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Epidemiologic Notes and Reports

Follow-up on Toxic-Shock Syndrome

Continuing epidemiologic and microbiologic studies at CDC firmly establish the roles of both *Staphylococcus aureus* and tampons in the pathogenesis of toxic-shock syndrome (TSS) in menstruating women. The possible factors contributing to these roles and to the apparently increasing incidence of the disease are still being studied. However, preliminary results of the most recent CDC study, detailed below, suggest that there are differences in the brand of tampons used by TSS patients and controls. In particular, there is an increased risk associated with the use of Rely tampons among TSS patients as compared with controls.

TSS is a severe illness characterized by sudden onset of high fever with vomiting, diarrhea, and myalgia, followed by the development of hypotension and, in severe cases, shock (*1,2*). An erythematous, "sunburn-like" rash is present during the acute phase of the illness; about 10 days after onset, there is desquamation of the skin, particularly of the palms and soles (Table 1).

Cases of TSS continue to be reported to CDC. Since January 1980, 299 cases of TSS have been reported; 285 (95%) of these cases have been in women; there have been 25 (8.4%) deaths. Although cases have been recognized since 1975, reporting has increased over time. Fifty-two (17%) cases had onset of illness in July or August 1980, and had been reported to CDC by September 8.

Approximately 95% of all reported cases of TSS in women have occurred during a menstrual period. A previously reported retrospective case-control study was conducted by CDC in June 1980 to examine factors underlying the almost exclusive occurrence of TSS in menstruating women (*2*). A significant association between tampon use, particularly continuous use during the menstrual period, and the development of TSS was found. The association with tampon use was corroborated by a separate study conducted by the Wisconsin State Health Department.

In the June 1980 CDC study, potentially important differences were found between cases and controls in the use of individual tampon brands but none of these differences were statistically significant. The identification of significant differences among tampon brands may have been hindered by 1) the small number of cases and single-matched controls, 2) the possibility that "best friend" controls would be likely to use the same brands, 3) important changes in brand of tampon used over time since new products and new component materials have been introduced, and 4) differences in accuracy of recall of tampon brands used by cases and controls (cases were questioned about brands used at the time of onset of disease, which may have been many months or, in some cases, years before the study, while controls were asked about their most recent periods).

Because of the problem of accuracy of recall, the earlier study could not be expanded

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to examine the possible association of individual tampon brands with TSS. CDC, therefore, continued its investigation by designing a second retrospective case-control study that focused on tampon brands and was based only on recent cases. Of the 52* TSS patients who had onset of illness in July or August, 1980, 50 were contacted by telephone. None of these women had been included in the earlier study. These women were questioned about tampon, napkin, or minipad use, brand of tampon used, and pattern of use for the menstrual cycle in which they became ill.

TABLE 1. Toxic-shock syndrome case definition

1. Fever (temperature ≥38.9 C [102 F]).
2. Rash (diffuse macular erythroderma).
3. Desquamation, 1-2 weeks after onset of illness, particularly of palms and soles.
4. Hypotension (systolic blood pressure ≤90 mm Hg. for adults or <5th percentile by age for children <16 years of age, or orthostatic syncope).
5. Involvement of 3 or more of the following organ systems:
   A. Gastrointestinal (vomiting or diarrhea at onset of illness).
   B. Muscular (severe myalgia or creatine phosphokinase level ≥2 x ULN*).
   C. Mucous membrane (vaginal, oropharyngeal, or conjunctival hyperemia).
   D. Renal (BUN† or Cr‡ ≥2 x ULN or ≥5 white blood cells per high-power field—in the absence of a urinary tract infection).
   E. Hepatic (total bilirubin, SGOT§, or SGPT¶ ≥2 x ULN).
   F. Hematologic (platelets ≤100,000/mm³).
   G. Central nervous system (disorientation or alterations in consciousness without focal neurologic signs when fever and hypotension are absent).
6. Negative results on the following tests, if obtained:
   A. Blood, throat, or cerebrospinal fluid cultures.
   B. Serologic tests for Rocky Mountain spotted fever, leptospirosis, or measles.

*Twice upper limits of normal for laboratory.
†Blood urea nitrogen level.
‡Creatinine level.
§Serum glutamic oxaloacetic transaminase level.
¶Serum glutamic pyruvic transaminase level.

These women were asked to provide the names of 3 female friends or acquaintances within 3 years of their own age who lived within the same geographic area. Relatives and members of the same household were not accepted as controls. The controls were asked the same questions as TSS patients for the menstrual period that the patient became ill. If knowledge of the TSS patient's illness had caused a change in the control's tampon use, the control was questioned about the menstrual period in the previous month. Both patients and controls were asked to read the labels on their tampon boxes to substantiate brand and absorbency of tampons used.

Fifty of 50 cases (100%) used tampons during the menstrual period associated with their illness, as compared to 124 of 150 controls (83%) (P=0.006 by chi-square for studies with matched cases and controls (*3*). Cases and those controls who used tampons were examined for differences in brand use. The proportions of cases and controls using a single brand of tampon exclusively during the menstrual period are shown in Table 2. The risk associated with specific brands of tampons was further evaluated taking into account the number of days of menstrual flow; a matched linear logistic regression

*Information could not be obtained from 2 of these women.

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model was used (*4*). The odds ratio (an estimate of relative risk) associated with use of Rely tampons was statistically significant ($P<.0001$, relative risk = 7.9; 95% confidence limits = 2.8 to 22.2). An increased risk was observed for both product lines of Rely—Super and Regular. Similar differences in the frequency of products used by patients and controls were seen when brands were examined for (1) predominant use during the menstrual period or (2) use at least once during the period.

TABLE 2. Distribution of tampon brands among toxic-shock syndrome cases and controls using only one tampon brand

Tampon brand	Cases (N=42)	Controls (N=114)
Rely	71%	26%
Playtex	19%	25%
Tampax	5%	25%
Kotex	2%	12%
OB	2%	11%

Although no previous study has demonstrated a statistically significant difference in brand use, no other study has been designed to look at brands used by cases and controls over a recent and comparable time period. The Minnesota State Department of Health, however, has reported preliminary results of a study of cases of TSS occurring since early 1979. In this study, 10 (35%) of 29 cases and 9 (18%) of 50 matched controls used Rely tampons. These trends are similar to the results of the CDC study.

Investigation of the role of *Staphylococcus aureus* in TSS continues. In a recent CDC study, *S. aureus* was isolated from the vaginas of 4 (7%) of 55 unmatched control women who visited family planning clinics during their menstrual periods. In contrast, *S. aureus* was isolated from 43 (98%) of 44 appropriately cultured TSS patients included in this tampon brand study ($P<0.001$). Moreover, in male cases and in female cases not associated with menstruation, *S. aureus* has been isolated from focal lesions of the skin, bone, and lung. To date, all isolates of *S. aureus* from TSS patients that have been examined in CDC laboratories have been penicillin resistant. *S. aureus* has not been recovered from unused tampons, including those from tampon boxes used by TSS patients.

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Editorial Note: From earlier studies, the incidence of TSS was estimated to be 3/100,000 women of menstrual age per year, based on surveillance data from Wisconsin (*2*). It now appears that that rate underestimates the true incidence of the disease in menstruating women for 3 reasons: 1) there is incomplete reporting of cases, 2) the rate was based on severe cases meeting a strict case definition that requires evidence of hypotension and involvement of 3 or more organ systems, and 3) not all women of menstrual age are actually menstruating. While the rate is still low, the severity of the illness and the case-fatality ratio make TSS a cause for concern, particularly since TSS occurs almost exclusively in previously healthy young women.

