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CURRENT TRENDS
THE PUBLIC HEALTH IMPLICATIONS OF THE PRESENCE OF HEPATITIS B ANTIGEN IN HUMAN SERUM

A Statement By
The Committee[1] on Viral Hepatitis
of the
Division of Medical Sciences
NATIONAL ACADEMY OF SCIENCES – NATIONAL RESEARCH COUNCIL

Epidemiologic data for the United States since 1966 show steady annual increases in the incidence of type B hepatitis (serum hepatitis) and in its proportional representation among all reported cases of viral hepatitis, including type A (infectious) hepatitis. It is now recognized that, in addition to the well-established parenteral mode of transmission, type B hepatitis can be transmitted by other means. During the last few years, a clearer definition of the significance of type B hepatitis as a clinical and public health problem has arisen from the discovery, development, and widespread application of various serologic tests for the presence of an antigen, hepatitis B antigen[2] (HB Ag), that is associated with the disease.

The demonstration of the antigen in the serum of a patient or of an apparently healthy person raises questions not only of the presence of active liver disease but also of the potential risk of his transmitting the infection to others.

On the basis of information acquired from clinical and epidemiologic studies and from antigen testing programs, the Committee on Viral Hepatitis finds that:

1. A positive test is indicative of the presence of acute or chronic type B hepatitis or of the asymptomatic carrier state.

2. The presence of the antigen in the serum of a patient with acute type B hepatitis is usually transitory. If it persists for more than 3 months after the onset of illness, the person is likely to become a chronic carrier of the antigen.

3. The chronic carrier of the antigen may or may not have readily demonstrable evidence of related liver disease.

4. Although the infectiousness of patients with antigen-positive hepatitis apparently diminishes when the antigen is no longer demonstrable in the serum, they are not acceptable as blood donors.

5. There is clear evidence that carriers should be prohibited from donating blood for transfusion.

6. There is insufficient knowledge of the extent to which chronic carriers can transmit type B hepatitis by non-parenteral routes.

The Committee recommends that:

1. When a person is found to have a positive test in the course of diagnostic studies, blood donor testing, or testing after exposure to a known risk of infection with type B hepatitis, he be so informed and the test be repeated promptly on a later sample of serum; and a person with a confirmed positive test be evaluated for the presence of liver disease and followed to determine whether the antigen persists.

2. Patients with acute antigen-positive hepatitis be considered infectious and control measures be taken with

[1] R. W. McCollum, Yale University School of Medicine, New Haven, Connecticut, Chairman; M. B. Gregg, Center for Disease Control, Atlanta, Georgia; E. A. Kabat, Columbia University, College of Physicians and Surgeons, New York, New York; S. Krugman, New York University School of Medicine, New York, New York; J. L. Melnick, Baylor College of Medicine, Houston, Texas; A. G. Redeker, University of Southern California, Los Angeles, California; and P. E. Taylor, Canadian Communicable Disease Centre, Ottawa, Canada.

This statement has been endorsed by the American Association of Blood Banks, the Committee on Transfusion and Transplantation of the American Medical Association, and the American National Red Cross.

[2] This antigen has been referred to as Australia antigen (Au Ag), hepatitis antigen (HA), serum hepatitis (SH) antigen, and hepatitis-associated antigen (HAA).

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HEPATITIS-ASSOCIATED ANTIGEN – Continued

respect to potentially infectious materials such as blood and blood-contaminated secretions.

3. Testing be required of all blood donors, although, with respect to risk of transmission to others, there is no reason at this time to recommend routine testing of any specific professional or occupational group or of all hospital patients.

4. Until more complete knowledge of the significance of the antigen carrier state is acquired, particularly as to its prevalence and its relation to communicability, no routine precautions be instituted beyond those which apply to percutaneous routes of potential transmission.

5. Because standard Immune Serum Globulin (ISG) is of no demonstrable value in the treatment of carriers, it not be used for this purpose – nor is there adequate evidence to recommend the use of standard ISG for prophylaxis among contacts.

6. An intensified effort be made to report hepatitis cases – on the basis of serologic test results, as well as epidemiologic characteristics – in order to improve surveillance on a national basis.

Acknowledgement

The preparation of this statement was made possible by funds provided under a contract with the National Institutes of Health (PH43-64-44, Task Order No. 56).

While this statement in its final form may not necessarily have their endorsement, the Committee wishes to acknowledge the contributions of Dr. Baruch S. Blumberg, Dr. Thomas C. Chalmers, Dr. H. Bruce Dull, Dr. Paul J. Schmidt, and Dr. Hyman J. Zimmerman.

INTERNATIONAL NOTES

POLIOMYELITIS – Nicaragua, 1971

From Jan. 1, 1971, to Jan. 31, 1972, a total of 244 cases of poliomyelitis were reported to the Ministry of Health in Nicaragua, Central America (Figure 1). The attack rate and the case-fatality rate for this period were 12.7 per 100,000 and 6%, respectively. The disease affected the northern Pacific coastal zone in July and August, then spread to the remainder of the Pacific coastal areas in November, and finally to inland districts in December. Most of the cases occurred in Nicaragua's two largest cities, Managua and Leon. A total of 80% of the cases were in children under the age of 3 years (Table 1); only 4% had a previous history of adequate vaccination. Poliovirus type 1 was isolated from 37 patients; serologic testing confirmed that antibody responses were directed only to type 1.

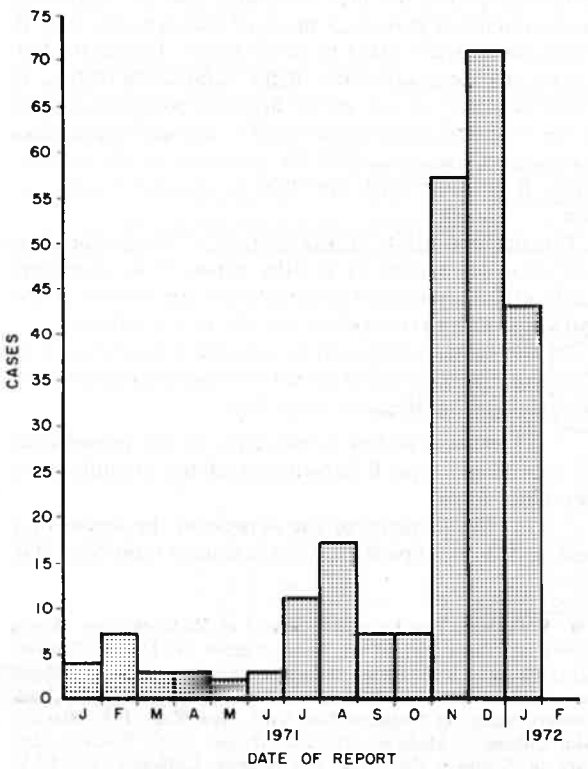
Mass vaccination programs for children under 5 years of age were conducted on Dec. 5, 1971, and Jan. 16, 1972, using trivalent oral polio vaccine. Final results of these efforts are not yet available.

Poliomyelitis continues to be cyclically endemic in Nicaragua, with outbreaks occurring every 2-3 years. The largest recent outbreak was in 1967; 458 cases were reported, with an attack rate of 26.1 per 100,000. As in other tropical countries, polio continued to affect mainly unvaccinated young children, with the highest rates in the first 3 years of life. Outbreaks occur in every season and generally last 3-4 months.

