Altered Immune States

BCG for tuberculosis prevention should not be given to persons with impaired immune response such as occurs with leukemia, lymphoma, or generalized malignancy, and when immunologic response has been suppressed with steroids, alkylating agents, antimetabolites, or radiation.

Pregnancy

Although no harmful effects of BCG on the fetus have been observed, it is prudent to avoid vaccination during pregnancy unless there is an excessive risk of unavoidable exposure to infective tuberculosis.

Interpretation of Tuberculin Test

After BCG vaccination, it is usually not possible to distinguish between a tuberculin reaction caused by virulent super-infection and one resulting from persistent post-vaccination sensitivity. Therefore, caution is advised in attributing a positive skin test to BCG (except in the immediate post-vaccination period), especially if the vaccinee has recently been exposed to infective tuberculosis.

Tuberculosis in Vaccinated Persons

Since full, lasting protection from BCG vaccination cannot be assured, tuberculosis should be included in the differential diagnosis of any tuberculosis-like illness in a BCG vaccinee.

SURVEILLANCE

All suspected adverse reactions to BCG should be carefully investigated and reported to health authorities. These reactions occasionally occur as long as a year or more after vaccination.

Selected Bibliography

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4. Waaler H, Rouillon A: BCG vaccination policies according to the epidemiological situation. Bull of the International Union Against Tuberculosis 49:166-189, 1974

5. Diagnostic Standards and Classification of Tuberculosis and Other Mycobacterial Diseases. New York, American Lung Association/American Thoracic Society, 1974

CURRENT TRENDS

CHANGE IN REPORTING PRACTICES FOR TUBERCULOSIS CASES – United States

Tuberculosis cases reported to CDC in 1975 and published in the Morbidity and Mortality Weekly Report are not comparable with cases reported in 1974. Prior to 1975 a case was defined as a person who developed active tuberculosis during the year and had never been reported before as active. Reactivated cases (previously reported active) were excluded from the new case count. Beginning in 1975 tuberculosis cases reported to CDC are defined as persons who have one or both of the following characteristics: (1) positive bacteriology or (2) treatment with two or more antituberculosis drugs. Included are persons who had disease at some time in the past and who have disease again with one or both of these characteristics. This change in reporting practice was approved by the Association of State and Territorial Health Officers.

(Reported by Tuberculosis Control Division, Bureau of State Services, CDC.)

CURRENT TRENDS

PREVENTIVE THERAPY OF TUBERCULOUS INFECTION

The following recommendation on the use of isoniazid for preventive treatment of tuberculosis is a joint statement from the American Thoracic Society, American Lung Association, and the Center for Disease Control. It supersedes previous statements and recommendations on preventive therapy, including "Isoniazid-Associated Hepatitis: Summary of the Report of the Tuberculosis Advisory Committee and Special Consultants to the Director, Center for Disease Control," which appeared in Volume 23, No. 11, of the Morbidity and Mortality Weekly Report, *March 1974. The current recommendation was previously published in the* American Review of Respiratory Disease, *Volume 110, No. 3, September 1974.*

Antimicrobial drugs, which have revolutionized the therapy of tuberculosis, can also be used to prevent disease in the infected individual. Preventive therapy (chemoprophylaxis) presumably acts by diminishing the bacterial population in "healed" or roentgenographically invisible lesions of the person taking the drug. It is, in reality, treatment of infection and can prevent progressive tuberculosis from developing.

A substantial and growing body of scientific data testifies to the value of isoniazid (INH) in prevention of the disease tuberculosis. The extensive trials conducted by the U.S. Public Health Service show a consistent reduction of morbidity in treated groups; it seems reasonable to expect that preventive therapy can substantially reduce future morbidity from tuberculosis in high risk groups.

Drugs used in Preventive Therapy

A single drug, INH, is used for preventive therapy in a dose of 300 mg per day for adults and 10 mg per kg body weight per day, not to exceed 300 mg per day, for children, to be administered in a daily single dose over a period of 12 months. A larger dose or longer period of time is not required. INH is inexpensive, administered orally, and easy to take. As of now, no other drug has been demonstrated to be effective for preventive therapy.

It is now apparent that mild hepatic dysfunction evidenced by elevation of serum aminotransferase (transaminase) activity, occurs in 10 to 20 percent of persons taking INH. This abnormality usually occurs in the first 4 to 6 months of treatment but can occur at any time during therapy. In most instances, enzyme levels return to normal with no necessity to discontinue medication. In occasional instances, progessive liver damage occurs and presents symptoms; the drug should be discontinued immediately in these cases. The frequency of progressive liver damage increases with age. It is rare in individuals under age 20. The observed frequency in other age groups is as follows: ages 20–34, up to 0.3 per cent; ages 35–49, up to 1.2 per cent; 50 years and more, up to 2.3 per cent.

It must be remembered that the chance of developing INH-associated liver disease exists only during the year of preventive therapy, whereas the risk of developing tuberculous disease is present for life. It is to diminish the risk of developing tuberculosis, with possible transmission of infection, that INH is recommended for persons infected with *M. tuberculosis*. U.S. Public Health Service studies have demonstrated that the protection of one year of preventive therapy for those at risk of developing tuberculous disease continues for many years and may well be lifelong. Up to 15 years of follow-up of groups of people given preventive therapy with INH has revealed no evidence of delayed deleterious effect. The recommendations outlined below for the use of INH with appropriate safeguards are based on a comparison of the risk of hepatic injury with the benefit of preventive therapy.

Persons for Whom Preventive Therapy is Recommended

Every positive tuberculin skin test reactor† is at some risk of developing tuberculous disease and can benefit from preventive therapy. Since the risk of developing disease is lifelong, the benefit from preventive therapy is greater the younger the age and the longer the life expectancy. Hepatitis, the most serious complication of INH therapy, increases with age. The risk of hepatitis is exceedingly low in the less than age 20 group and reaches a peak among persons more than 50 years of age.

Priorities must be set for preventive therapy, taking into consideration not only the risk of developing tuberculosis compared with the risk of INH toxicity, but also the ease of identifying and supervising persons for whom preventive therapy is indicated, and their likelihood of infecting others.

The following groups are listed in order of priority:

1. Household members and other close associates of persons with recently diagnosed tuberculous disease.
2. Positive tuberculin skin test reactors with findings on the chest roentgenogram consistent with nonprogressive tuberculous disease, in whom there are neither positive bacteriologic findings nor a history of adequate chemotherapy.
3. Newly infected persons.
4. Positive tuberculin skin test reactors in the special clinical situations described below.
5. Other positive tuberculin skin test reactors. The risk of tuberculosis is highest in infancy, high again in adolescence and early adult life, and continues at a lower rate for a lifetime.

1. Household Members and Other Close Associates. Household members and other close associates of patients with newly discovered tuberculous disease are at high risk of being recently infected and of developing disease. The risk is approximately 2.5 per cent for the first year. However, the risk is approximately 5.0 per cent for those already infected (tuberculin positive) at the time of the initial examination. Contacts of patients should be examined and those diagnosed as having tuberculous disease should be treated with multiple drug therapy. All other contacts with Mantoux tuberculin skin test readings of 5 mm or more should receive preventive therapy, since in this group such reactions are likely to be due to infection with *M. tuberculosis*.