The results of this and previous studies support the conclusion that there is a significant association between tampons and TSS in menstruating women. Of the menstrually associated TSS cases, all have occurred in women using tampons. Furthermore, the present study demonstrates that the brand of tampon a woman uses is likely to affect

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her risk of developing TSS. While cases of TSS have occurred with tampons produced by all 5 of the major U.S. tampon manufacturers, a substantially greater proportion of cases than controls in the present study used Rely tampons. Consistent with this finding is the fact that consumer use of Rely tampons has increased as the apparent incidence of TSS has increased. However, other tampon manufacturers have changed the formulation of their products during the same period of time, and consumer buying practices have been changing rapidly.

Moreover, it is possible that tampons are associated with TSS only because they serve as a proxy for some as yet uncharacterized risk factor. If so, the risk of various brands cannot be fully evaluated until such factors are identified and controlled. It is also possible that tampon use might be a proxy for some other risk factor only in women using Rely. For instance, it is possible that the frequency of vaginal colonization with *S. aureus* may be greater among Rely users than among women using other products either by chance or because of some unidentified characteristic of Rely users.

Although the use of tampons is undoubtedly an important factor in the development of TSS in menstruating women, the pathogenesis of TSS is not yet fully understood. The isolation rates of *S. aureus* in cases and controls presented here document an association between *S. aureus* and TSS. This association is consistent with an etiologic role for *S. aureus* in this disease. Studies are in progress to try to identify a marker other than penicillin resistance which would distinguish strains capable of producing TSS. Studies to date suggest that tampons play a contributing role, perhaps by carrying the organism from the fingers or the introitus into the vagina in the process of insertion, by providing a favorable environment for growth of the organism or elaboration of toxin regardless of the manner in which the organism is introduced, or by traumatizing the vaginal mucosa and thus facilitating local infection with *S. aureus* or absorption of toxin from the vagina.

Whatever roles *S. aureus* and tampons play in the development of TSS, certain preventive measures can be identified. Women can almost entirely eliminate their risk of TSS by not using tampons. Women who choose to use tampons can reduce their risk by using them intermittently during each menstrual period (that is, not use them all day and all night throughout the period). Until the reasons underlying the increased risk of TSS in users of Rely tampons are more clearly understood, women may choose to use another product. Which, if any, of these preventive measures a woman chooses is an individual decision. If a woman chooses to use tampons and develops a high fever and vomiting or diarrhea during her menstrual period, she should discontinue tampon use and consult a physician immediately.

Proper management of women suspected of having TSS includes a careful vaginal examination with removal of any retained tampons, inclusion of cervical and vaginal cultures for *S. aureus* among other cultures performed, and aggressive fluid replacement. Physicians should probably use beta-lactamase resistant antistaphylococcal antibiotics after appropriate cultures have been obtained. Such antibiotics are indicated in view of the evidence supporting their efficacy in preventing recurrences. In addition, because of the recurrence rate of 30%, CDC continues to recommend that women who have had an episode of TSS not use tampons at least until *S. aureus* has been eradicated from the vagina.

References

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Acute Hemorrhagic Conjunctivitis in Refugees – United States

In mid-July, an outbreak of conjunctivitis among Southeast Asian refugees arriving in Oakland, California, was reported (*1*). After that report, a surveillance system was established on all charter flights arriving in Oakland and, later in the month, at all U.S. quarantine stations. As of September 7, 528 arriving refugees out of the 9,376 surveyed were found to have clinical conjunctivitis. Cases were found on 24 of the 220 flights carrying refugees.

Most of the cases were characterized by conjunctival injection, swelling of eyelids, and scanty white discharge in 1 or both eyes, with no systemic symptoms (*1*). However, 21 of the 528 cases had hemorrhagic manifestations. Since initial serologic studies and clinical data suggested a viral etiology, viral cultures were taken from each refugee with hemorrhagic conjunctivitis and from a sample of refugees with no clinical evidence of hemorrhagic conjunctivitis. Of 62 specimens examined thus far at CDC, 4 have revealed picornaviruses. One of these 4 has been identified, by homologous-antibody neutralization, as enterovirus 70, the agent predominantly responsible for acute hemorrhagic conjunctivitis (AHC). This organism has not been previously isolated from a patient in the Western Hemisphere.

The refugee who was culture positive for enterovirus 70 is living in California. He is 1 of 4 members of a family that arrived in Los Angeles on a commercial flight from Singapore. One of the other members of his family also had conjunctivitis upon arrival, involving both eyes. The illness began while he was in transit and resolved without residual ophthalmologic problems in 3 to 4 days. No other family members or friends reported conjunctivitis with onset after arrival in the United States.

Twelve refugees who had been cultured at the port of entry were surveyed by telephone. In most cases, both eyes were affected; the duration of symptoms was 3 to 10 days. None reported seeing a physician for this problem nor did any patient report persistent eye problems. No clinical evidence of conjunctivitis occurred among 60-70 contacts of these persons following arrival in the United States.

In the period July 15-30, 479 of 3,257 refugees surveyed on 10 flights had conjunctivitis; 17 (3.5%) of the 479 had hemorrhagic signs. On July 30, medical and quarantine officials in Singapore and Bangkok began to screen refugees for hemorrhagic conjunctivitis at Hawkins Road, Lumpini, and Rangsit transit centers before departures. During the last week in July, out of a sample of 2,356 refugees surveyed in Bangkok, 200 (8.5%) had conjunctivitis; 116 (58%) of these were hemorrhagic. All families with members having signs of hemorrhagic conjunctivitis were detained until it was clinically resolved. All refugees with non-hemorrhagic conjunctivitis were kept separated from those without conjunctivitis while in flight to the United States.

After screening procedures were begun in Thailand and Singapore, the number of conjunctivitis cases seen at the quarantine stations in the United States declined rapidly. Between July 31 and September 7, only 49 cases of conjunctivitis were seen, and only

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3 of the 49 (6.1%) had hemorrhagic signs. Recent reports from Bangkok, however, indicate that conjunctivitis is still occurring in virtually all of the refugee camps. Screening of refugees in the transit camps and surveillance at the U.S. quarantine stations are both continuing.

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Editorial Note: AHC was first recognized in Western Africa in 1969. Outbreaks were seen in North Africa, England, continental Europe, India, and Southeast Asia shortly thereafter. By 1971 large epidemics had been described in Singapore, Hong Kong, Indonesia, Japan, Malaysia, the Philippines, India, Korea, Thailand, Sri Lanka, Viet Nam, and the Republic of China (Taiwan). Enterovirus 70 has been the most frequently isolated etiologic agent in these epidemics, although a Coxsackievirus A24 variant and adenovirus 11 have also been implicated (*2*).

