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Provisional Public Health Service Inter-Agency Recommendations for Screening Donated Blood and Plasma for Antibody to the Virus Causing Acquired Immunodeficiency Syndrome

In March 1983, the U.S. Public Health Service issued inter-agency recommendations on the prevention of acquired immunodeficiency syndrome (AIDS) (*1*). Included was the recommendation that members of groups at increased risk for AIDS should refrain from donating plasma and/or blood. That recommendation was made to decrease the risk of AIDS associated with the administration of blood or blood products, which accounts for about 2% of all reported AIDS cases in the United States.

Evidence has shown that a newly recognized retrovirus is the cause of AIDS. Although this virus has been given several names, including human T-lymphotropic virus type III (HTLV-III) (*2*), lymphadenopathy-associated virus (LAV) (*3*), and AIDS-associated retrovirus (ARV) (*4*), it is referred to as HTLV-III in this discussion. Tests to detect antibody to HTLV-III will be licensed and commercially available in the United States in the near future to screen blood and plasma for laboratory evidence of infection with the virus. The antibody tests are modifications of the enzyme-linked immunosorbent assay (ELISA), which uses antigens derived from whole disrupted HTLV-III (*5*).

There is considerable experience with the ELISA test in research laboratories, but much additional information will be gathered following its widespread application. In the early phases of testing, a number of false-positive tests may be encountered. Adjustments in interpretation are anticipated as more is learned about the performance of the test in an individual laboratory and about the specific proportion of falsely positive or falsely negative tests in the screening setting where the test is used.

The present recommendations concern the use of these tests to screen blood and plasma collected for transfusion or manufactured into other products. They are intended to supplement, rather than replace, the U.S. Food and Drug Administration's recently revised recommendations to blood and plasma collection facilities and the earlier inter-agency recommendations (*1*). Additional public health applications of these tests in the understanding and control of AIDS will be described in a subsequent report.

BACKGROUND

Antibody Detection Studies

The ELISA test has been used in many research programs for detecting antibodies to HTLV-III in patients with AIDS and with AIDS-related conditions. In different studies, HTLV-III antibody was found to range from 68% to 100% of patients with AIDS, and in 84%-100% of persons with related conditions, such as unexplained generalized lymphadenopathy (*5-7*). Serologic surveys have yielded variable seropositivity rates in groups at increased risk for AIDS: 22%-65% of homosexual men (*8-11*), 87% of intravenous-drug abusers admitted to a detoxification program in New York City (*12*), 56%-72% of persons with hemophilia A (*13,14*), and 35% of women who were sexual partners of men with AIDS (*15*). In contrast to

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the above groups, HTLV-III antibody has been detected in fewer than 1% of persons with no known risks for AIDS (*4-10*).

The time needed to develop a positive antibody test following infection is not known. Data regarding the interval between infection with HTLV-III and seroconversion are limited. A nurse who sustained a needle-stick injury while caring for an AIDS patient developed antibody between 4 and 7 weeks following exposure (*16*). Additionally, a recent study described several asymptomatic individuals infected with HTLV-III for more than 6 months in the absence of detectable antibody (*17,18*). Nonetheless, currently available ELISA tests can be expected to identify most persons with HTLV-III infection.

Virus Isolation Studies

HTLV-III has been isolated from blood, semen, and saliva and has been recovered from many individuals in the presence of antibody (*19,20*). HTLV-III has been isolated from the blood of 85% or more of seropositive individuals with AIDS (*21*), lymphadenopathy, or other AIDS-associated conditions (*2*) and from three of four mothers of infants with AIDS (*2*). The virus has also been isolated from asymptomatic seropositive homosexual men and hemophiliacs, and has been recovered from 95% of seropositive high-risk blood donors who had been implicated in the transmission of AIDS through transfusion (*21*). The recovery of HTLV-III from these high-risk donors 2 or more years after their initial donation provides evidence that viremia may persist for years in both asymptomatic and symptomatic individuals. HTLV-III has also been isolated from some asymptomatic seronegative persons, but this is the exception (*17*).

Modes of Transmission

Epidemiologic data suggest that the virus has been transmitted through intimate sexual contact; sharing contaminated needles; transfusion of whole blood, blood cellular components, plasma, or clotting factor concentrates that have not been heat treated; or from infected mother to child before, at, or shortly after the time of birth. No other products prepared from blood (e.g., immunoglobulin, albumin, plasma protein fraction, hepatitis B vaccine) have been implicated, nor have cases been documented to occur through such common exposures as sharing meals, sneezing or coughing, or other casual contact.

Natural History of Infection

Information about the course of infection with HTLV-III is incomplete, but the majority of infected adults will not acquire clinically apparent AIDS in the first few years after infection. In some studies 5%-19% of seropositive homosexual men developed AIDS within 2-5 years after a previously collected serum sample was retrospectively tested and found to be seropositive. An additional 25% developed generalized lymphadenopathy, oral candidiasis, or other AIDS-associated conditions within the same interval (*11,22*). The long-term prognosis for most persons infected with HTLV-III is unknown.

SCREENING BLOOD AND PLASMA

Initial Testing

Persons accepted as donors should be informed that their blood or plasma will be tested for HTLV-III antibody. Persons not wishing to have their blood or plasma tested must refrain from donation. Donors should be told that they will be notified if their test is positive and that they may be placed on the collection facility's donor deferral list, as is currently practiced with other infectious diseases, and should be informed of the identities of additional deferral lists to which the positive donors may be added.

All blood or plasma should be tested for HTLV-III antibody by ELISA. Any blood or plasma that is positive on initial testing must not be transfused or manufactured into other products capable of transmitting infectious agents.

When the ELISA is used to screen populations in whom the prevalence of HTLV-III infections is low, the proportion of positive results that are falsely positive will be high. Therefore,

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the ELISA should be repeated on all seropositive specimens before the donor is notified. If the repeat ELISA test is negative, the specimen should be tested by another test.

Other Testing

Other tests have included immunofluorescence and radioimmunoprecipitation assays, but the most extensive experience has been with the Western blot technique (*22*), in which antibodies can be detected to HTLV-III proteins of specific molecular weights. Based on available data, the Western blot should be considered positive for antibody to HTLV-III if band p24 or gp41 is present (alone or in combination with other bands).

Notification of Donors

If the repeat ELISA test is positive or if other tests are positive, it is the responsibility of the collection facility to ensure that the donor is notified. The information should be given to the donor by an individual especially aware of the sensitivities involved. At present, the proportion of these seropositive donors who have been infected with HTLV-III is not known. It is, therefore, important to emphasize to the donor that the positive result is a preliminary finding that may not represent true infection. To determine the significance of a positive test, the donor should be referred to a physician for evaluation. The information should be given to the donor in a manner to ensure confidentiality of the results and of the donor's identify.

Maintaining Confidentiality

Physicians, laboratory and nursing personnel, and others should recognize the importance of maintaining confidentiality of positive test results. Disclosure of this information for purposes other than medical or public health could lead to serious consequences for the individual. Screening procedures should be designed with safeguards to protect against unauthorized disclosure. Donors should be given a clear explanation of how information about them will be handled. Facilities should consider developing contingency plans in the event that disclosure is sought through legal process. If donor deferral lists are kept, it is necessary to maintain confidentiality of such lists. Whenever appropriate, as an additional safeguard, donor deferral lists should be general, without indication of the reason for inclusion.