Table 1
Age Distribution of Reported Cases of Poliomyelitis
Nicaragua – Jan. 1, 1971-Jan. 31, 1972

Age (Years)	Number of Cases	Cumulative Percent	Estimated Age-Specific Attack Rate/100,000
< 1	76	31	94.7
1–2	120	80	105.4
3–6	39	96	18.4
> 6	3	97	0.2
Unknown	6	99	–
Total	244	99	12.7

Figure 1
POLIOMYELITIS CASES,* BY DATE OF REPORT
NICARAGUA – JAN. 1, 1971-JAN. 31, 1972



* NINE CASES ARE NOT INCLUDED BECAUSE THE DATES OF REPORTS ARE UNKNOWN

(Reported by the Communicable Disease Division, Pan American Health Organization, Washington, D.C.; the PAHO country representative, Managua, Nicaragua; and a team from CDC.)

CURRENT TRENDS
RECOMMENDED TREATMENT SCHEDULES FOR GONORRHEA – March 1972
Addendum – Vol. 21, No. 10

New therapy schedules for the treatment of uncomplicated gonorrhea were recently announced by the Venereal Disease Branch, State and Community Services Division, CDC. In developing this schedule, the Venereal Disease Branch utilized many of the suggestions of the *ad hoc* Therapy Advisory Committee which met at CDC on Feb. 25, 1972. The committee consisted of Dr. King K. Holmes (chairman), U.S. Public Health Service Hospital, Seattle, Washington; Dr. Harvey Blank, University of Miami School of Medicine, Miami, Florida; Dr. Alan R. Hinman, New York State Department of Health, Albany, New York; Dr. Edward H. Kass, Harvard Medical School, Boston, Massachusetts; Dr. Harry Pariser, Norfolk City Health Department, Norfolk, Virginia; and Dr. P. Frederick Sparling, Department of Medicine, University of North Carolina School of Medicine, Chapel Hill, North Carolina.

A requirement for a nationwide therapy recommendation is that it must be effective regardless of geographical variations in gonococcal antibiotic resistance and regardless of the patient population to which the therapy is given. The Venereal Disease Branch acknowledged this requirement in developing the current recommendations.

Some key references in the material reviewed by the committee are the following:

1. Kvale PA, Keys TF, Johnson DW, *et al:* Single oral dose ampicillin-probenecid treatment of gonorrhea in the male. JAMA 215:1,449-1,453, 1971
2. Johnson DW, Kvale PA, Afable VL, *et al*: Single-dose antibiotic treatment of asymptomatic gonorrhea in hospitalized women. New Engl J Med 283: 1-5, 1970
3. Holmes KK, Johnson DW, Floyd TM: Studies of venereal disease I. Probenecid-procaine penicillin B combination and tetracycline hydrochloride in the treatment of "penicillin-resistant" gonorrhea in men. JAMA 202:461-466, 1967
4. Cornelius CE, Domescik G: Spectinomycin hydrochloride in the treatment of uncomplicated gonorrhea. Brit J Ven Dis 46:212-213, 1970
5. Jones SR, Gilleland HE: Using one dose of doxycycline or penicillin to treat men with gonococcal urethritis. HSMHA Health Reports 86:849-854, 1971

A more extensive bibliography of gonorrheal therapy is available on request from Don W. Printz, M.D., Chief, Clinical Research Activity, Venereal Disease Branch, CDC, Atlanta, Georgia 30333.

(Reported by the Venereal Disease Branch, CDC.)

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

DISEASE	16th WEEK ENDED		MEDIAN	CUMULATIVE, FIRST 16 WEEKS		
	April 22, 1972	April 24, 1971	1967-1971	1972	1971	MEDIAN 1967-1971
Aseptic meningitis	41	28	28	521	754	454
Brucellosis	2	3	3	36	40	40
Chickenpox	5,769	---	---	64,471	---	---
Diphtheria	3	1	1	33	60	48
Encephalitis, primary:						
Arthropod-borne & unspecified	15	24	23	249	336	318
Encephalitis, post-infectious	10	2	12	83	94	128
Hepatitis, serum (Hepatitis B)	168	208	113	2,963	2,623	1,601
Hepatitis, infectious (Hepatitis A)	992	1,073	1,006	17,652	19,198	14,780
Malaria	13	47	38	434	1,178	746
Measles (rubeola)	1,275	3,502	1,810	13,812	36,994	20,290
Meningococcal infections, total	32	75	66	553	1,079	1,109
Civilian	30	59	58	528	916	989
Military	2	16	8	25	163	117
Mumps	2,249	3,376	---	33,923	59,004	---
Rubella (German measles)	988	1,681	2,000	11,498	20,917	20,917
Tetanus	1	2	3	23	22	33
Tuberculosis, new active	741	---	---	9,880	---	---
Tularemia	1	2	1	33	30	30
Typhoid fever	5	1	4	77	74	74
Typhus, tick-borne (Rky. Mt. spotted fever)	2	1	1	21	8	6
Venereal Diseases: †						
Gonorrhea	12,869	11,783	---	206,372	186,599	---
Syphilis, primary and secondary	495	436	---	7,177	7,249	---
Rabies in animals	121	115	90	1,338	1,442	1,243

TABLE II. NOTIFIABLE DISEASES OF LOW FREQUENCY

	Cum.		Cum.
Anthrax:	–	Poliomyelitis, total:	5
Botulism:	–	Paralytic:	5
Congenital rubella syndrome: Calif. – 1, La. – 1, Mo. – 3	13	Psittacosis: Wis. – 1	9
Leprosy: Hawaii – 1	32	Rabies in man:	1
Leptospirosis:	2	Trichinosis: Conn. – 1	30
Plague:	1	Typhus, murine:	5

†Numbers for 1971 are estimated from quarterly reports to the Venereal Disease Branch, CDC

INTERNATIONAL NOTES
FOLLOW-UP ON SMALLPOX – Yugoslavia

The first outbreak of smallpox to occur in Yugoslavia in 42 years is believed to be under complete control [MMWR, Vol. 21, No. 14]. As shown in Table 2, the number of cases occurring each week has decreased sharply since the peak incidence was reached in the week of March 19-25.

The last known case occurred on April 10 in Kosovo Province. In Proper Serbia Province, all cases with onsets of illness after March 24 have been among those who had already been identified as contacts and were in quarantine. In Kosovo, the last case to occur in a person not in quarantine experienced the onset of illness on April 8.

The outbreak was first recognized on the evening of March 14 when a physician in Prizren, Kosovo, (430 km from Belgrade) notified the Federal Health Authorities that he suspected the diagnosis of smallpox in three patients just admitted. Health authorities flew immediately to the site, examined the patients, and obtained specimens. The diagnosis was confirmed by electron microscopy and agar gel diffusion at the Institute for Immunology and Virology, Belgrade. By March 17, epidemiologic studies to trace the spread of infection had been initiated, containment measures taken, and the World Health Organization and neighboring countries notified.

Subsequent investigation disclosed that 11 cases had occurred with onsets of illness from March 3 to 8. Nine of these cases occurred in Kosovo – six in the village of Danjani, one in a neighboring village, and two in villages near the town of Djakovica. Two cases occurred in Proper Serbia: one in Novi Pazar and one in Brecniza.

