

INFLUENZA – Trust Territory and Hawaii

A/Victoria/3/75(H3N2)-like strains of influenza virus have been reported in association with outbreaks of influenza in the Trust Territory of the Pacific Islands and in Hawaii.

Kwajalein Atoll-Kwajalein Missile Range, Trust Territory of the Pacific Islands

Between October 11-November 1, an outbreak of acute febrile upper respiratory disease occurred among the residents on Kwajalein Missile Range in the Trust Territory of the Pacific Islands. A similar outbreak had recently occurred among the Marshallese population on the neighboring island of Ebeye.

Investigation revealed a clinical attack rate of 30% among the population of 3,400 with cases clustered in families and evenly distributed among adults and children. Serologic studies indicated that an influenza A virus was the cause of the outbreak.

A/Victoria-like strains were isolated from 2 asymptomatic individuals from Kwajalein passing through Hawaii during the time of the outbreak.

Hawaii

During October, 5 isolates of influenza B were reported from Hawaii. The specimens were submitted by private practitioners and were obtained from sporadic cases. Isolates

have been characterized as similar to the B/Hong Kong/5/72 strain.

In November, an outbreak of influenza occurred in a private elementary/secondary school in Honolulu. During the outbreak approximately 200 students out of 2,600 enrolled were seen in the dispensary for influenza-like illness. A total of 41 of the 611 boarding students were hospitalized in the infirmary during the course of the outbreak. Primary findings in those ill were fever, sore throat, and cough. Of 12 throat swabs taken from November 14-21, 1 isolate of an A/Victoria-like strain was obtained from a 9th grade boy and 4 isolates of influenza B were obtained from other students.

Another isolation of an A/Victoria-like strain of influenza A was obtained from a 4th grade boy attending a public elementary school on the outskirts of Honolulu. He was cultured in mid-November during a small outbreak of febrile upper respiratory illness in that school.

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EPIDEMIOLOGIC NOTES AND REPORTS

DEATHS AT A RENDERING PLANT – Ohio

On June 30, 1975, 6 men died of asphyxiation at an animal waste products rendering plant in Franklin County (Columbus), Ohio. In response to a request from the Occupational Safety and Health Administration (OSHA), the National Institute of Occupational Safety and Health began an investigation of the operations of the plant.

The animal waste products at this plant are delivered by truck, weighed, and dumped into a subterranean holding pit. After the trucks are unloaded, they are washed out with the drainage entering a pit below the scales (pit 1). This pit normally drains into an adjoining pit (pit 2) by gravity through a 6-inch drain pipe. Before this accident, however, the drain pipe had been clogged for between 2-7 days.

On June 30, a maintenance man descended into pit 2 to open the clogged drain and spent approximately 20 minutes in the pit with no apparent ill effects. After unclogging the drain, he immediately returned to the surface. Later he reentered the pit to shut off a sump pump, but collapsed while attempting to climb out of the pit. Assuming that the man had slipped and fallen, 3 men went to aid him; they, too, collapsed unconscious.

A 2-man rescue squad then arrived; believing the problem to be an electrical one, they entered pit 2 to attempt rescue. Almost immediately, they also fell to the pit floor unconscious. Additional help was sought from fire department rescuers, who removed the 6 men from the pit using self-contained air packs. Many of these and subsequent rescuers became symptomatic during the rescue operations; 6 were hospitalized with dizziness, faintness, shortness of breath, chest heaviness, coughing, choking, nausea, and vomiting. Four of the 6 fallen men were dead when removed from the pit; 1 was dead on arrival at the hospital; and 1 died at the hospital 4 days later, without having regained consciousness.

Postmortem findings showed cause of death in all of the men to be general anoxia with acute edema of the brain and lungs. Four had evidence of severe respiratory irritation; 1 showed greenish discoloration of the viscera – a finding associated with hydrogen sulfide poisoning. Blood from the deceased workers was negative for cyanomethemoglobin, and carboxyhemoglobin did not exceed normal ranges. Methane was found in the blood of 5 patients and sulfmethemoglobin levels were negative, consistent with sulfide poisoning. Coins and keys carried by the patients were deeply darkened, indicating the formation of metallic sulfides.

Present medical and environmental evidence suggests that hydrogen sulfide alone or in combination with methane and carbon dioxide was the most likely cause of the accident. The clogging of the drainpipe may have permitted organic material to accumulate in the scale pit where it underwent anaerobic and aerobic decomposition, producing gases such as hydrogen sulfide, carbon dioxide, or vapors of organic acids (1). Investigations are continuing in an attempt to determine which of these gases or what combination was primarily responsible for the illnesses and deaths.

(Reported by W Adrion, MD, Franklin County Coroner; J Bernans, ME Olney, RC Temple, Lt, Franklin Township Fire Dept; M Fulmer, R Kimmerer, JH Oliver, Columbus area office, OSHA; D Selchar, E Tyler, Ohio State Div of Safety and Hygiene; G Shadle, MD, TJ Halpin, MD, State Epidemiologist, Ohio State Dept of Health; M Gohar, Ohio State Arson Laboratory; and Div of Technical Services NIOSH, CDC.)

