CENTERS FOR DISEASE CONTROL

August 17, 1984 / Vol. 33 / No. 32

MMWR

MORBIDITY AND MORTALITY WEEKLY REPORT

Epidemiologic Notes and Reports

Vietnam Veterans' Risks for Fathering Babies with Birth Defects

Vietnam veterans' risks for fathering babies born with serious structural birth defects were assessed using a case-control study. Case-group babies—those with serious structural defects—were born during 1968 through 1980 and registered by CDC's Metropolitan Atlanta Congenital Defects Program (MACDP). This program registers babies born with structural defects to women who are residents of the five-county metropolitan Atlanta area. To be included in the registry, a baby's defects must have been diagnosed during the first year of life and recorded on a hospital chart by a physician. The use of MACDP as the source of cases precluded analysis of other reproductive outcomes in the fathers or functional deficits, such as mental retardation, in the babies.

Control-group babies—those born without defects—were chosen from among 323,421 babies who were born in the same metropolitan area to resident mothers during the same period. They were frequency-matched to the case-group babies by race, year of birth, and hospital of birth. A total of 7,133 case-group babies and 4,246 control-group babies were eligible for the study. The decision to include fewer control-group babies than case-group babies was based on a review of the anticipated statistical power of the study.

In all, 4,929 mothers of case-group babies and 3,029 mothers of control-group babies completed interviews; fewer fathers completed interviews—3,977 from the case group and 2,426 from the control group. The major reason for parents' not participating in the study was that they could not be located after extensive searching.

Information about paternal military service in Vietnam was obtained during 1982 and 1983 through telephone interviews with the parents of the case- and control-group babies. Vietnam veteran fathers were asked if they believed they had been exposed to herbicides, such as Agent Orange. In addition, a five-level "Exposure Opportunity Index" (EOI) was defined based on activities that may have provided an opportunity for exposure to Agent Orange. Vietnam veteran fathers were given subjective scores by the staff of the Army Agent Orange Task Force reflecting their presumed opportunities for exposure to Agent Orange; the EOI scores were assigned on the basis of times and places of service in Vietnam and occupational duties. Scores were assigned without knowledge of the case/control status of the fathers. Both parents were questioned about a wide variety of other potential risk factors for birth defects. In addition, Vietnam veteran fathers were asked whether they had contracted malaria in Vietnam and whether they had taken malaria chemoprophylaxis there.

Defects occurring among the case-group babies were divided into 96 diagnostic categories for data analysis. Most of the 96 categories were comprised of specific defects, such as anencephaly, ventricular septal defect, and Down syndrome. Some categories were formed by grouping specific types of defects; one comprised all types of defects combined (i.e., the complete case series).

Birth Defects – Continued

For each of these 96 categories, four hypotheses were tested: (1) whether veterans, excluding Vietnam veterans, were at different risk than nonveterans for fathering babies with birth defects; (2) whether Vietnam veterans were at different risk for fathering babies with birth defects; (3) whether Vietnam veterans who were judged by the Army Agent Orange Task Force to have had greater opportunities for exposure to Agent Orange had different risks for fathering babies with defects; and (4) whether Vietnam veterans who said during the interview that they had been exposed to herbicides, such as Agent Orange, were at different risk. Testing the first hypothesis determined whether, for the tests of the remaining three hypotheses, Vietnam veterans' risks should be compared with those of other veterans or with those of other veterans and nonveterans combined. Testing the second hypothesis was the main focus of this study.

Fathers of 428 case-group babies were Vietnam veterans; fathers of 268 control-group babies were Vietnam veterans. Fathers of 4,387 case-group babies and fathers of 2,699 control-group babies were not Vietnam veterans.

The estimated relative risk of Vietnam veterans' fathering babies with defects when all types of defects are combined was 0.97 (95% confidence limits 0.83-1.14). With few exceptions, the estimated relative risks of Vietnam veterans' fathering babies with defects in the remaining 95 defect groups were similar. Similarly, there was little evidence of different risks for Vietnam veterans who had been assigned higher Agent Orange EOI scores or for Vietnam veterans who had stated during the interview that they believed they had been exposed.

It was determined that, for most defect groups, Vietnam veterans' risks were neither higher nor lower than those of other fathers. In any large study in which multiple statistical tests are done, some exceptions are expected. Some of this study's exceptions are noted below. The estimated risks for fathering babies with spina bifida (imperfectly formed spinal cord) were higher for Vietnam veteran fathers who received higher EOI scores. Vietnam veterans who had higher scores had higher estimated risks for fathering babies with cleft lip with or without cleft palate. Vietnam veterans who received higher scores had higher estimated risks for fathering babies with defects classified as "Other Neoplasms," which include teratomas, neuroblastomas, hamartomas, dermoid cysts, lipomas, central nervous system tumors, Wilms tumor, and miscellaneous benign tumors. Vietnam veterans, in general, had a lower risk for fathering babies with cardiovascular defects classified as "complex" defects (two or more cardiovascular defects). Vietnam veterans who stated they had contracted malaria while in Vietnam had a higher estimated risk for fathering babies born with hypospadias.

No associations between risks of defects and use of malaria chemoprophylaxis were found.

Reported by Chronic Diseases Div, Center for Environmental Health, CDC.

Editorial Note:The most important conclusion to be drawn from this study is that the data collected contain no evidence to indicate that Vietnam veterans have had a greater risk than other men for fathering babies with defects when all types of serious structural birth defects are combined. This study cannot prove that some factor associated with service in Vietnam was or was not associated with the occurrence of rare types of defects, defects in the babies of selected individuals, or defects in the babies of small groups of veterans. The conclusion, however, that Vietnam veterans in general have not fathered, at higher rates than other men, babies with defects when all types of birth defects are combined is based on relatively strong evidence.

All parents are at some risk of having a baby born with birth defects. Because this risk is always there, it is called a "background risk." All men, whether Vietnam veterans or not, who father babies, have the same background risk—about two or three chances out of 100 that their babies will have serious structural birth defects.

Assessing Vietnam veterans' risks associated with exposure to Agent Orange is difficult.