The source and means of introduction of smallpox was initially obscure, leading to speculation in the press that one or several pilgrims returning to Yugoslavia had brought back variola virus on gifts or personal effects. Subsequent studies disprove this. The index case is believed to be a pilgrim from the village of Danjani who, in company with 25 others, had traveled to Mecca and returned by bus through Iraq. Baghdad was reported to be infected with smallpox at that time. The pilgrims arrived back in Yugoslavia on February 15, and shortly thereafter the pilgrim from Danjani experienced a mild fever and lesions on his face. His illness was mild; he did not seek medical attention, and at no time was he confined to bed. He had been successfully vaccinated against smallpox in childhood and three times subsequently. The last time was in November 1971, but it is doubtful that any of the revaccinations were successful. Following his return to Yugoslavia, he received and entertained many visitors from Danjani and neighboring villages and visited nearby towns where the four patients who resided away from Danjani were exposed.

Before the outbreak was recognized, smallpox was introduced into Belgrade itself. One of the first group of 11 patients, the patient in Novi Pazar, experienced the hemorrhagic form of smallpox, the diagnosis of which is invariably difficult. After admission to the local hospital, he was transferred to a second hospital in the town of Cacak and finally to a major teaching hospital in Belgrade, where he died on March 10, 5 days after onset of illness. Not until the subsequent development of smallpox in a brother was the illness recognized to have been smallpox. By then, hospital staff, patients, and visitors had been exposed in three hospitals. In all, 42 of the 48 cases in Proper Serbia resulted from transmission within hospitals. Included were five nurses and two physicians. Once the outbreak had been recognized, all of the known contacts of this patient were immediately vaccinated and placed in quarantine. Because of the concern that some of the many contacts may not have been identified, mass vaccination was undertaken in Belgrade and throughout Serbia. In all, 8,160,000 persons were vaccinated in a population of 8,437,000.

Table 2
Cases of Smallpox, by Week of Onset
Yugoslavia – February-April 1972

Week Ending	Total	Number of Cases by Province			
		Kosovo	Proper Serbia	Vojvodina	Montenegro
February 26	1	1	0		
March 4	6	5	1		
March 11	5	4	1		
March 18	15	9	6		
March 25	110	80	30	1	1
April 1	24	16	6		
April 8	11	7	4		
April 15	1	1	0		
Total	173	123	48	1	1

In Kosovo, 12 of the 123 patients contracted smallpox as a result of smallpox transmission in a hospital, the remainder acquiring the disease as a result of contact through frequent visits between the large extended family groups living in this area. Transmission occurred in 17 villages in five communes. Because of the extent of spread, a house-to-house vaccination program and search for cases has been carried out throughout Kosovo (population 1,244,000). In all, 380 teams have been engaged in this effort, and over 1,200,000 have been vaccinated. At vaccination control posts, all persons entering or leaving Kosovo or the infected communes and towns within both Proper Serbia and Kosovo are required to present certificates showing evidence of successful vaccination.

While a few additional cases may yet occur among contacts vaccinated late in the incubation period, it would seem unlikely that further foci would be identified.

(Reported by the World Health Organization: Weekly Epidemiological Record, *Vol. 47, No. 16, April 21, 1972.)*

Editorial Note

Over 1,000 travelers from Yugoslavia to the United States have been put under surveillance by state and local health officials. Seventeen travelers experienced rashes or other evidence of illness, requiring clinical, epidemiologic, and laboratory study. No cases of smallpox have been detected.

EPIDEMIOLOGIC NOTES AND REPORTS
FOLLOW-UP ON HUMAN RABIES – Texas

Information not available at the time of the initial report of the human rabies case in Temple, Texas, (MMWR, Vol. 21, No. 14) indicates that although the patient was serologically negative for rabies antibody at the onset of his illness in March, he had received pre-exposure rabies vaccination. Beginning Sept. 5, 1958, he received three weekly doses of modified live virus-high egg passage vaccine, 1.0 ml given subcutaneously. A serum antibody test on Oct. 13, 1958, was negative. A booster vaccine was given on Dec. 20, 1958, and another serum antibody test on Jan. 20, 1959, was also negative. Apparently, no other antirabies vaccine was administered prior to his illness and death in 1972.

(Reported by M. S. Dickerson, M.D., Chief, Communicable Disease Services, Texas State Health Department; and George R. Sharpless, Sc.D., Department Head, Virus Products Testing, Lederle Laboratories, Pearl River, New York.)

Editorial Note

This is the first case of rabies in the United States in a person who had received pre-exposure vaccination, but it should be stressed that the vaccine used was an experimental product never commercially distributed for this purpose. The rate of sero-conversions with this experimental vaccine was appreciably lower than that obtained with the duck embryo vaccine, which is licensed for antirabies vaccination.

This case of rabies in a person who had received pre-exposure vaccination emphasizes the importance of determining the presence of neutralizing antibody following such vaccination.

INTERNATIONAL NOTES
SMALLPOX SURVEILLANCE – Worldwide

As of April 4, 1972, a total of 15,222 smallpox cases had been reported to the World Health Organization (WHO), an increase of 94% over the 7,853 cases recorded at this time last year. More cases are being reported this year by each of the five principal endemic countries – Ethiopia, India, Nepal, Pakistan, and Sudan – reflecting, it is believed, improved surveillance and more complete reporting of cases. In addition, 1,077 cases of smallpox were reported from seven districts of Bangladesh.

Refugees returning from a camp near Calcutta and one in Cooch Behar District of West Bengal State in India introduced smallpox into Bangladesh, where no cases had been reported or detected by special surveillance teams for the past 18 months. A large number of introductions occurred over a short period of time, and the disease spread rapidly. Cases have so far been reported by the following districts: Bakerganj 316, Commilla 1, Dacca 3, Faridpur 274, Jessore 8, Khulna 168, and Rangpur 307. Emergency measures have been instituted, and surveillance teams are endeavoring to contain the outbreaks; extensive vaccination programs are in progress despite difficult transportation and communication problems.

Additional serious setbacks to the progress of the global eradication program occurred in February and March as smallpox spread westwards to infect Syria and Iraq and subsequently Yugoslavia and the Federal Republic of Germany. The outbreaks in the Middle-Eastern countries are of particular concern, since countries throughout this area had succeeded in interrupting smallpox transmission by the early 1960's and, except for occasional importations, remained smallpox-free until December 1970. Smallpox was introduced into Iran from areas of Afghanistan which were endemic at that time. Outbreaks continued to occur in Iran in 1971 and early 1972. Nine cases were reported in January 1971, 20 cases in September 1971, and two cases in January 1972. Since only the initial outbreak could be traced to an importation from known endemic areas, it is possible that transmission may have continued throughout this period. In February 1972, Iraq reported cases of smallpox along the Iranian border. Four cases have been reported from Erbil Province, six cases from the capital, Baghdad, and 10 cases from Muthana Province. Finally, in March 1972, Syria reported 18 cases in Dier-ez-Zor District on the border of Iraq. Extensive vaccination programs are in progress in Iran, Iraq, and Syria, employing in large part vaccine provided through WHO. Detailed data regarding the cases in each of these countries, their sources of infection, and the pattern of disease transmission are not available.