AHC is characterized by a short incubation period (under 24 hours), rapid involvement of both eyes, swelling of the eyelids, congestion and watering of the conjunctivae, and in a large percentage of the patients, subconjuctival hemorrhages. Follicular conjunctivitis and occasional punctate epithelial keratitis may also be seen on examination. There are usually no permanent ocular complications; however, radiculomyelitis has been noted on rare occasions (*3*). Enterovirus 70 is very contagious and is thought to be transmitted

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

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

DISEASE	37th WEEK ENDING		MEDIAN 1975-1979	CUMULATIVE, FIRST 37 WEEKS		MEDIAN 1975-1979
	September 13, 1980	September 15, 1979*		September 13, 1980	September 15, 1979*	
Aseptic meningitis	254	400	185	4,126	4,819	3,025
Brucellosis	4	8	8	134	118	164
Chickenpox	299	254	254	156,398	171,645	150,436
Diphtheria	–	–	–	3	7	67
Encephalitis: Primary (arthropod-borne & unspec.)	41	39	63	580	679	802
Post-infectious	3	6	3	155	180	180
Hepatitis, Viral: Type B	341	306	306	12,173	10,249	10,580
Type A	558	597	597	19,366	20,956	21,851
Type unspecified	184	222	158	8,352	7,139	5,900
Malaria	37	11	12	1,367	495	390
Measles (rubeola)	38	43	90	12,843	12,053	23,944
Meningococcal infections: Total	26	30	29	1,920	1,982	1,317
Civilian	26	30	28	1,913	1,964	1,308
Military	–	–	–	7	18	18
Mumps	50	71	103	7,107	11,167	16,051
Pertussis	57	42	41	1,122	995	1,085
Rubella (German measles)	31	37	64	3,294	10,687	14,826
Tetanus	4	2	2	50	49	53
Tuberculosis	513	502	567	19,413	19,654	21,383
Tularemia	6	9	1	139	153	105
Typhoid fever	9	14	11	307	348	292
Typhus fever, tick-borne (Rky. Mt. spotted)	49	20	27	941	878	874
Venereal diseases:						
Gonorrhea: Civilian	20,408	23,195	20,985	696,132	700,978	700,978
Military	517	396	495	19,369	19,590	19,590
Syphilis, primary & secondary: Civilian	543	498	475	18,650	17,204	17,096
Military	3	10	6	226	226	226
Rabies in animals	103	97	63	4,680	3,605	2,201

TABLE II. Notifiable diseases of low frequency, United States

	CUM. 1980		CUM. 1980
Anthrax (Colo. 1)	1	Poliomyelitis: Total	6
Botulism (Calif. 1)	46	Paralytic	4
Cholera	8	Psittacosis (Miss. 1, Utah 1, Calif. 2)	72
Congenital rubella syndrome	45	Rabies in man	–
Leprosy (N.J. 1, Tex. 1)	132	Trichinosis (Conn. 1, Ups. N.Y. 1)	86
Leptospirosis (R.I. 1, Fla. 1, Tenn. 1, Hawaii 1)	52	Typhus fever, flea-borne (endemic, murine)	47
Plague (N. Mex. 2)	15		

*Delayed reports received for calendar year 1979 are used to update last year's weekly and cumulative totals.

TABLE III. Cases of specified notifiable diseases, United States, weeks ending September 13, 1980, and September 15, 1979 (37th week)

REPORTING AREA	ASEPTIC MENINGITIS	BRUCELLOSIS	CHICKEN-POX	DIPHTHERIA		ENCEPHALITIS			HEPATITIS (VIRAL), BY TYPE			MALARIA	
						Primary		Post-infectious	B	A	Unspecified		
	1980	1980	1980	1980	CUM. 1980	1980	1979*	1980	1980	1980	1980	1980	CUM. 1980
UNITED STATES	254	4	299	–	3	41	39	3	341	558	184	37	1,367
NEW ENGLAND	20	–	24	–	–	–	1	–	16	18	6	1	83
Maine	2	–	5	–	–	–	–	–	1	2	–	–	14
N.H.	–	–	–	–	–	–	1	–	–	–	–	–	7
Vt.	–	–	4	–	–	–	–	–	–	1	–	–	1
Mass.	4	–	6	–	–	–	–	–	3	4	5	–	41
R.I.	10	–	1	–	–	–	–	–	2	7	–	–	8
Conn.	4	–	8	–	–	–	–	–	10	4	1	1	12
MID. ATLANTIC	72	–	46	–	1	2	5	–	57	56	21	6	178
Upstate N.Y.	20	–	16	–	–	1	2	–	12	13	8	–	29
N.Y. City	6	–	30	–	1	–	–	–	5	12	2	2	45
N.J.	31	–	NN	–	–	–	1	–	16	16	8	–	49
Pa.	15	–	–	–	–	1	2	–	24	15	3	4	55
E.N. CENTRAL	24	–	129	–	1	2	13	–	45	67	21	1	70
Ohio	–	–	4	–	–	–	5	–	8	12	4	–	8
Ind.	–	–	22	–	–	1	3	–	14	29	8	–	7
Ill.	–	–	6	–	–	–	–	–	5	7	2	1	28
Mich.	20	–	41	–	1	1	1	–	17	16	6	–	19
Wis.	4	–	56	–	–	–	4	–	1	3	1	–	8
W.N. CENTRAL	14	–	17	–	1	2	–	1	10	16	3	2	58
Minn.	–	–	–	–	–	–	–	–	–	–	–	–	19
Iowa	3	–	12	–	–	2	–	–	4	12	–	–	7
Mo.	2	–	–	–	1	–	–	–	1	3	2	–	12
N. Dak.	1	–	–	–	–	–	–	–	–	–	–	–	–
S. Dak.	5	–	4	–	–	–	–	–	–	–	–	–	3
Nebr.	3	–	1	–	–	–	–	–	2	–	–	–	7
Kans.	–	–	–	–	–	–	–	1	3	1	1	2	10
S. ATLANTIC	41	–	46	–	–	5	6	1	76	93	21	3	143
Del.	–	–	–	–	–	–	–	–	–	1	–	–	–
Md.	–	–	2	–	–	–	–	–	9	1	5	1	24
D.C.	–	–	1	–	–	–	–	–	3	1	–	–	2
Va.	10	–	1	–	–	3	–	–	9	6	2	–	53
W. Va.	3	–	12	–	–	1	4	–	–	–	–	–	4
N.C.	14	–	NN	–	–	1	2	–	9	6	4	1	11
S.C.	6	–	1	–	–	–	–	–	11	5	2	–	5
Ga.	–	–	–	–	–	–	–	–	14	22	–	–	14
Fla.	8	–	29	–	–	–	–	1	21	51	8	1	30
E.S. CENTRAL	23	1	1	–	–	2	6	–	10	30	4	–	10
Ky.	3	–	–	–	–	–	1	–	–	–	–	–	2
Tenn.	4	1	NN	–	–	–	2	–	8	16	1	–	–
Ala.	16	–	–	–	–	–	1	–	1	3	3	–	6
Miss.	–	–	1	–	–	2	2	–	1	11	–	–	2
W.S. CENTRAL	21	3	11	–	–	23	1	1	34	95	49	10	132
Ark.	1	–	–	–	–	–	–	–	–	8	3	2	8
La.	1	1	NN	–	–	8	–	–	6	27	3	–	42
Okla.	2	–	–	–	–	–	–	–	6	5	5	–	12
Tex.	17	2	11	–	–	15	1	1	22	55	38	8	70
MOUNTAIN	5	–	8	–	–	1	5	–	13	46	25	5	73
Mont.	–	–	4	–	–	–	1	–	–	–	–	–	1
Idaho	–	–	–	–	–	–	–	–	–	–	–	–	1
Wyo.	NA	NA	NA	NA	–	NA	–	–	NA	NA	NA	NA	2
Colo.	3	–	4	–	–	1	2	–	4	20	1	2	27
N. Mex.	–	–	–	–	–	–	–	–	–	1	–	–	3
Ariz.	–	–	NN	–	–	–	–	–	5	11	18	1	16
Utah	2	–	–	–	–	–	1	–	1	14	2	–	15
Nev.	–	–	–	–	–	–	1	–	3	–	4	2	8
PACIFIC	34	–	17	–	–	4	2	–	80	137	34	9	620
Wash.	–	–	6	–	–	–	–	–	4	14	–	–	45
Oreg.	2	–	1	–	–	–	–	–	15	30	1	–	32
Calif.	29	–	–	–	–	3	1	–	61	91	33	9	522
Alaska	2	–	–	–	–	1	1	–	–	–	–	–	6
Hawaii	1	–	10	–	–	–	–	–	–	2	–	–	15
Guam	NA	NA	NA	NA	–	NA	–	–	NA	NA	NA	NA	3
P.R.	–	–	9	–	–	–	–	–	2	3	3	–	3
V.I.	NA	NA	NA	NA	–	NA	–	–	NA	NA	NA	NA	–
Pac. Trust Terr.	NA	NA	NA	NA	–	NA	–	–	NA	NA	NA	NA	–

