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Perspectives in Disease Prevention and Health Promotion

# 1986 Surgeon General's Report: The Health Consequences of Involuntary Smoking

Inhalation of tobacco smoke during active cigarette smoking remains the largest single preventable cause of death and disability in the United States. The health consequences of cigarette smoking and of the use of other tobacco products have been extensively documented in the 18 previous Surgeon General's reports issued by the Public Health Service. More than 300,000 premature deaths that are directly attributable to tobacco use—particularly cigarette smoking—occur each year in the United States. The magnitude of the disease risk for active smokers, secondary to their high dose exposure to tobacco smoke, suggests that the lower doses of smoke received by involuntary smokers also puts them at risk. The 1986 Surgeon General's Report explores the health consequences incurred by involuntary smokers. It was developed by the Office on Smoking and Health, Center for Health Promotion and Education, Centers for Disease Control (CDC) as part of the U. S. Department of Health and Human Services' responsibility under Public Law 91-222 to report new and current information on smoking and health to the U. S. Congress.

Data in the 1986 report present evidence that the chemical composition of sidestream smoke (smoke emitted into the environment by a smoker between puffs) is qualitatively similar to the mainstream smoke inhaled by the smoker and that both mainstream and sidestream smoke act as carcinogens in bioassay systems (1). Data on the environmental levels of the components of tobacco smoke and on nicotine absorption in nonsmokers suggest that non-smokers are exposed to levels of environmental tobacco smoke (ETS) that would be expected to generate a lung cancer risk. In addition, epidemiological studies of populations exposed to ETS have documented an increased risk for lung cancer in those nonsmokers with increased exposure. Of the 13 epidemiological studies that were available for review in the scientific literature, 11 reported a positive relationship and six of these observed statistically significant results. It is rare to have such detailed exposure data or human epidemiologic studies on disease occurrence when attempting to evaluate the risk of low-dose exposure to an agent with established toxicity at higher levels of exposure. The relative abundance of data reviewed in the report, their cohesiveness, and their biologic plausibility allow a judgment that involuntary smoking can cause lung cancer in nonsmokers.

The 1986 Surgeon General's Report comes to three major conclusions:

- Involuntary smoking is a cause of disease, including lung cancer, in healthy nonsmokers.
- Compared with children of nonsmoking parents, children whose parents smoke have an increased frequency of respiratory symptoms and infections. They also have slightly smaller rates of increase in lung function as the lung matures.

# U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES / PUBLIC HEALTH SERVICE

### Involuntary Smoking - Continued

 Simple separation of smokers and nonsmokers within the same air space may reduce, but does not eliminate, ETS exposure.

The report also reviews policies restricting smoking in public places and the workplace and states that, in the 1970s, an increasing number of public and private sector institutions began adopting policies to protect individuals from ETS exposure by restricting the circumstances in which smoking is permitted. Local governments have been enacting smoking ordinances at an increasing rate since 1980. Restrictions on smoking at the workplace have resulted from both governmental action and private initiative, and an increase in workplace smoking policies has been a trend of the 1980s. Laws restricting smoking in public places have been implemented with few problems and at little cost to state and local governments. Public opinion polls document strong and growing support for restricting or banning smoking in a wide range of public places.

The Surgeon General, in his preface to the report, states, "Cigarette smoking is an addictive behavior, and the individual smoker must decide whether or not to continue that behavior; however, it is evident from the data presented in this volume that the choice to smoke cannot interfere with the nonsmokers' right to breathe air free of tobacco smoke."

Reported by Office on Smoking and Health, Center for Health Promotion and Education, CDC.

Editorial Note: A review recently published by the National Academy of Sciences states that approximately 20% of the estimated 12,200 lung cancer deaths occurring annually in nonsmokers are attributable to environmental tobacco smoke (2). This estimate falls close to the mid-point of the range published by Repace and Lowery, who state that between 500 and 5,000 lung cancer deaths may occur annually as a result of nonsmokers' exposure to tobacco smoke (3). By comparison, figures published in the *Journal of the Air Pollution Control Association* estimate that between 1,300 and 1,700 total cases of cancer resulting from other air pollutants in the general environment occur each year in the United States (4). Thus, while the number of lung cancer deaths that may be related to ETS exposure is small compared with those caused by active smoking, the actual number of lung cancer annually than many other agents in the general environment that are regulated because of their potential to cause disease.