Some contacts with negative tuberculin skin test reactions should be considered for preventive therapy. At highest risk are children who are contacts of bacteriologically

†For definition of infection with *M. tuberculosis* and techniques for administering and reading skin tests, see "The Tuberculin Skin Test," Supplement to "Diagnostic Standards and Classification of Tuberculosis and Other Mycobacterial Diseases," revised 1974 by Committee on Diagnostic Skin Testing of the American Thoracic Society Scientific Assembly on Tuberculosis.

TUBERCULOUS INFECTION – Continued

positive patients and who may be infected but may not yet have converted their tuberculin skin test. These children should receive preventive therapy for 3 months and then be skin tested again. If positive, therapy should be continued for a total period of 12 months; if negative, and exposure has ended, therapy may be discontinued. For adult contacts with negative tuberculin skin test reactions, factors such as the state of infectiousness of the source case and the risk of drug side effects should be considered when prescribing preventive therapy. If therapy is not prescribed, the tuberculin skin test should be repeated in 3 months and therapy prescribed at that time if conversion has occurred.

2. Positive Tuberculin Skin Test Reactor with Abnormal Chest Roentgenogram. Persons with past tuberculous disease not previously treated by adequate chemotherapy and tuberculin skin test reactors with roentgenographic findings consistent with nonprogressive tuberculous disease should receive preventive therapy. The rate of reactivation in such groups, if untreated, has been observed to range between 1.0 per cent and 4.5 per cent per year.

3. Newly Infected Persons. The risk of developing tuberculous disease for the newly infected is about 5.0 per cent during the first year after infection. Because this excess risk is concentrated in the first year or so, the term, "newly infected persons," should be applied only to those who have had a tuberculin skin test conversion within the past 2 years.

Changes in tuberculin products and differences in the techniques of administration and reading can result in considerable variation in tuberculin skin test results. Therefore, a converter should be defined as a person whose tuberculin skin test reaction has increased by at least 6 mm from less than 10 mm induration to greater than 10 mm. Unless it is reasonably certain that a standard tuberculin has been given with skill and care on both occasions, it may be wise not to consider as newly infected those persons with "borderline conversions."

The so-called "booster effect" should also be taken into account. Because delayed hypersensitivity to tuberculin may gradually wane over the years, a tuberculin skin test given after some time has elapsed since sensitization may be read as negative or doubtful. The stimulus of that test may cause a "boost" in the size of reaction to a repeat test within a year or two, thereby causing an apparent conversion. The booster effect occurs rarely in children, increases in frequency with age, and is seen most frequently in persons over 50 years of age. Therefore, conversions among older persons should be interpreted with caution as signifying new infections.

4. Special Clinical Situations. To a varying degree, the following situations increase the risk of developing tuberculous disease and may require preventive therapy in the infected: (*a*) prolonged therapy with adrenocorticoids, (*b*) immunosuppressive therapy, (*c*) some hematologic and reticulo-

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TABLE I. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
(Cumulative totals include revised and delayed reports through previous weeks)

DISEASE	8th WEEK ENDING		MEDIAN	CUMULATIVE, FIRST 8 WEEKS		
	February 22, 1975	February 23, 1974	1970-1974	February 22, 1975	February 23, 1974	MEDIAN 1970-1974
Aseptic meningitis	36	27	27	295	277	292
Brucellosis	2	–	2	21	10	15
Chickenpox	3,832	3,445	– – –	27,485	26,863	– – –
Diphtheria	14	3	6	64	14	16
Encephalitis, Primary	17	15	15	100	120	128
Encephalitis, Post-Infectious	5	2	5	31	32	36
Hepatitis, Viral, Type B	212	172	172	1,562	1,302	1,302
Hepatitis, Viral, Type A	697	890	1,033	5,421	6,753	8,592
Hepatitis, Viral, Type unspecified	151	169		1,128	1,224	
Malaria	6	4	27	41	26	282
Measles (rubeola)	423	598	754	2,390	3,575	5,208
Meningococcal infections, total	40	34	41	273	212	297
Civilian	40	33	40	266	210	288
Military	–	1	1	7	2	9
Mumps	1,407	1,526	2,116	10,918	12,633	16,713
Pertussis	24	23	– – –	200	212	– – –
Rubella (German measles)	269	231	695	1,753	1,684	4,215
Tetanus	–	–	2	9	8	8
Tuberculosis	509	579	– – –	4,192	3,965	– – –
Tularemia	1	–	1	9	13	13
Typhoid fever	2	7	4	30	51	37
Typhus, tick-borne (Rky. Mt. spotted fever)	–	1	–	10	14	4
Venereal Diseases:						
Gonorrhea, Civilian	17,286	16,057	– – –	141,203	128,459	– – –
Gonorrhea, Military	396	520	– – –	4,710	4,160	– – –
Syphilis, primary and secondary, Civilian	528	466	– – –	3,936	3,724	– – –
Syphilis, primary and secondary, Military	3	9	– – –	52	70	– – –
Rabies in animals	43	45	71	271	369	469

TABLE II. NOTIFIABLE DISEASES OF LOW FREQUENCY

	Cum.		Cum.
Anthrax:	–	Poliomyelitis, total:	1
Botulism:	3	Paralytic:	1
Congenital rubella syndrome:	5	Psittacosis: N.J. 1	6
Leprosy:	25	Rabies in man:	–
Leptospirosis:	7	Trichinosis: NYC 3	11
Plague: . N. Mex. 1	1	Typhus, murine: . Tex. 1	1

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES FOR WEEKS ENDING FEBRUARY 22, 1975 AND FEBRUARY 23, 1974 (8th WEEK)