NN: Not notifiable. NA: Not available.

*Delayed reports received for 1979 are not shown below but are used to update last year's weekly and cumulative totals.

TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending September 13, 1980, and September 15, 1979 (37th week)

REPORTING AREA	MEASLES (RUBEOLA)			MENINGOCOCCAL INFECTIONS TOTAL			MUMPS		PERTUSSIS	RUBELLA		TETANUS
	1980	CUM. 1980	CUM. 1979*	1980	CUM. 1980	CUM. 1979*	1980	CUM. 1980	1980	1980	CUM. 1980	CUM. 1980
UNITED STATES	38	12,843	12,053	26	1,920	1,982	50	7,107	57	31	3,294	50
NEW ENGLAND	2	669	288	1	104	107	3	555	4	1	213	2
Maine	–	33	17	–	5	5	–	285	–	–	68	1
N.H.	–	326	33	–	8	9	–	19	2	–	35	–
Vt.	–	226	119	–	13	6	1	11	–	–	3	–
Mass.	–	58	13	1	35	41	1	122	2	1	80	–
R.I.	–	2	102	–	7	7	–	22	–	–	9	1
Conn.	2	24	4	–	36	39	1	96	–	–	18	–
MID. ATLANTIC	7	3,769	1,476	2	348	297	8	803	11	4	550	7
Upstate N.Y.	4	690	618	–	113	106	1	114	5	1	208	2
N.Y. City	3	1,179	756	–	89	74	2	92	2	3	95	2
N.J.	–	827	57	1	72	71	3	99	–	–	101	–
Pa.	–	1,073	45	1	74	46	2	498	4	–	146	3
E.N. CENTRAL	3	2,417	3,140	2	219	212	10	2,693	15	6	793	3
Ohio	1	377	266	–	72	87	3	1,122	7	3	7	1
Ind.	–	91	203	–	36	42	2	118	1	1	331	–
Ill.	2	337	1,406	2	43	11	1	354	–	2	161	–
Mich.	–	235	823	–	55	54	3	797	1	–	126	1
Wis.	–	1,377	442	–	13	18	1	302	6	–	168	1
W.N. CENTRAL	4	1,315	1,722	1	71	63	5	247	–	–	197	3
Minn.	4	1,101	1,214	–	20	11	2	15	–	–	27	1
Iowa	–	–	16	–	9	9	2	42	–	–	8	–
Mo.	–	64	409	–	28	33	–	71	–	–	45	1
N. Dak.	–	–	20	–	1	1	–	4	–	–	5	–
S. Dak.	–	–	2	1	5	4	–	2	–	–	2	–
Nebr.	–	83	–	–	–	–	–	9	–	–	1	–
Kans.	–	67	61	–	8	5	1	104	–	–	109	1
S. ATLANTIC	6	1,880	1,841	11	473	482	11	964	7	5	334	10
Del.	–	3	1	–	2	5	–	39	–	–	1	–
Md.	–	71	15	–	46	41	–	315	–	–	70	1
D.C.	–	–	–	–	1	–	–	4	–	–	1	–
Va.	1	303	269	1	46	69	3	64	–	–	51	3
W. Va.	–	15	54	1	17	8	1	90	–	1	24	1
N.C.	1	129	112	2	91	75	3	92	1	–	46	1
S.C.	–	159	150	1	54	59	2	205	–	–	51	2
Ga.	1	811	450	3	82	68	–	3	6	–	–	1
Fla.	3	389	790	3	134	157	2	152	–	4	90	1
E.S. CENTRAL	–	340	201	2	174	146	3	854	3	1	81	4
Ky.	–	55	37	–	53	29	2	750	–	–	37	1
Tenn.	–	179	56	1	46	41	1	25	2	1	39	2
Ala.	–	22	84	1	48	36	–	21	–	–	3	1
Miss.	–	84	24	–	27	40	–	58	1	–	2	–
W.S. CENTRAL	2	927	889	1	202	307	2	255	6	1	119	13
Ark.	–	14	7	–	18	24	–	20	1	–	4	1
La.	–	11	247	–	75	116	–	65	1	–	10	3
Okla.	–	745	22	–	17	29	–	–	1	–	4	1
Tex.	2	157	613	1	92	138	2	170	3	1	101	8
MOUNTAIN	6	484	310	3	67	78	1	192	3	3	141	–
Mont.	–	2	53	–	3	8	–	55	–	–	43	–
Idaho	–	–	18	–	4	8	–	15	2	1	19	–
Wyo.	NA	–	36	–	2	1	NA	–	NA	NA	1	–
Colo.	–	24	64	1	18	5	1	52	1	–	11	–
N. Mex.	–	13	38	–	8	4	–	–	–	–	5	–
Ariz.	6	390	72	–	12	33	–	34	–	1	31	–
Utah	–	47	18	2	5	8	–	27	–	–	25	–
Nev.	–	8	11	–	15	11	–	9	–	1	6	–
PACIFIC	8	1,042	2,186	3	262	290	7	544	8	10	866	8
Wash.	–	177	1,126	–	49	46	–	129	–	4	80	–
Oreg.	–	–	61	–	46	25	1	67	–	–	50	–
Calif.	7	853	918	3	159	203	6	321	8	5	719	8
Alaska	1	6	17	–	8	6	–	11	–	1	12	–
Hawaii	–	6	64	–	–	10	–	16	–	–	5	–
Guam	NA	5	11	–	1	1	NA	9	NA	NA	–	–
P.R.	–	131	338	–	9	5	4	134	–	–	18	10
V.I.	NA	6	5	–	1	3	NA	2	NA	NA	–	–
Pac. Trust Terr.	NA	6	8	–	–	1	NA	17	NA	NA	1	–

NA: Not available.
*Delayed reports received for 1979 are not shown below but are used to update last year's weekly and cumulative totals.

TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending September 13, 1980, and September 15, 1979 (37th week)

REPORTING AREA	TUBERCULOSIS		TULAREMIA	TYPHOID FEVER		TYPHUS FEVER (Tick-borne) (RMSF)		VENEREAL DISEASES (Civilian)						RABIES (in Animals)
								GONORRHEA			SYPHILIS (Pri. & Sec.)			
	1980	CUM. 1980	CUM. 1980	1980	CUM. 1980	1980	CUM. 1980	1980	CUM. 1980	CUM. 1979*	1980	CUM. 1980	CUM. 1979*	CUM. 1980
UNITED STATES	513	19,413	139	9	307	49	941	20,408	696,132	700,978	543	18,650	17,204	4,680
NEW ENGLAND	11	557	6	–	8	2	11	604	17,491	17,368	7	427	338	47
Maine	2	42	–	–	1	–	–	27	1,001	1,218	–	5	10	21
N.H.	1	13	–	–	–	–	–	19	647	654	–	1	16	6
Vt.	–	19	–	–	–	–	–	6	411	413	–	5	1	–
Mass.	7	305	4	–	5	–	5	305	7,346	6,862	6	274	190	12
R.I.	1	56	1	–	1	–	2	32	1,134	1,431	–	24	11	–
Conn.	–	122	1	–	1	2	4	215	6,952	6,790	1	118	110	8
MID. ATLANTIC	109	3,166	2	2	63	–	39	2,769	75,957	75,959	59	2,617	2,587	56
Upstate N.Y.	19	624	1	–	9	–	13	307	14,134	12,564	–	219	177	29
N.Y. City	42	1,133	1	1	28	–	3	1,625	29,003	30,297	37	1,700	1,759	–
N.J.	18	664	–	1	13	–	14	131	14,049	13,554	9	314	339	12
Pa.	30	745	–	–	13	–	9	706	18,771	19,544	13	384	312	15
E.N. CENTRAL	54	2,807	1	1	27	1	25	2,769	107,985	108,037	43	1,744	2,287	706
Ohio	7	497	–	–	6	–	12	813	28,325	29,873	4	261	442	44
Ind.	6	285	–	–	–	–	2	260	11,061	9,272	4	141	166	62
Ill.	18	997	–	1	11	–	6	581	33,957	33,547	25	987	1,282	383
Mich.	17	865	1	–	6	–	3	782	24,428	25,552	10	291	329	12
Wis.	6	163	–	–	4	1	2	333	10,214	9,793	–	64	68	205
W.N. CENTRAL	30	722	23	–	21	–	50	1,248	33,421	34,490	12	242	229	1,517
Minn.	4	140	1	–	3	–	–	140	5,409	5,850	8	85	62	154
Iowa	–	61	1	–	1	–	2	130	3,589	4,124	–	14	27	321
Mo.	11	329	19	–	15	–	32	728	15,052	14,802	4	118	104	310
N. Dak.	5	39	–	–	–	–	–	22	468	576	–	3	2	176
S. Dak.	4	37	–	–	1	–	2	28	993	1,164	–	2	2	347
Nebr.	1	29	1	–	–	–	4	114	2,546	2,431	–	6	3	83
Kans.	5	87	1	–	1	–	10	86	5,364	5,543	–	14	29	126
S. ATLANTIC	110	4,287	9	–	36	40	608	5,510	174,909	170,361	138	4,456	4,093	365
Del.	–	56	–	–	1	–	2	55	2,467	2,816	–	10	21	1
Md.	14	540	2	–	2	–	63	477	18,836	20,411	8	324	272	24
D.C.	8	261	–	–	4	–	–	413	12,402	11,169	14	331	319	–
Va.	NA	430	–	–	6	10	85	715	15,876	16,298	8	400	347	13
W. Va.	3	157	–	–	3	–	3	55	2,350	2,344	–	15	41	19
N.C.	25	772	3	–	2	14	268	909	25,059	24,443	7	305	322	19
S.C.	9	390	–	–	3	3	132	563	16,554	16,083	11	251	210	47
Ga.	18	580	4	–	–	13	51	1,360	33,965	32,316	55	1,295	1,130	180
Fla.	33	1,101	–	–	15	–	4	963	47,400	44,481	35	1,525	1,431	62
E.S. CENTRAL	34	1,764	9	1	9	3	89	1,967	57,169	60,121	61	1,535	1,117	256
Ky.	11	396	–	1	3	–	16	263	8,365	7,922	–	103	122	110
Tenn.	8	589	6	–	–	2	52	861	20,730	21,682	31	647	471	108
Ala.	11	460	1	–	2	–	12	619	16,899	17,938	11	320	208	38
Miss.	4	319	2	–	4	1	9	224	11,175	12,579	19	465	316	–
W.S. CENTRAL	60	2,159	60	3	40	3	101	2,739	89,546	90,759	109	3,728	3,143	1,114
Ark.	5	232	38	1	5	2	21	264	7,646	7,152	6	139	101	147
La.	6	403	–	–	–	–	2	488	16,182	16,053	25	901	775	8
Okla.	–	213	16	–	4	–	56	325	8,967	8,716	–	69	68	192
Tex.	49	1,311	6	2	31	1	22	1,662	56,751	58,838	78	2,619	2,199	767
MOUNTAIN	10	508	24	1	21	–	14	652	27,012	28,145	2	451	333	187
Mont.	–	20	7	–	1	–	3	10	1,020	1,392	–	1	8	36
Idaho	–	22	1	–	1	–	1	62	1,201	1,224	–	24	21	2
Wyo.	NA	16	3	NA	–	NA	2	NA	775	798	NA	8	5	13
Colo.	–	73	5	1	7	–	3	197	7,306	7,495	1	116	71	46
N. Mex.	–	101	–	–	2	–	4	86	3,340	3,511	–	78	62	37
Ariz.	5	215	1	–	7	–	–	101	7,193	7,831	–	154	94	49
Utah	2	35	5	–	3	–	1	60	1,361	1,427	–	11	3	3
Nev.	3	26	2	–	–	–	–	136	4,816	4,467	1	59	69	1
PACIFIC	95	3,443	5	1	82	–	4	2,150	112,642	115,738	112	3,450	3,077	432
Wash.	7	312	–	–	3	–	–	NA	9,075	10,142	NA	154	159	–
Oreg.	5	128	1	–	9	–	1	183	7,828	7,458	1	72	126	4
Calif.	79	2,892	3	1	70	–	3	1,780	90,567	92,319	109	3,101	2,702	384
Alaska	–	41	1	–	–	–	–	95	2,827	3,633	–	7	21	44
Hawaii	4	70	–	–	–	–	–	92	2,345	2,186	2	116	69	–
Guam	NA	30	–	NA	–	NA	–	NA	72	86	NA	4	–	–
P.R.	1	127	–	–	21	–	–	52	1,940	1,476	10	423	369	42
V.I.	NA	–	–	NA	–	NA	–	NA	108	123	NA	10	6	–
Pac. Trust Terr.	NA	30	–	NA	–	NA	–	NA	295	334	NA	–	1	–

NA: Not available.
*Delayed reports received for 1979 are not shown below but are used to update last year's weekly and cumulative totals.

