# Asian Strain of Influenza A

An influenza outbreak first noted in late April 1957 in Hong Kong, chiefly among recent refugees from China, was followed rapidly by others in Singapore, Taiwan, the Philippines, and the Malay States. On request from Walter Reed Army Institute of Research, United States military laboratories near these areas, notably the 406th Medical General Laboratory, U. S. Army, at Zama, Japan, promptly undertook study of the epidemiology of this disease, which appeared to be highly communicable but not ordinarily fatal.

The infection attacked on the average an estimated 18 to 20 percent of the population in affected areas. Incidence in certain localities was reported as high as 60 percent. Characterized by rapid onset, fever, malaise, muscular aches and pains, and coryza, the disease lasts 3 to 5 days. Mortality, occurring mostly in infants and debilitated persons, has been less than 1 per 1,000 cases.

On April 25, Army medical teams in Japan took throat washings from affected crew-members of a United States aircraft carrier recently out of Hong Kong, and, on noting that isolated virus strains appeared unusual, sent the isolates to the United States for antigenic analysis. These strains together with others recovered from the epidemics at Hong Kong and Singapore were analyzed at the Walter Reed Army Institute of Research in Washington, D. C. On May 22, the Walter Reed laboratory announced the virus to be type A influenza, but strikingly different antigenically from previously known strains of this type, and reported the findings to the World Health Organization, the Public Health Service, and the Armed Forces Epidemiological Board. Similar findings were reported shortly thereafter from the World Influenza Center in London and from Sir Frank Macfarlane Burnet's laboratory in Australia.

Tests of 30 serum specimens collected at random from personnel at Walter Reed Army Medical Center showed no detectable antibody against the virus, further evidence of a new strain of influenza virus.

#### **Precautionary Measures**

On the basis of these findings, the World Health Organization alerted all influenza centers and distributed new strains for further intensive studies. Using prototype strains received from the Walter Reed Army Institute of Research, the WHO International Influenza Center for the Americas in the Communicable Disease Center in Montgomery, Ala., sent ampules of the strain A/Japan/305/57, samples of related strains, and hyperimmune serums to laboratories in the Western Hemisphere collaborating in the influenza study program. Studies are now under way at this center, as well as at the University of Michigan School of Public Health and the Walter Reed Army Institute of Research, on antibody reactions with various regimens for vaccination.

A number of strains of Asian influenza virus were sent in dried form by the Walter Reed institute to the Division of Biologics Standards, National Institutes of Health, Public Health Service, for distribution to the six licensed manufacturers of vaccine. All six houses promptly began to produce experimental monovalent vaccine. Four contracted for fall delivery of vaccine to the Department of Defense. Supplies for the public were expected by the industry to reach at least 60 million cubic centimeters by February 1, 1958.

### **Epidemic Reporting**

The WHO International Influenza Center for the Americas and the World Influenza Information Center in London act as clearinghouses for news of influenza outbreaks anywhere in the world. In the United States, health agencies are receiving current information on confirmed or suspected outbreaks of Asian influenza in the *Morbidity and Mortality Weekly Report* issued by the National Office of Vital Statistics, Public Health Service.

The Public Health Service instructed its epi-

demic intelligence officers, assigned to local and State health departments, to assist health officers in investigating early signs of the occurrence of influenza. In addition, quarantine officers of the Service advised travelers from affected areas to see a physician if respiratory illness develops within 10 days after arrival in

## Calendar of Major Events in the 1957 Outbreaks

**April 18.** Newspaper report of influenza outbreak in Hong Kong. Cable instructions from Walter Reed Army Institute of Research in Washington, D.C., to 406th Medical General Laboratory, U.S. Army, in Japan to investigate. Similar outbreak in Singapore.

**April 25.** U.S. aircraft carrier out of Hong Kong docked at Yokosuka, Japan. Influenza aboard. Throat washings from affected crew members taken by U.S. Army medical personnel and first isolation made at 406th Medical General Laboratory.

May 22. After analysis of 2 strains recovered in Japan, 1 strain from the Hong Kong outbreak, and 2 strains from Singapore, Walter Reed Army Institute of Research announced they were antigenically different from other type A influenza viruses. No detectable antibodies against new viruses found in personnel selected at random. New strains supplied to WHO International Influenza Center for the Americas and National Institutes of Health for distribution to six manufacturers of vaccine.

**May 23.** Division of Foreign Quarantine, Public Health Service, instituted measures to identify and follow up travelers from the Orient with respiratory disease.

June 2. Influenza on board vessels at Newport, R. I. Strains of virus from throat washings identified as Asian type. Throat washings taken at Norfolk, Va., on a vessel from Newport. Asian influenza virus identified. Cases on these vessels totaled 373; attack

rates ranged from 3 to 45 percent. June 7. The first experimental vaccine was submitted to the Division of Biologics Standards, Public Health Service, for testing.