AREA	ASEPTIC MENINGITIS	BRUCELLOSIS	CHICKENPOX	DIPHTHERIA		ENCEPHALITIS			HEPATITIS, VIRAL			MALARIA	
						Primary: Arthropod-borne and Unspecified		Post Infectious	Type B	Type A	Type Unspecified		
	1975	1975	1975	1975	Cum. 1975	1975	1974	1975	1975	1975	1975	1975	Cum. 1975
UNITED STATES	36	2	3,832	14	64	17	15	5	212	697	151	6	41
NEW ENGLAND	–	–	440	–	–	2	1	–	5	24	6	–	1
Maine *	–	–	26	–	–	–	–	–	–	2	1	–	–
New Hampshire *	–	–	4	–	–	1	–	–	–	–	–	–	–
Vermont	–	–	15	–	–	–	–	–	–	1	–	–	–
Massachusetts	–	–	161	–	–	1	1	–	1	3	5	–	1
Rhode Island	–	–	50	–	–	–	–	–	2	10	–	–	–
Connecticut	–	–	184	–	–	–	–	–	2	8	–	–	–
MIDDLE ATLANTIC	5	–	160	–	–	2	–	–	38	78	34	–	4
Upstate New York	1	–	66	–	–	2	–	–	16	40	6	–	2
New York City	1	–	79	–	–	–	–	–	2	18	–	–	2
New Jersey *	3	–	NN	–	–	–	–	–	14	8	28	–	–
Pennsylvania *	–	–	15	–	–	–	–	–	6	12	–	–	–
EAST NORTH CENTRAL	6	–	1,302	1	1	3	3	–	23	93	4	–	1
Ohio	1	–	114	–	–	1	–	–	–	24	–	–	–
Indiana *	–	–	74	–	–	–	–	–	–	16	–	–	–
Illinois	–	–	–	–	–	–	2	–	10	12	2	–	1
Michigan	3	–	665	1	1	2	–	–	10	36	2	–	–
Wisconsin *	2	–	449	–	–	–	1	–	3	5	–	–	–
WEST NORTH CENTRAL	–	1	714	–	–	–	2	–	11	38	12	1	2
Minnesota *	–	–	24	–	–	–	–	–	4	14	–	–	–
Iowa	–	1	524	–	–	–	1	–	2	–	2	–	–
Missouri	–	–	13	–	–	–	1	–	3	11	10	1	2
North Dakota	–	–	27	–	–	–	–	–	–	1	–	–	–
South Dakota	–	–	–	–	–	–	–	–	–	–	–	–	–
Nebraska	–	–	2	–	–	–	–	–	1	2	–	–	–
Kansas	–	–	124	–	–	–	–	–	1	10	–	–	–
SOUTH ATLANTIC	9	1	313	–	–	2	4	2	28	105	17	–	6
Delaware	–	–	11	–	–	–	–	–	–	1	–	–	–
Maryland	–	–	32	–	–	–	1	1	2	4	3	–	–
District of Columbia	–	–	11	–	–	–	–	–	5	3	–	–	–
Virginia *	4	1	21	–	–	2	3	1	2	9	6	–	4
West Virginia	–	–	197	–	–	–	–	–	–	2	–	–	–
North Carolina	–	–	NN	–	–	–	–	–	4	11	4	–	–
South Carolina	–	–	41	–	–	–	–	–	4	14	–	–	–
Georgia	–	–	–	–	–	–	–	–	–	21	–	–	–
Florida	5	–	–	–	–	–	–	–	11	40	4	–	2
EAST SOUTH CENTRAL	4	–	179	–	–	–	3	1	24	55	1	–	5
Kentucky	–	–	89	–	–	–	1	–	1	17	–	–	2
Tennessee	–	–	NN	–	–	–	2	1	7	21	–	–	–
Alabama	4	–	81	–	–	–	–	–	16	10	1	–	2
Mississippi	–	–	9	–	–	–	–	–	–	7	–	–	1
WEST SOUTH CENTRAL	4	–	451	–	1	1	1	1	12	98	20	1	3
Arkansas	–	–	25	–	–	–	–	–	2	6	3	–	1
Louisiana	1	–	NN	–	–	1	–	1	8	13	7	–	–
Oklahoma	–	–	86	–	–	–	–	–	–	12	5	–	1
Texas	3	–	340	–	1	–	1	–	2	67	5	1	1
MOUNTAIN	–	–	97	–	6	2	–	–	7	56	17	2	10
Montana	–	–	45	–	–	1	–	–	–	5	–	–	–
Idaho	–	–	–	–	–	1	–	–	1	19	2	–	–
Wyoming	–	–	–	–	–	–	–	–	–	1	–	–	–
Colorado	–	–	34	–	–	–	–	–	1	2	4	–	8
New Mexico	–	–	2	–	1	–	–	–	–	8	5	–	–
Arizona	–	–	–	–	5	–	–	–	5	15	4	2	2
Utah	–	–	13	–	–	–	–	–	–	2	2	–	–
Nevada	–	–	3	–	–	–	–	–	–	4	–	–	–
PACIFIC	8	–	176	13	56	5	1	1	64	150	40	2	9
Washington *	3	–	148	13	55	–	–	–	4	6	6	–	1
Oregon	–	–	–	–	–	–	1	–	5	21	1	–	–
California *	4	–	–	–	1	3	–	1	54	122	33	2	7
Alaska	–	–	–	–	–	2	–	–	–	–	–	–	–
Hawaii	1	–	28	–	–	–	–	–	1	1	–	–	1
Guam *	–	–	–	–	–	–	–	–	–	–	–	–	–
Puerto Rico	8	–	17	–	–	–	–	–	–	8	–	–	1
Virgin Islands	–	–	3	–	–	–	–	–	–	–	1	–	–

*Delayed reports: Chickenpox: (1975) Me. 12, N.H. 6, Calif. 12, Guam 7
Diphtheria: (1975) Wash. delete 1
Encephalitis primary: (1974) Pa. 1, Minn. 4
Hepatitis B: (1975) Wisc. delete 3, Guam 1; (1974) Pa. 4
Hepatitis A: (1975) Me. 2, N.H. 1, Ind. delete 2, Wisc. 3, Va. delete 1, Wash. delete 8, Guam 8; (1974) Pa. 7
Hepatitis Unspecified: (1975) Me. 2, Wash. 8, Guam 6; (1974) Pa. 1
Malaria: (1974) N.J. 4

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES FOR WEEKS ENDING FEBRUARY 22, 1975 AND FEBRUARY 23, 1974 (8th WEEK) – Continued