Editorial Note

Toxic gases can accumulate where organic substances have the opportunity to decay in a confined space. Hydrogen sulfide (H₂S), the most powerful of these gases, can evolve whenever the decaying organic materials contain sulfur.

DEATHS AT A RENDERING PLANT — Continued

Deaths from such exposure have been reported among gypsum, sulfur, and lead miners, drillers, and refiners of high-sulfur petroleum; sewer cleaners; and, as apparently happened here, among tanners and animal rendering plant workers (2). Testing for a "rotten egg" smell is not sufficient safeguard against such exposure, as H_2S can rapidly induce olfactory nerve paralysis. Adequate ventilation should be provided, but if ventilation is not possible, the space to be entered should be vented, and proper air sampling undertaken before entry. If this cannot be done, the entering worker should be provided with an air-supplied respirator and a safety harness and line to make rapid removal possible.

In addition, another person similarly equipped should stand by outside the confined space.

References

1. Imhoff K, Fair GM: Sewage Treatment. New York, John Wiley & Sons, Inc., 1947
2. Hamilton A, Hardy HL: Industrial Toxicology, 3rd ed., Acton, Massachusetts, Publishing Sciences Group Inc., 1973, p 229

Erratum, Vol. 24, No. 50, p 421

In Table II, Notifiable Diseases of Low Frequency, under Trichinosis, delete N.S. 2, and insert N.J. 2.

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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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EPIDEMIOLOGIC NOTES AND REPORTS FATAL MUSHROOM POISONINGS - New York City

In October, 2 persons died in New York City following an illness compatible with poisoning from amatoxin-containing mushrooms.

Case 1

On October 16, 1975, a 37-year-old resident of Martha's Vineyard, Massachusetts, ate raw wild mushrooms which he had collected from his backyard. Within hours he experienced diarrhea, cramps, nausea, and vomiting; these symptoms persisted for 2 days. He also noted peripheral paresthesias and decreased mental acuity. On October 19, he was admitted to a hospital in Brooklyn, New York, with marked hepatic dys-

function. The next day he lapsed into hepatic coma and did not respond to charcoal hemoperfusion. At this point he was treated with thioctic acid without apparent effect. The remainder of his hospital course was further complicated by

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

DISEASE	WEEK ENDING		MEDIAN 1970-1974	CUMULATIVE, FIRST 51 WEEKS		
	December 20, 1975	December 21, 1974		December 20, 1975	December 21, 1974	MEDIAN 1970-1974
Aseptic meningitis	57	47	58	4,008	3,128	4,625
Brucellosis	6	6	2	260	188	183
Chickenpox	3,478	2,793	---	139,821	119,689	---
Diphtheria	---	7	3	285	247	207
Encephalitis	Primary	15	20	2,543	1,061	1,488
	Post-Infectious	2	3	297	247	274
Hepatitis, Viral	Type B	303	137	11,670	9,782	8,650
	Type A	607	663	34,097	40,671	53,681
	Type unspecified	212	186	8,200	8,061	---
Malaria	13	2	5	415	258	806
Measles (rubeola)	359	235	380	23,635	21,977	31,059
Meningococcal infections, total	25	14	24	1,398	1,314	1,336
Civilian	25	14	20	1,370	1,285	1,316
Military	---	---	---	28	29	48
Mumps	1,172	1,614	1,614	57,397	56,533	70,247
Pertussis	21	25	---	1,520	1,725	---
Rubella (German measles)	103	86	268	16,097	11,741	27,832
Tetanus	---	1	2	93	94	117
Tuberculosis	689	552	---	32,532	29,817	---
Tularemia	3	3	3	110	138	157
Typhoid fever	6	6	6	362	419	411
Typhus, tick-borne (Rky. Mt. spotted fever)	6	8	1	817	775	521
Venereal Diseases:						
Gonorrhea	Civilian	18,461	18,270	---	976,705	880,674
	Military	457	585	---	28,111	29,359
Syphilis, primary and secondary	Civilian	547	493	---	25,021	24,893
	Military	4	10	---	342	470
Rabies in animals	28	37	43	2,305	2,833	3,259

TABLE II. NOTIFIABLE DISEASES OF LOW FREQUENCY

	Cum.		Cum.
Anthrax	1	Poliomyelitis, total:	7
Botulism	15	Paralytic:	7
Congenital rubella syndrome	27	Psittacosis:	48
Leprosy, Ore. 1	145	Rabies in man:	2
Leptospirosis, Tex. 1	63	Trichinosis: * Mass. 11, Conn. 1, N.J. 2	143
Plague	16	Typhus, murine: *	33

*Delayed Reports: Poliomyelitis, Paralytic: NY State delete 1. Psittacosis: Pa. delete 1. Trichinosis: Alaska 9. Typhus, Murine: Tex. 1