Effective containment of outbreaks in each of these countries depends on prompt and complete reporting, immediate investigation of all suspect cases, and tracing the sources of infection. Where such measures are in progress, they are proving to be highly effective. If Iran, Iraq, and Syria are to prevent re-establishment of endemic smallpox and if any further spread of the disease is to be prevented, intensive surveillance and containment measures will be required in that area as well as detailed and prompt information, which is of crucial importance for adjoining countries to take the necessary preventive action.

The importance of surveillance in the endemic countries is just as great as in those which are non-endemic. Although surveillance activities (including reporting and containment measures) have repeatedly been shown to be the most important component of an eradication program, implementation of these activities has been regrettably slow in virtually all endemic countries. The outdated belief that mass vaccination alone can eradicate the disease has seriously inhibited the satisfactory development of surveillance at many levels. The most notable exception to this observation has been the program in Ethiopia which, from its inception only 12 months ago, has emphasized surveillance as its principal strategy. The experience acquired during the first year of this program is described below.

(Continued on page 138)

SMALLPOX SURVEILLANCE – Continued

Ethiopia – The first 12 months

After a 4-month period of planning, preparation, and staff training, the program in Ethiopia began its field operations in February 1971. At that time, smallpox was recognized to be widely endemic in a largely unvaccinated population, but with limited health services and no national reporting system, the extent of the problem was unknown.

The strategy of the program emphasizes, as priorities, the development of a reporting network incorporating all available health facilities both government and private, the investigation and containment of all cases and outbreaks, and the active search for cases in areas where no reporting posts are present. Existing health facilities are encouraged to conduct vaccination programs to the extent possible. Surveillance teams conduct systematic vaccination programs in the rainy season when travel is restricted to all-weather roads.

With an initial staff of only 34 persons, work was first concentrated in four provinces: Gamu-Gofa, Kaffa, Ilubabor, and Wollega. A national surveillance team was stationed in the capital for work in Addis Ababa and neighboring Shoa Province, and one or two sanitarians were sent to each of the remaining nine provinces to prepare for further activities. By September, with additional staff and transport, they extended surveillance activities to all 14 provinces. The present smallpox program staff consists of 63 persons, including three physicians. Local health personnel and other cooperating organizations assist in containment activities and routine vaccination.

In 1971, a total of 25,976 cases of smallpox were reported by Ethiopia, 50% of all cases reported in the world. Of these, 1,390 (5.4%) were reported by routine notification; virtually all other cases were detected by field investigation. In the preceding year, only 722 cases had been reported. Information regarding age, sex, and vaccination status is available for most cases in 1971 (Table 3).

Almost 75% of the cases were among children less than 15 years of age, with almost half of the cases among those 5-14 years. Only 2.3% had ever been vaccinated. The overall case-fatality rate was 2.1%, but among those less than 1 year of age, the case-fatality rate was 11.7%. This rate is considerably lower than that observed in other parts of Africa but almost three times higher than was observed in Brazil, where variola minor was present.

In 1971, a total of 9,819 households with 51,264 residents were known to be afflicted with smallpox. Among the 47,770 persons who were examined, only 6% had a scar indicating previous vaccination; 4% showed scars of variolation, and 15% had scars denoting previous smallpox (Table 4). Fifty percent of all persons in these households eventually became ill with smallpox, and among those without scars of smallpox or variolation/vaccination 70% contracted the disease.

Cases in 1971 occurred in all provinces and in 75 of the 102 *awrajas* (counties). Six of the 14 provinces experienced attack rates exceeding 100 cases per 100,000 population – the highest being Ilubabor Province with a rate of 457 cases per 100,000 (Figure 2). Each of the four provinces where activities first began in February 1971 had rates exceeding 100 cases per 100,000.

The efficacy of the surveillance strategy is best appraised by the pattern of occurrence of cases in the four provinces where the program has been operative for the longest time. Cases are shown in Figure 3 by the 4-week period in which they were first reported (or discovered) and by the date of onset.

In general, the numbers of detected cases decreased in the middle of the year when the May-September rainy season prevented travel in many areas. Smallpox incidence, as shown by date of onset of cases, also decreased in this period, suggesting that, as in other areas, the rainy season is normally the seasonal low period of incidence.

In each of these four provinces, smallpox is confined to one or two *awrajas*. Containment activities are in progress, and an active search for cases is being undertaken in the other

Table 4
Susceptibility to Smallpox Among Residents of 9,819 Affected Households
Ethiopia – 1971

Age (Years)	Total*	Previous Variola			Susceptibles	Susceptibles (Percent)
		Smallpox Scar	Variolation Scar	Vaccination Scar		
< 1	860	4	4	21	831	97.4
1–4	7,470	49	21	240	7,160	96.6
5–14	14,759	304	99	941	13,415	91.3
15+	24,117	6,548	1,733	1,828	14,008	58.4
Unknown	564	55	14	22	473	
Total	47,770	6,960	1,871	3,052	35,887	75.0

*Excludes 3,494 persons not examined

Table 3
Distribution of Smallpox Cases by Age, Sex, and Vaccination Status – Ethiopia, 1971

Age (Years)	Number of Cases				Vaccination Status			Deaths**	Case-Fatality Rate (Percent)
	Total*	Male	Female	Unknown	Vaccinated	Not Vaccinated	Unknown		
< 1	537	256	279	2	13	506	18	63	11.7
1–4	5,801	2,814	2,981	6	99	5,521	181	146	2.5
5–14	11,350	5,887	5,443	20	262	10,699	389	91	0.8
15+	6,868	3,423	3,427	18	161	6,361	346	222	3.2
Total	24,556	12,380	12,130	46	535	23,087	934	522	2.1

*Excludes 1,420 cases of unknown age
**Excludes 8 cases of unknown age

areas. Based on detailed analysis of trends in incidence and patterns of disease occurrence, it is anticipated that transmission of smallpox can be interrupted in these four provinces as well as in four additional provinces (central and southern Ethiopia) by the end of 1972.

In the course of containment activities and systematic vaccination programs in high-risk areas, 3,012,985 vaccinations were performed in 1971. Including vaccinations performed in the October-December 1970 preparatory phase and in January 1972, almost 3.5 million persons have been vaccinated.

Health facilities throughout the country have been cooperating in the program and are expected to assume an even larger role in 1972.

It is increasingly apparent that the strategy employed in the Ethiopian program is sound and, despite a staff of less than 75 persons, the interruption of smallpox transmission appears feasible. At the same time, the smallpox program staff is working closely with health units throughout the country to improve reporting for other diseases and is assisting, where feasible, in the administration of BCG vaccine; almost 100,000 BCG vaccinations have been given.

In the other endemic countries where staff is more plentiful, immunization levels higher, and communication and transportation less difficult, the efficacy of the surveillance strategy in Ethiopia should be reviewed with care.

