Staphylococcus aureus – Continued

demiologic studies in settings involving illegal activities, and controlling this outbreak in the addict population may be extremely difficult. It may be easier to prevent secondary spread to the community at large and in medical settings.

Physicians who treat persons for staphylococcal infection must be aware that organisms resistant to the commonly used semisynthetic penicillins can be spread in both their hospitalized and outpatient populations. MRSA infections may appear in other communities with large addict populations. Methicillin, nafcillin, and the oral and parenteral oxacillins remain the antibiotics of choice for both nosocomial and community-acquired staphylococcal infections until results of antimicrobial susceptibility testing are available. The proper isolation precautions should be instituted until the organism can no longer be recovered from the patient. In communities and hospitals where MRSA has been isolated in large numbers, initial antibiotic treatment should also include vancomycin.

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PCB Transformer Fire – Binghamton, New York

At 5:30 AM on February 5, 1981, a fire occurred in the basement utility room of the State Office Building in Binghamton, New York. An intensely hot, local electrical fire in the switch gear adjacent to a transformer containing 1,060 gallons of askarel (a type of transformer fluid) caused the transformer bushings to crack, resulting in the spill of 180 gallons of fluid. An estimated 90 gallons of askarel was pyrolyzed and spread throughout the 18-story structure as a fine, oily soot.

The most probable path for the soot to have reached all floors of the building was through 2 vertical shafts that extended the entire height of the building and were open at the bottom to the utility room, where the transformer and switch gear were located.

The askarel contained 65% polychlorinated biphenyl (PCB) (Aroclor 1254)® and 35% chlorinated benzenes (mainly trichlorobenzene and tetrachlorobenzene) with trace additives. Several days after the fire, concentrations of Aroclor 1254® in air in the building averaged 1.5 $\mu g/M^3$. Dry swabs of horizontal surfaces in open office areas averaged

PCB Transformer Fire – Continued

162 μg/M^2 Aroclor 1254®; similar surfaces within cabinets and desks averaged 74 μg/M^2.

Composite soot samples were analyzed for potential pyrolysis products of PCBs and polychlorinated benzenes. The 2,3,7,8 isomer of tetrachlorodibenzo-p-dioxin (TCDD) was identified in concentrations of 2.8 and 2.9 parts per million (ppm). The 2,3,7,8 isomer of tetrachlorodibenzofuran (TCDF) was measured at 273 and 124 ppm in the same samples (*1*). Preliminary results of further analyses have identified numerous other polychlorinated dibenzofurans (PCDF) and an additional group of compounds, the chlorinated biphenylenes (*2*).

Cleanup of the building, which began soon after the fire in February, was suspended when the high concentrations of TCDD and TCDF were found. Plans for eventual cleanup await further assays of soot to determine how uniform PCDF contamination is throughout the building and to what extent such chemicals may be active biologically when bound to soot. No health effects attributable to the soot chemicals have been documented in cleanup and maintenance workers associated with the building.

(Continued on page 193)

TABLE I. Summary – cases of specified notifiable diseases, United States

[Cumulative totals include revised and delayed reports through previous weeks.]

DISEASE	16th WEEK ENDING		MEDIAN 1976-1980	CUMULATIVE, FIRST 16 WEEKS		
	April 25 1981	April 19 1980		April 25 1981	April 19 1980	MEDIAN 1976-1980
Aseptic meningitis	50	52	41	970	976	579
Brucellosis	6	1	2	33	48	48
Chickenpox	7,788	6,447	6,488	99,916	88,927	93,905
Diphtheria	–	–	2	3	1	26
Encephalitis: Primary (arthropod-borne & unspec.)	8	11	11	217	180	178
Post-infectious	–	5	5	24	54	54
Hepatitis, Viral: Type B	419	275	292	5,791	4,926	4,612
Type A	456	462	618	7,621	8,334	9,075
Type unspecified	192	194	145	3,391	3,349	2,768
Malaria	18	29	7	366	439	122
Measles (rubeola)	93	911	1,042	942	5,407	9,908
Meningococcal infections: Total	78	45	50	1,481	1,057	895
Civilian	78	45	50	1,478	1,048	886
Military	–	–	–	3	9	6
Mumps	82	188	445	1,687	4,323	7,059
Pertussis	19	19	16	308	306	313
Rubella (German measles)	68	123	509	884	1,570	5,444
Tetanus	–	2	2	13	13	13
Tuberculosis	569	591	591	7,894	7,732	8,240
Tularemia	6	2	2	38	27	28
Typhoid fever	6	3	4	146	83	108
Typhus fever, tick-borne (Rky. Mt. spotted)	7	5	4	27	19	21
Venereal diseases:						
Gonorrhea: Civilian	17,914	17,712	17,712	291,750	287,770	287,770
Military	433	546	546	8,734	8,269	8,365
Syphilis, primary & secondary: Civilian	537	550	408	9,104	8,011	7,393
Military	6	2	5	109	110	94
Rabies in animals	119	163	79	2,009	1,740	824