June 10. The Surgeon General of the Public Health Service met with advisory committee of physicians and health officers.

June 11. On a naval vessel entering San Diego after a training cruise, 78 of 130 crew members were ill with a respiratory disease later identified as type A influenza by virus isolation. Within 2 weeks, more than 70 percent of the crew were attacked, and 2,770 recruits were affected. Etiological agent confirmed as Asian strain virus.

June 12. The Surgeon General of the Public Health Service met with technical representatives of the licensed manufacturers of vaccine.

**June 16.** During the following week, 137 persons from Mare Island Naval Base, Calif., were hospitalized with respiratory disease.

June 17–30. At Fort Ord, Calif., 245 cases were confirmed as Asian strain influenza by virus isolation and serologic tests.

June 20. Two outbreaks of influenza reported in California civilians.

June 25. Representatives of the American Medical Association met with the Surgeon General of the Public Health Service on medical manpower utilization in event of an epidemic.

**June 26.** At least 200 cases of influenza, Asian strain, occurred among 1,800 persons from 43 States and

several countries attending a conference at Grinnell, Iowa. Of the first 12 cases, 11 were from California. After the conference, about 48 of those who had attended were reported ill.

July 10–24. Influenza among Boy Scouts at Jamboree in Valley Forge, Pa. First occurrence among California contingent of 1,000.

**July 19.** Reports from the Netherlands that certain serums from aged persons contain inhibitory substance for hemagglutination of Asian influenza virus confirmed at WRAIR.

July 24. Evidence of antibodies against Asian virus among certain elderly persons in Massachusetts indicated by tests at the Virus and Rickettsia Section of the Communicable Disease Center in Alabama. Significance of demonstration of inhibiting substance against Asian influenza in serums of aged persons remains undetermined.

Diagnosis of Asian virus in Boy Scouts confirmed at WRAIR, later at NIH.

**July 31.** Project at Veterans Administration Hospital, Livermore, Calif., on the use of irradiation with ultraviolet light in preventing spread of Asian influenza.

August 12. The Public Health Service released 502,000 doses of vaccine for the armed forces and civilians, civilian lots to be distributed through hospitals, clinics, and private physicians. The Service recommended that State and local governments give priority to vaccination of persons engaged in essential work. the United States. Names and addresses of those ill with such a disease on arrival are forwarded to health officers in their home communities.

On June 10, the Surgeon General called the first meeting of the 10-member Advisory Committee on Influenza, formed of private physicians and public health officers. Committee members stressed the value of prompt reporting of suspicious cases, so that any occurrence of suspected influenza can be subjected to laboratory analysis through the State and local health department.

A statement by a number of medical organizations collaborating with the Public Health Service outlined specific procedure for physicians based on specifications of the WHO Influenza Typing Center for the Americas at the Public Health Service influenza laboratory in Montgomery, Ala.

"Optimally, the washings should be obtained during the first 3 days of illness and while the patient is still febrile, although virus may be recovered as long as 7 days after onset. The

patient should gargle 3 times, using about 15 ml. of diluent (broth, skimmed milk, or distilled water) and returning the washing each time to the paper cup. Some infective material may be brought from the trachea into the pharynx if the patient will cough. The washings should be transferred to a closed tube for transportation to the laboratory and tested as soon as possible. If a delay of more than a few hours is necessary, the fluid should be kept chilled at refrigerator temperatures. When longer periods of storage are unavoidable, the washing should be frozen and stored, preferably near 70° C. Serum samples should also be taken, one during the time of illness and a second. 2 to 4 weeks later.

"Not all laboratories are prepared to do virus isolation and serology for influenza. State health departments, however, can either do these procedures or refer the specimens to influenza reference laboratories such as the one at the Public Health Service's Communicable Disease Center Virus and Rickettsia Laboratory, Montgomery, Ala."

## Dental Care for the Aged and Chronically III

A 4-year study to explore ways of providing dental care to the aged and chronically ill was launched by the Public Health Service in July 1957. The survey covers the Kansas City metropolitan area. During the first 6 months, investigators will study the dental needs of a sample of about 1,500 chronically ill patients in nursing homes and an undetermined number confined to the home.

The second phase of the study will concentrate on the administrative and organizational approach to the problem, supplementing technical research in this field. Collected data on costs and methods will be useful to communities planning programs for the chronically ill and aged who do not now receive dental care.

The University of Kansas City School of Dentistry has donated space for the study clinic; and Community Services, Inc., a nonprofit research agency in Kansas City, is assisting the Division of Dental Public Health, Public Health Service, in the project. Other voluntary and official agencies in the area will be called on to participate as the study progresses.