TABLE IV. Deaths in 121 U.S. cities,* week ending September 13, 1980 (37th week)

REPORTING AREA	ALL CAUSES, BY AGE (YEARS)					P&I** TOTAL
	ALL AGES	>65	45-64	25-44	<1	
NEW ENGLAND	645	423	151	28	22	36
Boston, Mass.	168	94	44	11	11	10
Bridgeport, Conn.	42	29	8	2	1	5
Cambridge, Mass.	24	14	7	2	–	4
Fall River, Mass.	31	25	4	1	1	–
Hartford, Conn.	51	26	19	3	–	–
Lowell, Mass.	18	13	4	–	–	1
Lynn, Mass.	16	12	4	–	–	–
New Bedford, Mass.	21	17	3	–	–	–
New Haven, Conn.	43	24	10	4	4	1
Providence, R.I.	83	53	22	1	4	3
Somerville, Mass.	6	5	1	–	–	2
Springfield, Mass.	63	41	19	1	1	2
Waterbury, Conn.	36	31	4	1	–	5
Worcester, Mass.	43	39	2	2	–	3
MID. ATLANTIC	2,415	1,571	547	161	61	79
Albany, N.Y.	45	35	8	–	2	1
Allentown, Pa.	19	12	7	–	–	–
Buffalo, N.Y.	133	84	37	8	3	8
Camden, N.J.	39	24	11	4	–	1
Elizabeth, N.J.	26	19	3	–	–	–
Erie, Pa.†	35	26	5	–	2	–
Jersey City, N.J.	41	33	4	2	–	–
Newark, N.J.	47	23	12	9	2	1
N.Y. City, N.Y.	1,309	859	273	109	32	40
Paterson, N.J.	21	15	2	1	2	–
Philadelphia, Pa.†	217	133	64	11	5	9
Pittsburgh, Pa.†	115	67	28	8	3	3
Reading, Pa.	32	26	5	1	–	1
Rochester, N.Y.	100	59	25	1	7	6
Schenectady, N.Y.	22	13	7	–	–	2
Scranton, Pa.†	28	20	5	2	1	1
Syracuse, N.Y.	106	67	31	2	1	2
Trenton, N.J.	39	24	12	2	1	2
Utica, N.Y.	16	11	4	1	–	1
Yonkers, N.Y.	25	21	4	–	–	1
E.N. CENTRAL	2,220	1,269	582	173	100	44
Akron, Ohio	50	33	9	4	1	–
Canton, Ohio	40	24	12	2	–	1
Chicago, Ill.	534	290	156	52	22	6
Cincinnati, Ohio	115	69	28	11	3	3
Cleveland, Ohio	173	99	48	9	10	3
Columbus, Ohio	125	62	45	10	3	2
Dayton, Ohio	115	68	30	7	5	2
Detroit, Mich.	277	146	62	38	13	4
Evansville, Ind.	54	34	14	2	4	3
Fort Wayne, Ind.	50	32	10	2	1	3
Gary, Ind.	21	5	8	5	1	–
Grand Rapids, Mich.	53	33	12	–	4	1
Indianapolis, Ind.	173	84	53	13	12	2
Madison, Wis.	24	13	7	–	1	–
Milwaukee, Wis.	131	92	21	4	9	2
Peoria, Ill.	44	30	6	4	3	2
Rockford, Ill.	39	19	16	2	–	4
South Bend, Ind.	56	38	13	2	2	3
Toledo, Ohio	93	62	20	5	3	2
Youngstown, Ohio	53	36	12	1	3	1
W.N. CENTRAL	740	457	176	39	36	17
Des Moines, Iowa	69	44	19	4	2	1
Duluth, Minn.	26	13	10	–	2	1
Kansas City, Kans.	36	21	7	4	2	3
Kansas City, Mo.	119	75	33	2	5	3
Lincoln, Nebr.	38	20	7	2	2	2
Minneapolis, Minn.	86	59	16	4	5	2
Omaha, Nebr.	86	47	27	5	4	1
St. Louis, Mo.	183	114	36	14	11	3
St. Paul, Minn.	60	43	13	1	2	–
Wichita, Kans.	37	21	8	3	1	1

REPORTING AREA	ALL CAUSES, BY AGE (YEARS)					P&I** TOTAL
	ALL AGES	>65	45-64	25-44	<1	
S. ATLANTIC	1,069	610	272	100	33	40
Atlanta, Ga.	131	66	37	22	–	1
Baltimore, Md.	153	80	44	16	3	1
Charlotte, N.C.	64	41	15	5	1	5
Jacksonville, Fla.	116	69	32	6	3	6
Miami, Fla.	65	36	13	11	3	2
Norfolk, Va.	61	38	10	2	4	4
Richmond, Va.	96	53	29	4	3	5
Savannah, Ga.	37	23	7	3	2	3
St. Petersburg, Fla.	67	48	11	3	3	6
Tampa, Fla.	68	43	14	4	4	5
Washington, D.C.	154	78	46	18	7	1
Wilmington, Del.	57	35	14	6	–	1
E.S. CENTRAL	761	445	208	61	13	26
Birmingham, Ala.	109	55	36	10	3	2
Chattanooga, Tenn.	77	43	21	6	–	5
Knoxville, Tenn.	45	30	12	2	–	–
Louisville, Ky.	100	60	28	6	5	8
Memphis, Tenn.	207	123	59	15	1	4
Mobile, Ala.	53	37	11	3	–	3
Montgomery, Ala.	41	30	8	2	1	2
Nashville, Tenn.	129	67	33	17	3	2
W.S. CENTRAL	1,284	710	322	120	52	36
Austin, Tex.	44	33	8	3	–	2
Baton Rouge, La.	49	29	16	3	1	3
Corpus Christi, Tex.	32	16	8	4	3	–
Dallas, Tex.	200	126	40	16	7	2
El Paso, Tex.	56	33	14	6	2	2
Fort Worth, Tex.	103	61	27	5	6	6
Houston, Tex.	346	165	101	42	8	5
Little Rock, Ark.	63	31	17	3	5	7
New Orleans, La.	73	38	18	11	1	–
San Antonio, Tex.	162	88	41	14	8	7
Shreveport, La.	89	51	16	5	10	1
Tulsa, Okla.	67	39	16	8	1	1
MOUNTAIN	638	358	156	60	30	19
Albuquerque, N.Mex.	61	17	21	15	–	1
Colo. Springs, Colo.	39	27	8	2	–	3
Denver, Colo.	151	85	40	11	10	5
Las Vegas, Nev.	62	28	22	5	2	2
Ogden, Utah	25	13	8	–	2	2
Phoenix, Ariz.	133	84	27	9	10	1
Pueblo, Colo.	27	20	3	4	–	2
Salt Lake City, Utah	46	27	10	2	5	1
Tucson, Ariz.	94	57	17	12	1	2
PACIFIC	1,683	1,037	407	123	55	58
Berkeley, Calif.	20	11	3	4	–	–
Fresno, Calif.	86	53	15	6	3	3
Glendale, Calif.	15	12	2	1	–	1
Honolulu, Hawaii	59	27	16	9	2	6
Long Beach, Calif.	90	53	27	4	4	10
Los Angeles, Calif.	451	281	99	37	14	10
Oakland, Calif.	76	46	19	7	4	6
Pasadena, Calif.	32	26	4	–	2	2
Portland, Oreg.	158	91	45	10	4	–
Sacramento, Calif.	75	54	16	4	1	3
San Diego, Calif. ††	126	76	33	9	5	1
San Francisco, Calif.	130	90	29	9	–	2
San Jose, Calif.	137	77	39	10	6	2
Seattle, Wash.	142	91	33	11	4	6
Spokane, Wash.	51	25	18	2	5	4
Tacoma, Wash.	35	24	9	–	1	2
TOTAL	11,455	6,880	2,821	865	402	355

*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.

††Data not available this week. Figures are estimates based on average percent of regional totals.

