Current Trends

Explosive Azide Hazard

The National Institute for Occupational Safety and Health (NIOSH) has issued an alert that an explosive hazard may exist in hospital and clinical laboratory plumbing systems due to sodium azide formulated into diluents used in conjunction with automatic blood cell counters. These counters are found in more than 15,000 hospital and clinical laboratories in the United States. Decontamination recommendations have already been distributed by NIOSH to most of these laboratories.

NIOSH has recently learned of violent sodium azide-related explosions associated with automatic blood cell counters at a number of hospitals in the United States and Canada. NIOSH is also aware of a violent azide explosion occurring while a constant temperature water bath in which sodium azide had been used as a preservative was being repaired. These explosions have the propensity to propel metallic fragments over a wide area and the potential for causing serious injury to exposed workers and others in the vicinity. When the hazard was substantiated, Coulter Electronics, Inc., the major supplier of automatic blood cell counters to U. S. laboratories, introduced an azide-free hematology reagent system.

Sodium azide is a common preservative in many *in vitro* diagnostic products and is found in concentrations up to 0.1% in diluents used with automatic blood cell counters. After the blood count procedure is completed, the waste (containing azide) is commonly discharged into a drain, thus bathing the drain pipeline with solutions of sodium azide. Over a period of time, the azide reacts with copper, lead, brass, or solder in the plumbing system to form an accumulation of lead and/or copper azide. Lead azide is a more sensitive primary explosive than nitroglycerine and a more effective detonating agent than mercury fulminate; in comparison with lead azide, copper azide is even more explosive and too sensitive to be used commercially.

Future accumulation of lead and copper azides in plumbing systems can be retarded by thoroughly flushing any drain known to receive azides with large amounts of water several times a day. The use of copper-free and lead-free lines between the point of discharge of azide and the nearest pipe in which there is a good stream of water, or the use of azide-free reagents, may prevent future accumulation of explosive azides in plumbing. However, these measures will not decontaminate plumbing already containing explosive azides.

Laboratory maintenance workers, especially plumbers, should be alerted to the azide hazard so that proper precautions can be taken. Violent explosions have resulted when plumbers have attempted to penetrate blocked azide-contaminated drainage systems with a flexible metal probe (snake) or to cut or saw azide-contaminated drain lines.

For further information about this problem and suggested methods for decontaminating plumbing systems, contact the Technical Evaluation and Review Branch, Office of Extramural Coordination and Special Projects, NIOSH, Rockville, Md. 20852. NIOSH would appreciate being advised in detail of any azide-related explosion or of comments about the effectiveness of the decontamination procedures.

Reported by Technical Evaluation and Review Br, Office of Extramural Coordination and Special Projects, NIOSH, and Office of Biosafety, Office of the Center Director, CDC.

Erratum, Vol. 25, No. 32

p 245 In the article, "Atypical Measles—California, 1974-1975," the total number of patients in Table 3 should be 56, not 52 as indicated.

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MORBIDITY AND MORTALITY WEEKLY REPORT

Epidemiologic Notes and Reports

Rubella — Hawaii

Ten cases of rubella occurred in the period March 18-July 25, 1976, in tourists from Japan visiting Hawaii. None of the patients — 6 females and 4 males, ranging in age from 6 to 42 — had been vaccinated. One additional secondary case occurred in a 26-year-old male Hawaii resident. Details of the first 4 cases follow.

Two 17-year-old female Japanese exchange students became ill with fever, rash, and postcervical lymphadenopathy within 24 hours of arrival in Hawaii. Single convalescent titers obtained 6 days after the onset of rash were 1:40 and 1:640, respectively. IgM levels indicated recent infection in both patients. Blood tests showed that 10 of the students' 14 female traveling companions (71%) were susceptible to rubella.

The third patient was a 31-year-old airline stewardess, who developed clinical rubella 2 weeks after an extensive tour of duty in Japan and Guam. Acute and convalescent sera showed a greater than 4-fold rise in rubella antibody. The fourth patient, a 24-year-old school teacher who had been teaching in Japan for 9 months, developed fever and rash upon arrival in Honolulu. She had a greater than 4-fold rise in rubella antibody.

The Hawaii Department of Health immediately immunized family and other contacts of all cases. Only 1 secondary case occurred, despite an estimated 50% susceptibility rate among family and contacts. Because the susceptibility of the adult female population in Hawaii is markedly higher than on the U.S. mainland, the Hawaii Department of Health has advised the airline and tourist industries to recommend rubella immunization for employees having contact with the public. Over 2,200 workers from those industries have undergone serologic testing for rubella antibody. Of this number, 1,803 have been immunized.

Reported by C Ibara, BS, N Wiebenga, MD, State Epidemiologist, Hawaii Dept of Health; Field Services Div, and Quarantine Div, Bureau of Epidemiology, CDC.

Editorial Note: These cases demonstrate the value of careful surveillance for rash illnesses. Rubella presents a unique problem in Hawaii. Prior to vaccine availability, susceptibility levels in all age groups were markedly higher than in the continental United States. An excellent program of vaccination, begun in 1969, as well as strict enforcement of a school entry law requiring rubella (and other) vaccines, and intensive surveillance activities have effected excellent control of rubella — 64 reported cases in 1974 and 39 in 1975. Nevertheless, the susceptibility rates in persons past the age of puberty in or since 1969, the time of vaccine availability, still remains high. Although more than 95% of school-aged children are immunized, recent serologic surveys show that approximately 50% of adults native to Hawaii have no demonstrable antibodies to rubella.

Penicillinase-producing *Neisseria gonorrhoeae*

The Bureau of Laboratories, CDC, has identified 2 penicillinase-producing isolates of *Neisseria gonorrhoeae*, obtained from a patient in Maryland and a patient in California, who were first seen in February and April 1976, respectively. Both remained symptomatic after receiving 4.8 million units of aqueous procaine penicillin G with 1 gram of probenecid and were treated with a variety of regimens before responding to spectinomycin. Further epidemiologic and clinical data are being obtained.

Reported by WA Ashford, Col. RN Lucas, and Col. MB Miller, David Grant Medical Center, Travis Air Force Base, California; J Chin, MD, State Epidemiologist, California State Dept of Health; WJ Marek, MD, St. Mary's County, and KH Acree, MDCM, State Epidemiologist, Maryland State Dept of Health and Mental Hygiene; Bur of Laboratories and Bur of State Services, CDC.

Editorial Note: This appears to be the first time that penicillinase-producing gonococci have been isolated from patients, and a search for additional cases is being undertaken. CDC recommends that all patients with gonorrhea be cultured 7 to 14 days after completion of treatment to confirm cure. Patients with a positive culture should be re-treated with 2 grams of spectinomycin intramuscularly. If prior arrangements have been made, gonococcal isolates for penicillinase testing may be sent to the Bureau of Laboratories, CDC, through state health department laboratories.