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International Notes

Valproic Acid and Spina Bifida: A Preliminary Report — France

Valproic acid use during the first trimester of pregnancy has been reported among an unusually high proportion of mothers of infants with spina bifida. During 1976 and from 1978 through September 1982, the birth defects surveillance system at the Institut Europeen des Genomutations in Lyon, France, ascertained 146 cases of spina bifida aperta. Among these cases, nine (6.2%) of the mothers had epilepsy and had taken valproic acid during the first trimester at dosages between 400 mg and 2,000 mg per day. Five of the nine patients with spina bifida were exposed to valproic acid alone, and four were exposed to additional anticonvulsants. Twenty-one (0.32%) of the mothers of the 6,616 infants in the surveillance system with other malformations had taken the drug (Table 1). These data show a highly statistically significant odds ratio of 20.6.* To isolate the effect of valproic acid from the possible effects of seizure disorders and other drug therapy, the analysis was then confined to the 71 epileptic mothers. Nine (90%) of the 10 such mothers of spina bifida infants had taken valproic acid, compared with 21 (34.4%) of the 61 mothers of infants with other defects (Table 2). The odds ratio of 17.1 is statistically significant.

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Editorial Note: A woman who requires treatment for epilepsy during pregnancy is at increased risk of having a baby with a birth defect. The American Academy of Pediatrics Committee on Drugs offers the following recommendation on alerting women to the risk: "When a woman who has epilepsy and requires medication asks about pregnancy, she should be advised that she has a 90% chance of having a normal child, but that the risk of congenital malformations and mental retardation is two to three times greater than average because of her disease or its treatment" (*1*). The new data from Lyon do not change this general advice.

*The odds ratio is an estimation of relative risk in case-control studies.

TABLE 1. Spina bifida (SB) and treatment with valproic acid (VA) of mothers who have delivered infants with birth defects — Lyon, France

	SB	Other birth defects	Total
VA treatment	9	21	30
No VA treatment	137	6,595	6,732
Total	146	6,616	6,762

odds ratio = 20.6; 95% confidence limits 8.2-47.9; $p < 0.000001$ (2-tail)

Valproic Acid and Spina Bifida – Continued

While the Lyon data suggest that valproic acid taken during the first trimester of pregnancy is associated with spina bifida, other anticonvulsants (phenytoin and trimethadione) have also been associated with increased risk of specific congenital defects (*2,3*). Selection of therapy for a seizure patient who may become pregnant is a complex decision and requires careful consideration of the clinical situation. All anticonvulsants, including valproic acid, carry a warning of potential human teratogenicity in their labeling.

It has been estimated that, in the United States, 700-1,000 pregnant women take valproic acid each year. Given the United States' spina bifida rate of approximately six per 10,000 births (*4*) and a relative risk of 20.6 (as indicated by the French data), the estimated risk of valproic acid-exposed women having children with spina bifida is approximately 1.2%. This risk is similar to that for women who have had previous children with neural-tube defects (anencephaly or spina bifida). The United States has prenatal counseling centers for women at increased risk of having children with spina bifida. Women who may be exposed to valproic acid during pregnancy should contact their physicians for further counseling.

A registry of women currently taking valproic acid during pregnancy is being established in order to better define the risk of such therapy. Physicians of women who are taking valproic acid during pregnancy are urged to report to this registry as soon as possible by calling (404) 452-4080 on weekdays between 8:00 a.m. and 4:30 p.m., Eastern time, or by writing Birth Defects Branch, Center for Environmental Health, Centers for Disease Control, Atlanta, Georgia 30333.

References

1. American Academy of Pediatrics Committee on Drugs. Anticonvulsants and pregnancy. Pediatrics 1979;63:331-3.
2. Hanson JW, Myrianthopoulos NC, Harvey MA, Smith DW. Risks to the offspring of women treated with hydantoin anticonvulsants, with emphasis on the fetal hydantoin syndrome. J Pediatr 1976;89:662-8.
3. Zackai EH, Mellman WJ, Neiderer B, Hanson JW. The fetal trimethadione syndrome. J Pediatr 1975;87:280-4.
4. CDC. Congenital malformations surveillance, January-December 1980. Atlanta: CDC, February 1982:8.

TABLE 2. Spina bifida (SB) and treatment with valproic acid (VA) of mothers who have seizure disorders and who have delivered infants with birth defects – Lyon, France

	SB	Other Birth defects	Total
VA treatment	9	21	30
No VA treatment	1	40*	41
Total	10	61	71

odds ratio = 17.1; 95% confidence limits 2.1-769.5; p = 0.00068 (2-tail)

*Five not treated with anticonvulsants; five with unknown therapy

Current Trends

Rapid Laboratory Virus Diagnosis

A World Health Organization (WHO)/National Bacteriological Laboratory meeting was held in Stockholm, Sweden, from June 16 to June 18, 1982, to review rapid laboratory virus

Virus Diagnosis – Continued

diagnosis, with special emphasis on coordination of production, quality control, and supply of reagents. A summary of the meeting follows.*

Recent advances in rapid diagnostic techniques: Existing rapid diagnostic techniques and recent relevant advances pertaining to a number of viral infections were reviewed. The major advances in viral respiratory-disease diagnosis include the successful extension of immunofluorescence techniques to more laboratories, use of large-scale production of antibodies in eggs, and development of sensitive solid-phase immunoassays for detection of virus antigens in nasopharyngeal secretions. For diarrheal diseases, immunoassays for both rotaviruses and adenoviruses have been further refined and standardized, and monoclonal antibodies have been used in ELISA tests for rotavirus. In the hepatitis area, advances include growth of hepatitis A virus in tissue-culture systems, use of antigens for IgM immunoassays, the recent production of hepatitis B core antigen from bacteria through genetic engineering, and development of immunoassays for both antigen and antibody associated with the "delta" antigen. The diagnosis of dengue has been facilitated by development of monoclonal antibodies to all four dengue types. Detection of IgM antibodies during the acute phase of both dengue and Japanese encephalitis is of value in rapid diagnosis. Development of microscopic slides containing stable, inactivated, formalin-fixed antigens for Lassa and Ebola viruses has facilitated the detection of antibodies by immunofluorescence.