AREA	MEASLES (Rubeola)			MENINGOCOCCAL INFECTIONS, TOTAL			MUMPS		PERTUSSIS	RUBELLA		TETANUS
	1975	Cumulative		1975	Cumulative		1975	Cum. 1975	1975	1975	Cum. 1975	Cum. 1975
		1975	1974		1975	1974						
UNITED STATES	423	2,390	3,575	40	273	212	1,407	10,918	24	269	1,753	9
NEW ENGLAND	–	29	239	1	12	16	40	458	1	31	286	–
Maine *	–	1	9	–	–	–	–	10	–	1	11	–
New Hampshire *	–	11	139	–	1	4	–	7	–	3	144	–
Vermont	–	–	–	–	–	–	1	1	–	–	1	–
Massachusetts	–	8	46	–	4	5	5	76	–	23	107	–
Rhode Island	–	2	32	–	2	3	16	195	–	1	2	–
Connecticut	–	7	13	1	5	4	18	169	1	3	21	–
MIDDLE ATLANTIC	36	155	1,222	3	23	27	39	583	–	14	127	1
Upstate New York	11	42	18	2	9	3	20	264	–	1	16	–
New York City	2	17	63	–	3	8	5	101	–	1	24	1
New Jersey	13	64	923	–	2	13	–	80	–	6	62	–
Pennsylvania	10	32	218	1	9	3	14	138	–	6	25	–
EAST NORTH CENTRAL	207	1,133	1,396	6	36	18	591	4,729	4	80	480	–
Ohio	7	20	604	1	7	6	18	503	–	3	31	–
Indiana	2	67	45	–	–	–	28	472	–	10	58	–
Illinois	30	277	263	2	6	2	68	368	1	5	35	–
Michigan	116	443	379	2	18	6	280	2,306	3	42	252	–
Wisconsin *	52	326	105	1	5	4	197	1,080	–	20	104	–
WEST NORTH CENTRAL	81	341	108	–	18	12	91	648	–	7	97	1
Minnesota	–	–	75	–	1	4	1	5	–	–	3	–
Iowa	–	6	2	–	4	3	49	227	–	–	2	–
Missouri *	12	30	10	–	10	3	5	86	–	1	16	1
North Dakota	3	16	12	–	–	1	33	141	–	–	17	–
South Dakota	–	26	1	–	–	–	–	1	–	–	1	–
Nebraska	28	144	1	–	1	–	–	4	–	3	4	–
Kansas	38	119	7	–	2	1	3	184	–	3	54	–
SOUTH ATLANTIC	8	42	117	7	49	44	91	648	3	13	170	2
Delaware	–	–	2	–	1	3	–	4	–	–	3	–
Maryland	–	–	2	–	1	6	1	13	–	–	–	–
District of Columbia	–	–	–	–	1	–	6	19	–	–	–	–
Virginia	1	7	9	3	10	9	19	144	–	3	13	–
West Virginia	6	27	30	–	–	2	31	236	–	3	25	–
North Carolina	–	–	1	1	9	9	NN	NN	3	1	1	–
South Carolina	–	–	7	1	8	1	2	11	–	5	111	1
Georgia	–	–	1	2	7	4	–	–	–	–	–	–
Florida	1	8	65	–	12	10	32	221	–	1	17	1
EAST SOUTH CENTRAL	–	29	22	3	44	15	114	1,173	–	11	112	1
Kentucky	–	20	17	1	14	3	71	659	–	2	28	1
Tennessee	–	7	–	2	17	11	19	397	–	8	79	–
Alabama	–	–	–	–	8	1	16	82	–	1	4	–
Mississippi	–	2	5	–	5	–	8	35	–	–	1	–
WEST SOUTH CENTRAL	14	35	56	10	56	46	145	891	8	11	112	1
Arkansas	–	1	4	–	1	4	2	12	–	–	–	–
Louisiana	–	–	5	1	15	10	2	119	–	4	35	–
Oklahoma	6	10	6	–	4	6	5	32	1	2	46	–
Texas *	8	24	41	9	36	26	136	728	7	5	31	1
MOUNTAIN	19	191	144	1	8	6	19	112	1	51	77	–
Montana	–	–	109	1	2	–	1	2	–	51	52	–
Idaho	–	2	15	–	–	1	1	2	–	–	4	–
Wyoming	–	–	–	–	–	–	–	–	–	–	–	–
Colorado	18	186	5	–	3	–	5	54	–	–	10	–
New Mexico	–	1	12	–	2	2	2	5	1	–	5	–
Arizona	1	1	3	–	1	2	–	–	–	–	1	–
Utah	–	–	–	–	–	1	10	22	–	–	2	–
Nevada	–	1	–	–	–	–	–	27	–	–	3	–
PACIFIC	58	435	271	9	27	28	277	1,676	7	51	292	3
Washington	4	10	20	–	3	4	179	854	3	18	86	–
Oregon	9	46	–	–	–	5	13	107	–	5	28	–
California	45	379	250	9	24	18	83	702	4	28	175	3
Alaska	–	–	–	–	–	1	1	8	–	–	–	–
Hawaii	–	–	1	–	–	–	1	5	–	–	3	–
Guam *	–	1	1	–	–	–	–	3	–	–	–	–
Puerto Rico	17	87	77	–	1	–	13	154	1	–	2	–
Virgin Islands	–	2	6	–	–	–	5	17	–	–	1	–

*Delayed reports: Measles: (1975) Wisc. 5
Meningococcal infections: (1975) Mo. 1, Texas delete 1
Mumps: (1975) Me. 2, N.H. 1, Guam 1
Pertussis: (1975) Mo. delete 22
Rubella: (1975) Me. 4, N.H. 6

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES FOR WEEKS ENDING FEBRUARY 22, 1975 AND FEBRUARY 23, 1974 (8th WEEK) – Continued