Medical Evaluation

The evaluation might include ELISA testing of a follow-up serum specimen and Western blot testing, if the specimen is positive. Persons who continue to show serologic evidence of HTLV-III infection should be questioned about possible exposure to the virus or possible risk factors for AIDS in the individual or his/her sexual contacts and examined for signs of AIDS or related conditions, such as lymphadenopathy, oral candidiasis, Kaposi's sarcoma, and unexplained weight loss. Additional laboratory studies might include tests for other sexually transmitted diseases, tests of immune function, and where available, tests for the presence of the virus, such as viral culture. Testing for antibodies to HTLV-III in the individual's sexual contacts may also be useful in establishing whether the test results truly represent infection.

RECOMMENDATIONS FOR THE INDIVIDUAL

An individual judged most likely to have an HTLV-III infection should be provided the following information and advice:

1. The prognosis for an individual infected with HTLV-III over the long term is not known. However, data available from studies conducted among homosexual men indicate that most persons will remain infected.
2. Although asymptomatic, these individuals may transmit HTLV-III to others. Regular medical evaluation and follow-up is advised, especially for individuals who develop signs or symptoms suggestive of AIDS.
3. Refrain from donating blood, plasma, body organs, other tissue, or sperm.
4. There is a risk of infecting others by sexual intercourse, sharing of needles, and possibly, exposure of others to saliva through oral-genital contact or intimate kissing. The

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efficacy of condoms in preventing infection with HTLV-III is unproven, but the consistent use of them may reduce transmission.

5. Toothbrushes, razors, or other implements that could become contaminated with blood should not be shared.
6. Women with a seropositive test, or women whose sexual partner is seropositive, are themselves at increased risk of acquiring AIDS. If they become pregnant, their offspring are also at increased risk of acquiring AIDS.
7. After accidents resulting in bleeding, contaminated surfaces should be cleaned with household bleach freshly diluted 1:10 in water.
8. Devices that have punctured the skin, such as hypodermic and acupuncture needles, should be steam sterilized by autoclave before reuse or safely discarded. Whenever possible, disposable needles and equipment should be used.
9. When seeking medical or dental care for intercurrent illness, these persons should inform those responsible for their care of their positive antibody status so that appropriate evaluation can be undertaken and precautions taken to prevent transmission to others.
10. Testing for HTLV-III antibody should be offered to persons who may have been infected as a result of their contact with seropositive individuals (e.g., sexual partners, persons with whom needles have been shared, infants born to seropositive mothers).

Revised recommendations will be published as additional information becomes available and additional experience is gained with this test.

Reported by Centers for Disease Control; Food and Drug Administration; Alcohol, Drug Abuse, and Mental Health Administration; National Institutes of Health; Health Resources and Services Administration.

References

1. CDC. Prevention of acquired immune deficiency syndrome (AIDS): Report of inter-agency recommendations. MMWR 1983; 32:101-3.
2. Gallo RC, Salahuddin SZ, Popovic M, et al. Frequent detection and isolation of cytopathic retroviruses (HTLV-III) from patients with AIDS and at risk for AIDS. Science 1984;224:500-3.
3. Barré-Sinoussi F, Chermann JC, Rey F, et al. Isolation of a T-lymphotropic retrovirus from a patient at risk for acquired immune deficiency syndrome (AIDS). Science 1983;220:868-71.
4. Levy JA, Hoffman AD, Kramer SM, Landis JA, Shimabukuro JM, Oschiro LS. Isolation of lymphocytopathic retroviruses from San Francisco patients with AIDS. Science 1984;225:840-2.
5. Sarngadharan MG, Popovic M, Bruch L, Schüpbach J, Gallo RC. Antibodies reactive with human T-lymphotropic retroviruses (HTLV-III) in the serum of patients with AIDS. Science 1984;224-506-8.
6. Safai B, Sarngadharan MG. Groopman JE, et al. Seroepidemiological studies of human T-lymphotropic retrovirus type III in acquired immunodeficiency syndrome. Lancet 1984;1:1438-40.
7. Laurence J, Brun-Vezinet F, Schutzer SE, et al. Lymphadenopathy associated viral antibody in AIDS. N Engl J Med 1984;311:1269-73.
8. Melbye M, Biggar RJ, Ebbesen P, et al. Seroepidemiology of HTLV-III antibody in Danish homosexual men: prevalence, transmission, and disease outcome. Brit Med J 1984; 289:573-5.
9. CDC. Antibodies to a retrovirus etiologically associated with acquired immunodeficiency syndrome (AIDS) in populations with increased incidences of the syndrome. MMWR 1984; 33:377-9.
10. Weiss SH, Goedert JJ, Sarngadharan MB, et al. Screening test for HTLV-III (AIDS agent) antibodies: specificity, sensitivity, and applications. JAMA 1985; 253:221-5.
11. Goedert JJ, Sarngadharan MG, Biggar RJ, et al. Determinants of retrovirus (HTLV-III) antibody and immunodeficiency conditions in homosexual men. Lancet 1984;2:711-16.
12. Spira TJ, Des Jarlais DC, Marmor M, et al. Prevalence of antibody to lymphadenopathy-associated virus among drug-detoxification patients in New York. N Engl J Med 1984;311:467-8.
13. Ramsey RB, Palmer EL, McDougal JS, et al. Antibody to lymphadenopathy-associated virus in hemophiliacs with and without AIDS. Lancet 1984;2:397-8.
14. Tsoukas C, Gervais F, Shuster J, Gold P, O'Shaughnessy M, Robert-Guroff M. Association of HTLV-III antibodies and cellular immune status of hemophiliacs. N Engl J Med 1984;311:1514-15.
15. Harris CA, Cabradilla C, Klein RS, et al. Antibodies to a core protein (p25) of lymphadenopathy associated virus (LAV) and immunodeficiency in heterosexual partners of AIDS patients. Presentation at 24th Interscience Conference on Antimicrobial Agents and Chemotherapy. Washington, D.C., 1984.

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16. Anonymous. Needlestick transmission of HTLV-III from a patient infected in Africa. Lancet 1984; 2:1376-7.
17. Salahuddin SZ, Groopman JE, Markham PD, et al. HTLV-III in symptom-free seronegative persons. Lancet 1984; 2:1418-20.
18. Groopman JE. Unpublished data.
19. Groopman JE, Salahuddin SZ, Sarngadharan MG, et al. HTLV-III in saliva of people with AIDS-related complex and healthy homosexual men at risk for AIDS. *Science* 1984, 226:447-9.
20. Zagury D, Bernard J, Leibowitch J, et al. HTLV-III in cells cultured from semen of two patients with AIDS. Science 1984;226:449-51.
21. Feorino PM, Jaffe HW, Palmer E, et al. Transfusion-associated acquired immunodeficiency syndrome: evidence for persistent infection in blood donors. Submitted for publication.
22. Darrow WW, Jaffe HW, Braff E, et al. Acquired immunodeficiency syndrome (AIDS) in a cohort of homosexual men. Presentation at 24th Interscience Conference on Antimicrobial Agents and Chemotherapy. Washington, D.C., 1984.
23. Tsang VCW, Peralta JM, Simons AR. Enzyme-linked immunoelectrotransfer blot techniques (EITB) for studying the specificities of antigens and antibodies separated by gel electrophoresis. Methods Enzymol 1983;92:377-91.