Birth Defects – Continued

The measures of exposure that can be obtained today are imperfect, at best. The ability of Vietnam veterans to give valid reports of exposure is unknown, and the records used for the assignment of EOI scores were made for military purposes, not for health studies. This limitation makes it particularly difficult to assess whether the few statistically significant associations found in this study between defects and greater opportunity for exposure to Agent Orange are likely to reflect true effects of exposure or whether they are merely chance occurrences.

Moreover, the estimated relative risks for the exceptions presented here are rather low. These exceptions could conceivably be due to unmeasured confounding factors and may not be biologically significant. The same reasoning can be applied to the statistically significant association of malaria and hypospadias and the statistically significant association observed for babies with complex cardiovascular defects being fathered by Vietnam veterans.

A summary report of this study has recently been published (*1*), and a more comprehensive report is available from CDC. Copies of these reports can be obtained from CDC's Chronic Diseases Division, Center for Environmental Health.

Reference

1. Erickson JD, Mulinare J, McClain PW, et al. Vietnam veterans' risks for fathering babies with birth defects. JAMA 1984:252;903-12.

International Notes

Update: Incidence of Low Birth Weight

The birth weight of an infant is the single most important determinant of its chances of survival and healthy growth and development. Because birth weight is conditioned by the health and nutritional status of the mother, the proportion of infants born with low birth weights (LBW) closely reflects the health status of the communities into which they are born.

LBW has been defined as a birth weight of less than 2,500 g. It can be caused either by premature delivery (short gestation) or by fetal growth retardation. In countries where the proportion of LBW infants is low, most are preterm. In countries where the proportion is high, the majority of LBW infants suffer from fetal growth retardation. The causes of fetal growth retardation are multiple and interrelated and include low maternal food intake, hard physical work during pregnancy, and illness, especially infections. Short maternal stature, very young age, high parity, and close birth spacing are all associated factors.

It is clear from the many causes that there is no single solution to LBW. Interventions have to be cause-specific. Prenatal care, nutrition programs, health education on the needs of pregnant women, family planning, and measures aimed at improving the health and nutrition of young girls all factor in the solution.

At the Thirty-fourth World Health Assembly, the Member States of the World Health Organization (WHO) adopted, as part of the global strategy for health for all by the year 2000, the proportion of infants born with an LBW as one of a number of global indicators with which to monitor progress.

Associated with the use of this indicator, however, are a number of practical problems. In developed countries, most infants are weighed at birth; in developing countries, usually only those born in institutions are weighed. These infants constitute a small—usually privileged—minority. A recent survey has shown that only about one-third of births in the developing world take place in institutions; in some countries, the proportion is lower than one-fifth. Even when records of birth weights exist at the institutional level, they are rarely collated at the national level.

Low Birth Weight — Continued

For these reasons, and to obtain an approximate global picture of the availability of data and the extent of the problem of LBW, the Division of Family Health, WHO, Geneva, undertook in 1979 a widespread search of all available sources of information. The results of this search and details of the methodology employed have been published (*1*). At that time, it was estimated that 21 million LBW infants were born in 1979.

The present review updates that search. A new search, carried out at the end of 1983, yielded some new information on 90 countries, including 20 for which no previous information was available. This brings the total number of countries for which some information is available to 112. The new information was compared to that of the previous search and new estimates made where the data seemed to warrant it.*

Taken as a whole, the data would tend to indicate a slight decrease in the incidence of LBW. It is estimated that, of the 127 million infants born in 1982, 16.0%—some 20 million—had an LBW. This constitutes a decrease in both relative and absolute terms when compared to the estimates for 1979—21 million LBW infants making up 16.8% of the 122 million born that year. For developing countries only, the proportion has fallen from 18.4% to 17.6%.

*Details of the studies on which the estimates are based are available from the Division of Family Health, WHO, 1211 Geneva 27, Switzerland.

(Continued on page 465)

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

Disease	32nd Week Ending			Cumulative, 32nd Week Ending		
	Aug. 11 1984	Aug. 13, 1983	Median 1979-1983	Aug. 11 1984	Aug. 13 1983	Median 1979-1983
Acquired Immunodeficiency Syndrome (AIDS)	83	N	N	2,480	N	N
Aseptic meningitis	251	523	366	3,270	4,633	3,873
Encephalitis: Primary (arthropod-borne & unspec.)	25	61	36	554	771	644
Post-infectious	1	2	3	66	62	62
Gonorrhea: Civilian	15,948	19,593	21,097	495,436	543,763	594,042
Military	407	798	706	12,954	14,891	16,752
Hepatitis: Type A	417	426	463	12,684	12,772	15,597
Type B	527	489	418	15,224	14,397	12,431
Non A, Non B	74	70	N	2,255	2,109	N
Unspecified	116	126	198	3,587	4,383	6,144
Legionellosis	11	18	N	349	438	N
Leprosy	4	3	3	135	155	126
Malaria	23	20	28	519	465	637
Measles: Total*	22	12	41	2,140	1,182	2,479
Indigenous	17	10	N	1,894	986	N
Imported	5	2	N	246	196	N
Meningococcal infections: Total	29	35	45	1,878	1,893	1,893
Civilian	29	35	45	1,874	1,878	1,878
Military	-	-	-	4	15	13
Mumps	32	25	50	2,072	2,335	4,108
Pertussis	47	61	61	1,190	1,321	830
Rubella (German measles)	9	10	11	489	738	1,872
Syphilis (Primary & Secondary): Civilian	451	673	672	16,838	19,733	18,411
Military	5	8	8	212	256	232
Toxic Shock syndrome	14	7	N	269	286	N
Tuberculosis	403	452	556	13,019	14,116	16,354
Tularemia	17	10	7	182	176	138
Typhoid fever	11	10	10	188	230	273
Typhus fever, tick-borne (RMSF)	35	58	48	507	757	757
Rabies, animal	94	104	139	3,069	3,929	3,929