AREA	TUBERCULOSIS		TULAREMIA	TYPHOID FEVER		TYPHUS-FEVER TICK-BORNE (Rky. Mt. spotted fever)		VENEREAL DISEASES (Civilian Cases Only)						RABIES IN ANIMALS
								GONORRHEA			SYPHILIS (Pri. & Sec.)			
	1975	Cum. 1975	Cum. 1975	1975	Cum. 1975	1975	Cum. 1975	1975	Cumulative 1975	Cumulative 1974	1975	Cumulative 1975	Cumulative 1974	Cum. 1975
UNITED STATES	509	4,192	9	2	30	–	10	17,286	141,203	128,459	528	3,936	3,724	271
NEW ENGLAND	24	157	–	–	3	–	–	300	3,972	3,267	11	138	142	8
Maine	2	12	–	–	–	–	–	–	282	232	–	3	6	7
New Hampshire *	–	8	–	–	–	–	–	16	117	91	–	4	2	–
Vermont	–	1	–	–	–	–	–	2	63	95	–	3	1	–
Massachusetts	13	78	–	–	2	–	–	165	1,849	1,514	6	91	100	–
Rhode Island	3	21	–	–	–	–	–	18	317	262	–	2	3	–
Connecticut	6	37	–	–	1	–	–	99	1,344	1,073	5	35	30	1
MIDDLE ATLANTIC	47	702	1	–	4	–	–	2,013	16,705	16,033	72	779	788	8
Upstate New York	6	101	1	–	2	–	–	394	3,366	3,004	8	86	78	7
New York City	13	326	–	–	2	–	–	918	7,272	6,661	36	444	448	–
New Jersey	19	142	–	–	–	–	–	199	1,963	2,404	16	118	130	–
Pennsylvania	9	133	–	–	–	–	–	502	4,104	3,964	12	131	132	1
EAST NORTH CENTRAL	86	723	–	1	5	–	1	2,723	24,533	20,468	22	311	312	7
Ohio	18	200	–	–	1	–	1	830	7,197	5,686	5	70	40	–
Indiana	21	103	–	–	–	–	–	203	2,000	1,809	2	24	30	–
Illinois	14	168	–	1	3	–	–	918	8,206	6,263	13	148	161	–
Michigan	33	245	–	–	1	–	–	466	4,821	4,934	–	51	65	–
Wisconsin	–	7	–	–	–	–	–	306	2,309	1,776	2	18	16	7
WEST NORTH CENTRAL	25	145	2	–	1	–	–	936	6,666	6,546	6	88	84	81
Minnesota *	8	20	–	–	1	–	–	60	1,267	1,458	–	8	8	24
Iowa	–	10	–	–	–	–	–	465	873	953	2	5	7	13
Missouri *	6	76	1	–	–	–	–	189	2,564	2,043	3	55	55	10
North Dakota	–	–	–	–	–	–	–	25	115	112	–	3	–	26
South Dakota	2	6	–	–	–	–	–	26	295	289	–	2	1	–
Nebraska	3	6	–	–	–	–	–	64	544	520	–	2	1	2
Kansas	6	27	1	–	–	–	–	107	1,008	1,171	1	13	12	6
SOUTH ATLANTIC	93	909	4	–	1	–	6	4,245	35,035	31,801	198	1,192	1,187	36
Delaware	–	19	–	–	–	–	–	32	438	483	–	10	12	–
Maryland	17	137	–	–	–	–	–	344	3,804	2,860	8	97	131	–
District of Columbia	3	54	–	–	–	–	–	251	2,344	3,196	9	100	105	–
Virginia	6	115	2	–	–	–	–	392	3,670	2,899	13	104	147	23
West Virginia *	6	43	–	–	–	–	–	29	406	381	–	–	4	1
North Carolina *	13	130	–	–	1	–	6	718	5,476	4,250	25	161	126	1
South Carolina *	5	25	2	–	–	–	–	502	3,144	3,377	29	99	97	1
Georgia	18	140	–	–	–	–	–	703	6,439	5,632	33	169	189	7
Florida	25	246	–	–	–	–	–	1,274	9,314	8,723	81	452	376	3
EAST SOUTH CENTRAL	32	350	1	–	2	–	2	1,403	11,023	10,941	27	164	195	31
Kentucky	5	73	–	–	1	–	1	222	1,504	1,337	6	22	44	25
Tennessee	15	136	1	–	–	–	–	518	4,577	4,308	11	66	76	2
Alabama *	5	101	–	–	–	–	1	338	2,695	3,093	4	42	36	4
Mississippi	7	40	–	–	1	–	–	325	2,247	2,203	6	34	39	–
WEST SOUTH CENTRAL	83	446	1	–	1	–	1	2,258	17,971	17,082	44	377	341	71
Arkansas	7	66	–	–	1	–	–	430	1,809	1,868	–	5	16	10
Louisiana *	7	78	–	–	–	–	–	403	3,255	3,689	9	96	101	2
Oklahoma	13	45	–	–	–	–	1	195	1,526	1,295	4	22	24	24
Texas	56	257	1	–	–	–	–	1,230	11,381	10,230	31	254	200	35
MOUNTAIN	4	90	–	–	2	–	–	539	5,252	4,539	7	82	91	12
Montana	–	–	–	–	–	–	–	31	300	273	–	–	–	6
Idaho	–	4	–	–	–	–	–	26	276	293	1	2	–	–
Wyoming	–	3	–	–	1	–	–	16	113	109	1	1	1	–
Colorado	–	–	–	–	–	–	–	126	1,489	1,309	2	22	19	–
New Mexico	4	23	–	–	–	–	–	43	881	630	–	16	18	5
Arizona	–	47	–	–	1	–	–	199	1,418	1,178	3	34	35	1
Utah	–	1	–	–	–	–	–	38	293	222	–	1	4	–
Nevada *	–	12	–	–	–	–	–	60	482	525	–	6	14	–
PACIFIC	115	670	–	1	11	–	–	2,869	20,046	17,782	141	805	584	17
Washington	5	52	–	–	–	–	–	156	1,867	1,707	–	40	21	–
Oregon	6	20	–	–	–	–	–	208	1,756	1,531	2	15	15	–
California	97	520	–	1	11	–	–	2,409	15,617	13,820	139	744	543	15
Alaska	–	6	–	–	–	–	–	51	445	379	–	–	–	2
Hawaii	7	72	–	–	–	–	–	45	361	345	–	6	5	–
Guam *	–	20	–	–	–	–	–	–	63	---	–	1	---	–
Puerto Rico	14	68	–	–	–	–	–	51	463	495	9	105	152	7
Virgin Islands	3	3	–	–	–	–	–	2	26	113	3	7	11	–

*Delayed reports: Tuberculosis: (1975) N.H. delete 1, Ala. 10, Guam 1; (1974) Minn. 2, N.C. delete 5
Typhoid: (1975) W. Va. delete 1
Gonorrhea: (1975) N.H. Mil. 11, La. delete 6, Nev. 44, Guam 9
Syphilis: (1975) Mo. 1, S.C. Mil. delete 1, Nev. 1

Week No. 08

TABLE IV. DEATHS IN 121 UNITED STATES CITIES FOR WEEK ENDING FEBRUARY 22, 1975

(By place of occurrence and week of filing certificate. Excludes fetal deaths)