Poliomyelitis — Finland

As of January 9, 1985, four cases of paralytic and one case of nonparalytic poliomyelitis had been diagnosed and confirmed during the previous 2 months from various parts of Finland, including the vicinities of Helsinki and Turku. The outbreak apparently began in late October 1984, when a 6-year-old boy developed aseptic meningitis; type 3 poliovirus was isolated from his stool. In mid-November, paralytic poliomyelitis occurred in a 17-year-old male who had previously received five doses of inactivated poliomyelitis vaccine (IPV). Subsequently, three other cases of paralytic poliomyelitis were diagnosed from mid-November to mid-December. One patient, a 12-year-old boy, had previously received five doses of IPV; one, a 31-year-old pregnant woman, was unvaccinated; and one, a 33-year-old man with Hodgkin's disease, was incompletely immunized. Poliovirus type 3 was isolated from stool specimens of all four individuals with paralytic disease; these isolates have been characterized as "not vaccine-like" by the method of van Wezel (*1*). Poliovirus type 3 has also been isolated from approximately 15% of 700 stool samples or throat swabs from children without clinical illness, most of whom were residents of communities with cases.

Since 1960, routine vaccination against poliomyelitis using IPV has been performed in Finland. Before this outbreak, paralytic poliomyelitis was last reported in Finland in 1964. Sewage surveys conducted from 1971-1981 had failed to detect any poliovirus. Epidemiologic investigations are currently being conducted. All children 6 months to 18 years old have been given an additional dose of IPV. Vaccination of the entire population with oral poliomyelitis vaccine (OPV) is to begin soon.

Reported by National Board of Health, Government of Finland; Div of Immunization, Center for Prevention Svcs, CDC.

Editorial Note: In developed countries, such as Japan, Australia, New Zealand, Canada, and the countries of industrialized Europe, the risk of acquiring poliomyelitis is usually no greater than in the United States. In contrast, all developing countries should generally be considered endemic for poliomyelitis. Proof of poliomyelitis immunization is not required for international travel. However, the Immunization Practices Advisory Committee (ACIP) recommends that travelers to countries where poliomyelitis is occurring—which now includes Finland—be immunized. Schedules for primary immunization against poliomyelitis require three or more doses. In general, OPV is the vaccine of choice for persons under 18 years of age. Unimmunized adults (18 years and older) should receive at least two doses of IPV, 4 or more weeks apart, and preferably a complete primary series, before traveling; if an individual's travel plans

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do not permit this interval, then a single dose of OPV is recommended. For adults incompletely immunized with OPV or IPV, the remaining doses should be given to complete the primary series, regardless of the interval since the last dose or the type of vaccine previously received; either OPV or IPV can be used to complete the series. A single additional dose of either OPV or IPV should be given to travelers who have previously completed a primary series of OPV or IPV. ACIP recommendations on poliomyelitis prevention should be consulted for further details (*2*).

Reference

1. van Wezel AL, Hazendonk AG. Intratypic serodifferentiation of polomyelitis virus strains by strain specific antisera. Intervirology 1979;11:2-8.
2. ACIP. Poliomyelitis prevention. MMWR 1982;31:22-6, 31-4.

Update: Influenza Activity — United States

Influenza virus type A(H3N2) has been isolated from persons with influenza-like illnesses in outbreaks in Sacramento, California, New York City, and Illinois.

In Sacramento, a kindergarten teacher developed influenza-like illness on December 2, 1984, and similar illness in her husband and son developed on December 5. Also, beginning

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

Disease	First Week Ending			Cumulative, First Week Ending		
	Jan. 5, 1985	Jan. 7, 1984	Median 1980-1984	Jan. 5, 1985	Jan. 7, 1984	Median 1980-1984
Acquired Immunodeficiency Syndrome (AIDS)*	88	97	N	88	97	N
Aseptic meningitis	32	74	76	32	74	76
Encephalitis: Primary (arthropod-borne & unspec.)	6	9	11	6	9	11
Post-infectious	1	4	1	1	4	1
Gonorrhea: Civilian	9,703	13,471	18,213	9,703	13,471	18,213
Military	178	240	369	178	240	369
Hepatitis: Type A	225	275	315	225	275	315
Type B	264	287	287	264	287	287
Non A, Non B	37	46	N	37	46	N
Unspecified	55	52	93	55	52	93
Legionellosis	3	5	N	3	5	N
Leprosy	4	6	2	4	6	2
Malaria	1	15	12	1	15	12
Measles: Total**	3	10	10	3	10	10
Indigenous	3	8	N	3	8	N
Imported	-	2	N	-	2	N
Meningococcal infections: Total	22	41	41	22	41	41
Civilian	22	41	41	22	41	41
Military	-	-	-	-	-	-
Mumps	28	46	59	28	46	59
Pertussis	7	34	12	7	34	12
Rubella (German measles)	5	5	18	5	5	18
Syphilis (Primary & Secondary): Civilian	252	354	518	252	354	518
Military	3	2	6	3	2	6
Toxic Shock syndrome	2	9	N	2	9	N
Tuberculosis	142	213	216	142	213	216
Tularemia	-	2	1	-	2	1
Typhoid fever	3	3	4	3	3	4
Typhus fever, tick-borne (RMSF)	1	-	1	1	-	1
Rabies, animal	30	40	72	30	40	72

TABLE II. Notifiable diseases of low frequency, United States

	Cum. 1985		Cum. 1985
Anthrax	-	Plague	-
Botulism: Foodborne	-	Poliomyelitis: Total	-
Infant	-	Paralytic	-
Other	-	Psittacosis	-
Brucellosis (Mo. 1)	1	Rabies, human	-
Cholera	-	Tetanus (Ala. 1)	1
Congenital rubella syndrome	-	Trichinosis	-
Diphtheria	-	Typhus fever, flea-borne (endemic, murine)	-
Leptospirosis (N.C. 2)	2		

*The 1983 reports which appear in this table were collected before AIDS became a notifiable condition.

**There were no cases of internationally imported measles reported for this week.

TABLE III. Cases of specified notifiable diseases, United States, weeks ending January 5, 1985 and January 7, 1984 (First Week)