Reagents for quality control and distribution: Preparation of reagents can be commercial or WHO-sponsored, but working reagents supplied by WHO should consist of large lots suitable for quality control and wide distribution. Quality control must be carried out by at least two reference laboratories separate from the producer and must include not only serologic reagents but also the solid-phase supports and any other materials used in each assay system. Advances in biotechnology might change the availability and quality of reagents and the feasibility of production in the near future, but this eventuality should not delay the implementation of current plans.

General recommendations: The Group recommended that a coordinated program be developed to ensure the availability of reagents within the network of WHO Collaborating Centres and National Laboratories for the diagnosis of the following diseases: viral hepatitis; respiratory viral diseases, including measles; viral gastroenteritis; arthropod- and rodent-borne viral diseases; rubella; and herpes-virus-group diseases.

To implement a program in each of these areas, it was agreed that coordinators within the WHO Collaborating Centers, together with their associates, be appointed and assume responsibility for 1) identifying specific tests recommended for rapid diagnosis, taking into account considerations of cost, simplicity, and accuracy; 2) defining reagents and test material required and identifying specific suppliers of reagents; 3) defining minimum standards of quality and performance of reagents and other material; 4) developing a strategy for distributing reagents within the network of WHO Collaborating Centres for Reference and Research and cooperating national laboratories; 5) assisting WHO in developing and implementing training courses and selecting suitable candidates for training; 6) evaluating rapid virus diagnostic tests performed in field situations; and 7) soliciting and reviewing information on new tests and new reagents, including monoclonal antibodies that might have application in rapid virus diagnosis.

Reported by WHO Weekly Epidemiological Record *1982;57:257,261.*

*A full report of the meeting may be obtained from the Virus Diseases Unit, Division of Communicable Diseases, World Health Organization, CH-1211, Geneva 27, Switzerland.

Rubella — United States, 1979-1982

A record low number of 2,077 rubella cases was reported in the United States for 1981. This was a 47% decline from the 1980 total of 3,904 cases (the previous record low) and an 82% decline from the 1979 total of 11,795 cases. During the first 38 weeks of 1982 (ending September 25), 2,018 cases were reported—a 13% increase from the number of cases reported during the same period in 1981 (Figure 1). This increase was due to a three-fold increase in reported cases from California from 445 cases during the first 38 weeks of 1981 to 1,319 cases during the same period in 1982. Reported cases of rubella from all other states declined by 52% during the first 38 weeks of 1982 as compared with the first 38 weeks of 1981.

The National Congenital Rubella Syndrome Registry (NCRSR) maintained at the Immunization Division, CDC, collects detailed data on clinical signs and laboratory test results on patients reported with congenital rubella syndrome (CRS). Reports of CRS are voluntarily submitted to CDC from local and state health departments. Specific criteria are used for classifying patient data submitted to the NCRSR (*1*).*

*Confirmed cases are those with defects compatible with CRS, and with laboratory confirmation of disease. Compatible cases are those with defects compatible with CSR, but without laboratory confirmation.

(Continued on page 573)

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

Disease	42nd Week Ending			Cumulative, First 42 Weeks		
	October 23, 1982	October 24, 1981	Median 1977-1981	October 23, 1982	October 24, 1981	Median 1977-1981
Aseptic meningitis	333	298	252	6,914	7,816	5,980
Brucellosis	2	7	5	129	137	143
Encephalitis: Primary (arthropod-borne & unspec.)	52	40	38	1,099	1,207	952
Post-infectious	-	5	5	49	79	173
Gonorrhea: Civilian	18,583	20,593	20,593	771,070	812,979	807,241
Military	422	378	465	21,438	22,717	22,390
Hepatitis: Type A	475	559	593	18,042	20,241	23,450
Type B	497	436	319	17,031	16,393	13,338
Non A, Non B	54	N	N	1,825	N	N
Unspecified	179	191	191	7,294	8,731	8,309
Legionellosis	6	N	N	420	N	N
Leprosy	8	2	2	159	210	146
Malaria	28	27	17	847	1,169	607
Measles (rubeola)	60	16	88	1,443	2,711	13,059
Meningococcal infections: Total	49	50	38	2,377	2,868	2,152
Civilian	49	50	37	2,364	2,857	2,132
Military	-	-	1	13	11	16
Mumps	77	102	148	4,444	3,596	11,719
Pertussis	36	27	39	1,244	1,015	1,398
Rubella (German measles)	29	25	60	2,093	1,856	10,956
Syphilis (Primary & Secondary): Civilian	679	724	556	26,516	24,874	20,004
Military	10	7	5	357	316	248
Tuberculosis	542	561	556	20,680	21,740	22,193
Tularemia	5	7	3	210	228	168
Typhoid fever	13	21	14	325	479	420
Typhus fever, tick-borne (RMSF)	19	7	8	941	1,126	1,060
Rabies, animal	85	115	105	5,084	6,128	4,185