TABLE II. Notifiable diseases of low frequency, United States

	CUM. 1981		CUM. 1981
Anthrax	–	Poliomyelitis: Total	–
Botulism	17	Paralytic	–
Cholera	–	Psittacosis (Mass. 1, Ga. 1, Calif. 2)	24
Congenital rubella syndrome (La. 1)	5	Rabies in man	–
Leprosy (N.Y. City 1, Idaho 1, Calif. 8)	65	Trichinosis	64
Leptospirosis (Fla. 1)	14	Typhus fever, flea-borne (endemic, murine) (Calif. 1)	3
Plague	1		

All delayed reports and corrections will be included in the following week's cumulative totals.

PCB Transformer Fire – Continued

Reported by AJ Schecter, MD, Broome County Health Dept, Binghamton; GF Haughie, MD, R Rothenberg, MD, State Epidemiologist, New York State Dept of Health; Industry-Wide Studies Br, Hazard Evaluations and Technical Assistance Br, Div of Surveillance, Hazard Evaluations, and Field Studies, National Institute for Occupational Safety and Health, Chronic Diseases Div, Clinical Chemistry Div, Center for Environmental Health, CDC.

Editorial Note: PCBs manufactured in this country contain up to 2 ppm PCDF as contaminants (*3*), and heat can increase concentrations of PCDF (*4*). The high concentration of PCDF in the soot from the Binghamton building presumably resulted from pyrolysis of PCBs. TCDD, however, is not known to be a contaminant of PCBs. It was probably present as a pyrolysis product of the chlorinated benzenes.

Although explosions resulting in the spread of TCDD are known to have occurred in factories engaged in the manufacture of trichlorophenol and similar related compounds (*5*), no comparable situation has been described in the setting of a general office building. The National Institute for Occupational Safety and Health is conducting a national survey regarding the presence and location of transformers in office buildings and is working with Broome County and New York State health officials in health follow-up studies of workers engaged in cleanup of the Binghamton building.

Human health effects associated with chemical compounds such as TCDD and TCDF, as well as PCB, have thus far been observed in situations of high-dose, occupational exposure. Effects observed have included chloracne, liver function abnormalities, elevations in serum lipid levels, and neurologic changes. TCDD has been shown to be oncogenic in rodents. No health effects have yet been clearly demonstrated in human populations in lower-dose levels. In this context, the potential human health risks in connection with the Binghamton fire warrant close study.

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p109. In the article "Tuberculosis – California," Editorial Note, the 4th sentence should read as follows: "Approximately 1%-2% of newly arriving Southeast Asian refugees have tuberculous disease, but they are not infectious on arrival because treatment began *for patients with positive sputum smears or extensive pulmonary disease* before they departed from the resettlement camps."

CENTERS FOR DISEASE CONTROL

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MMWR

MORBIDITY AND MORTALITY WEEKLY REPORT

Epidemiologic Notes and Reports

Community-Acquired Methicillin-Resistant *Staphylococcus aureus* Infections — Michigan

Ninety-eight patients have been hospitalized in medical center hospitals in Detroit, Michigan, since June 1980 in the first reported outbreak of community-acquired methicillin-resistant* *Staphyloccus aureus* (MRSA) infection. Nearly one-fourth of all *S. aureus* isolates from patients with invasive disease at 1 inner-city hospital have been methicillin resistant (Figure 1), and patients with MRSA infections continue to be admitted to Detroit area hospitals. Of the 98 patients discussed in this report, 96 had a history of intravenous heroin use.

*In this investigation, methicillin resistance was defined as either the failure of a 1-μg oxacillin disc to inhibit growth of *S. aureus* isolates in disc-diffusion tests *or* a broth-dilution minimal inhibitory concentration of >4 μg/ml.

FIGURE 1. Community-acquired *Staphylococcus aureus* at a Detroit receiving hospital, July-December 1980