Reporting Area	AIDS	Aseptic Meningitis	Encephalitis		Gonorrhea (Civilian)		Hepatitis (Viral), by type				Legionellosis	Leprosy
			Primary	Post-infectious			A	B	NA,NB	Unspecified		
	Cum. 1985	1985	Cum. 1985	Cum. 1985	Cum. 1985	Cum. 1984	1985	1985	1985	1985	1985	Cum. 1985
UNITED STATES	88	32	6	1	9,703	13,471	225	264	37	55	3	4
NEW ENGLAND	10	-	-	-	365	449	4	16	1	5	-	-
Maine	1	-	-	-	16	12	-	1	-	-	-	-
N.H	-	-	-	-	16	6	1	1	-	1	-	-
Vt.	-	-	-	-	2	6	1	-	-	-	-	-
Mass.	9	-	-	-	95	153	2	11	1	4	-	-
R.I.	-	-	-	-	45	32	-	3	-	-	-	-
Conn.	-	-	-	-	191	240	-	-	-	-	-	-
MID ATLANTIC	11	2	-	-	371	1,055	23	69	2	5	-	1
Upstate N.Y.	1	1	-	-	-	-	1	2	-	-	-	-
N.Y. City	7	1	-	-	100	688	17	53	-	4	-	1
N.J.	2	-	-	-	271	38	5	14	2	1	-	-
Pa.	1	U	-	-	-	329	U	U	U	U	U	-
E.N. CENTRAL	-	7	1	-	1,281	1,924	5	20	2	3	1	-
Ohio	-	5	1	-	285	286	3	13	1	2	1	-
Ind.	-	-	-	-	111	88	-	-	-	-	-	-
Ill.	-	-	-	-	445	796	-	-	-	-	-	-
Mich.	-	2	-	-	365	641	2	7	1	1	-	-
Wis.	-	-	-	-	75	113	-	-	-	-	-	-
W.N. CENTRAL	1	1	-	-	703	652	4	14	2	-	1	-
Minn.	1	-	-	-	111	190	-	-	-	-	-	-
Iowa	-	-	-	-	41	53	1	-	-	-	1	-
Mo.	-	1	-	-	252	183	2	14	2	-	-	-
N. Dak.	-	-	-	-	4	10	-	-	-	-	-	-
S. Dak.	-	-	-	-	13	24	-	-	-	-	-	-
Nebr.	-	-	-	-	49	45	1	-	-	-	-	-
Kans.	-	-	-	-	233	147	-	-	-	-	-	-
S. ATLANTIC	21	7	2	-	1,559	3,567	8	48	8	6	-	-
Del.	-	-	-	-	42	77	3	2	-	-	-	-
Md.	-	-	-	-	296	411	-	-	-	-	-	-
D.C.	-	-	-	-	171	136	-	9	-	3	-	-
Va.	2	4	-	-	236	322	3	24	6	-	-	-
W. Va.	-	-	-	-	68	19	1	1	-	-	-	-
N.C.	1	-	2	-	289	659	-	5	1	3	-	-
S.C.	-	1	-	-	457	287	-	2	-	-	-	-
Ga.	3	1	-	-	-	790	1	5	1	-	-	-
Fla.	15	1	-	-	-	866	-	-	-	-	-	-
E.S. CENTRAL	1	1	1	1	892	1,204	7	16	1	3	-	-
Ky.	-	-	-	-	122	111	3	1	-	-	-	-
Tenn.	-	1	-	-	410	466	4	8	1	2	-	-
Ala.	1	-	1	1	270	473	-	7	-	1	-	-
Miss.	-	-	-	-	90	154	-	-	-	-	-	-
W.S. CENTRAL	5	-	1	-	1,593	2,078	1	-	-	1	-	-
Ark.	-	-	-	-	192	216	1	-	-	-	-	-
La.	-	-	-	-	214	792	-	-	-	-	-	-
Okla.	-	-	1	-	169	284	-	-	-	1	-	-
Tex.	5	-	-	-	1,018	786	-	-	-	-	-	-
MOUNTAIN	-	4	-	-	367	353	25	9	-	8	-	-
Mont.	-	-	-	-	20	24	2	-	-	-	-	-
Idaho	-	-	-	-	10	16	1	-	-	-	-	-
Wyo.	-	-	-	-	7	7	-	-	-	-	-	-
Colo.	-	1	-	-	158	91	6	6	-	7	-	-
N. Mex.	-	-	-	-	60	54	4	-	-	-	-	-
Ariz.	-	-	-	-	42	88	-	-	-	-	-	-
Utah	-	2	-	-	-	18	2	1	-	1	-	-
Nev.	-	1	-	-	70	55	10	2	-	-	-	-
PACIFIC	39	10	1	-	2,572	2,189	148	72	21	24	1	3
Wash.	-	1	-	-	-	117	11	3	-	2	-	-
Oreg.	-	-	-	-	87	97	30	3	2	2	-	1
Calif.	39	9	1	-	2,416	1,888	107	64	19	18	1	2
Alaska	-	-	-	-	38	53	-	1	-	1	-	-
Hawaii	-	-	-	-	31	34	-	1	-	1	-	-
Guam	-	U	-	-	-	4	U	U	U	U	U	-
P.R.	-	-	-	-	4	60	-	-	-	-	-	-
V.I.	-	-	-	-	5	6	1	-	-	-	-	-
Pac. Trust Terr.	-	U	-	-	-	-	U	U	U	U	U	-

N: Not notifiable U: Unavailable

TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending January 5, 1985 and January 7, 1984 (First Week)

Reporting Area	Malaria	Measles (Rubeola)					Menin-gococcal Infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported *		Total									
	Cum. 1985	1985	Cum. 1985	1985	Cum. 1985	Cum. 1984	Cum. 1985	1985	Cum. 1985	1985	Cum. 1985	Cum. 1984	1985	Cum. 1985	Cum. 1984
UNITED STATES	1	3	3	-	-	10	22	28	28	7	7	34	5	5	5
NEW ENGLAND	-	-	-	-	-	-	1	-	-	-	-	2	-	-	-
Maine	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
N.H.	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Vt.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mass.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R.I.	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Conn.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MID ATLANTIC	1	-	-	-	-	-	1	9	9	3	3	1	3	3	-
Upstate N.Y.	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-
N.Y. City	1	-	-	-	-	-	-	9	9	3	3	-	3	3	-
N.J.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pa.	-	U	-	U	-	-	-	U	-	U	-	-	U	-	-
E.N. CENTRAL	-	-	-	-	-	4	5	7	7	2	2	2	-	-	1
Ohio	-	-	-	-	-	-	4	3	3	2	2	-	-	-	-
Ind.	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Ill.	-	-	-	-	-	-	-	2	2	-	-	1	-	-	1
Mich.	-	-	-	-	-	4	-	2	2	-	-	-	-	-	-
Wis.	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
W.N. CENTRAL	-	-	-	-	-	-	1	-	-	-	-	26	-	-	-
Minn.	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Iowa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mo.	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
N. Dak.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S. Dak.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nebr.	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Kans.	-	-	-	-	-	-	-	-	-	-	-	24	-	-	-
S. ATLANTIC	-	-	-	-	-	-	3	5	5	-	-	2	1	1	-
Del.	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Md.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D.C.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Va.	-	-	-	-	-	-	2	3	3	-	-	-	-	-	-
W. Va.	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-
N.C.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S.C.	-	-	-	-	-	-	-	1	1	-	-	-	1	1	-
Ga.	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-
Fla.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E.S. CENTRAL	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Ky.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tenn.	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Ala.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Miss.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W.S. CENTRAL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Ark.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
La.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Okla.	-	-	-	-	-	-	-	N	N	-	-	-	-	-	-
Tex.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
MOUNTAIN	-	-	-	-	-	4	2	-	-	2	2	-	-	-	-
Mont.	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-
Idaho	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wyo.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Colo.	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
N. Mex.	-	-	-	-	-	-	-	N	N	1	1	-	-	-	-
Ariz.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utah	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-
Nev.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PACIFIC	-	3	3	-	-	2	8	7	7	-	-	1	1	1	3
Wash.	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Oreg.	-	-	-	-	-	-	1	N	N	-	-	-	-	-	-
Calif.	-	3	3	-	-	2	6	6	6	-	-	1	1	1	3
Alaska	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hawaii	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-
Guam	-	U	-	U	-	-	-	U	-	U	-	-	U	-	-
P.R.	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-
V.I.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pac. Trust Terr.	-	U	-	U	-	-	-	U	-	U	-	-	U	-	-

*For measles only, imported cases includes both out-of-state and international importations.