(Reported by the World Health Organization: Weekly Epidemiological Record, *Vol. 47, No. 14, April 7, 1972.)*

Figure 2
SMALLPOX CASES AND CASES PER 100,000 POPULATION
ETHIOPIA – 1971

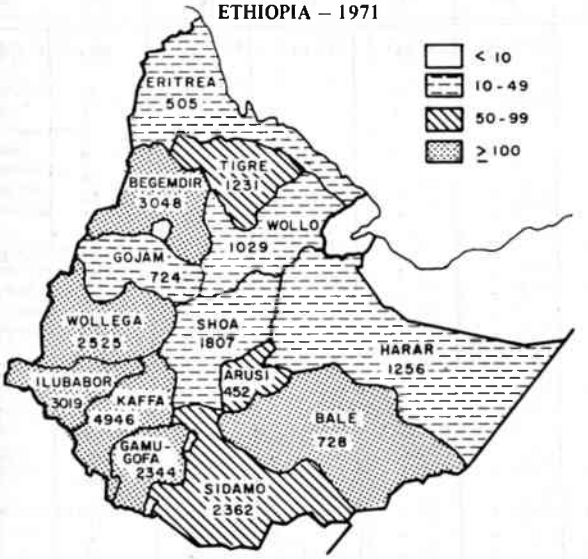


Figure 3
SMALLPOX CASES, BY 4-WEEK PERIOD – ETHIOPIA, 1971

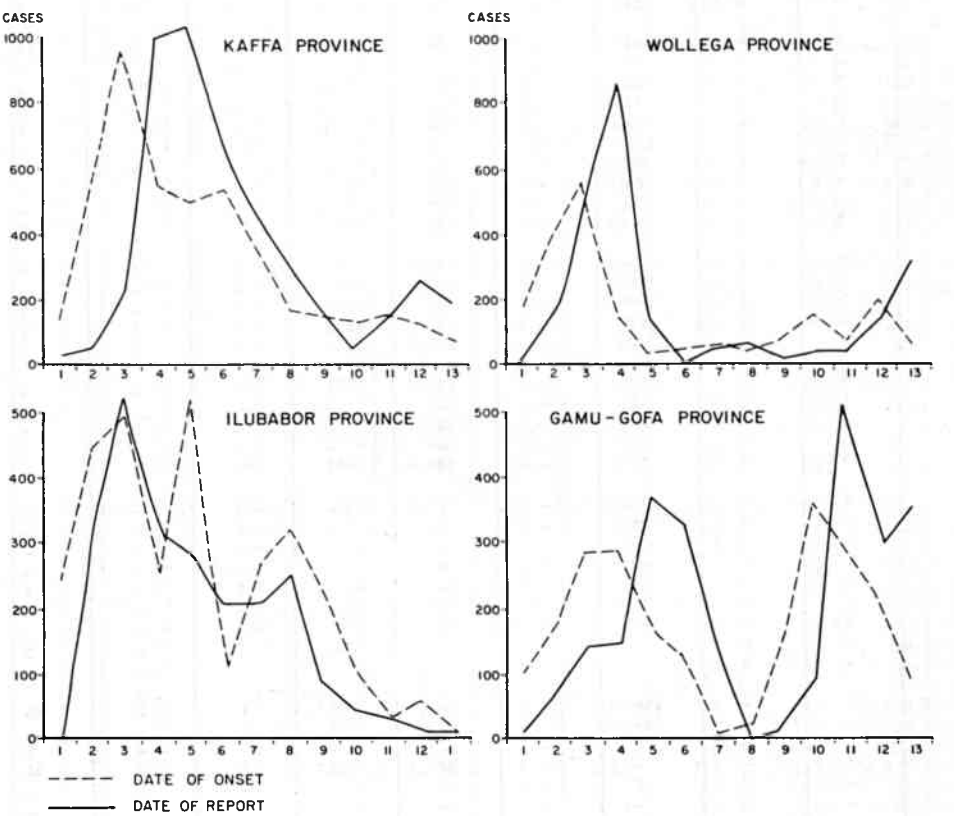


TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
FOR WEEKS ENDING APRIL 22, 1972 AND APRIL 24, 1971 (16th WEEK)

AREA	ASEPTIC MENINGITIS	BRUCELLOSIS	CHICKENPOX	DIPHTHERIA		ENCEPHALITIS			HEPATITIS		
						Primary including unspec. cases		Post Infectious	Serum (HEPATITIS B)	Infectious (HEPATITIS A)	
	1972	1972	1972	1972	Cum. 1972	1972	1971	1972	1972	1972	1971
UNITED STATES	41	2	5,769	3	33	15	24	10	168	992	1,073
NEW ENGLAND	1	–	850	–	–	1	2	–	5	70	60
Maine *	–	–	26	–	–	–	–	–	–	1	8
New Hampshire *	1	–	13	–	–	–	–	–	–	2	3
Vermont	–	–	9	–	–	–	–	–	1	8	5
Massachusetts	–	–	332	–	–	1	–	–	1	28	18
Rhode Island	–	–	123	–	–	–	2	–	–	10	9
Connecticut	–	–	347	–	–	–	–	–	3	21	17
MIDDLE ATLANTIC	4	–	520	1	1	–	3	–	67	135	207
Upstate New York	3	–	–	1	1	–	1	–	16	30	31
New York City	–	–	243	–	–	–	–	–	29	32	68
New Jersey *	–	–	NN	–	–	–	–	–	19	55	79
Pennsylvania	1	–	277	–	–	–	2	–	3	18	29
EAST NORTH CENTRAL	4	1	2,615	1	1	5	8	–	19	167	168
Ohio *	2	–	435	–	–	1	1	–	4	49	37
Indiana	–	–	262	–	–	–	1	–	–	10	11
Illinois	2	–	249	–	–	4	2	–	6	49	17
Michigan	–	–	632	1	1	–	3	–	9	53	88
Wisconsin	–	1	1,037	–	–	–	1	–	–	6	15
WEST NORTH CENTRAL	2	–	654	1	5	2	–	1	12	51	50
Minnesota	–	–	41	–	–	–	–	–	–	9	12
Iowa *	–	–	495	–	–	–	–	1	2	7	8
Missouri	2	–	14	–	–	2	–	–	4	15	19
North Dakota	–	–	21	–	–	–	–	–	–	2	1
South Dakota	–	–	22	1	5	–	–	–	–	2	1
Nebraska	–	–	7	–	–	–	–	–	–	1	5
Kansas	–	–	54	–	–	–	–	–	6	15	4
SOUTH ATLANTIC	7	–	402	–	6	1	–	2	16	154	155
Delaware	–	–	17	–	–	–	–	–	–	–	3
Maryland	2	–	64	–	–	–	–	–	4	22	17
District of Columbia	–	–	31	–	–	–	–	–	–	2	1
Virginia	1	–	13	–	–	1	–	–	1	11	30
West Virginia	–	–	255	–	–	–	–	–	–	13	6
North Carolina *	1	–	NN	–	–	–	–	–	3	29	26
South Carolina	–	–	22	–	–	–	–	–	–	6	11
Georgia	–	–	–	–	2	–	–	–	–	11	7
Florida	3	–	–	–	4	–	–	2	8	60	54
EAST SOUTH CENTRAL	5	1	214	–	1	2	2	1	6	48	41
Kentucky *	1	–	190	–	–	–	2	–	–	13	11
Tennessee	1	1	NN	–	–	–	–	–	3	19	22
Alabama	3	–	22	–	1	2	–	1	2	9	4
Mississippi	–	–	2	–	–	–	–	–	1	7	4
WEST SOUTH CENTRAL	6	–	23	–	17	1	–	4	4	85	102
Arkansas	1	–	2	–	–	–	–	–	–	1	3
Louisiana *	2	–	NN	–	4	–	–	3	–	16	7
Oklahoma	–	–	10	–	–	–	–	–	–	10	19
Texas	3	–	11	–	13	1	–	1	4	58	73
MOUNTAIN	1	–	195	–	2	–	3	–	3	43	76
Montana	–	–	25	–	–	–	2	–	–	4	1
Idaho	–	–	–	–	–	–	–	–	–	5	9
Wyoming	–	–	18	–	–	–	–	–	–	1	5
Colorado	–	–	21	–	–	–	1	–	1	11	17
New Mexico	–	–	31	–	1	–	–	–	–	9	11
Arizona *	1	–	100	–	1	–	–	–	–	11	21
Utah	–	–	–	–	–	–	–	–	2	2	11
Nevada	–	–	–	–	–	–	–	–	–	–	1
PACIFIC	11	–	296	–	–	3	6	2	36	239	214
Washington	–	–	284	–	–	1	–	–	–	5	11
Oregon	–	–	4	–	–	–	–	–	2	35	32
California	11	–	–	–	–	2	6	2	34	192	167
Alaska	–	–	8	–	–	–	–	–	–	–	2
Hawaii	–	–	–	–	–	–	–	–	–	7	2
Guam	–	–	–	–	–	–	---	–	–	–	---
Puerto Rico	–	–	8	–	–	–	–	–	1	13	71
Virgin Islands	–	–	–	–	–	–	–	–	–	–	–