TABLE II. Notifiable diseases of low frequency, United States

	Cum. 1982		Cum. 1982
Anthrax	-	Poliomyelitis: Total	4
Botulism (Calif. 5)	65	Paralytic	4
Cholera	-	Psittacosis (Mo. 1)	100
Congenital rubella syndrome	5	Rabies, human	-
Diphtheria	2	Tetanus (NYC 1, Minn. 1, Calif. 1)	67
Leptospirosis (La. 1, Tex. 1, Wash. 1, Hawaii 1)	54	Trichinosis (N.J. 1)	74
Plague	17	Typhus fever, flea-borne (endemic, murine) (Tex. 1, Hawaii 2)	36

TABLE III. Cases of specified notifiable diseases, United States, weeks ending October 23, 1982 and October 24, 1981 (42nd week)

Reporting Area	Aseptic Meningitis	Brucellosis	Encephalitis		Gonorrhea (Civilian)		Hepatitis (Viral), by type				Legionellosis	Leprosy
			Primary	Post-infectious			A	B	NA,NB	Unspecified		
	1982	Cum. 1982	Cum. 1982	Cum. 1982	Cum. 1982	Cum. 1981	1982	1982	1982	1982	1982	Cum. 1982
UNITED STATES	333	129	1,099	49	771,070	812,979	475	497	54	179	6	159
NEW ENGLAND	17	3	41	5	18,687	19,892	9	25	-	11	-	1
Maine	1	-	-	-	963	1,063	-	2	-	-	-	-
N.H.	5	-	7	-	618	716	-	1	-	-	-	-
Vt.	-	-	-	-	353	347	-	2	-	-	-	-
Mass.	6	-	14	-	8,422	8,380	4	9	-	11	-	-
R.I.	1	-	-	1	1,233	1,176	3	6	-	-	-	-
Conn.	4	3	20	4	7,098	8,210	2	5	-	-	-	1
MID. ATLANTIC	44	3	112	11	97,597	97,925	72	112	1	13	1	9
Upstate N.Y.	11	3	44	3	15,980	16,737	5	14	1	1	-	1
N.Y. City	7	-	17	-	39,959	40,490	25	44	-	4	1	6
N.J.	12	-	20	-	17,895	18,424	11	20	-	2	-	1
Pa.	14	-	31	8	23,763	22,274	31	34	-	6	-	1
E.N. CENTRAL	59	3	258	10	108,064	121,312	52	41	-	11	-	4
Ohio	23	1	106	4	30,108	38,645	25	29	-	6	-	-
Ind.	6	-	75	3	13,551	10,404	15	-	-	-	-	-
Ill.	-	1	12	1	28,021	34,450	2	3	-	1	-	3
Mich.	30	1	60	-	26,574	26,660	10	9	-	4	-	-
Wis.	-	-	5	2	9,810	11,153	-	-	-	-	-	1
W.N. CENTRAL	9	15	81	4	36,570	38,732	6	9	3	3	1	4
Minn.	1	1	27	1	5,314	5,993	3	3	2	-	-	2
Iowa	2	4	39	1	3,865	4,276	-	-	-	-	1	-
Mo.	1	4	6	-	17,385	17,945	1	6	1	3	-	1
N. Dak.	-	-	-	-	479	489	-	-	-	-	-	-
S. Dak.	-	1	-	1	974	1,052	1	-	-	-	-	1
Nebr.	5	2	4	-	2,190	2,881	-	-	-	-	-	-
Kans.	-	3	5	1	6,363	6,096	1	-	-	-	-	-
S. ATLANTIC	68	24	169	8	200,097	199,639	56	131	10	23	1	9
Del.	-	-	-	-	3,380	3,197	-	10	-	2	-	-
Md.	8	-	22	-	25,254	23,580	1	22	4	2	-	3
D.C.	-	-	-	-	12,037	11,289	-	7	-	-	-	-
Va.	1	7	32	1	16,121	18,383	-	7	-	-	1	1
W. Va.	4	-	15	-	2,293	3,028	1	2	-	-	-	-
N.C.	12	-	26	1	32,273	30,940	4	6	-	4	-	-
S.C.	1	2	2	-	19,732	19,263	13	19	-	1	-	-
Ga.	2	3	14	-	36,994	41,546	12	22	1	4	-	1
Fla.	40	12	58	6	52,013	48,413	25	36	5	10	-	4
E.S. CENTRAL	23	12	59	2	67,186	67,942	17	25	5	-	-	-
Ky.	7	-	1	-	9,083	8,344	10	5	1	-	-	-
Tenn.	3	7	26	-	26,549	25,636	2	16	2	-	-	-
Ala.	10	4	16	2	19,535	20,749	1	4	2	-	-	-
Miss.	3	1	16	-	12,019	13,213	4	-	-	-	-	-
W.S. CENTRAL	18	39	184	1	107,495	107,633	97	29	2	66	-	25
Ark.	-	7	16	-	8,750	8,125	2	-	-	4	-	-
La.	1	8	24	-	20,081	18,778	10	2	-	-	-	-
Okla.	2	5	34	-	11,671	11,623	5	2	2	3	-	-
Tex.	15	19	110	1	66,993	69,107	80	25	-	59	-	25
MOUNTAIN	45	1	40	3	26,269	31,876	53	13	5	12	2	2
Mont.	-	1	-	-	1,094	1,168	2	-	-	-	-	-
Idaho	1	-	-	-	1,277	1,434	1	-	-	-	-	1
Wyo.	-	-	-	-	772	803	-	-	-	-	-	-
Colo.	11	-	19	1	7,061	8,542	8	2	1	-	-	-
N. Mex.	-	-	1	-	3,568	3,521	9	-	-	2	-	-
Ariz.	3	-	11	-	6,860	9,415	25	3	1	7	1	-
Utah	30	-	5	2	1,293	1,586	4	2	1	2	-	1
Nev.	-	-	4	-	4,344	5,407	4	6	2	1	1	-
PACIFIC	50	29	155	5	109,105	128,028	113	112	28	40	1	105
Wash.	5	1	11	-	9,231	10,672	4	4	1	3	-	8
Oreg.	-	-	3	-	6,478	7,651	7	4	1	-	1	1
Calif.	39	27	132	5	88,591	103,895	101	103	25	37	-	67
Alaska	-	1	5	-	2,742	3,290	-	-	-	-	-	1
Hawaii	6	-	4	-	2,063	2,520	1	1	1	-	-	28
Guam	U	-	-	-	97	96	U	U	U	U	U	-
P.R.	-	-	1	1	2,207	2,627	1	-	-	3	-	1
V.I.	U	-	-	-	181	193	U	U	U	U	U	-
Pac. Trust Terr.	U	-	-	-	297	357	U	U	U	U	U	13