N Not notifiable U Unavailable †International §Out-of-state

TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending January 5, 1985 and January 7, 1984 (First Week)

Reporting Area	Syphilis (Civilian) (Primary & Secondary)		Toxic-shock Syndrome	Tuberculosis		Tula-remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1985	Cum. 1984	1985	Cum. 1985	Cum. 1984	Cum. 1985	Cum. 1985	Cum. 1985	Cum. 1985
UNITED STATES	252	354	2	142	213	-	3	1	30
NEW ENGLAND	3	7	-	4	3	-	-	-	-
Maine	-	-	-	-	-	-	-	-	-
N.H.	-	-	-	-	-	-	-	-	-
Vt.	-	-	-	-	-	-	-	-	-
Mass.	1	1	-	2	2	-	-	-	-
R.I.	-	1	-	-	-	-	-	-	-
Conn.	2	5	-	2	1	-	-	-	-
MID. ATLANTIC	26	46	-	40	43	-	-	-	-
Upstate N.Y.	-	-	-	-	-	-	-	-	-
N.Y. City	19	30	-	25	22	-	-	-	-
N.J.	7	4	-	15	16	-	-	-	-
Pa.	-	12	U	-	5	-	-	-	-
E.N. CENTRAL	14	30	1	22	14	-	-	1	-
Ohio	2	3	1	7	9	-	-	1	-
Ind.	1	9	-	-	-	-	-	-	-
Ill.	7	17	-	15	5	-	-	-	-
Mich.	3	-	-	-	-	-	-	-	-
Wis.	1	1	-	-	-	-	-	-	-
W.N. CENTRAL	4	7	-	1	1	-	-	-	2
Minn.	-	2	-	-	-	-	-	-	-
Iowa	-	2	-	1	-	-	-	-	2
Mo.	2	3	-	-	-	-	-	-	-
N. Dak.	-	-	-	-	-	-	-	-	-
S. Dak.	-	-	-	-	-	-	-	-	-
Nebr.	1	-	-	-	-	-	-	-	-
Kans.	1	-	-	-	1	-	-	-	-
S. ATLANTIC	34	137	-	28	42	-	-	-	5
Del.	1	-	-	-	-	-	-	-	-
Md.	7	14	-	5	10	-	-	-	-
D.C.	-	3	-	4	2	-	-	-	-
Va.	4	8	-	-	-	-	-	-	4
W. Va.	-	-	-	1	3	-	-	-	-
N.C.	16	9	-	-	5	-	-	-	-
S.C.	6	12	-	12	13	-	-	-	1
Ga.	-	36	-	-	-	-	-	-	-
Fla.	-	55	-	6	9	-	-	-	-
E.S. CENTRAL	26	18	-	12	14	-	-	-	3
Ky.	-	-	-	2	4	-	-	-	1
Tenn.	11	8	-	3	2	-	-	-	-
Ala.	3	10	-	7	8	-	-	-	2
Miss.	12	-		-	-	-	-	-	-
W.S. CENTRAL	66	39	-	-	-	-	-	-	6
Ark.	6	5	-	-	-	-	-	-	2
La.	20	14	-	-	-	-	-	-	-
Okla.	3	2	-	-	-	-	-	-	-
Tex.	37	18	-	-	-	-	-	-	4
MOUNTAIN	15	8	1	1	2	-	-	-	2
Mont.	-	-	-	-	-	-	-	-	-
Idaho	-	-	-	-	-	-	-	-	-
Wyo.	-	1	-	-	-	-	-	-	1
Colo.	2	2	1	-	-	-	-	-	-
N. Mex.	-	-	-	-	-	-	-	-	-
Ariz.	13	3	-	1	2	-	-	-	1
Utah	-	2	-	-	-	-	-	-	-
Nev.	-	-	-	-	-	-	-	-	-
PACIFIC	64	62	-	34	94	-	3	-	12
Wash.	-	3	-	-	1	-	-	-	-
Oreg.	7	2	-	2	-	-	-	-	-
Calif.	55	57	-	32	93	-	3	-	12
Alaska	-	-	-	-	-	-	-	-	-
Hawaii	2	-	-	-	-	-	-	-	-
Guam	-	-	U	-	-	-	-	-	-
P.R.	2	18	-	-	1	-	-	-	-
V.I.	-	-	-	-	-	-	-	-	-
Pac. Trust Terr.	-	-	U	-	-	-	-	-	-

U Unavailable

TABLE IV. Deaths in 121 U.S. cities,* week ending January 5, 1985 (First Week)