TABLE II. Notifiable diseases of low frequency, United States

	Cum. 1984		Cum. 1984
Anthrax	1	Plague (Tex. 1)	17
Botulism: Foodborne	7	Poliomyelitis: Total	2
Infant (Utah 1)	61	Paralytic	2
Other (Tex. 1)	5	Psittacosis (Calif. 1)	50
Brucellosis (Ark. 1, Tex. 1)	64	Rabies, human (Tex. 1)	1
Cholera	-	Tetanus	34
Congenital rubella syndrome	3	Trichinosis	56
Diphtheria	-	Typhus fever, flea-borne (endemic, murine) (Tex. 1)	13
Leptospirosis	10		

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

TABLE III. Cases of specified notifiable diseases, United States, weeks ending August 11, 1984 and August 13, 1983 (32nd Week)

Reporting Area	AIDS	Aseptic Meningitis	Encephalitis		Gonorrhea (Civilian)		Hepatitis (Viral), by type				Legionellosis	Leprosy
			Primary	Post-infectious			A	B	NA,NB	Unspecified		
	Cum. 1984	1984	Cum. 1984	Cum. 1984	Cum. 1984	Cum. 1983	1984	1984	1984	1984	1984	Cum. 1984
UNITED STATES	2,480	251	554	66	495,436	543,763	417	527	74	116	11	135
NEW ENGLAND	83	22	33	1	14,230	13,582	7	36	3	9	1	6
Maine	1	1	-	-	576	691	-	-	-	-	-	-
N.H.	1	3	4	-	402	432	-	2	-	-	-	-
Vt.	-	1	3	-	230	254	-	-	-	-	-	-
Mass.	44	14	18	-	5,824	5,802	-	17	1	8	-	4
R.I.	5	-	-	-	988	758	-	-	-	-	-	2
Conn.	32	3	8	1	6,210	5,645	7	17	2	1	1	-
MID ATLANTIC	1,089	54	66	8	66,980	69,436	47	118	11	11	1	25
Upstate N.Y.	97	19	26	5	10,331	10,972	4	18	3	1	-	2
N.Y. City	785	8	4	-	27,191	27,922	17	53	-	6	-	23
N.J.	158	17	17	-	11,473	12,967	15	14	2	3	1	-
Pa.	49	10	19	3	17,985	17,575	11	33	6	1	-	-
E.N. CENTRAL	112	20	132	16	69,330	77,719	15	24	4	7	1	6
Ohio	15	5	42	8	18,258	20,213	5	3	-	2	-	2
Ind.	16	4	26	-	8,091	7,591	-	4	-	2	-	-
Ill.	57	-	17	6	15,405	22,209	3	2	1	1	-	2
Mich.	15	11	31	-	19,862	20,929	7	15	3	2	1	2
Wis.	9	-	16	2	7,714	6,777	-	-	-	-	-	-
W.N. CENTRAL	26	5	36	1	23,744	25,512	7	14	2	1	1	1
Minn.	7	2	12	-	3,622	3,583	2	2	1	-	-	-
Iowa	1	-	17	-	2,613	2,737	-	1	1	-	-	1
Mo.	13	-	3	-	11,394	12,632	2	3	-	1	-	-
N. Dak.	-	-	-	-	235	259	-	-	-	-	-	-
S. Dak.	-	-	-	1	580	696	1	-	-	-	-	-
Nebr.	2	2	1	-	1,628	1,531	2	4	-	-	-	-
Kans.	3	1	3	-	3,672	4,074	-	4	-	-	1	-
S. ATLANTIC	357	58	94	14	125,900	140,318	29	112	14	12	1	6
Del.	4	-	1	-	2,229	2,516	-	2	1	-	-	-
Md.	23	3	23	-	14,442	17,955	1	18	2	1	-	-
D.C.	49	1	-	-	9,126	9,561	-	3	-	-	-	1
Va.	18	12	22	5	11,913	12,407	1	10	2	2	1	4
W. Va.	4	1	6	-	1,533	1,446	4	1	-	1	-	-
N.C.	8	4	19	7	20,274	21,096	2	18	-	5	-	-
S.C.	6	1	4	-	12,570	13,357	-	9	-	-	-	-
Ga.	32	21	2	1	23,633	28,380	4	26	1	1	-	-
Fla.	213	15	17	1	30,180	33,600	17	25	8	2	-	1
E.S. CENTRAL	17	20	29	7	43,358	45,725	9	25	5	4	1	-
Ky.	7	1	5	-	5,215	5,316	-	1	-	-	-	-
Tenn.	4	5	9	1	18,010	18,941	3	9	1	2	-	-
Ala.	4	12	13	6	13,811	14,141	5	14	4	2	1	-
Miss.	2	2	2	-	6,322	7,327	1	1	-	-	-	-
W.S. CENTRAL	152	22	39	4	67,015	76,829	74	51	2	42	1	12
Ark.	1	-	-	2	5,886	5,898	-	4	-	17	-	1
La.	18	-	4	-	15,445	14,158	14	20	-	-	-	-
Okla.	4	2	13	1	7,329	9,012	19	4	-	-	1	-
Tex.	129	20	22	1	38,355	47,761	41	23	2	25	-	11
MOUNTAIN	37	9	20	7	16,082	17,192	53	13	7	1	1	7
Mont.	-	3	-	-	687	731	2	1	-	-	1	-
Idaho	-	-	-	-	810	735	2	1	-	-	-	-
Wyo.	1	1	-	-	463	452	-	-	-	-	-	-
Colo.	20	1	7	-	4,628	4,843	17	-	1	-	-	-
N. Mex.	-	-	-	-	1,831	2,087	-	-	-	-	-	-
Ariz.	9	3	7	3	4,340	4,932	19	4	5	1	-	5
Utah	3	-	6	4	790	825	8	2	-	-	-	1
Nev.	4	1	-	-	2,533	2,587	5	5	1	-	-	1
PACIFIC	607	41	105	8	68,797	77,450	176	134	26	29	3	72
Wash.	32	6	4	-	4,787	6,010	7	9	4	1	2	3
Oreg.	5	-	-	-	4,165	4,142	10	7	1	-	-	1
Calif.	557	32	99	8	56,951	63,775	159	115	20	26	1	53
Alaska	1	-	-	-	1,725	1,936	-	2	1	2	-	-
Hawaii	12	3	2	-	1,169	1,587	-	1	-	-	-	15
Guam	-	U	-	-	95	101	U	U	U	U	U	-
P.R.	33	2	-	1	2,089	1,663	6	4	-	-	-	2
V.I.	-	-	-	-	271	173	-	-	-	-	-	-
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 August 11, 1984 and August 13, 1983 (32nd Week)