Area	All Causes					Pneumonia and Influenza All Ages
	All Ages	65 years and over	45-64 years	25-44 years	Under 1 year	
NEW ENGLAND	802	534	180	42	19	63
Boston, Mass.	223	148	48	14	6	16
Bridgeport, Conn.	65	47	14	2	–	7
Cambridge, Mass.	26	17	5	2	–	6
Fall River, Mass.	27	18	8	–	–	4
Hartford, Conn.	65	36	17	6	4	3
Lowell, Mass.	33	27	3	3	–	6
Lynn, Mass.	21	13	7	–	–	–
New Bedford, Mass.	34	22	11	–	1	2
New Haven, Conn.	50	34	9	2	3	1
Providence, R. I.	86	52	22	6	2	5
Somerville, Mass.	3	2	1	–	–	–
Springfield, Mass.	55	39	8	5	1	6
Waterbury, Conn.	51	34	10	2	1	4
Worcester, Mass.	63	45	17	–	1	3
MIDDLE ATLANTIC	3,206	2,045	844	179	55	255
Albany, N. Y.	68	47	14	2	4	5
Allentown, Pa.	33	21	10	–	–	4
Buffalo, N. Y.	153	102	36	5	7	15
Camden, N. J.	41	24	13	3	1	7
Elizabeth, N. J.	33	19	10	2	–	2
Erie, Pa.	32	20	10	1	–	2
Jersey City, N. J.	68	43	18	4	2	3
Newark, N. J.	58	31	18	2	3	2
New York City, N. Y. *	1,600	1,035	400	99	23	123
Paterson, N. J.	51	33	12	2	4	4
Philadelphia, Pa.	399	240	114	28	5	15
Pittsburgh, Pa.	212	119	72	15	1	33
Reading, Pa.	52	37	14	1	–	4
Rochester, N. Y.	126	82	32	6	3	6
Schenectady, N. Y.	29	15	13	–	–	1
Scranton, Pa.	42	36	6	–	–	5
Syracuse, N. Y.	98	64	24	3	2	7
Trenton, N. J.	39	29	7	3	–	6
Utica, N. Y.	31	23	7	1	–	5
Yonkers, N. Y.	41	25	14	2	–	6
EAST NORTH CENTRAL	2,681	1,627	683	166	93	109
Akron, Ohio	88	55	21	5	4	–
Canton, Ohio	43	30	7	3	3	3
Chicago, Ill.	638	359	174	43	28	17
Cincinnati, Ohio	139	79	36	9	8	3
Cleveland, Ohio	200	106	68	11	5	8
Columbus, Ohio	180	116	43	13	1	–
Dayton, Ohio	116	71	27	11	2	3
Detroit, Mich.	349	206	94	23	8	8
Evansville, Ind.	62	45	10	2	2	7
Fort Wayne, Ind.	61	33	18	4	3	11
Gary, Ind.	29	18	6	2	1	4
Grand Rapids, Mich.	58	37	12	5	2	6
Indianapolis, Ind.	205	134	46	16	4	7
Madison, Wis.	47	28	12	–	5	8
Milwaukee, Wis.	149	103	31	6	6	8
Peoria, Ill.	48	26	14	–	6	1
Rockford, Ill.	45	30	7	4	1	4
South Bend, Ind.	58	44	11	–	2	5
Toledo, Ohio	98	77	15	4	–	4
Youngstown, Ohio	68	30	31	5	2	2
WEST NORTH CENTRAL	817	520	193	46	28	38
Des Moines, Iowa	71	50	16	1	3	5
Duluth, Minn.	11	9	1	–	–	–
Kansas City, Kans.	25	14	6	4	1	1
Kansas City, Mo.	121	83	24	5	4	8
Lincoln, Nebr.	35	25	7	1	1	3
Minneapolis, Minn.	110	80	16	7	3	2
Omaha, Nebr.	76	47	20	4	3	4
St. Louis, Mo.	267	153	76	16	11	10
St. Paul, Minn.	60	37	18	2	1	1
Wichita, Kans.	41	22	9	6	1	4
SOUTH ATLANTIC	1,288	723	365	106	52	53
Atlanta, Ga.	164	75	56	21	5	7
Baltimore, Md.	213	129	55	12	10	3
Charlotte, N. C.	75	39	25	10	–	4
Jacksonville, Fla.	74	32	20	12	5	–
Miami, Fla.	116	66	32	6	8	9
Norfolk, Va.	55	28	17	5	3	6
Richmond, Va.	97	46	41	5	3	5
Savannah, Ga.	29	16	8	3	–	2
St. Petersburg, Fla.	168	140	23	3	1	13
Tampa, Fla.	56	29	16	4	4	–
Washington, D. C.	180	86	60	16	11	3
Wilmington, Del.	61	37	12	9	2	1
EAST SOUTH CENTRAL	682	411	174	47	27	33
Birmingham, Ala.	124	68	31	8	10	1
Chattanooga, Tenn.	59	36	14	2	2	10
Knoxville, Tenn.	46	33	11	1	–	2
Louisville, Ky.	98	59	29	7	2	5
Memphis, Tenn.	140	91	34	8	2	3
Mobile, Ala.	56	33	13	4	5	2
Montgomery, Ala.	34	18	11	3	2	–
Nashville, Tenn.	125	73	31	14	4	10
WEST SOUTH CENTRAL	1,160	643	305	101	57	50
Austin, Tex.	22	11	4	3	3	1
Baton Rouge, La.	50	24	19	2	2	5
Corpus Christi, Tex.	29	17	8	2	2	2
Dallas, Tex.	175	100	51	15	5	8
El Paso, Tex.	49	28	12	5	1	6
Fort Worth, Tex.	115	59	33	7	8	2
Houston, Tex.	213	108	62	23	4	6
Little Rock, Ark.	67	34	20	6	4	8
New Orleans, La.	163	88	33	17	17	1
San Antonio, Tex.	118	69	26	11	6	2
Shreveport, La.	70	43	25	2	–	2
Tulsa, Okla.	89	62	12	8	5	7
MOUNTAIN	631	402	155	32	29	37
Albuquerque, N. Mex.	57	37	13	2	2	8
Colorado Springs, Colo.	40	25	8	2	5	4
Denver, Colo.	151	94	36	10	10	8
Las Vegas, Nev.	33	18	10	3	1	1
Ogden, Utah	28	17	8	1	1	3
Phoenix, Ariz.	158	101	44	6	5	4
Pueblo, Colo.	17	13	3	1	–	4
Salt Lake City, Utah	62	40	13	3	3	5
Tucson, Ariz.	85	57	20	4	2	–
PACIFIC	1,825	1,170	451	102	51	111
Berkeley, Calif.	18	9	6	3	–	–
Fresno, Calif.	48	26	15	2	3	3
Glendale, Calif.	25	20	5	–	–	2
Honolulu, Hawaii	68	29	24	9	4	1
Long Beach, Calif.	119	77	33	4	3	4
Los Angeles, Calif.	485	326	105	28	14	28
Oakland, Calif.	105	63	31	9	1	5
Pasadena, Calif.	36	26	7	1	2	–
Portland, Oreg.	153	96	37	8	7	18
Sacramento, Calif.	86	47	26	7	1	3
San Diego, Calif.	156	99	39	7	5	11
San Francisco, Calif.	195	126	49	12	3	12
San Jose, Calif.	65	45	15	–	3	2
Seattle, Wash.	159	104	37	10	2	12
Spokane, Wash.	58	45	8	1	3	8
Tacoma, Wash.	49	32	14	1	–	2
Total	13,092	8,075	3,350	821	411	749
Expected Number	13,251	8,025	3,516	833	396	564

*Estimate based on average percent of divisional total.

TUBERCULOUS INFECTION – Continued

endothelial diseases, such as leukemia or Hodgkin's disease, (*d*) diabetes mellitus, (*e*) silicosis, and (*f*) after gastrectomy.

There is no evidence at this time that continuing preventive therapy in these situations for more than one year is beneficial.

5. Other Positive Reactors. Among persons less than 35 years of age who are positive tuberculin reactors, even in the absence of one of the 4 additional risk factors (such as contacts or converters) listed above, the benefit of INH therapy in preventing tuberculosis clearly outweighs the risk of hepatitis. Preventive therapy is mandatory for positive reactors through age 6 years and highly recommended to age 35 years, unless there are contraindications to the use of INH, as listed below.

Among positive tuberculin reactors aged 35 years and more, the risk of hepatitis precludes the routine use of preventive therapy unless one of the 4 additional risk factors (such as contacts or converters) listed above is present. Thus, persons 35 and more with normal chest roentgenograms and no other risk factors (1, 3, or 4) are not, as a group, recommended for preventive therapy. Rather, they should be considered for preventive therapy on an individual basis in situations where there is a likelihood of serious consequences to contacts who may become infected. Examples are persons who live in a closed environment, who work with groups of infants or children, or who work with patients having impaired immune systems.

Screening Procedures

Before INH for preventive therapy is started, the following screening procedures should be carried out:

1. Rule out bacteriologically positive or progressive tuberculous disease. Every person who is a positive reactor should have a chest roentgenogram taken. If there are findings consistent with pulmonary tuberculous disease, further studies—medical evaluation, bacteriologic examinations, and comparison with previous roentgenographic findings—should be made to rule out progressive disease. This is because persons with progressive or bacteriologically confirmed tuberculous disease require more intensive chemotherapy than is given for preventive therapy.