Reporting Area	All Causes, By Age (Years)						P&I** Total
	All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	768	552	148	39	9	20	62
Boston, Mass.	182	114	46	12	3	7	21
Bridgeport, Conn.	56	35	14	5	1	1	2
Cambridge, Mass.	30	26	2	2	-	-	2
Fall River, Mass.	30	24	5	1	-	-	1
Hartford, Conn.	61	42	13	5	-	1	-
Lowell, Mass.	31	24	7	-	-	-	3
Lynn, Mass.	27	22	4	-	-	1	-
New Bedford, Mass	32	32	-	-	-	-	3
New Haven, Conn.	69	47	13	4	1	4	4
Providence, R.I.	74	50	15	4	1	4	6
Somerville, Mass.	5	4	1	-	-	-	-
Springfield, Mass.	63	43	14	4	-	2	8
Waterbury, Conn.	45	34	8	2	1	-	5
Worcester, Mass.	63	55	6	-	2	-	7
MID. ATLANTIC	2,566	1,705	546	217	49	47	125
Albany, N.Y.	56	43	6	2	1	4	1
Allentown, Pa.	9	7	2	-	-	-	-
Buffalo, N.Y.	138	103	23	7	2	3	10
Camden, N.J.	56	33	15	4	-	4	3
Elizabeth, N.J.	17	6	6	4	1	-	3
Erie, Pa.†	49	32	13	2	1	1	3
Jersey City, N.J.	59	39	14	4	2	-	-
N.Y. City, N.Y.	1,525	992	323	150	33	27	67
Newark, N.J.	61	26	20	11	2	2	4
Paterson, N.J.	37	25	7	3	-	2	3
Philadelphia, Pa.†	92	60	26	5	1	-	6
Pittsburgh, Pa.†	65	41	18	4	1	1	4
Reading, Pa.	30	24	6	-	-	-	4
Rochester, N.Y.	134	97	24	7	4	2	6
Schenectady, N.Y.	32	21	10	1	-	-	2
Scranton, Pa.†	24	20	3	1	-	-	-
Syracuse, N.Y.	74	58	14	1	1	-	2
Trenton, N.J.	26	22	2	2	-	-	-
Utica, N.Y.	28	19	7	2	-	-	1
Yonkers, N.Y.	54	37	7	7	-	1	6
E.N. CENTRAL	2,249	1,566	418	113	64	85	76
Akron, Ohio	100	71	16	7	3	3	-
Canton, Ohio	36	23	9	3	1	-	2
Chicago, Ill §	533	452	10	21	16	31	15
Cincinnati, Ohio	104	68	28	4	2	2	6
Cleveland, Ohio	171	99	54	9	6	3	5
Columbus, Ohio	128	70	35	10	9	4	3
Dayton, Ohio	83	61	13	3	2	4	4
Detroit, Mich.	269	160	67	32	6	4	5
Evansville, Ind.	40	28	12	-	-	-	1
Fort Wayne, Ind.	55	37	13	3	1	1	1
Gary, Ind.	14	9	5	-	-	-	1
Grand Rapids, Mich.	89	63	19	2	2	3	3
Indianapolis, Ind.	158	108	30	6	5	9	1
Madison, Wis.	27	13	10	-	1	3	5
Milwaukee, Wis.	149	106	34	2	1	6	5
Peoria, Ill.	40	30	6	-	-	4	5
Rockford, Ill.	50	40	7	-	3	-	3
South Bend, Ind.	32	25	4	1	1	1	-
Toledo, Ohio	105	60	28	9	4	4	9
Youngstown, Ohio	66	43	18	1	1	3	2
W.N. CENTRAL	768	543	137	34	25	29	27
Des Moines, Iowa	57	44	10	-	2	1	1
Duluth, Minn.	24	20	2	1	1	-	-
Kansas City, Kans.	24	11	5	3	2	3	1
Kansas City, Mo.	136	94	31	6	2	3	5
Lincoln, Nebr.	42	35	5	1	1	-	6
Minneapolis, Minn.	85	64	12	6	1	2	1
Omaha, Nebr.	115	67	26	7	8	7	4
St. Louis, Mo.	150	106	22	7	6	9	-
St. Paul, Minn.	63	47	13	1	1	1	-
Wichita, Kans.	72	55	11	2	1	3	9
S. ATLANTIC	1,250	768	299	113	33	37	65
Atlanta, Ga.	148	99	27	17	4	1	5
Baltimore, Md.	169	104	42	13	2	8	2
Charlotte, N.C.	86	53	16	5	6	6	7
Jacksonville, Fla.	133	86	32	8	4	3	14
Miami, Fla.	145	87	40	13	4	1	8
Norfolk, Va.	55	33	11	4	2	5	6
Richmond, Va.	84	39	33	7	1	4	4
Savannah, Ga.	32	20	8	3	1	-	1
St. Petersburg, Fla.	104	86	9	5	1	3	10
Tampa, Fla.	71	41	21	5	3	1	3
Washington, D.C.	197	101	54	32	5	5	5
Wilmington, Del.	26	19	6	1	-	-	-
E.S. CENTRAL	588	392	142	36	11	7	24
Birmingham, Ala.	81	49	24	4	2	2	1
Chattanooga, Tenn.	54	38	13	2	1	-	4
Knoxville, Tenn.	61	43	17	1	-	-	2
Louisville, Ky.	71	49	15	4	-	3	2
Memphis, Tenn.	110	72	23	13	2	-	9
Mobile, Ala.	50	32	17	1	-	-	1
Montgomery, Ala.	56	41	10	3	2	-	2
Nashville, Tenn.	105	68	23	8	4	2	3
W.S. CENTRAL	910	558	221	60	35	36	48
Austin, Tex. §	54	53	-	-	1	-	3
Baton Rouge, La.	23	13	5	1	1	3	3
Corpus Christi, Tex.	29	13	5	8	3	-	-
Dallas, Tex.	183	98	58	12	5	10	11
El Paso, Tex.	67	39	17	3	6	2	7
Fort Worth, Tex.	89	57	18	5	8	1	4
Houston, Tex.	64	32	18	6	3	5	-
Little Rock, Ark.	51	32	12	3	2	2	1
New Orleans, La.	83	51	23	3	2	4	2
San Antonio, Tex.	127	80	32	8	2	5	11
Shreveport, La.	44	32	11	1	-	-	2
Tulsa, Okla.	96	58	22	10	2	4	4
MOUNTAIN	726	505	139	33	24	25	43
Albuquerque, N.Mex.	102	73	18	5	4	2	3
Colo. Springs, Colo.	41	29	9	2	-	1	7
Denver, Colo.	110	67	22	8	2	11	6
Las Vegas, Nev.	58	41	11	3	3	-	3
Ogden, Utah	35	25	6	1	1	2	4
Phoenix, Ariz.	200	141	40	6	9	4	10
Pueblo, Colo.	19	16	3	-	-	-	-
Salt Lake City, Utah	50	35	6	4	2	3	3
Tucson, Ariz.	111	78	24	4	3	2	7
PACIFIC	1,822	1,256	357	122	45	35	115
Berkeley, Calif.	27	19	4	4	-	-	-
Fresno, Calif.	100	67	24	5	2	2	9
Glendale, Calif.	16	13	2	1	-	-	-
Honolulu, Hawaii	49	37	10	2	-	-	6
Long Beach, Calif.	98	67	21	4	2	4	3
Los Angeles, Calif.	345	216	65	41	10	6	6
Oakland, Calif.	92	66	13	3	4	6	8
Pasadena, Calif.	49	37	7	3	1	1	2
Portland, Oreg.	141	103	30	3	4	1	12
Sacramento, Calif.	152	105	32	9	4	2	7
San Diego, Calif.	105	71	27	3	3	1	12
San Francisco, Calif.	173	109	43	15	3	3	9
San Jose, Calif.	201	151	31	11	5	3	19
Seattle, Wash.	145	102	25	10	5	3	7
Spokane, Wash.	80	62	12	4	1	1	13
Tacoma, Wash.	49	31	11	4	1	2	2
TOTAL	11,647††	7,845	2,407	767	295	321	585

* Mortality data in this table are voluntarily reported from 121 cities in the United States, most of which have populations of 100,000 or more. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.

** Pneumonia and influenza

† Because of changes in reporting methods in these 4 Pennsylvania cities, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

†† Total includes unknown ages.

§ Data not available. Figures are estimates based on average of past 4 weeks.

Influenza – Continued

on December 5 and continuing to December 10, an outbreak of influenza-like illness among her students increased the class absentee rate to 50%. Throat swabs from the teacher and her husband and son were collected on December 7. The class was not tested. An influenza type A(H3N2) virus was isolated from the teacher's son.

In New York City, six type A(H3N2) influenza viruses were isolated from inmates at Rikers Island Prison in December. Five isolates were recovered from young adults in the adolescent detention unit of Rikers Island Prison who had influenza-like illnesses from December 17 to December 19. During the outbreak, the number of patients on sick call with upper respiratory illnesses increased from approximately five to 20 daily. In addition, seven type A(H3N2) influenza virus isolates were identified from elderly patients at an extended-care facility in New York City who had influenza-like illnesses in an outbreak that began in mid-December. From December 20 to December 28, there were 30 patients with influenza-like illnesses among the approximately 500 nursing-home residents.

In Illinois, two type A(H3N2) isolates were collected from students in school outbreaks that took place in mid-December in two counties outside Springfield. Four type A(H3N2) isolates were identified from students at the Chicago campus of Loyola University who reported to the student health center in December. Approximately 170 patients and staff members at the Hines Veterans Administration Hospital in Chicago had influenza-like illness in an outbreak that began in mid-December. Type A(H3N2) viruses were identified from each of the five specimens tested in the outbreak.

Isolates of influenza virus type A(H3N2) from sporadic cases have also recently been reported from Arizona, Colorado, Florida, New Jersey, and New Mexico. Type A(H3N2) isolates were reported from Utah in conjunction with school outbreaks in December. Twelve states have now reported isolates of type A(H3N2) influenza virus this season (Arizona, California, Colorado, Florida, Illinois, Nevada, New Jersey, New Mexico, New York, Texas, Utah, and Wisconsin). One type A(H1N1) isolate from Houston, Texas, and type B influenza virus isolates from Hawaii, Illinois, Ohio, and Texas have also been identified.

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Phytophotodermatitis among Grocery Workers — Ohio

On July 5, 1984, a 33-year-old woman presented to an Ohio medical clinic with a bullous, erythematous, nonpruritic, discrete rash of the left forearm of 6 days' duration. An occupational history indicated that she was a cashier at a supermarket. Several co-workers were reported to have had similar rashes that were attributed to handling celery.