Conjunctivitis – Continued

primarily by fomites from contaminated fingers, clothing, or towels. Large epidemics most frequently occur in densely populated, crowded, humid areas. Small outbreaks attributed to cross contamination in medical facilities or physicians' offices have occurred in London, Moscow, and France.

Epidemic conjunctivitis due to enterovirus 70 infection (as well as adenovirus 11 and 8) occurred in 1975 on Guam among Southeast Asian refugees awaiting transportation to the United States (*4*). Although conjunctivitis of unknown etiology occurred rarely among American medical personnel in intimate contact with those patients, no documented AHC infection was subsequently reported in the United States. This fact, and the crowded and less-than-adequate hygienic conditions usually associated with outbreaks of AHC, make the likelihood of secondary spread in the United States minimal.

References

1. MMWR 1980;29:353.
2. Mirkovic RR, Kono R, Yin-Murphy M, Sohier R, Schmidt NJ, Melnick JL. Enterovirus type 70: the etiologic agent of pandemic acute haemorrhagic conjunctivitis. Bull WHO 1973;49:341-6.
3. Hung TP, Sung SM, Liang HC, Landsborough D, Green IJ. Radiculomyelitis following acute haemorrhagic conjunctivitis. Brain 1976;99:771-90.
4. Arnow PM, Hierholzer JC, Higbee J, Harris DH. Acute hemorrhagic conjunctivitis: a mixed virus outbreak among Vietnamese refugees on Guam. Am J Epidemiol 1977;105:68-74.

Dengue – Texas

Dengue virus type 1 has been isolated from a patient in Brownsville, Texas, by the San Juan Laboratories, CDC. This is the first report of dengue transmission within the continental United States since 1945.

The patient, a 5-year-old girl, had had a febrile illness for 4 days when the sample of her serum that contained the virus was collected on August 25 by a clinic participating in the Texas surveillance system. Her illness, characterized by fever, rash, myalgia, and petechiae was brief.

Although no increase in dengue-like illness has been observed in Brownsville, federal, state, and local health officials are investigating human and vector populations to determine if dengue virus is still being transmitted in the area. A neighborhood campaign to eliminate breeding sites of *Aedes aegypti*, the mosquito vector, is being intensified. Additional serologic studies are pending.

Reported by R Landsberg, DO, WR Meyers, MD, Brownsville; R Davis, RPE, J Dickens, RS, C Marshall, MD, C Webb, Jr, MD, State Epidemiologist, Texas Dept of Health; San Juan Laboratories, Bur of Laboratories, Vector Biology and Control Div, Bur of Tropical Diseases, Viral Diseases Div, Bur of Epidemiology, CDC.

Editorial Note: Because of the proximity of dengue activity in northeastern Mexico (*1*), areas of the southeastern United States that are infested with *A. aegypti* are at risk of dengue introduction and transmission during the remaining warm months. State and local health officials are coordinating surveillance and control measures to minimize the spread of dengue infection.

Reference

1. MMWR 1980;29:407-8.

Measles — New York

Subpopulations of unimmunized children can serve as a focus for the spread of measles, as the following outbreak illustrates.

In the period March 10-June 14, 1980, 112 cases of measles were reported from Erie County, New York. All cases were characterized by a typical measles rash, fever of ≥38.5 C for at least 2 days, and at least 1 of the following: cough, coryza, or conjunctivitis. Most of the cases occurred from April 9 through May 11 (Figure 1). The highest proportion of cases occurred in 10- to 14-year-olds (43.8%), followed by 5- to 9-year-olds (34.8%), 15- to 19-year-olds (10.7%), and 0- to 4-year-olds (8.9%). Only 2 cases (1.8%) occurred in persons over 19 years of age. Of the total cases, 75 occurred in adjacent school districts in the southern part of the county, and 37 were reported from other sections of the county.

Thirty-nine of the 112 (35%) ill patients were members of a religious group which though not specifically against immunization, will support individual members' beliefs against it. Nine of the 39 (23%) ill church members had a history of measles vaccination after 1 year of age. In contrast, 52 of the 73 (71%) ill persons who were not church members had similar vaccination histories. At least 17 of the 39 (44%) church members who became ill attended a church pageant on April 12 (Figure 1). Of the 37 measles cases that occurred outside the southern part of the county, 30 (81%) were in church members.

During the outbreak, over 1,300 susceptible students received measles vaccine at special school-based or community clinics or from private physicians. Nearly 300 students were temporarily excluded from school until they provided evidence of measles immunity or until 2 weeks had elapsed since onset of the last measles case in their school.

Reported by RG Judelsohn, MD, ML Fleissner, MD, Erie County Dept of Health; R Cavallo, I Mills, R Rothenberg, MD, State Epidemiologist, New York Dept of Health; Immunization Div, Bur of State Services, CDC.

Editorial Note: In this outbreak, most of the cases outside the southern part of the county were in members of a specific church and most were unvaccinated. In a similar outbreak of measles in Maryland in 1978, 26% of cases occurred in unvaccinated children who were exempt from school immunization laws because of religious belief (*1*).

During the 1979-80 school year New York State conducted audits of the immunization records for all school children, kindergarten to 12th grade. During the 1980-81 school year, all enrolled children who do not provide evidence of measles immunity or who do not have valid grounds for exemption will be excluded. Individuals who are truly exempt from the school law should be identified at the start of the school year. Effective control of measles may require exclusion of these children from school when measles is occurring in the community.

When evaluated, the efficacy of measles vaccine has generally been shown to be 90% or better, even in outbreaks such as this one, where a substantial proportion of the patients reported that they were vaccinated after 1 year of age (*2,3*). In this instance, 46% of the patients were either unvaccinated or vaccinated before they were 1 year old. These cases might have been prevented if the persons had been appropriately vaccinated or revaccinated before measles was introduced into the community.

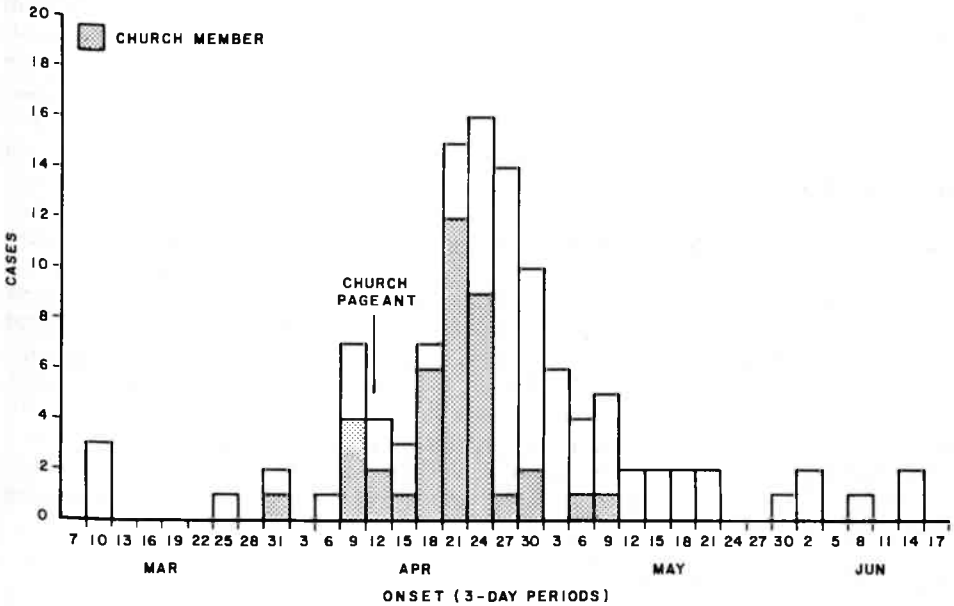
References

1. MMWR 1978;27:401-2.
2. Marks JS, Halpin TJ, Orenstein WA. Measles vaccine efficacy in children previously vaccinated at 12 months of age. Pediatrics 1978;62:955-60.