2. Question for a history of INH administration to exclude those who have had an adequate course of the drug.

3. Ascertain the presence of contraindications to the administration of INH for preventive therapy, which are: (*a*) previous INH-associated hepatic injury, (*b*) severe adverse reactions to INH, such as drug fever, chills, and arthritis, and (*c*) acute liver disease of any etiology.

4. Identify patients for whom preventive therapy is not contraindicated but in whom special attention is indicated by the following:

(*a*) Concurrent use of any other medication on a long-term basis (in view of possible drug interactions).

(*b*) Use of diphenylhydantoin, the dosage of which may need to be reduced to avoid diphenylhydantoin toxicity. This is because in some individuals INH may decrease the excretion of diphenylhydantoin or may enhance its effect.

(*c*) Daily use of alcohol, which may be associated with higher incidence of INH hepatitis.

(*d*) Previously discontinued INH because of possible but not definitely related side effects, e.g., headaches, dizziness, nausea, etc.

(*e*) Possibility of current chronic liver disease.

(*f*) Pregnancy. Although no harmful effects of INH to the fetus have been observed, it is prudent to prescribe only therapeutically necessary medications during pregnancy. Preventive therapy generally should be started after delivery. The increased risk of tuberculosis for new mothers is during the postpartum period, not during pregnancy.

Motivating and Monitoring Individuals

With adequate motivation, most individuals usually accept and stay on INH for the full course of treatment. Enthusiasm and encouragement by the physician, nurse, and other health personnel involved are key factors. At the beginning of a course of preventive therapy, the primary care provider should instruct and motivate the individuals and the parents of children who are to receive INH as to the disease process, necessity for treatment, and the importance of recognition and prompt reporting of certain signs and symptoms. Continuing and additional support in such motivation must be given by health personnel. Patients should be helped to develop their own systems of reminders to take drugs daily. Maintaining drug schedules should be made easier for patients by removing obstacles to getting to clinics or obtaining drug refills. Subsequently, there should be regular office, clinic, or home visits or telephone calls to insure the patient's understanding of the need for continued treatment and the importance of immediate reporting of any signs or symptoms of toxicity. Individuals receiving preventive therapy or a responsible adult in a household with children on preventive therapy should be questioned carefully at monthly intervals for the following:

1. Symptoms consistent with those of liver damage or other toxic effects; that is, unexplained anorexia, nausea, or vomiting of greater than 3 days' duration, fatigue or weakness of greater than 3 days' duration, persistent paresthesia of the hands and feet.

2. Signs consistent with those of liver damage or other toxic effects; that is, persistent dark urine, icterus, rash, elevated temperature of greater than 3 days' duration without explanation.

3. Other signs and symptoms the patient may report.

The use of a standardized form for interviewing at each individual visit will help insure alertness to all signs and symptoms, expedite the interview process, and provide for standardized data collection. Individuals should be advised that immediately on development of any such signs or symptoms during preventive therapy, they should discontinue the drug and report to the clinic or primary care provider for evaluation.

Monitoring by routine laboratory tests (e.g., serum glutamic oxaloacetic transaminase [SGOT], serum glutamic pyruvic transaminase, serum bilirubin, and alkaline phosphatase) is not useful in predicting hepatic disease in INH recipients and therefore is not recommended. However, in evaluating signs and symptoms such tests are mandatory. Preventive therapy should be reinstituted only if biochemical studies are normal and signs and symptoms are absent.

In some instances, an SGOT may be obtained for some reason other than the presence of signs or symptoms. If the result of this test does not exceed three times normal and no signs or symptoms have developed, the drug may be continued with caution and careful continued observation. If the level exceeds three times normal, the decision to continue INH should be based on careful evaluation for liver damage and the reason for preventive therapy.

TUBERCULOUS INFECTION – Continued

Preventive therapy for tuberculous infection with INH is an effective tool in tuberculosis control. It is a preventive health measure which benefits the infected person as well as a valid public health measure for the community. Its continued use should be encouraged.

(Prepared by Peter B Barlow, Martin Black, Donald L Brummer, George W Comstock, I Nathan Dubin, Philip Enterline, Merle L Gibson, George E Hardy, Jr, John A Harrel, Robert F Johnston, Donald C Kent, Beverly A Marvin, Nancy C McCaig, Jerry R Mitchell, James W Mosley, Frances R Ogasawara, Hans Popper, Lee B Reichman, and Hyman J Zimmerman.)

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CURRENT TRENDS

NEW ACTIVE TUBERCULOSIS CASES – United States, 1974

Reports from State health departments, based on provisional information, indicate that 30,210 new cases of tuberculosis were reported for the United States during 1974, a decline of 2.5 percent from 1973. The case rate decreased by 3.4 percent from 14.8 per 100,000 population in 1973 to 14.3 in 1974. In 35 states, the 1974 case rate was lower than the final 1973 rate; in 14 states and the District of Columbia the rate was higher; and in one state the rate remained the same. Case rates ranged from a high of 43.2 in Hawaii to a low of 2.7 in Nebraska (Table 1).

(Reported by Tuberculosis Control Division, Bureau of State Services, CDC.)

INFLUENZA – United States

Nationwide, pneumonia and influenza activity in 121 U.S. cities remains above the epidemic threshold for the 7th consecutive week. Pneumonia and influenza mortality, however, has fallen to expected levels in the South Atlantic, West South Central, East South Central, and West North Central regions. Excess pneumonia and influenza mortality is still occurring in the Pacific, Mountain, and Middle Atlantic regions.

(Reported by the Viral Diseases Division, Bureau of Epidemiology, CDC.)

EPIDEMIOLOGIC NOTES AND REPORTS

MUSHROOM POISONING – New York City, Washington

New York City

On October 29, 1974, a 50-year-old man and his 41-year-old wife had onset of nausea, vomiting, abdominal cramps, and diarrhea. Approximately 12 hours prior to onset each had eaten 20 wild mushrooms that they had picked while hiking in a rural area of New York State. On October 30 the man's bilirubin and blood urea nitrogen were slightly elevated; his wife had a slightly elevated bilirubin and SGOT and a normal BUN. They were both hospitalized on October 31 and treated with intravenous fluids and thioctic acid. Neither developed hepatic or renal failure and both survived.

Leftover mushrooms were identified as *Galerina marginata*.

(Reported by Abraham Sunshine, MD, physician, Bellevue Hospital Center; Harry Raybin, Director, Poison Control Center, John Marr, MD, Chief, Bureau of Infectious Disease Control, New York City Department of Health; and an EIS Officer.)

Washington

On November 20, 1974, a 71-year-old woman in Seattle, Washington, ate 46 wild mushrooms which she had obtained from a neighbor's yard and cooked in scrambled eggs and white sauce. Approximately 12 hours later, she developed severe vomiting, diarrhea, and headache and was hospitalized. Her husband, who had eaten only half a mushroom, remained well.

Therapy with thioctic acid was begun 24 hours after onset of illness (36 hours after ingestion). The patient developed no evidence of hepatic or renal dysfunction and was discharged on the 10th hospital day.

Leftover mushrooms were identified as *Galerina autumnalis*. Cylopeptide amatoxins were demonstrated in these mushrooms by thin layer chromatography.