*Delayed reports: Aseptic meningitis: Ariz. 1
Chickenpox: Me. 13, Ky. 228
Encephalitis, primary: Iowa 3, Ky. 1
Hepatitis, serum: N.H. 6, Iowa 2, N.C. 9, Ky. 1, La. delete 2
Hepatitis, infectious: Me. 9, N.H. delete 6, N.J. delete 1, Ohio delete 12, Ky. 29, La. delete 2

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES FOR WEEKS ENDING APRIL 22, 1972 AND APRIL 24, 1971 (16th WEEK) – Continued

AREA	MALARIA		MEASLES (Rubeola)			MENINGOCOCCAL INFECTIONS, TOTAL			MUMPS		RUBELLA	
	1972	Cum. 1972	1972	Cumulative		1972	Cumulative		1972	Cum. 1972	1972	Cum. 1972
				1972	1971		1972	1971				
UNITED STATES	13	434	1,275	13,812	36,994	32	553	1,079	2,249	33,923	988	11,498
NEW ENGLAND	1	10	154	1,060	1,384	–	24	45	111	1,411	71	517
Maine *	–	–	3	126	701	–	3	6	14	126	9	37
New Hampshire	–	1	2	86	93	–	–	5	1	96	–	24
Vermont	–	–	–	22	58	–	–	–	2	76	3	18
Massachusetts	1	5	21	190	150	–	13	18	19	385	39	250
Rhode Island	–	–	21	154	33	–	6	2	15	257	3	43
Connecticut	–	4	107	482	349	–	2	14	60	471	17	145
MIDDLE ATLANTIC	3	32	39	651	3,870	1	57	137	144	1,577	102	830
Upstate New York	2	7	13	70	271	–	15	38	NN	NN	13	145
New York City	–	5	11	127	2,235	–	12	24	68	697	15	105
New Jersey	1	9	13	429	424	–	16	36	48	537	71	454
Pennsylvania	–	11	2	25	940	1	14	39	28	343	3	126
EAST NORTH CENTRAL	1	41	635	5,239	7,124	6	73	108	612	9,507	285	3,135
Ohio	–	6	16	175	2,319	5	26	29	82	1,404	18	209
Indiana	–	1	63	843	1,100	–	10	6	43	690	35	407
Illinois	–	13	314	2,008	1,702	–	15	34	94	1,724	36	543
Michigan	1	19	84	925	643	1	19	31	86	1,572	48	711
Wisconsin	–	2	158	1,288	1,360	–	3	8	307	4,117	148	1,265
WEST NORTH CENTRAL	–	29	57	483	3,554	2	46	98	407	6,226	64	601
Minnesota	–	3	1	14	37	1	10	14	22	557	6	39
Iowa *	–	3	45	263	1,239	–	–	7	326	4,422	45	290
Missouri	–	8	3	135	1,172	1	13	36	–	238	5	84
North Dakota	–	1	5	36	133	–	–	2	12	248	–	18
South Dakota	–	4	–	4	182	–	2	5	34	78	–	11
Nebraska	–	3	3	13	21	–	7	11	7	159	4	42
Kansas	–	7	–	18	770	–	14	23	6	524	4	117
SOUTH ATLANTIC	3	57	97	1,273	3,864	11	125	166	168	2,896	139	948
Delaware	–	–	1	6	14	–	1	1	6	33	–	1
Maryland	–	–	1	10	59	2	22	25	10	139	–	25
District of Columbia	–	1	–	–	4	2	4	7	–	4	–	1
Virginia	–	2	4	34	827	4	30	16	10	408	–	47
West Virginia	–	1	39	137	251	–	9	2	94	1,557	17	260
North Carolina	–	23	–	25	1,289	–	19	24	NN	NN	1	6
South Carolina	–	8	3	162	554	1	10	16	9	117	8	36
Georgia	3	16	4	122	162	1	2	11	–	1	–	28
Florida	–	6	45	777	704	1	28	64	39	637	113	544
EAST SOUTH CENTRAL	1	121	10	817	5,002	3	45	94	112	1,771	61	688
Kentucky *	–	114	4	446	2,539	1	12	29	13	283	27	298
Tennessee	–	–	3	140	417	1	18	32	64	1,101	33	293
Alabama	1	3	–	99	738	1	9	20	34	302	–	24
Mississippi	–	4	3	132	1,308	–	6	13	1	85	1	73
WEST SOUTH CENTRAL	–	45	73	873	8,602	2	70	94	186	2,767	66	966
Arkansas	–	3	1	7	578	–	7	3	1	79	1	55
Louisiana *	–	2	8	49	1,196	–	20	32	24	132	7	53
Oklahoma	–	2	1	6	636	2	6	6	3	107	5	14
Texas	–	38	63	811	6,192	–	37	53	158	2,449	53	844
MOUNTAIN	2	32	46	962	1,748	2	11	29	119	1,858	20	578
Montana	–	1	–	12	661	1	2	2	2	123	–	16
Idaho	–	3	4	7	153	–	2	2	13	106	–	6
Wyoming	–	–	–	–	43	–	1	–	23	180	–	4
Colorado	1	21	5	323	473	1	2	5	38	495	12	298
New Mexico	–	1	–	64	203	–	1	2	9	429	–	52
Arizona *	–	5	36	428	140	–	1	8	30	473	8	185
Utah	1	1	1	128	72	–	1	9	–	29	–	14
Nevada	–	–	–	–	3	–	1	1	4	23	–	3
PACIFIC	2	67	164	2,454	1,846	5	102	308	390	5,910	180	3,235
Washington	–	–	41	506	512	–	11	13	115	2,023	26	529
Oregon	1	6	3	25	166	1	6	18	71	769	9	232
California	1	53	115	1,849	1,112	4	82	274	195	2,930	144	2,424
Alaska	–	1	–	5	8	–	–	–	1	90	–	14
Hawaii	–	7	5	69	48	–	3	3	8	98	1	36
Guam	–	1	–	2	---	–	6	---	–	1	–	5
Puerto Rico	–	2	27	245	120	1	2	–	20	280	–	2
Virgin Islands	–	–	–	–	5	–	2	–	1	105	–	3