Measles — Continued

3. McCormick JB, Halsey N, Rosenberg R. Measles vaccine efficacy determined from secondary attack rates during a severe epidemic. J Pediatr 1977;90:13-6.

FIGURE 1. Reported cases of measles, by onset, Erie County, New York, March 7-June 17, 1980



Current Trends

Influenza — United States, Worldwide

Influenza A(H3N2) virus, previously reported to have caused an outbreak in Tucson, Arizona, in July (*1*), has also been isolated from sporadic cases in Illinois, Texas, and Washington. From April through July, reports of influenza A(H3N2) isolation were made from Asia (Japan, Malaysia, the People's Republic of China, the Philippines, the Republic of China [Taiwan], Thailand), South America (Argentina, Brazil, Chile, French Guyana), Australia and New Zealand, and South Africa. In some areas (Johannesburg, South Africa, for example), outbreaks have been considered severe, with deaths among the elderly and/or industrial absenteeism being reported. In other regions, the virus had much less impact.

At the World Health Organization (WHO) Collaborating Centers for Influenza in Atlanta and London, isolates from several countries, including those with severe morbidity, have been tested. In general, the isolates have been well inhibited by both A/Texas/1/77 and A/Bangkok/1/79 antisera.

Influenza – Continued

From April through July, continued circulation of influenza A(H1N1) strains was also reported; isolates were recovered in Asia (Japan, Mongolia), Europe (Hungary, the Netherlands), and South America (Chile and Peru). Influenza B was also isolated during this period in Australia, Japan, the People's Republic of China, Indonesia, the Republic of China (Taiwan), and Thailand.

Reported by P Glezen, MD, Baylor College of Medicine, Houston; State Laboratory Directors in Illinois, Texas, and Washington; WHO Collaborating Center for Influenza, Virology Div, Bur of Laboratories, Immunization Div, Bur of Epidemiology, CDC.

Reference

1. MMWR 1980;29:354-5.

International Notes

Rabies – Continental Europe, United States, 1979

Continental Europe: In 1979, animal rabies was reported from 18 European countries participating in the European Rabies Surveillance System. Finland, Norway, Sweden, and the United Kingdom continued to be rabies free, and no cases were reported from Bulgaria or Portugal. One rabies case was reported by the Netherlands in a dog imported from India, and one by Spain in a cat. No data were available from Rumania or, for the third quarter of 1979, from the German Democratic Republic (GDR).

Four human and 16,816 cases of animal rabies were reported in 1979. Of the animals, there were 11,791 (70.1%) cases in foxes, and 3,468 (20.6%) cases in domesticated animals. The corresponding figures for 1978 were similar (Table 3).

TABLE 3. Rabies in continental Europe, 1978-79

Category	1978	1979
Human rabies	4	4
Animal rabies	16,835	16,816*
domesticated animals	3,383 (20.1%)	3,468 (20.6%)
wild animals	13,452 (79.7%)	13,348 (79.4%)
foxes	11,851 (70.4%)	11,791 (70.1%)

*Does not include GDR, third quarter.

Countries with a particularly high proportion of rabies in foxes were Hungary (92.4%), Yugoslavia (93.0%), and Czechoslovakia (85.3%). After foxes, the animal species most frequently reported to have rabies were dogs (7.7%), cattle (6.2%), deer (4.1%), mustelids (e.g., badgers) (4.1%), and cats (4.0%). Most of the rabid dogs were from Turkey. "Urban" rabies is prevalent in that country, with 61.1% of the total cases being in dogs and only 1.5% involving wild species. Turkey is also the only country in continental Europe where the fox did not account for the greatest number of cases. Other countries with a higher-than-average proportion of canine rabies were Czechoslovakia (4.5%), GDR (4.8%), and Poland (5.7%). In GDR, Poland, and Turkey the proportion of cases in cats was higher than average—7.8%, 7.9%, and 6.7%, respectively.

The badger was a major victim in Austria (6.3% of Austrian total), Italy (12.6%), and Switzerland (4.7%), and in Denmark and the Federal Republic of Germany mustelids other than badgers accounted for 5.5% and 4.3% of cases, respectively.

Rabies – Continued

In Turkey, there were 385 cases of rabies in cattle (24.1% of the total). Other countries with a higher-than-average incidence in cattle were the Federal Republic of Germany (5.7%) and France (7.7%). There was a higher proportion of cases in deer in GDR (7.6%), Switzerland (5.6%), and Austria (8.1%).

The geographic extent of rabies in 1979 changed little from 1978. In France, Italy, and Denmark, some rabies cases were recorded in new departments and, along the Yugoslavian border with Hungary, a number of new districts became infected. However, in most European countries, the geographic distribution of cases did not alter markedly, though the incidence of rabies may have changed. Austria was an exception: in 1979 the number of cases there declined throughout the year and the infected geographic area contracted.

United States: A total of 5,150 laboratory-confirmed cases of rabies were reported in the United States and its territories in 1979. This represents an increase of 1,852 cases above the 1978 total, and is 67% above the average for the preceding 5 years. Forty-eight states and Puerto Rico reported infected animals in 1979; only the District of Columbia, Idaho, Guam, Hawaii, and the Virgin Islands reported no cases. Seven kinds of animals accounted for 98% of the reported cases: skunks, 59%; bats, 15%; raccoons, 10%; cattle, 4%; dogs, 4%; cats, 3%; and foxes, 3%. Wild animal species accounted for 87.5% of the total reported cases, and domestic species accounted for 12.3%. Five human cases were reported in 1979 (Table 4); no human cases have been reported in 1980, to date. The sharpest increase in reported cases—67% over 1978—was for skunks.

TABLE 4. Rabies, United States, 1978-1979

	1978	1979
Human rabies	4	5
Animal rabies	3,298	5,150
domestic animals	469	636
wild animals	2,825	4,509
skunks	1,657	3,031

The geographic distribution of rabies in 1979 was similar to that seen in the previous 5 years. Bats continue to be the most widely distributed vector, with confirmed cases occurring in 45 states, followed by skunks, which were reported from 32 states.

Reported by the Communicable Disease Surveillance Centre in the Communicable Disease Report 80/26, July 4, 1980 (as adapted from the Rabies Bulletin Europe 5/79); and the Respiratory and Special Pathogens Br, Viral Diseases Div, Bur of Epidemiology, CDC.

The Morbidity and Mortality Weekly Report, circulation 91,840, is published by the Center for Disease Control, Atlanta, Georgia. The data in this report are provisional, based on weekly telegraphs to CDC by state health departments. The reporting week concludes at close of business on Friday; compiled data on a national basis are officially released to the public on the succeeding Friday.

The editor welcomes accounts of interesting cases, outbreaks, environmental hazards, or other public health problems of current interest to health officials. Send reports to: Center for Disease Control, Attn: Editor, Morbidity and Mortality Weekly Report, Atlanta, Georgia 30333.

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