Reporting Area	Malaria	Measles (Rubeola)					Menin-gococcal Infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported *		Total									
	Cum. 1984	1984	Cum. 1984	1984	Cum. 1984	Cum. 1983	Cum. 1984	1984	Cum. 1984	1984	Cum. 1984	Cum. 1983	1984	Cum. 1984	Cum. 1983
UNITED STATES	519	17	1,894	5	246	1,182	1,878	32	2,072	47	1,190	1,321	9	489	738
NEW ENGLAND	33	-	93	-	11	15	110	2	65	1	33	43	1	19	13
Maine	-	-	-	-	-	-	1	-	18	-	1	4	-	1	-
N.H.	-	-	34	-	3	3	6	-	15	-	6	7	-	1	4
Vt.	3	-	2	-	5	-	26	-	5	-	16	7	-	-	4
Mass.	17	-	47	-	-	4	37	-	10	1	8	21	1	17	5
R.I.	4	-	-	-	-	-	11	2	8	-	1	4	-	-	-
Conn.	9	-	10	-	3	8	29	-	9	-	1	-	-	-	-
MID ATLANTIC	82	3	110	-	29	88	330	1	242	3	107	265	5	172	132
Upstate N.Y.	22	-	21	-	10	8	114	-	60	1	61	83	-	101	23
N.Y. City	16	3	85	-	13	50	68	-	16	1	5	42	5	56	86
N.J.	25	-	4	-	2	27	66	1	128	-	6	16	-	11	3
Pa.	19	-	-	-	4	3	82	-	38	1	35	124	-	4	20
E.N. CENTRAL	42	2	579	-	67	630	300	8	846	12	323	313	-	72	113
Ohio	9	-	3	-	5	85	104	4	427	1	57	86	-	2	2
Ind.	1	-	2	-	1	400	37	4	46	6	214	32	-	2	23
Ill.	14	-	160	-	1	137	60	-	160	3	20	120	-	42	47
Mich.	8	2	400	-	54	7	60	-	155	2	20	17	-	18	15
Wis.	10	-	14	-	6	1	39	-	58	-	12	58	-	8	26
W.N. CENTRAL	18	-	3	-	7	1	118	2	83	3	91	84	-	29	30
Minn.	6	-	-	-	3	1	22	-	4	-	12	32	-	2	6
Iowa	1	-	-	-	-	-	21	2	19	1	7	5	-	1	-
Mo.	7	-	3	-	-	-	36	-	7	-	13	18	-	-	-
N. Dak.	1	-	-	-	-	-	1	-	1	-	-	1	-	3	-
S. Dak.	-	-	-	-	-	-	6	-	-	1	7	4	-	-	-
Nebr.	1	-	-	-	-	-	9	-	3	-	2	-	-	-	-
Kans.	2	-	-	-	4	-	23	-	49	1	50	24	-	23	24
S. ATLANTIC	85	-	14	-	23	183	390	1	145	9	95	181	-	21	87
Del.	4	-	-	-	-	-	3	-	2	-	2	3	-	-	-
Md.	22	-	6	-	11	6	31	-	27	4	8	25	-	1	1
D.C.	1	-	-	-	5	-	5	-	-	-	-	-	-	-	-
Va.	20	-	1	-	1	23	46	1	15	-	12	45	-	-	1
W. Va.	1	-	-	-	-	-	4	-	28	2	10	5	-	-	-
N.C.	6	-	-	-	-	1	58	-	19	-	17	18	-	-	10
S.C.	1	-	-	-	-	4	38	-	2	-	1	13	-	-	1
Ga.	6	-	-	-	-	8	78	-	17	1	7	50	-	2	11
Fla.	24	-	7	-	6	141	127	-	35	2	38	22	-	18	63
E.S. CENTRAL	6	-	1	-	2	6	101	-	40	-	8	16	-	9	11
Ky.	-	-	1	-	-	1	39	-	8	-	1	5	-	3	10
Tenn.	2	-	-	-	2	-	24	-	12	-	4	4	-	-	-
Ala.	4	-	-	-	-	5	25	-	6	-	-	3	-	3	1
Miss.	-	-	-	-	-	-	13	-	14	-	3	4	-	3	-
W.S. CENTRAL	43	1	482	-	23	73	198	2	110	1	236	226	-	13	94
Ark.	-	-	-	-	-	12	27	-	5	1	13	16	-	3	-
La.	5	-	-	-	-	25	43	-	-	-	4	5	-	-	9
Okla.	7	-	-	-	8	1	23	N	N	-	208	163	-	-	-
Tex.	31	1	482	-	15	35	105	2	105	-	11	42	-	10	85
MOUNTAIN	18	-	91	5	40	3	66	4	201	5	86	132	-	14	27
Mont.	1	-	-	-	-	-	2	1	5	-	17	1	-	-	3
Idaho	2	-	-	-	23	-	6	-	9	2	5	5	-	1	8
Wyo.	-	-	-	-	-	-	2	-	1	-	3	5	-	2	2
Colo.	1	-	-	5 §	7	2	24	1	15	3	32	86	-	2	-
N. Mex.	1	-	68	-	8	-	7	N	N	-	5	9	-	-	-
Ariz.	9	-	-	-	-	1	15	1	164	-	16	14	-	-	6
Utah	4	-	23	-	2	-	7	-	5	-	6	12	-	6	7
Nev.	-	-	-	-	-	-	3	1	2	-	2	-	-	3	1
PACIFIC	192	11	521	-	44	183	265	12	340	13	211	61	3	140	231
Wash.	6	-	110	-	13	5	40	2	36	5	49	10	-	1	9
Oreg.	8	-	-	-	-	9	39	N	N	3	14	6	-	1	13
Calif.	175	4	269	-	27	166	178	7	280	5	79	44	3	134	208
Alaska	-	-	-	-	-	2	7	1	6	-	-	-	-	1	1
Hawaii	3	7	142	-	4	1	1	2	18	-	69	1	-	3	-
Guam	1	U	83	U	2	2	1	U	5	U	-	-	U	2	-
P.R.	4	-	-	-	-	81	3	1	103	-	-	9	-	6	3
V.I.	-	-	-	-	-	5	-	-	3	-	-	-	-	-	2
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 August 11, 1984 and August 13, 1983 (32nd Week)