*Delayed reports: Malaria: Iowa 2
Measles: Ky. 7
Meningococcal infections: Ky. 1, Ariz. delete 1
Mumps: Ky. 15, La. delete 3
Rubella: Me. 2, Ky. 12

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
FOR WEEKS ENDING APRIL 22, 1972 AND APRIL 24, 1971 (16th WEEK) – Continued

AREA	TETANUS	TB (New Active)	TULAREMIA		TYPHOID FEVER		TYPHUS FEVER TICK-BORNE (Rky. Mt. spotted fever)		VENEREAL DISEASES		RABIES IN ANIMALS	
									GONORRHEA	SYPHILIS (Pri. & Sec.)		
	1972	1972	1972	Cum. 1972	1972	Cum. 1972	1972	Cum. 1972	1972	1972	1972	Cum. 1972
UNITED STATES	1	741	1	33	5	77	2	21	12,869	495	121	1,338
NEW ENGLAND	–	14	–	–	–	5	–	–	348	8	7	52
Maine *	–	–	–	–	–	–	–	–	11	–	7	48
New Hampshire	–	–	–	–	–	–	–	–	9	–	–	–
Vermont	–	–	–	–	–	–	–	–	3	–	–	4
Massachusetts	–	8	–	–	–	3	–	–	164	4	–	–
Rhode Island	–	2	–	–	–	–	–	–	30	1	–	–
Connecticut	–	4	–	–	–	2	–	–	131	3	–	–
MIDDLE ATLANTIC	–	148	–	1	1	18	–	3	1,710	105	4	26
Upstate New York	–	29	–	–	1	6	–	–	438	14	1	13
New York City	–	59	–	–	–	8	–	–	724	68	–	–
New Jersey	–	–	–	1	–	3	–	1	228	16	–	–
Pennsylvania	–	60	–	–	–	1	–	2	320	7	3	13
EAST NORTH CENTRAL	–	103	–	1	1	4	–	–	1,343	27	23	147
Ohio *	–	31	–	1	1	2	–	–	538	5	8	51
Indiana	–	7	–	–	–	–	–	–	159	7	2	40
Illinois	–	47	–	–	–	–	–	–	122	2	2	21
Michigan	–	16	–	–	–	2	–	–	395	13	1	2
Wisconsin	–	2	–	–	–	–	–	–	129	–	10	33
WEST NORTH CENTRAL	–	32	1	7	–	3	–	1	885	2	18	316
Minnesota	–	1	–	–	–	–	–	–	143	–	9	80
Iowa	–	1	–	–	–	–	–	–	108	1	5	79
Missouri	–	20	1	7	–	2	–	–	353	1	–	32
North Dakota	–	3	–	–	–	–	–	–	16	–	1	56
South Dakota	–	–	–	–	–	–	–	–	26	–	–	30
Nebraska	–	4	–	–	–	–	–	–	126	–	1	3
Kansas	–	3	–	–	–	1	–	1	113	–	2	36
SOUTH ATLANTIC	–	132	–	5	1	8	1	10	3,056	192	4	115
Delaware	–	–	–	–	–	–	–	–	28	1	–	–
Maryland	–	14	–	–	–	1	–	–	331	7	–	1
District of Columbia	–	13	–	–	1	1	–	–	370	16	–	–
Virginia	–	20	–	4	–	3	1	8	395	60	1	37
West Virginia	–	6	–	–	–	–	–	–	23	1	1	29
North Carolina	–	27	–	–	–	–	–	1	507	20	–	–
South Carolina	–	–	–	–	–	–	–	1	186	28	–	–
Georgia	–	18	–	–	–	–	–	–	622	22	1	27
Florida	–	34	–	1	–	3	–	–	594	37	1	21
EAST SOUTH CENTRAL	–	44	–	2	1	7	–	2	1,127	29	17	321
Kentucky *	–	11	–	–	1	2	–	–	116	5	3	106
Tennessee	–	20	–	1	–	1	–	1	483	9	13	181
Alabama	–	11	–	1	–	–	–	1	378	5	1	34
Mississippi	–	2	–	–	–	4	–	–	150	10	–	–
WEST SOUTH CENTRAL	–	136	–	14	–	5	1	5	1,586	42	36	285
Arkansas	–	11	–	9	–	2	–	–	76	5	5	47
Louisiana *	–	15	–	1	–	–	–	–	323	10	3	17
Oklahoma *	–	5	–	2	–	–	1	3	142	2	15	129
Texas	–	105	–	2	–	3	–	2	1,045	25	13	92
MOUNTAIN	–	37	–	2	–	3	–	–	232	13	–	10
Montana	–	–	–	–	–	–	–	–	35	–	–	–
Idaho	–	1	–	–	–	–	–	–	21	–	–	–
Wyoming	–	–	–	–	–	–	–	–	2	–	–	–
Colorado	–	3	–	1	–	–	–	–	106	9	–	–
New Mexico	–	1	–	–	–	1	–	–	38	4	–	1
Arizona	–	28	–	1	–	1	–	–	–	–	–	9
Utah	–	4	–	–	–	1	–	–	15	–	–	–
Nevada	–	–	–	–	–	–	–	–	15	–	–	–
PACIFIC	1	95	–	1	1	24	–	–	2,582	77	12	66
Washington	–	10	–	–	–	–	–	–	180	4	–	–
Oregon	–	4	–	–	–	–	–	–	203	2	–	–
California	1	74	–	–	1	21	–	–	2,192	71	12	62
Alaska	–	–	–	1	–	–	–	–	7	–	–	4
Hawaii	–	7	–	–	–	3	–	–	–	–	–	–
Guam	–	–	–	–	–	–	–	–	–	–	–	–
Puerto Rico	1	8	–	–	–	2	–	–	33	21	1	21
Virgin Islands	–	–	–	–	–	–	–	–	–	–	–	–

*Delayed reports: Tuberculosis: Ohio delete 1, Ky. 18, Okla. 4
Gonorrhea: Me. delete 1, Ky. 95, La. delete 8, Okla. 142
Syphilis: Ky. 3, Okla. 2
Rabies in animals: Ky. 6