N: Not notifiable U: Unavailable

TABLE III. (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending October 23, 1982 and October 24, 1981 (42nd week)

Reporting Area	Malaria		Measles (Rubeola)			Meningococcal Infections (Total)		Mumps		Pertussis	Rubella		
	1982	Cum. 1982	1982	Cum. 1982	Cum. 1981	1982	Cum. 1982	1982	Cum. 1982	1982	1982	Cum. 1982	Cum. 1981
UNITED STATES	28	847	60	1,443	2,711	49	2,377	77	4,444	36	29	2,093	1,856
NEW ENGLAND	-	43	-	15	83	5	127	1	183	2	-	20	119
Maine	-	-	-	-	5	-	9	-	41	-	-	-	33
N.H.	-	2	-	3	6	-	15	-	16	-	-	10	51
Vt.	-	-	-	2	3	1	9	-	7	-	-	-	-
Mass.	-	24	-	4	59	2	32	-	86	2	-	5	23
R.I.	-	3	-	-	-	2	16	-	15	-	-	1	-
Conn.	-	14	-	6	10	-	46	1	18	-	-	4	12
MID. ATLANTIC	7	145	1	162	844	6	424	2	286	13	-	102	221
Upstate N.Y.	-	27	1	112	210	1	147	1	72	3	-	49	107
N.Y. City	2	55	-	42	87	1	82	-	47	2	-	34	54
N.J.	3	32	-	4	58	-	85	1	42	-	-	18	47
Pa.	2	31	-	4	489	4	110	-	125	8	-	1	13
E.N. CENTRAL	-	58	-	76	81	6	293	28	2,250	2	2	181	386
Ohio	-	12	-	1	16	3	105	15	1,592	2	-	-	3
Ind.	-	3	-	2	9	-	29	-	37	-	-	28	132
Ill.	-	13	-	23	23	1	74	3	185	-	1	67	98
Mich.	-	26	-	50	30	2	68	9	323	-	-	49	34
Wis.	-	4	-	-	3	-	17	1	113	-	1	37	119
W.N. CENTRAL	-	20	-	49	10	5	111	6	582	1	-	59	78
Minn.	-	2	-	-	3	2	29	4	443	-	-	5	7
Iowa	-	7	-	-	1	2	11	-	34	1	-	-	4
Mo.	-	5	-	2	1	-	29	1	18	-	-	38	2
N. Dak.	-	1	-	-	-	-	6	-	-	-	-	-	-
S. Dak.	-	-	-	-	-	1	5	-	1	-	-	1	-
Nebr.	-	3	-	3	4	-	13	-	-	-	-	-	1
Kans.	-	2	-	44	1	-	18	1	86	-	-	15	64
S. ATLANTIC	3	121	37	81	444	13	505	5	270	7	1	82	136
Del.	-	4	-	-	-	-	-	-	13	-	-	1	1
Md.	-	19	-	3	5	-	34	-	29	-	-	34	1
D.C.	-	4	-	1	1	1	4	-	-	-	-	-	-
Va.	-	39	-	14	9	-	59	1	37	1	-	13	6
W. Va.	-	7	-	3	9	-	9	1	94	2	-	1	22
N.C.	3	6	-	1	3	2	99	-	16	1	-	1	5
S.C.	-	4	-	-	2	5	60	1	17	-	-	1	8
Ga.	-	15	-	-	111	-	101	2	18	2	-	14	37
Fla.	-	23	37	59	304	5	139	-	46	1	1	17	56
E.S. CENTRAL	1	9	2	9	5	2	146	-	52	1	-	46	36
Ky.	-	5	-	1	1	1	25	-	18	-	-	28	22
Tenn.	-	-	-	6	2	1	64	-	19	1	-	2	13
Ala.	1	1	2	2	2	-	46	-	9	-	-	-	1
Miss.	-	3	-	-	-	-	11	-	6	-	-	16	-
W.S. CENTRAL	3	61	15	149	862	3	282	15	208	4	5	111	168
Ark.	-	4	-	-	21	1	14	-	7	-	-	1	3
La.	1	5	-	2	4	1	60	-	6	3	-	1	9
Okla.	-	8	-	30	6	-	27	-	-	-	-	3	2
Tex.	2	44	15	117	831	1	181	15	195	1	5	106	154
MOUNTAIN	-	27	4	23	35	1	104	7	99	1	-	78	93
Mont.	-	1	-	-	-	-	4	-	3	-	-	5	3
Idaho	-	2	-	-	1	-	7	-	4	-	-	6	4
Wyo.	-	-	-	1	1	-	5	-	2	-	-	7	11
Colo.	-	11	-	6	10	1	44	-	16	1	-	6	30
N. Mex.	-	3	-	-	8	-	15	-	-	-	-	6	5
Ariz.	-	7	4	16	5	-	18	6	47	-	-	14	21
Utah	-	3	-	-	-	-	9	-	20	-	-	22	8
Nev.	-	-	-	-	10	-	2	1	7	-	-	12	11
PACIFIC	14	363	1	879	347	8	385	13	514	5	21	1,414	619
Wash.	-	20	-	41	3	3	46	2	66	-	-	38	89
Oreg.	1	14	-	23	5	-	71	-	-	-	-	6	53
Calif.	13	324	1	809	332	5	253	10	422	5	21	1,357	461
Alaska	-	1	-	1	-	-	11	-	10	-	-	5	1
Hawaii	-	4	-	5	7	-	4	1	16	-	-	8	15
Guam	U	1	U	6	6	U	2	U	3	U	U	2	2
P.R.	-	4	2	127	283	-	8	3	78	-	-	11	4
V.I.	U	-	U	-	24	U	-	U	3	U	U	-	1
Pac. Trust Terr.	U	-	U	-	1	U	2	U	5	U	U	-	1