Reporting Area	Syphilis (Civilian) (Primary & Secondary)		Toxic-shock Syndrome	Tuberculosis		Tula-remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1984	Cum. 1983	1984	Cum. 1984	Cum. 1983	Cum. 1984	Cum. 1984	Cum. 1984	Cum. 1984
UNITED STATES	16,838	19,733	14	13,019	14,116	182	188	507	3,069
NEW ENGLAND	320	420	-	375	415	4	9	3	26
Maine	3	12	-	18	26	-	-	-	10
N.H.	11	18	-	24	28	-	-	-	6
Vt.	1	1	-	8	6	-	-	-	-
Mass.	187	262	-	204	215	4	7	3	5
R.I.	12	14	-	29	32	-	-	-	-
Conn.	106	113	-	92	108	-	2	-	5
MID ATLANTIC	2,263	2,503	-	2,410	2,518	-	27	15	223
Upstate N.Y.	162	207	-	408	380	-	10	6	33
N.Y. City	1,396	1,482	-	952	1,031	-	6	1	-
N.J.	413	474	-	534	538	-	7	3	10
Pa.	292	340	-	516	569	-	4	5	180
E.N. CENTRAL	793	1,061	3	1,753	1,849	3	25	34	132
Ohio	154	278	3	327	298	-	5	22	14
Ind.	85	74	-	190	181	-	2	4	13
Ill.	249	521	-	727	807	3	9	6	54
Mich.	256	139	-	399	469	-	3	2	14
Wis.	49	49	-	110	94	-	6	-	37
W.N. CENTRAL	246	233	2	389	458	66	6	32	516
Minn.	71	94	-	67	91	1	2	-	54
Iowa	11	12	1	44	45	-	-	4	102
Mo.	120	86	-	189	228	32	3	5	40
N. Dak.	7	2	-	9	5	-	-	-	109
S. Dak.	-	9	-	15	31	30	-	4	133
Nebr.	12	11	1	20	17	-	-	2	35
Kans.	25	19	-	45	41	3	1	17	43
S. ATLANTIC	5,014	5,206	1	2,672	2,817	5	24	246	840
Del.	13	20	-	35	24	-	-	-	4
Md.	311	338	-	273	222	-	2	27	438
D.C.	201	234	-	99	115	-	6	-	-
Va.	252	363	1	269	285	-	6	36	145
W. Va.	12	18	-	83	87	-	-	6	31
N.C.	508	482	-	406	398	1	1	91	13
S.C.	460	319	-	331	255	-	1	58	32
Ga.	856	953	-	371	521	4	1	26	113
Fla.	2,401	2,479	-	805	910	-	7	2	64
E.S. CENTRAL	1,129	1,352	-	1,197	1,285	3	5	45	156
Ky.	63	85	-	285	311	-	2	7	43
Tenn.	303	391	-	372	387	3	2	24	60
Ala.	371	545	-	359	332	-	1	8	53
Miss.	392	331	-	181	255	-	-	6	-
W.S. CENTRAL	4,134	5,187	1	1,493	1,683	79	11	118	649
Ark.	109	128	1	160	195	57	-	19	66
La.	740	1,074	-	182	271	6	1	1	39
Okla.	137	133	-	152	126	15	2	78	76
Tex.	3,148	3,852	-	999	1,091	1	8	20	468
MOUNTAIN	371	418	2	340	399	16	10	11	168
Mont.	2	5	-	14	34	-	1	8	82
Idaho	15	6	-	21	21	5	-	1	4
Wyo.	4	9	-	-	10	-	-	2	7
Colo.	86	93	-	35	51	5	2	-	26
N. Mex.	53	126	-	64	83	1	3	-	9
Ariz.	137	101	-	161	151	2	3	-	29
Utah	12	13	1	29	28	2	-	-	2
Nev.	62	65	1	16	21	1	1	-	9
PACIFIC	2,568	3,353	5	2,390	2,692	6	71	3	359
Wash.	83	119	-	124	139	-	2	-	1
Oreg.	72	78	-	98	113	2	1	1	1
Calif.	2,360	3,104	5	1,995	2,254	4	63	1	351
Alaska	3	7	-	43	36	-	1	1	6
Hawaii	50	45	-	130	150	-	4	-	-
Guam	-	-	U	5	5	-	-	-	-
P.R.	500	598	-	253	303	-	3	-	38
V.I.	8	15	-	2	1	-	3	-	-
Pac. Trust Terr.	-	-	U	-	-	-	-	-	-

U: Unavailable

TABLE IV. Deaths in 121 U.S. cities,* week ending August 11, 1984 (32nd Week Ending)