Week No. 16

TABLE IV. DEATHS IN 122 UNITED STATES CITIES FOR WEEK ENDING APRIL 22, 1972

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

Area	All Causes			Pneumonia and Influenza	Area	All Causes			Pneumonia and Influenza
	All Ages	65 years and over	Under 1 year	All Ages		All Ages	65 years and over	Under 1 year	All Ages
NEW ENGLAND	767	467	28	43	SOUTH ATLANTIC	1,322	705	41	53
Boston, Mass.	247	128	11	13	Atlanta, Ga.	139	67	7	6
Bridgeport, Conn.	44	27	2	2	Baltimore, Md.	237	118	12	2
Cambridge, Mass.	30	21	–	5	Charlotte, N. C.	66	31	2	–
Fall River, Mass.	27	16	–	1	Jacksonville, Fla.	91	49	–	1
Hartford, Conn.	77	42	5	2	Miami, Fla.	119	53	4	5
Lowell, Mass.	27	18	1	2	Norfolk, Va.	55	30	3	2
Lynn, Mass.	24	15	–	3	Richmond, Va.	100	48	2	11
New Bedford, Mass.	31	23	–	1	Savannah, Ga.	30	18	4	4
New Haven, Conn.	47	33	4	1	St. Petersburg, Fla.	96	81	–	5
Providence, R. I.	56	34	2	4	Tampa, Fla.	75	46	1	5
Somerville, Mass.	13	9	–	–	Washington, D. C.	263	140	6	11
Springfield, Mass.	61	43	2	2	Wilmington, Del.	51	24	–	1
Waterbury, Conn.	19	13	–	–					
Worcester, Mass.	64	45	1	7	EAST SOUTH CENTRAL	723	402	25	51
					Birmingham, Ala.	124	77	2	1
MIDDLE ATLANTIC	3,264	2,000	94	136	Chattanooga, Tenn.	48	27	1	4
Albany, N. Y.	46	27	–	1	Knoxville, Tenn.	45	28	1	3
Allentown, Pa.	27	10	2	3	Louisville, Ky.	117	67	4	11
Buffalo, N. Y.	156	101	3	4	Memphis, Tenn.	178	88	5	17
Camden, N. J.	47	26	4	5	Mobile, Ala.	52	27	3	2
Elizabeth, N. J.	34	23	–	1	Montgomery, Ala.	58	27	7	7
Erie, Pa.	43	28	2	2	Nashville, Tenn.	101	61	2	6
Jersey City, N. J.	66	47	1	1					
Newark, N. J.	71	28	5	2	WEST SOUTH CENTRAL	1,037	557	48	28
New York City, N. Y. †	1,769	1,084	48	74	Austin, Tex.	32	19	2	2
Paterson, N. J.	62	35	4	1	Baton Rouge, La.	35	19	2	1
Philadelphia, Pa.	398	238	8	3	Corpus Christi, Tex.	26	11	1	–
Pittsburgh, Pa.	121	70	2	11	Dallas, Tex.	150	73	7	2
Reading, Pa.	42	30	1	5	El Paso, Tex.	34	20	4	3
Rochester, N. Y.	119	75	8	12	Fort Worth, Tex.	85	47	3	4
Schenectady, N. Y.	24	16	–	2	Houston, Tex.	181	78	3	–
Scranton, Pa.	55	38	1	3	Little Rock, Ark.	41	24	1	3
Syracuse, N. Y.	78	49	2	2	New Orleans, La.	131	72	9	1
Trenton, N. J.	51	30	3	–	Oklahoma City, Okla.	84	50	3	2
Utica, N. Y.	20	18	–	–	San Antonio, Tex.	121	72	7	3
Yonkers, N. Y.	35	27	–	4	Shreveport, La.	63	37	3	5
					Tulsa, Okla.	54	35	3	2
EAST NORTH CENTRAL	2,590	1,484	121	80					
Akron, Ohio	61	40	3	–	MOUNTAIN	504	284	25	23
Canton, Ohio	34	25	1	–	Albuquerque, N. Mex.	46	24	2	5
Chicago, Ill.	674	348	37	22	Colorado Springs, Colo.	43	22	2	9
Cincinnati, Ohio	154	97	1	3	Denver, Colo.	128	74	10	3
Cleveland, Ohio	190	100	13	4	Ogden, Utah	14	8	–	1
Columbus, Ohio	176	109	10	4	Phoenix, Ariz.	118	68	4	–
Dayton, Ohio	87	43	8	1	Pueblo, Colo.	28	18	–	5
Detroit, Mich.	355	198	19	11	Salt Lake City, Utah	62	33	5	–
Evansville, Ind.	36	25	1	2	Tucson, Ariz.	65	37	2	–
Flint, Mich.**	52	28	4	2					
Fort Wayne, Ind.	55	23	5	3	PACIFIC	1,598	985	51	18
Gary, Ind.	33	16	1	2	Berkeley, Calif.	15	11	–	1
Grand Rapids, Mich.	49	29	1	2	Fresno, Calif.	46	28	1	1
Indianapolis, Ind.	156	85	3	2	Glendale, Calif.	43	30	–	–
Madison, Wis.	26	14	2	1	Honolulu, Hawaii	52	30	3	–
Milwaukee, Wis.	151	105	4	5	Long Beach, Calif.	102	57	1	1
Peoria, Ill.	29	20	1	2	Los Angeles, Calif.	497	301	12	7
Rockford, Ill.	38	24	–	5	Oakland, Calif.	90	50	5	1
South Bend, Ind.	55	29	2	3	Pasadena, Calif.	27	19	1	–
Toledo, Ohio	124	84	4	5	Portland, Oreg.	132	89	3	2
Youngstown, Ohio	55	42	1	1	Sacramento, Calif.	57	31	5	–
					San Diego, Calif.	117	71	7	1
WEST NORTH CENTRAL	845	509	50	29	San Francisco, Calif.	165	93	4	3
Des Moines, Iowa	60	39	3	4	San Jose, Calif.	37	32	–	–
Duluth, Minn.	28	22	–	1	Seattle, Wash.	141	89	6	1
Kansas City, Kans.	40	22	6	–	Spokane, Wash.	52	38	1	–
Kansas City, Mo.	135	72	6	6	Tacoma, Wash.	25	16	2	–
Lincoln, Nebr.	16	12	–	1					
Minneapolis, Minn.	108	69	10	4	Total	12,650	7,393	483	461
Omaha, Nebr.	83	47	2	–	Expected Number	12,924	7,452	548	495
St. Louis, Mo.	260	156	18	6	Cumulative Total (includes reported corrections for previous weeks)	218,083	128,582	8,271	10,623
St. Paul, Minn.	58	41	1	2					
Wichita, Kans.	57	29	4	5					
Las Vegas, Nev.*	25	16	–	2					

*Mortality data are being collected from Las Vegas, Nev., for possible inclusion in this table, however, for statistical reasons, these data will be listed only and not included in the total, expected number, or cumulative total, until 5 years of data are collected.

†Delayed report for week ending April 15, 1972

**Estimate based on average percent of divisional total

INTERNATIONAL NOTES
QUARANTINE MEASURES

Changes in the "Supplement – Vaccination Certificate Requirements for International Travel," MMWR, Vol. 21, No. 11

The following changes should be made in the Vaccination Certificate Requirements for International Travel:

Belgium

In the note concerning smallpox, insert: Certificate required from travelers coming from Yugoslavia.

Germany, Federal Republic of

In the note concerning smallpox, insert: Certificate required from travelers coming from Yugoslavia.

Greece

In the note concerning smallpox, insert: Certificate required from travelers coming from Yugoslavia.

Egypt

Delete the note concerning smallpox. Change symbol to I.

Iceland

In the note concerning smallpox, insert: Certificate required from travelers coming from Yugoslavia.

Italy

In the note concerning smallpox, insert: Certificate required from travelers coming from Yugoslavia.

Sweden

In the note concerning smallpox, insert: Certificate required from travelers coming from Yugoslavia.

Turkey

In the note concerning smallpox, insert: Certificate required from travelers coming from Yugoslavia.

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Director, Center for Disease Control — David J. Sencer, M.D.
Director, Epidemiology Program, CDC — Philip S. Brachman, M.D.
Editor, MMWR — Michael B. Gregg, M.D.
Managing Editor — Susan J. Dillon

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 outbreaks or case investigations of current interest to health officials.

Address all correspondence to: Center for Disease Control
Attn: Editor
Morbidity and Mortality Weekly Report
Atlanta, Georgia 30333

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