U: Unavailable

TABLE III. (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending October 23, 1982 and October 24, 1981 (42nd week)

Reporting Area	Syphilis (Civilian) (Primary & Secondary)		Tuberculosis		Tularemia	Typhoid Fever		Typhus Fever (Tick-borne) (RMSF)		Rabies, Animal
	Cum. 1982	Cum. 1981	1982	Cum. 1982	Cum. 1982	1982	Cum. 1982	1982	Cum. 1982	Cum. 1982
UNITED STATES	26,516	24,874	542	20,680	210	13	325	19	941	5,084
NEW ENGLAND	473	479	16	573	6	-	17	-	10	40
Maine	4	5	2	49	-	-	-	-	-	26
N.H.	1	12	-	20	-	-	-	-	1	1
Vt.	2	15	-	13	-	-	2	-	-	1
Mass.	318	309	11	363	6	-	13	-	5	6
R.I.	20	29	1	25	-	-	-	-	2	-
Conn.	128	109	2	103	-	-	2	-	2	6
MID. ATLANTIC	3,594	3,600	109	3,456	7	2	59	2	43	181
Upstate N.Y.	373	353	20	602	7	-	9	-	15	97
N.Y. City	2,141	2,141	55	1,326	-	2	31	1	3	-
N.J.	499	510	5	653	-	-	11	-	13	17
Pa.	581	596	29	875	-	-	8	1	12	67
E.N. CENTRAL	1,514	1,888	78	3,136	1	-	26	-	82	522
Ohio	259	252	11	524	-	-	12	-	76	74
Ind.	167	239	10	391	-	-	2	-	-	70
Ill.	774	1,018	32	1,348	-	-	3	-	6	263
Mich.	239	302	19	706	-	-	8	-	-	6
Wis.	75	77	6	167	1	-	1	-	-	109
W.N. CENTRAL	455	548	27	609	32	2	16	-	33	1,053
Minn.	104	166	2	106	-	2	8	-	-	182
Iowa	26	24	4	63	2	-	1	-	4	339
Mo.	259	311	14	295	21	-	4	-	11	105
N. Dak.	7	8	-	12	-	-	-	-	-	87
S. Dak.	2	2	1	27	1	-	-	-	4	88
Nebr.	11	9	2	26	3	-	2	-	2	114
Kans.	46	28	4	80	5	-	1	-	12	138
S. ATLANTIC	7,259	6,621	122	4,281	12	-	39	8	506	962
Del.	20	13	-	38	-	-	-	-	-	2
Md.	390	479	19	493	1	-	9	1	49	53
D.C.	390	538	16	180	-	-	-	-	-	-
Va.	496	571	22	472	4	-	3	-	72	513
W. Va.	25	21	3	132	-	-	4	-	8	38
N.C.	584	519	4	671	-	-	2	6	217	65
S.C.	446	463	14	409	6	-	3	-	105	54
Ga.	1,525	1,637	20	673	-	-	-	1	50	174
Fla.	3,383	2,380	24	1,213	1	-	18	-	5	63
E.S. CENTRAL	1,830	1,630	45	1,901	8	2	19	2	88	574
Ky.	110	91	18	505	-	2	4	-	1	118
Tenn.	524	594	12	614	6	-	3	1	56	318
Ala.	676	480	9	510	-	-	9	1	15	131
Miss.	520	465	6	272	2	-	3	-	16	7
W.S. CENTRAL	6,950	5,943	33	2,512	108	1	33	6	160	976
Ark.	170	126	6	290	64	-	5	1	28	135
La.	1,554	1,350	-	366	3	-	3	-	2	31
Okla.	147	133	-	279	31	-	3	3	75	168
Tex.	5,079	4,334	27	1,577	10	1	22	2	55	642
MOUNTAIN	674	614	18	580	27	-	13	1	13	259
Mont.	5	11	-	37	4	-	-	-	4	84
Idaho	24	18	-	28	1	-	-	1	4	10
Wyo.	16	10	-	6	5	-	-	-	1	21
Colo.	179	181	4	72	4	-	3	-	1	47
N. Mex.	153	107	1	99	2	-	-	-	1	23
Ariz.	183	157	9	240	-	-	7	-	-	52
Utah	20	23	3	39	11	-	2	-	-	18
Nev.	94	107	1	59	-	-	1	-	2	4
PACIFIC	3,767	3,551	94	3,632	9	6	103	-	6	517
Wash.	128	148	7	230	1	-	6	-	-	7
Oreg.	91	90	3	145	1	-	4	-	1	3
Calif.	3,444	3,244	73	2,952	6	6	89	-	5	428
Alaska	14	11	-	74	1	-	1	-	-	79
Hawaii	90	58	11	231	-	-	3	-	-	-
Guam	1	-	U	36	-	U	-	U	-	-
P.R.	647	542	-	352	-	-	2	-	-	45
V.I.	21	15	U	1	-	U	-	U	-	-
Pac. Trust Terr.	-	-	U	91	-	U	-	U	-	-