(Reported by Fred E Cleveland, MD, Internist, Mason Clinic, Seattle; Daniel E Stuntz, PhD, Botany Department; Lynn R Brady, PhD, Robert G Benedict, PhD, Pharmaceutical Science Department, University of Washington; Herb W Anderson, RS, Environmental Epidemiologist, AHB Pedersen, MD, Director, Personal Health Services, Lawrence Bergner, MD, Director of Public Health, Seattle-King County Department of Public Health; Thieu L Nghiem, MD, State Epidemiologist, Washington Department of Social and Health Services.)

Editorial Note

Although mushroom poisoning occurs much more frequently in Europe than in the United States, 9 outbreaks of mushroom poisoning with 41 cases were reported to CDC in 1973 (*1*).

Mushroom poisoning may be divided into 2 groups: an immediate group where symptoms appear in less than 6 hours and a delayed group where symptoms appear within 6-24 hours (*2*). *G. marginata* and *G. autumnalis*, which contain highly toxic cyclopeptide amatoxins, are in the delayed on-

Table 1
New Active Tuberculosis Cases and Case Rates: States, 1973 and 1974

State	1973 Provisional		1973 Final		1974 Provisional	
	Number	Rate*	Number	Rate*	Number	Rate*
United States	31,015	14.8	30,998	14.8	30,210	14.3
Alabama	790	22.3	790	22.3	785	21.9
Alaska	112	33.9	100	30.3	111	32.9
Arizona	403	19.6	416	20.2	349	16.2
Arkansas	445	21.8	460	22.6	404	19.6
California	3,131	15.2	3,210	15.6	3,167	15.1
Colorado	199	8.2	197	8.1	192	7.7
Connecticut	251	8.2	259	8.4	280	9.1
Delaware	74	12.8	74	12.8	98	17.1
Dist. of Col.	307	41.2	307	41.2	351	48.5
Florida	1,488	19.4	1,487	19.4	1,460	18.0
Georgia	986	20.6	1,010	21.1	982	20.1
Hawaii	299	35.9	303	36.4	366	43.2
Idaho	38	4.9	38	4.9	38	4.8
Illinois	1,418	12.6	1,520	13.5	1,585	14.2
Indiana	707	13.3	677	12.7	660	12.4
Iowa	125	4.3	125	4.3	124	4.3
Kansas	165	7.2	172	7.5	156	6.9
Kentucky	683	20.4	674	20.2	621	18.5
Louisiana	469	12.5	469	12.5	475	12.6
Maine	107	10.4	107	10.4	91	8.7
Maryland	689	16.9	719	17.7	841	20.5
Massachusetts	673	11.6	676	11.6	649	11.2
Michigan	1,153	12.7	1,121	12.4	1,083	11.9
Minnesota	180	4.6	183	4.7	192	4.9
Mississippi	443	19.4	445	19.5	395	17.0
Missouri	610	12.8	608	12.8	565	11.8
Montana	61	8.5	60	8.3	88	12.0
Nebraska	64	4.2	67	4.3	41	2.7
Nevada	59	10.8	61	11.1	56	9.8
New Hampshire	52	6.6	52	6.6	30	3.7
New Jersey	1,075	14.6	1,075	14.6	1,016	13.9
New Mexico	221	20.0	221	20.0	195	17.4
New York	3,197	17.5	3,110	17.0	2,866	15.8
North Carolina	986	18.7	974	18.5	938	17.5
North Dakota	44	6.9	44	6.9	35	5.5
Ohio	1,369	12.8	1,218	11.4	1,153	10.7
Oklahoma	340	12.8	351	13.2	283	10.4
Oregon	240	10.8	239	10.7	208	9.2
Pennsylvania	1,692	14.2	1,689	14.2	1,557	13.2
Rhode Island	90	9.2	90	9.2	108	11.5
South Carolina	615	22.6	619	22.7	640	23.0
South Dakota	90	13.1	90	13.1	64	9.4
Tennessee	860	20.8	889	21.5	842	20.4
Texas	2,239	19.0	2,224	18.9	2,319	19.2
Utah	56	4.8	56	4.8	54	4.6
Vermont	30	6.5	32	6.9	23	4.9
Virginia	850	17.7	839	17.4	800	16.3
Washington	363	10.6	362	10.6	346	10.0
West Virginia	223	12.4	226	12.6	230	12.8
Wisconsin	231	5.1	238	5.2	273	6.0
Wyoming	23	6.5	25	7.1	25	7.0
Puerto Rico**	537	19.8	519	19.1	600	22.1

*Rate per 100,000. Population based on U.S. Bureau of Census, Current Population Series P25 No. 533.
**Not included in totals.

MUSHROOM POISONING – Continued

set group (*3*). Poisoning caused by these species has rarely been reported in the United States. In poisonings caused by other species containing the amatoxins (*Amanita phalloides, Amanita virosa*, and *Amanita verna*) case fatality ratios of 30-50% have been reported.

Illness caused by species containing the toxic cyclopeptides typically has 3 phases: severe abdominal cramps, watery diarrhea, nausea, and vomiting within 6-24 hours after ingestion; transient clinical improvement; then hepatic and renal failure 2-5 days after ingestion.

Thioctic (α-lipoic) acid has been used in the treatment of severe cases of mushroom poisoning in Europe and in the United States (*4*), and it may have benefited these 3 patients. This drug may be obtained from Dr. Frederick Bartter or Dr. Jerry Mitchell at the National Institutes of Health, Bethesda, Maryland (301-496-1518, 301-656-4000 weekdays or 202-244-5562 nights and weekends).

Mushroom poisoning may best be prevented by not consuming wild mushrooms unless they have been examined by an individual trained and experienced in their identification.

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INTERNATIONAL NOTES
QUARANTINE MEASURES

The following changes should be made in the "Supplement–Health Information for International Travel," Morbidity and Mortality Weekly Report, Vol. 23, September 1974:

MACAO
Cholera – insert code II

MALAWI
Cholera – insert code I

MALTA
Cholera – delete all information

MOROCCO
Smallpox – insert in the note: Africa: Algeria, Tunisia

MOZAMBIQUE
Cholera – insert: Mozambique recommends vaccination
Yellow Fever – delete code I; insert code II; delete note

NIGERIA
Cholera – delete note and insert: A Certificate is required ONLY from travelers proceeding to countries which require a Certificate
Yellow Fever – under code insert > 1 year

OMAN
Cholera – insert code II > 1 year

PANAMA
Yellow Fever – insert: Panama recommends vaccination

PITCAIRN ISLAND
Cholera – insert code II
Smallpox – insert in the note: Americas: USA, Canada

The Morbidity and Mortality Weekly Report, circulation 41,500, is published by the Center for Disease Control, Atlanta, Ga.

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The data in this report are provisional, based on weekly telegraphs 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.

In addition to the established procedures for reporting morbidity and mortality, the editor welcomes accounts of interesting cases, outbreaks, environmental hazards, or other public health problems of current interest to health officials.

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DHEW Publication No. (CDC) 75-8017