Reporting Area	All Causes, By Age (Years)						P&I** Total
	All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	671	436	164	31	20	20	47
Boston, Mass.	170	104	46	6	6	8	23
Bridgeport, Conn.	56	35	15	2	3	1	5
Cambridge, Mass.	21	18	2	1	-	-	1
Fall River, Mass.	30	22	6	2	-	-	-
Hartford, Conn.	54	31	16	3	1	3	2
Lowell, Mass.	31	23	7	1	-	-	-
Lynn, Mass.	19	13	6	-	-	-	-
New Bedford, Mass.	29	23	5	-	1	-	1
New Haven, Conn.	39	19	10	4	2	4	-
Providence, R.I.	73	49	14	4	3	3	5
Somerville, Mass.	6	5	1	-	-	-	-
Springfield, Mass.	45	28	14	2	-	1	3
Waterbury, Conn.	38	25	10	2	1	-	2
Worcester, Mass.	60	41	12	4	3	-	5
MID. ATLANTIC	2,238	1,440	481	179	64	74	94
Albany, N.Y.	48	30	10	3	2	3	1
Allentown, Pa.	17	14	3	-	-	-	-
Buffalo, N.Y.	96	70	21	3	2	-	6
Camden, N.J.	25	13	8	2	2	-	2
Elizabeth, N.J.	30	20	8	1	1	-	2
Erie, Pa.†	42	23	12	4	1	2	2
Jersey City, N.J.	38	22	7	6	1	2	1
N.Y. City, N.Y.	1,293	829	270	125	34	35	52
Newark, N.J.	36	18	9	2	-	7	3
Paterson, N.J.	23	16	4	2	-	1	3
Philadelphia, Pa.†	196	115	51	13	11	6	5
Pittsburgh, Pa.†	56	37	14	1	-	4	1
Reading, Pa.	24	17	3	1	1	2	-
Rochester, N.Y.	108	71	24	3	6	4	10
Schenectady, N.Y.	16	13	2	1	-	-	1
Scranton, Pa.†	28	19	8	-	1	-	2
Syracuse, N.Y.	80	58	11	6	2	3	1
Trenton, N.J.	37	22	8	5	-	2	2
Utica, N.Y.	27	21	3	1	-	2	-
Yonkers, N.Y.	18	12	5	-	-	1	-
E.N. CENTRAL	1,976	1,222	489	136	73	56	73
Akron, Ohio	65	37	18	3	5	2	-
Canton, Ohio	39	28	7	3	1	-	-
Chicago, Ill	434	254	120	37	19	4	10
Cincinnati, Ohio	131	81	34	7	7	2	11
Cleveland, Ohio	142	82	33	15	1	11	3
Columbus, Ohio	89	60	20	3	2	4	2
Dayton, Ohio	113	72	27	8	4	2	2
Detroit, Mich.	225	140	53	17	7	8	7
Evansville, Ind.	39	22	9	1	5	2	1
Fort Wayne, Ind.	44	32	8	1	1	2	2
Gary, Ind.	10	7	2	-	-	1	-
Grand Rapids, Mich.	33	18	9	3	1	2	2
Indianapolis, Ind.	178	94	58	15	5	6	5
Madison, Wis.	34	22	7	1	3	1	4
Milwaukee, Wis.	112	76	24	6	2	4	2
Peoria, Ill.	47	34	9	-	3	1	3
Rockford, Ill.	48	33	8	5	2	-	3
South Bend, Ind.	57	41	14	-	1	1	9
Toledo, Ohio	87	58	18	8	2	1	7
Youngstown, Ohio	49	31	11	3	2	2	-
W.N. CENTRAL	691	441	144	40	25	41	13
Des Moines, Iowa	66	45	14	3	3	1	1
Duluth, Minn.	17	10	2	1	2	2	-
Kansas City, Kans.	29	17	8	1	-	3	-
Kansas City, Mo.	110	67	22	13	3	5	4
Lincoln, Nebr.	41	29	9	3	-	-	2
Minneapolis, Minn.	74	49	15	2	3	5	2
Omaha, Nebr.	86	54	21	2	3	6	2
St. Louis, Mo.	148	94	30	10	4	10	-
St. Paul, Minn.	53	33	12	2	2	4	1
Wichita, Kans.	67	43	11	3	5	5	1
S. ATLANTIC	1,222	698	313	92	57	62	49
Atlanta, Ga.	143	90	28	11	6	8	2
Baltimore, Md.	286	163	71	24	17	11	2
Charlotte, N.C.	63	31	17	5	3	7	4
Jacksonville, Fla.	124	72	34	5	6	7	8
Miami, Fla.	85	36	26	12	7	4	2
Norfolk, Va.	73	41	15	6	4	7	5
Richmond, Va.	79	41	29	4	3	2	8
Savannah, Ga.	36	21	10	2	1	2	2
St. Petersburg, Fla.	85	61	15	4	1	4	5
Tampa, Fla.	54	35	13	2	2	2	6
Washington, D.C.	135	66	39	16	6	8	4
Wilmington, Del.	59	41	16	1	1	-	1
E.S. CENTRAL	704	438	177	51	26	12	24
Birmingham, Ala.	107	66	27	7	6	1	2
Chattanooga, Tenn.	46	31	10	5	-	-	5
Knoxville, Tenn.	63	35	20	6	-	2	3
Louisville, Ky.	93	59	24	5	4	1	6
Memphis, Tenn.	206	123	53	17	7	6	4
Mobile, Ala.	47	27	11	2	5	2	1
Montgomery, Ala.	35	27	7	1	-	-	1
Nashville, Tenn.	107	70	25	8	4	-	2
W.S. CENTRAL	1,147	653	282	99	70	43	41
Austin, Tex.	44	29	7	3	2	3	4
Baton Rouge, La.	33	23	5	4	-	1	3
Corpus Christi, Tex.	35	23	8	1	-	3	-
Dallas, Tex.	140	75	43	9	11	2	1
El Paso, Tex.	42	24	10	3	2	3	3
Fort Worth, Tex.	88	50	21	7	2	8	9
Houston, Tex.	278	133	72	38	24	11	3
Little Rock, Ark.	101	57	25	8	7	4	5
New Orleans, La.	117	68	30	10	7	2	-
San Antonio, Tex.	160	100	39	5	11	5	5
Shreveport, La.	15	9	3	1	2	-	-
Tulsa, Okla.	94	62	19	10	2	1	8
MOUNTAIN	584	327	138	60	32	27	25
Albuquerque, N.Mex.	80	47	16	7	3	7	8
Colo. Springs, Colo.	34	19	8	1	3	3	2
Denver, Colo.	90	55	19	9	4	3	4
Las Vegas, Nev.	84	39	24	10	10	1	-
Ogden, Utah	30	21	5	3	1	-	2
Phoenix, Ariz.	125	66	32	18	5	4	1
Pueblo, Colo.	15	11	2	2	-	-	3
Salt Lake City, Utah	48	25	14	4	1	4	1
Tucson, Ariz.	78	44	18	6	5	5	4
PACIFIC	1,830	1,334	287	101	48	47	105
Berkeley, Calif.	22	15	5	1	1	-	-
Fresno, Calif.	83	50	17	9	5	2	7
Glendale, Calif. §	23	23	-	-	-	-	1
Honolulu, Hawaii	64	46	14	2	1	1	5
Long Beach, Calif.	85	64	14	4	2	1	3
Los Angeles, Calif. §	520	472	6	3	17	9	16
Oakland, Calif.	67	41	15	6	2	3	6
Pasadena, Calif.	27	20	6	-	1	-	-
Portland, Oreg.	125	87	25	7	3	3	7
Sacramento, Calif.	137	88	27	11	3	8	16
San Diego, Calif.	146	96	32	12	3	3	21
San Francisco, Calif.	141	90	34	11	1	5	2
San Jose, Calif.	140	82	40	13	1	4	14
Seattle, Wash.	148	91	33	15	5	4	3
Spokane, Wash.	60	38	12	6	1	3	4
Tacoma, Wash.	42	31	7	1	2	1	-
TOTAL	11,063††	6,989	2,475	789	415	382	471