U: Unavailable

TABLE IV. Deaths in 121 U.S. cities,* week ending October 23, 1982 (42nd week)

Reporting Area	All Causes, By Age (Years)						P&I** Total
	All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	669	463	134	37	19	16	43
Boston, Mass.	198	125	42	15	6	10	21
Bridgeport, Conn.	46	35	7	1	1	2	4
Cambridge, Mass.	21	18	2	1	-	-	2
Fall River, Mass.	34	29	5	-	-	-	-
Hartford, Conn.	67	41	18	5	2	1	2
Lowell, Mass.	27	17	8	2	-	-	-
Lynn, Mass.	24	22	1	1	-	-	1
New Bedford, Mass.	21	11	6	2	2	-	-
New Haven, Conn.	32	28	2	1	1	-	1
Providence, R.I.	61	44	10	2	2	3	5
Somerville, Mass.	10	7	3	-	-	-	-
Springfield, Mass.	49	31	12	4	2	-	4
Waterbury, Conn.	29	21	5	2	1	-	2
Worcester, Mass.	50	34	13	1	2	-	1
MID. ATLANTIC	2,399	1,560	532	175	56	76	96
Albany, N.Y.	49	29	10	3	1	6	-
Allentown, Pa.	21	19	2	-	-	-	-
Buffalo, N.Y.	125	78	25	10	4	8	12
Camden, N.J.	38	26	8	3	1	-	1
Elizabeth, N.J.	26	16	7	2	1	-	-
Erie, Pa.†	38	30	6	1	-	1	1
Jersey City, N.J.	57	42	10	2	3	-	3
N.Y. City, N.Y.	1,398	897	314	112	33	42	44
Newark, N.J.	64	33	17	7	4	3	10
Paterson, N.J.	40	28	6	4	2	-	3
Philadelphia, Pa.†	118	68	26	9	4	11	3
Pittsburgh, Pa.†	61	35	18	5	-	3	-
Reading, Pa.	27	23	4	-	-	-	2
Rochester, N.Y.	123	89	25	6	2	1	8
Schenectady, N.Y.	27	22	5	-	-	-	1
Scranton, Pa.†	25	14	8	2	-	1	2
Syracuse, N.Y.	72	47	21	3	1	-	1
Trenton, N.J.	31	20	10	1	-	-	-
Utica, N.Y.	25	20	4	1	-	-	1
Yonkers, N.Y.	34	24	6	4	-	-	4
E.N. CENTRAL	2,292	1,475	518	148	71	79	61
Akron, Ohio	78	50	13	7	4	4	-
Canton, Ohio	42	28	10	2	1	1	1
Chicago, Ill	509	298	137	32	20	22	12
Cincinnati, Ohio	142	86	38	10	3	5	9
Cleveland, Ohio	176	106	40	19	6	5	-
Columbus, Ohio	139	90	29	12	3	5	6
Dayton, Ohio	95	61	22	5	3	4	2
Detroit, Mich.	265	166	64	22	5	8	4
Evansville, Ind.	49	36	10	2	-	1	-
Fort Wayne, Ind.	52	32	15	2	3	-	2
Gary, Ind.	23	12	6	5	-	-	1
Grand Rapids, Mich.	50	36	11	2	1	-	2
Indianapolis, Ind.	153	90	43	9	3	8	2
Madison, Wis.	31	17	6	1	1	6	1
Milwaukee, Wis.	166	122	27	7	5	5	6
Peoria, Ill.	52	34	15	1	2	-	6
Rockford, Ill.	45	29	9	4	2	1	2
South Bend, Ind.	55	37	8	3	5	2	3
Toledo, Ohio §	101	96	-	1	2	1	2
Youngstown, Ohio	69	49	15	2	2	1	-
W.N. CENTRAL	738	505	142	36	20	35	31
Des Moines, Iowa	69	46	19	3	-	1	5
Duluth, Minn.	26	22	3	-	1	-	1
Kansas City, Kans.	38	27	7	2	-	2	1
Kansas City, Mo.	118	77	28	5	3	5	6
Lincoln, Nebr.	29	22	5	-	1	1	1
Minneapolis, Minn.	91	57	11	10	5	8	3
Omaha, Nebr.	68	52	11	2	2	1	6
St. Louis, Mo.	172	117	30	8	5	12	5
St. Paul, Minn.	72	53	13	1	2	3	2
Wichita, Kans.	55	32	15	5	1	2	1
S. ATLANTIC	1,098	698	239	76	43	39	30
Atlanta, Ga.	156	88	41	20	4	3	4
Baltimore, Md.	200	106	64	16	8	6	4
Charlotte, N.C.	74	48	13	6	3	4	2
Jacksonville, Fla.	92	59	15	7	5	6	1
Miami, Fla.	82	49	21	3	7	2	-
Norfolk, Va.	49	28	15	1	1	4	2
Richmond, Va.	74	47	12	8	5	2	6
Savannah, Ga.	39	30	6	2	1	-	2
St. Petersburg, Fla.	83	61	18	1	-	3	4
Tampa, Fla.	76	44	21	5	3	3	1
Washington, D.C. §	129	113	1	4	3	5	2
Wilmington, Del.	44	25	12	3	3	1	2
E.S. CENTRAL	740	470	179	33	32	26	30
Birmingham, Ala.	124	73	31	5	10	5	2
Chattanooga, Tenn.	66	51	9	3	3	-	5
Knoxville, Tenn.	57	38	13	3	2	1	5
Louisville, Ky.	125	84	24	6	6	5	7
Memphis, Tenn.	160	106	31	7	7	9	4
Mobile, Ala.	24	14	7	1	-	2	1
Montgomery, Ala.	44	27	15	-	-	2	2
Nashville, Tenn.	140	77	49	8	4	2	4
W.S. CENTRAL	993	544	267	77	39	66	22
Austin, Tex.	43	25	12	1	3	2	1
Baton Rouge, La.	23	12	10	1	-	-	1
Corpus Christi, Tex.	50	27	12	6	2	3	-
Dallas, Tex.	187	102	52	14	6	13	2
El Paso, Tex.	72	41	15	6	2	8	3
Fort Worth, Tex.	78	49	20	4	5	-	2
Houston, Tex.	58	28	16	9	3	2	-
Little Rock, Ark.	59	34	18	2	1	4	3
New Orleans, La.	123	59	28	10	3	23	-
San Antonio, Tex.	181	89	58	17	10	7	6
Shreveport, La.	36	23	11	-	2	-	2
Tulsa, Okla.	83	55	15	7	2	4	2
MOUNTAIN	670	414	169	48	19	20	32
Albuquerque, N.Mex.	83	42	23	13	2	3	2
Colo. Springs, Colo.	32	23	6	2	1	-	6
Denver, Colo.	132	72	42	10	3	5	3
Las Vegas, Nev.	72	36	25	6	4	1	4
Ogden, Utah	25	17	8	-	-	-	-
Phoenix, Ariz.	168	117	32	9	4	6	3
Pueblo, Colo.	26	21	5	-	-	-	3
Salt Lake City, Utah	47	24	10	6	4	3	-
Tucson, Ariz.	85	62	18	2	1	2	11
PACIFIC	1,692	1,072	395	130	47	45	65
Berkeley, Calif.	16	13	1	2	-	-	1
Fresno, Calif.	78	55	12	5	4	2	2
Glendale, Calif.	26	24	2	-	-	-	1
Honolulu, Hawaii	64	38	17	3	4	2	1
Long Beach, Calif.	97	57	31	8	1	-	4
Los Angeles, Calif.	490	300	119	45	14	10	13
Oakland, Calif.	51	32	11	7	-	1	1
Pasadena, Calif.	35	24	5	3	2	1	4
Portland, Oreg.	135	82	38	7	4	4	8
Sacramento, Calif.	55	32	11	5	2	5	5
San Diego, Calif.	120	70	35	10	3	2	7
San Francisco, Calif.	129	80	38	5	2	4	-
San Jose, Calif.	156	108	27	14	3	3	9
Seattle, Wash.	151	97	32	12	4	6	5
Spokane, Wash.	46	29	9	3	4	1	4
Tacoma, Wash.	43	31	7	1	-	4	-
TOTAL	11,291††	7,201	2,575	760	346	402	410