The physician alerted the National Institute for Occupational Safety and Health (NIOSH), and a NIOSH medical officer visited the market. A cross-sectional study of all employees was undertaken. Fifty-two (95%) of 55 current full- and part-time employees were interviewed and examined between July and September. Fourteen (27%) of these workers had papular, well-circumscribed rashes confined to the upper extremities, with residual blistering or hyperpigmentation. Dates of rash onset ranged from April through August, with a peak in July. All

Phytophotodermatitis — Continued

cases occurred among cashiers, baggers, and produce clerks (Table 1). None occurred among shelf stockers, delicatessen clerks, meat clerks, or managers.

Cases were significantly more likely than noncases to have had contact with fresh vegetables (100%, compared with 39%; p = 0.009) and with fresh flowers (92%, compared with 29%; p = 0.009). Also, cases were signficantly more likely than noncases to have used a tanning salon during the outbreak period (36%, compared with 5%; p = 0.01). There was suggestive evidence of a multiplicative interaction between produce exposure and use of a tanning salon in the etiology of cases (Figure 1).

On the basis of history and physical examination, a diagnosis of phytophotodermatitis was made in this outbreak. NIOSH recommended that employees handling produce wash exposed areas of hands, wrists, and forearms regularly and avoid either tanning salons or excessive exposure to sunlight. No new cases occurred after October, which is typical for the seasonal pattern of occurrence of this disease.

Reported by Div of Surveillance, Hazard Evaluations, and Field Studies, National Institute for Occupational Safety and Health, CDC.

Editorial Note: Skin disorders appear to represent a widespread but largely unrecognized problem among supermarket employees. Many of the rashes among these workers appear to be phytophotodermatitis, a well-circumscribed rash evoked by contact with linear furanocoumarins (psoralens), followed by exposure of the skin to long-wave ultraviolet light (350 nm). It is associated with exposure to a wide variety of fruits, flowers, and vegetables, including celery, dill, parsley, oil from lime peels, parsnip, oil of Bergamont, and chrysanthemums. Exposure to sunlight is sufficient to provoke phytophotodermatitis following contact with psoralens. However, the use of artificial ultraviolet light in tanning salons appears in the present instance to have enhanced this effect.

In phytophotodermatitis, the reaction is typically confined to the initial site of contact and is characterized by redness and blistering in the absence of itching and by residual hyperpigmentation (*1*). This type of reaction differs from an allergic contact dermatitis in that it requires exposure to ultraviolet light and does not require a period of sensitization. In addition, an allergic dermatitis is usually pruritic.

This outbreak resembles a series of episodes investigated by NIOSH in supermarkets throughout the midwest in 1980-1981. In those episodes, baggers had the highest attack rates of dermatitis (51%). Frequent contact with unpackaged celery and exposure to sunlight during the work-shift were significantly associated with cases (*2*). Also, an investigation of agricultural field workers in Michigan in 1961 found that celery infected with pink rot (*Sclerotinia sclerotiorum*) was associated with an outbreak of photodermatitis (*3*).

It is not possible at present to ascribe the etiology of this outbreak to any single foodstuff. However, since only workers who had contact with fresh produce developed rash, it appears likely that the psoralen-containing agent in the present outbreak is to be found among the vegetables, fruits, or flowers handled in this market. Surveillance of skin rashes in supermarket workers and investigation of additional outbreaks may help to identify a specific etiologic agent.

TABLE 1. Phototoxic dermatitis among grocery workers — Ohio

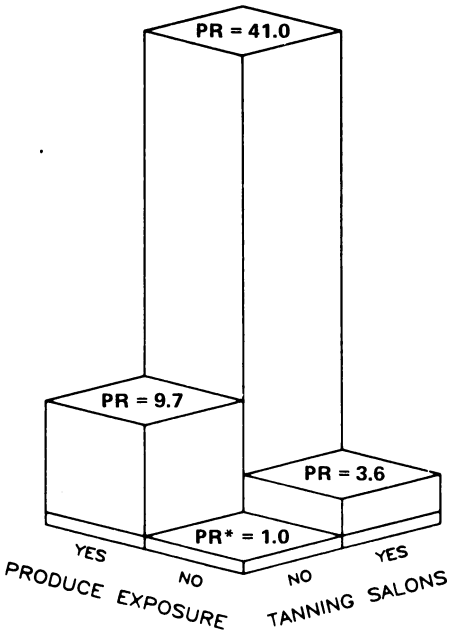
Job category	Employees	Cases (%)
Produce clerk	7	4 (57)
Bagger	10	5 (50)
Cashier	13	5 (38)
Other	22	0 (0)
Total	**52**	**14 (27)**

Phytophotodermatitis — Continued

References

1. Mitchell J, Rook A. Botanical dermatology: plants and photodermatitis injurious to the skin. Vancouver, British Columbia, Canada:Greenglass Ltd., 1979:41.
2. National Institute for Occupational Safety and Health. Health hazard evaluation determinination report no. HE 80-225, Cincinnati, Ohio: National Institute for Occupational Safety and Health, June 1982.
3. Birmingham DJ, Key MM,.Tubich, GE, Perone, VB. Phototoxic bullae among celery harvesters. Arch Dermatol 1961;83:127-41.

FIGURE 1. Risk of rash among grocery workers, by exposure to fresh produce and use of tanning salons — Ohio, April-August 1984



*Prevalence ratio, compared with a PR of 1.0 for workers with neither produce exposure nor exposure to tanning salons.

Reye Syndrome — United States, 1984

For the 1984 surveillance year,* 190 cases of Reye syndrome (RS) meeting CDC's case definition† were reported. Although delayed reports will increase the number of cases for 1984 somewhat, the 1984 total is presently among the lowest annual totals reported through the National Reye Syndrome Surveillance System (NRSSS) since its initiation in December 1973 (Table 1).

*For the purposes of surveillance, Reye syndrome years extend from December 1 to November 30 (i.e. the 1984 year runs from December 1, 1983, to November 30, 1984). The data for 1984 are preliminary and include cases reported as of January 8, 1985.

†The CDC case definition is (1) acute noninflammatory encephalopathy documented by the clinical picture of alteration in the level of consciousness and, if available, a record of cerebrospinal fluid containing eight leukocytes or less per mm^3, or histologic sections of the brain demonstrating cerebral edema without perivascular or meningeal inflammation; (2) fatty metamorphosis of the liver diagnosed by either biopsy or autopsy or a threefold or greater rise in the levels of either the SGOT, SGPT, or serum ammonia; and (3) no known more reasonable explanation for the cerebral or hepatic abnormalities.

Reye Syndrome — Continued

Cases were reported from 42 states. The sex and race distributions were similar to previous years. Of patients for whom this information was reported, 51% were male; 94%, white; 3%, black; and 3%, of Asian or American Indian extraction. Most RS patients were school-aged children; 38% were 10-14 years of age; 29%, 0-4 years of age; 18%, 5-9 years of age; 13%, 15-19 years of age; and 2%, 20 years of age or older.

For 179 (94%) of the patients, a prodromal illness occurring within 2 weeks before the onset of vomiting or neurologic symptoms of RS was reported. This prodromal illness was characterized by respiratory symptoms (76%), varicella exanthem (15%), diarrhea without respiratory symptoms (2%), or other signs and symptoms, including fever alone (7%).