* 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.

TABLE V. Years of potential life lost, deaths, and death rates, by cause of death, and estimated number of physician contacts, by principal diagnosis, United States

Cause of morbidity or mortality (Ninth Revision ICD, 1975)	Years of potential life lost before age 65 by persons dying in 1982*†	Estimated mortality March 1984		Estimated number of physician contacts March 1984*¶
		Number*§	Annual Rate/100,000*§	
ALL CAUSES (TOTAL)	9,429,000	183,640	919.3	112,200,000
Accidents and adverse effects (E800-E949)	2,367,000	7,530	37.7	5,200,000
Malignant neoplasms (140-208)	1,809,000	38,150	191.0	1,500,000
Diseases of heart (390-398, 402, 404-429)	1,566,000	70,000	350.4	6,700,000
Suicides, homicides (E950-E978)	1,314,000	4,060	20.3	—
Cerebrovascular diseases (430-438)	256,000	14,660	73.4	600,000
Chronic liver disease and cirrhosis (571)	252,000	2,400	12.0	100,000
Pneumonia and influenza (480-487)	118,000	6,250	31.3	2,000,000
Chronic obstructive pulmonary diseases and allied conditions (490-496)	114,000	6,790	34.0	2,300,000
Diabetes mellitus (250)	106,000	3,420	17.1	3,100,000
Prenatal care*				2,700,000
Infant mortality*††		3,300	11.3 /1,000 live births	

*For details of calculation, see footnotes for Table V, *MMWR* 1984;33:2.

†Years of potential life lost for persons between 1 year and 65 years old at the time of death are derived from the number of deaths in each age category as reported by the National Center for Health Statistics, *Monthly Vital Statistics Report* (MVSR), Vol. 31, No. 13, October 5, 1983.

§National Center for Health Statistics, *Monthly Vital Statistics Report* (MVSR), Vol. 33, No. 4, July 26, 1984, pp. 8-9.

¶IMS America *National Disease and Therapeutic Index* (NDTI), Monthly Report, March 1984, Section III.

††MVSR Vol. 33, No. 3, June 21, 1984, p. 1.

Low Birth Weight — Continued

Variations between and within geographic regions remain considerable and have not greatly changed (Table 1). The incidence of LBW, by region, ranges from 31.1% in Middle South Asia and 19.7% for Asia as a whole to 14.0% in Africa, 10.1% in Latin America, 6.8% in North America, and 6.5% in Europe.

In Africa, the estimated percentage of LBW infants for 1982 is 14.0%, 1% lower than that for 1979. This decrease is largely due to changes in Northern and Southern Africa, where more recent data have changed the estimates for a number of countries, including Egypt and Lesotho. There is no evidence of substantive changes in Eastern and Western Africa, with the possible exception of Kenya which has improved, and Rwanda and the United Republic of Tanzania which have deteriorated. New information is available for a number of countries in these regions, but national rates are all between 10% and 20%. The only change found for Middle Africa was a slight deterioration for Cameroon.

Low Birth Weight – Continued

The overall proportion of LBW infants born in Asia has slightly decreased, but in Middle South Asia, where the problem is most acute, there is no evidence of change. Rates in this region remain between 20% and 50%. The marked change in Western South Asia is largely due to new data relating to countries, notably Turkey, for which no information was found previously. The most notable changes in Eastern South Asia are in Singapore (a marked decrease) and Thailand. The estimate for the latter country is based on government data for all institutional births (which comprise 36% of all births). The propotion of LBW infants in East Asia remains very low.

In Latin America, there is evidence of improvement in many countries, with rates in the south approaching those of developed countries. Data from countries whose governments publish national rates—Cuba, Panama, Uruguay, and Venezuela—all show a downward trend.

In Europe as a whole, the incidence of LBW has decreased from 7.7% to 6.5%, although this may be partly an artifact resulting from the availability of better information from Italy.