* 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.

Rubella — Continued

Since 1979, the annual provisional total of both confirmed and compatible CRS cases has declined from 53 in 1979 to 17 in 1980 to five in 1981.† This decrease in reported confirmed and compatible CRS cases correlates with the decline in the reported incidence rate of rubella among women of childbearing age.

Age-specific data were available for 1,674 (81%) of the cases reported for 1981. The age-specific incidence rates of rubella have continued to decline for all age groups over the past 3 years. The greatest decline between 1980 and 1981 occurred in the 15- to 19- and 20- to 24-year-old age groups (Table 3), an occurrence first reported in 1980. In 1978 and 1979, 74% of the reported rubella cases were among persons ≥15 years old, and the highest rate was in the 15- to 19-year-old age group. In 1981, however, only 37% of the cases were reported among persons ≥15 years old, and the highest rate occurred among the <5-year-olds. In 1981, for the first time since age-specific reporting was instituted on a national basis in 1975, the rate among schoolage children 5-9 years old significantly exceeded the rate in 15- to 19-year-olds.

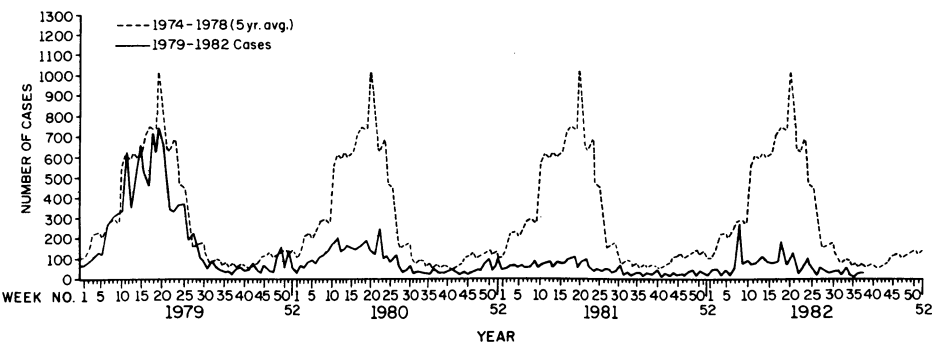
Reported by Immunization Br, Center for Prevention Svcs, CDC.