Most patients were hospitalized in the first 6 months of the surveillance year (Figure 1). This winter and spring seasonal distribution primarily reflected the incidence of respiratory virus infections among children, particularly influenza types A(H1N1) and B, the predominant influenza isolates during 1984. In addition, the small number of varicella-associated RS patients were hospitalized primarily during this period.

The largest percentages of patients were admitted to hospitals in the three precomatose stages of RS: stage I—38%; stage II—36%; or stage 0—8% (*1*). Of these, 56% progressed to coma. The short-term outcomes were reported for 173 (91%) of the RS patients; 45 died, for a case-fatality ratio of 26%.

Editorial Note: The NRSSS is useful in providing crude annual comparisons of RS activity, although the number of cases reported is recognized to be an underestimate of the true incidence of RS. During 1982-1984, the annual incidence of RS was the lowest reported since the initiation of national surveillance. The incidence of RS in previous years has reflected, at least in part, the intensity and/or type of influenza activity. However, the influenza activity in 1984 appeared to be much greater than in the 2 previous years, with widespread school outbreaks of both influenza types A(H1N1) and B (*2*).

When analyzed by 10-year age groups, the decline in reported cases from 1981 to 1984 is accounted for by a consistent decline in the number of cases reported each year among children under 10 years of age. No such decrease has occurred in the number of patients 10-19 years of age; in 1984, the number of cases reported in this age group increased, consistent with the increased influenza activity.

Varicella-associated RS cases show an even larger decline (from 77 in 1981 to 26 in 1984) in the number of cases reported each year among children under 10 years of age. However, annual varicella activity in the United States remained relatively stable during this period. The

TABLE 1. Incidence of Reye syndrome, by year — United States, 1974 and 1977-1984

Year (Dec. 1-Nov 30)	Major influenza activity	No. cases	Incidence*	Death/case† ratio (%)
1974§	B	379	0.58	157/379 (41)
1977	B	454	0.71	156/373 (42)
1978	A(H3N2),(H1N1)	237	0.37	66/225 (29)
1979	A(H1N1)	389	0.62	113/349 (32)
1980	B	548	0.88	114/516 (22)
1981	A(H3N2),(H1N1)	313	0.49	89/296 (30)
1982	B	222	0.35	73/208 (35)
1983	A(H3N2),(H1N1)	198	0.32	57/181 (31)
1984	A(H1N1), B	190¶	0.30	45/173 (26)

*Cases/100,000 population under 18 years of age.

†With known outcome.

§For the period December 15, 1973-June 10, 1974.

¶Preliminary count; reported cases as of January 8, 1985.

Reye Syndrome — Continued

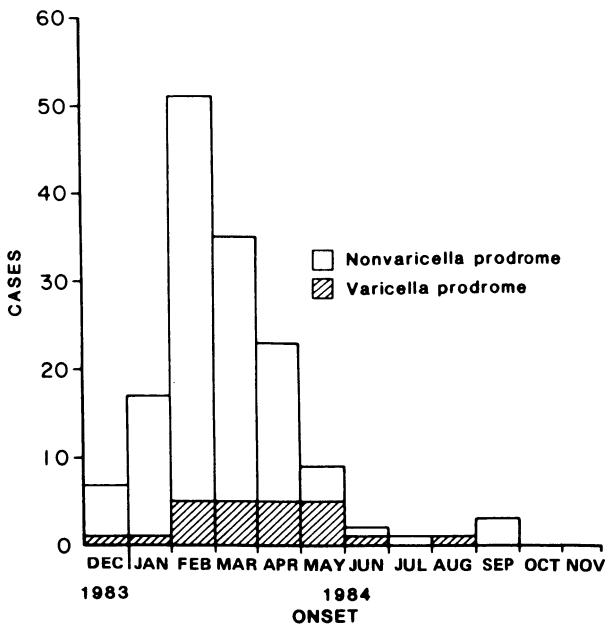
reasons for the decline in incidence among children under 10 years of age is unclear, although it does not appear to be solely the result of annual differences in the incidence of either influenza or varicella.

One possible explanation for the reduced incidence among children under 10 years of age is that there has been a decline in the use of salicylates among younger children in recent years.

In 1982, the Surgeon General of the Public Health Service (PHS) advised against giving salicylates and salicylate-containing medications to children with influenza and chickenpox (*3*). This advice was based on the review of results of case-control studies that showed a statistically significant association of RS with the ingestion of salicylates during the antecedent illness (*4-6*). Because of concerns regarding methodologic issues and the limitations of these studies, the Secretary of Health and Human Services appointed a PHS Task Force comprised of members of the National Institutes of Health, Food and Drug Administration, and CDC to design and implement a new epidemiologic study concerning the nature of the possible relationship between RS and medications.

A pilot study was conducted between February and May 1984 to determine the study feasibility and establish methodology. The pilot study included 29 RS cases and 143 controls consisting of children admitted to the same hospital (IP) or emergency room (ER), attending the same school, or identified by random-digit dialing (RDD). Ninety-seven percent of case children were reported to have received salicylates during the respiratory or chickenpox illness before a clinically defined onset of RS, compared with 28% (ER), 23% (IP), 59% (school), and 55% (RDD) at any time during their matched illnesses. The risk defined in the pilot study was comparable to or greater than that determined in the previous studies. The Institute of Medicine (IOM), National Academy of Sciences, served to advise and critique the protocol, monitor the study progress, and review study analysis and results. Following a review of the data col-

FIGURE 1. Reye syndrome cases, by month of onset — United States, December 1, 1983-November 30, 1984



Reye Syndrome — Continued

lection methodology in July 1984 and the data analysis in December 1984, the IOM, on January 8, stated:

1. The PHS Task Force should proceed with the full study.
2. Results of the pilot study should be released promptly to the public and to scientists for review and analysis.
3. Analysis of the pilot study data reveals a strong association between the Reye syndrome and the use of aspirin; considering data from previous studies also show an association of use of aspirin and Reye syndrome, the Committee recommends that steps should be taken to protect the public health before the full study is completed.
4. Although it is impossible to know with certainty whether the release of the pilot study data will harm the full study, the Committee suspects the effects of the attendant publicity will be no more damaging than the current climate of public opinion, which appears not to have impeded conduct of the pilot study.

A report of the pilot study is currently being prepared for publication. In view of these preliminary findings, physicians, parents, and older children who self-medicate should continue to be advised of the probable increased risk of RS associated with the use of salicylates for children, including teenagers, with influenza-like illness or chickenpox.

Reported by Div of Viral Diseases, Center for Infectious Diseases, CDC; the Reye Syndrome Task Force, consisting of members from U.S. Food and Drug Administration, National Institutes of Health, Office of the Assistant Secretary of Health, and CDC.

References

1. Hurwitz ES, Nelson DB, Davis C, Morens D, Schonberger LS, National Surveillance for Reye syndrome: a five-year review. Pediatrics 1982;70:895-900.
2. CDC. Influenza—United States, 1983-1984 season. MMWR 1984;33:417-8.
3. CDC. Surgeon General's advisory on the use of salicylates and Reye syndrome. MMWR 1982;31:289-90.
4. Starko KM, Ray CG, Dominguez LB, Stromberg WL, Wodall DF. Reye's syndrome and salicylate use. Pediatrics 1980;66:859-64.
5. Waldman RJ, Hall WN, McGee H, Van Amburg G: Aspirin as a risk factor in Reye's syndrome. JAMA 1982;247:3089-94.
6. Halpin TJ, Holtzhauer FT, Campbell RJ, et al: Reye's syndrome and medication use. JAMA 1982;248:687-91

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