TABLE 1. Estimated number of births of all live infants and of low-birth-weight infants, by region, 1982, and estimated proportion of low-birth-weight infants, 1979 and 1982

Region	Live births*	Low-birth-weight infants		
		1982*	Percentage† 1979	1982
Africa	**23,148**	**3,233**	**15.0**	**14.0**
Northern Africa	4,814	495	13	10
Western Africa	7,278	1,256	17	17
Eastern Africa	6,930	922	14	13
Middle Africa	2,554	398	15	16
Southern Africa	1,372	162	15	12
North America	**4,402**	**299**	**7.3**	**6.8**
Latin America	**12,490**	**1,259**	**10.2**	**10.1**
Middle America	3,669	448	12§	12
Caribbean	867	102	13	12
Tropical South America	7,033	647	9	9
Temperate South America	921	62	8	7
Asia	**74,885**	**14,750**	**20.3**	**19.7**
Western South Asia	4,080	302	16	7
Middle South Asia	35,311	10,947	31	31
Eastern South Asia	12,336	2,088	18	17
East Asia	23,158	1,413	6	6
Europe	**6,857**	**445**	**7.7**	**6.5**
Northern Europe	1,010	61	6	6
Western Europe	1,819	95	6	5
Eastern Europe	1,855	140	8	8
Southern Europe	2,173	149	9	7
Oceania	**507**	**59**	**12.2**	**11.6**
Union of Soviet Socialist Republics	**5,111**	**409**	**8.0**	**8.0**
World	**127,400**	**20,450**	**16.8**	**16.0**
Developed countries	18,200	1,250	7.4	6.9
Developing countries	109,200	19,200	18.4	17.6

*In thousands.

†Decimals are only shown for continents, since estimates for subregions are subject to a greater margin of error.

§Previous estimate for Middle America corrected.

Sources: United Nations, Department of International Economic and Social Affairs. Demographic indicators of countries: estimates and projects as assessed in 1980. New York, 1982.

Low Birth Weight — Continued

Some improvements are noted in Western and Northern Europe, but very little change took place in countries where the rates were already below 5% in 1979, nor is there any evidence of significant changes in Eastern Europe.

There are slight improvements in the rates for both Canada and the United States.

Reported by WHO Weekly Epidemiological Record *1984:59;205-12.*

Reference

1. World Health Organization. World Health Statistics Quarterly. 1980;33:197-224.

Notice to Readers

Availability of *NIOSH Manual of Analytical Methods, Third Edition*

The National Institute for Occupational Safety and Health (NIOSH) has announced that volumes 1 and 2 of the *NIOSH Manual of Analytical Methods, Third Edition,* are now available; a third volume is planned for 1985. This manual is the primary source of analytical methods cited in Criteria Documents, Current Intelligence Bulletins, and reports produced by NIOSH of health-hazard evaluations, industry-wide studies, and control-technology assessments.

The manual was first published in 1974 in loose-leaf form and contained 39 methods for analyzing 130 substances found in air and biologic samples; the 1974 manual was reprinted four times. From 1974 through 1979, the joint NIOSH/Occupational Safety and Health Administration (OSHA) Standards Completion Program established performance criteria and validated over 300 existing and new analytical methods (*1,2*). The seven-volume Second Edition was published during 1977-1981 (*3*). The Second Edition included methods contained in the First Edition, the new methods validated by the joint NIOSH/OSHA Program, and additional methods developed by NIOSH. Its 3,700 pages include 510 analytical methods for monitoring chemical exposures in the workplace. An estimated 6,000 copies are now in use.

NIOSH began work on the Third Edition in 1983. The major goals were to incorporate new data and analytic technology evaluated by NIOSH or used by NIOSH or contracting laboratories and to reduce the size of the manual by using a more concise format.

More than 60 chemists and industrial hygienists participated in the revision. Analytical methods were included for substances that: (1) are found frequently in field samples sent to NIOSH for analysis; (2) are referred to in NIOSH Criteria Documents or OSHA regulations; and (3) have a "high toxicity/exposure index," as determined from the known toxicity of the substance and the number of workers potentially exposed to it (*4*).

Discussion of each method begins with a summary, followed by a list of the reagents and equipment needed, special safety precautions, and instructions for taking and handling samples. Three indexes are included for cross reference: (1) method numbers used in the Third Edition; (2) method numbers used in the Second Edition; and (3) names and synonyms of the substance. A section on applicability helps users of the manual choose the most appropriate methods for their purposes. Chapters on the development and evaluation of methods, quality assurance, air sampling techniques, and biologic samples are included to expand on the protocols used by NIOSH to develop and apply the methods.

The *NIOSH Manual of Analytical Methods, Third Edition,* is available from the U.S. Government Printing Office, Washington, D.C. 20402, under a subscription service that includes the basic manual and all annual supplements through 1987. The manual is also available from the Superintendent of Documents for $31.00 (U.S. orders) or $38.75 (outside the United States).

Questions and suggestions for improving the manual should be sent to: Manual Coordinator, NIOSH, Division of Physical Sciences and Engineering, Mail Stop R-2, 4676 Columbia Parkway, Cincinnati, Ohio 45226; telephone: (513) 684-4323.

NIOSH Manual — *Continued*

Reported by Div of Physical Sciences and Engineering, National Institute for Occupational Safety and Health, CDC.

References

1. National Institute for Occupational Safety and Health. Documentation of the NIOSH validation tests. DHEW publication no. (NIOSH) 77-185, 1977.
2. National Institute for Occupational Safety and Health. Development and validation of methods for sampling and analysis of workplace toxic substances. DHHS publication no. (NIOSH) 80-133, 1980.
3. National Institute for Occupational Safety and Health Manual of analytical methods, 2nd ed. DHEW publication no. (NIOSH) 77-157-A (V.1), 77-157-B (V.2), 77-157-C (V.3), 78-175 (V.4), 79-141 (V.5); and DHHS publication no. (NIOSH) 80-125 (V.6) and 82-100 (V.7).
4. National Institute for Occupational Safety and Health. A model for the identification of high risk occupational groups using RTECS and NOHS data. DHHS publication no. (NIOSH) 83-117, 1983.

The *Morbidity and Mortality Weekly Report* is prepared by the Centers for Disease Control, Atlanta, Georgia, and available on a paid subscription basis from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, (202) 783-3238.

The data in this report are provisional, based on weekly reports 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. 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.

**DEPARTMENT OF
HEALTH & HUMAN SERVICES**
Public Health Service
Centers for Disease Control
Atlanta GA 30333

Official Business
Penalty for Private Use $300

U.S.MAIL

Postage and Fees Paid
U.S. Dept. of H.H.S.
HHS 396

X

S *HCRH NEWV75 8129
DR VERNE F NEWHOUSE
VIROLOGY DIVISION
CID
7-B14

HHS Publication No. (CDC) 84-8017