Editorial Note: The initial recommendation of the Public Health Service Immunization Practices Advisory Committee (ACIP) for rubella control was to vaccinate preschool and elementary school children of both sexes; vaccination of older individuals received only secondary emphasis. This approach caused a dramatic decline in rubella incidence and eliminated the characteristic 6- to 9-year cycle of epidemic rubella (*2*). It also resulted in a marked change in the age characteristics for reported rubella patients.

The 1981 and 1982 surveillance data, excluding California, (cases from California generally involved adults in outbreaks at hospitals, universities, and places of employment) continue to show a steady decline in reported cases of rubella to record low levels. Some of this decrease may be due to the Childhood Immunization Initiative that began in 1977, the goal of which was to achieve and maintain immunization levels in excess of 90% for all childhood vaccine-preventable diseases including rubella. Assessment of rubella immunization levels of 3.4 million children entering school (kindergarten and 1st grade) in the 50 states and the District of Columbia showed a level of 96% for the 1981-1982 school year. To ensure continued high immunity

†Cases in the CRS registry are reported by date of birth. Data are reported as provisional until at least 3 years have elapsed since year of birth. Data from 73 of the most recent reports with known date of birth and date of report showed that 64 (88%) cases were reported within the first year after birth.

FIGURE 1. Rubella incidence by week — United States, 1979-1982*



*1982 data is through the first 38 weeks (ending September 25).

Rubella – Continued

levels, all 50 states and the District of Columbia have enacted and enforced rubella-immunization requirements for school entry. The Measles Elimination Initiative, begun in 1978, has also had a major impact on the reduction of rubella incidence, since most of the measles vaccine administered during this program has been given as MMR (combined measles, mumps, rubella vaccine) or MR (combined measles, rubella vaccine). Approximately 75% of the measles vaccine administered in the public sector has been MMR or MR vaccine.

Before rubella vaccine became available in 1969, most reported rubella cases occurred among children <15 years of age. The initial rubella control policy lowered the attack rates for all age groups, but with proportionately greater declines in the <15-year age group. Data on age-specific incidence rates for 1981 show that rates for adolescents and young adults are now lower than those for young children. The greater recent decrease in rubella incidence among adolescents and young adults probably resulted because 1) young children targeted for vaccination during 1969 and the early 1970s have moved into older age groups, and 2) efforts have increased over the past 3-4 years to vaccinate the remaining susceptible adolescents and young adults. In the <5-year age group, 287 (46%) of the 626 reported cases were <1 year of age and thus below the earliest recommended age for vaccination.

TABLE 3. Percentage distribution and estimated incidence rates* of reported rubella cases, by age group – United States, 1979-1981

Age group	1979 No.	1979 %	1979 Rate	1980 No.	1980 %	1980 Rate	1981† No.	1981† %	1981† Rate	Percentage rate change 1979-1981†
<1	339§	4.3	14.8	294§	10.0	11.0	287	17.1	9.9	-33.1
1-4	443§	5.6	5.2	401§	13.6	4.1	339	20.3	3.2	-38.5
5-9	583§	7.3	5.1	477	16.2	3.8	277	16.5	2.1	-58.8
10-14	943	11.9	7.6	390	13.2	2.8	153	9.1	1.0	-86.8
15-19	2,748	34.6	19.1	602	20.4	3.8	210	12.5	1.3	-93.2
20-24	1,803§	22.7	12.7	438§	14.9	2.7	162	9.7	0.9	-92.9
25-29	516§	6.5	4.0	165§	5.6	1.1	102	6.1	0.6	-85.0
≥30	569	7.2	0.8	177	6.0	0.2	144¶	8.6	0.2	-75.0
Total Age known	7,944	67.4	—	2,944	75.4	—	1,674	80.6	—	—
Total Age unknown	3,851	32.6	—	960	24.6	—	403	19.4	—	—
TOTAL	11,795	100.0	5.3	3,904	100.0	1.7	2,077	100.0	0.9	-83.0

*Estimated incidence rate = cases per 100,000 population extrapolated from the age distribution of cases reported by age from 46 reporting areas in 1979 and 51 areas in 1980 and 1981.

†Provisional Data

§Excludes Arizona

¶Excludes Illinois

Rubella – Continued

Increased efforts to vaccinate adolescents and young adults were prompted by continued reporting of 27-59 cases of CRS per year from 1971 through 1979 (*2*) and by the knowledge that 10%-25% of adolescents and adults were susceptible to rubella (*3-5*). In the public sector, where between 40% and 50% of the rubella vaccine is distributed and administered, increasing numbers of doses were given to persons ≥15 years of age between 1979 and 1981; 234,000 doses were given in 1979, 325,000 in 1980, and 333,000 in 1981.

The current strategy for rubella control is to vaccinate 1) all infants at approximately 15 months of age in combination with measles and mumps vaccine; 2) all schoolchildren who were not vaccinated in infancy; and 3) susceptible individuals who have left high school, particularly females of childbearing age, military personnel, students and employees of educational and training institutions (such as colleges and universities), and health personnel of both sexes (*6*).

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The editor welcomes accounts of interesting cases, outbreaks, environmental hazards, or other public health problems of current interest to health officials. Such reports and any other matters pertaining to editorial or other textual considerations should be addressed to: ATTN: Editor, *Morbidity and Mortality Weekly Report*, Centers for Disease Control, Atlanta, Georgia 30333.

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