# References

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- 3. Repace JL, Lowrey AH. A quantitative estimate of nonsmokers' lung cancer risk from passive smoking. Environ Int 1985;11:3-22.
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# Epidemiologic Notes and Reports

# Rubella and Congenital Rubella Syndrome — New York City

In 1985, a provisional total of 630 cases of rubella (0.26/100,000 population) was reported in the United States. This is the lowest annual total since rubella became a nationally notifiable disease in 1966. It represents a 16% decrease from the 1984 total of 752 cases and a 99% decline from 1969, the year of rubella vaccine licensure and the year with the greatest number of reported cases (57,686). Reported rubella activity for the first 46 weeks of 1986 was 22% below that reported for the same time period in 1985. In spite of this high

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### Rubella – Continued

degree of rubella control, outbreaks of rubella in New York City (NYC) in 1985, and subsequently of congenital rubella syndrome (CRS) in 1986, raise concern about the potential for similar outbreaks in other areas of the United States.

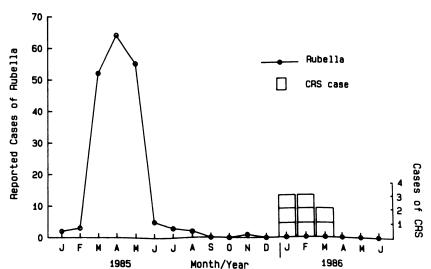
# Rubella

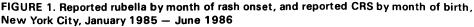
NYC experienced outbreaks of rubella each spring during the period 1983-1985 (1-3). These outbreaks primarily involved adults, and spread occurred in the workplace. Heightened rubella activity in 1985 (Figure 1) was associated with the recognized occurrence of outbreaks in a prison (50 cases), as previously reported (3); in a factory (45 cases); and in five hospitals (18 cases). Altogether, NYC\* reported 184 cases of rubella to the Centers for Disease Control (CDC) in 1985. Age was reported for 173 of the patients involved; 91% of them were  $\geq$ 20 years old.

Forty-five cases of rubella occurred in a population of predominantly Hispanic female workers at a factory in the South Bronx. Onsets of rash occurred between February 8 and April 8, 1985. The estimated attack rate for this facility was 7.5%. Patients ranged from 19 to 56 years of age (median = 40 years). Six pregnant women were identified among the employees; all were found to have prior immunity to rubella. Exclusion of the ill employees and of the pregnant women, pending serologic determination of immunity, resulted in 100 missed person-days of work.

During the spring of 1985, eighteen cases of rubella occurred in hospital workers from five medical facilities. Fourteen of these cases occurred in one large hospital located in the South Bronx. Ten of 14 cases were serologically confirmed by demonstration of enzymelinked immunosorbent assay (ELISA) rubella-specific IgM. The three first-generation cases were epidemiologically linked to the rubella outbreak occurring in the factory described above. Workers from this factory had gone to the hospital's dermatology clinic, where transmission to the medical staff occurred. This hospital outbreak continued for three generations and involved four physicians, five nurses, two laboratory workers, two clerical workers, and

\*Case definition used in NYC: generalized maculopapular rash and at least one of the following: fever, conjunctivitis, coryza, arthralgia, lymphadenopathy, or headache.





# Rubella - Continued

one x-ray technician. All of the patients had a rash that lasted from 1 to 7 days. Onsets of rash occurred between March 22 and May 6, 1985. Patients ranged from 24 to 37 years of age (median = 28 years).

Methods used to control the outbreaks included determining the rubella status of all employees, vaccinating susceptibles, and improving active surveillance. In addition, exclusion of employees during their infectious periods was recommended. The protocol used for controlling the outbreaks was similar to that used in previous outbreaks of rubella in the workplace (4). **Congenital Rubella Syndrome** 

During the first 5 months of 1986, eight suspected cases of CRS were reported to the NYC Department of Health. The diagnosis of CRS in all infants was based on clinical and laboratory data. CRS was serologically confirmed in five cases by demonstration of ELISA rubella-specific IgM; three cases were classified as CRS compatible by CDC criteria (Table 1) (5).

All eight of these births occurred in major NYC medical centers between January 5 and March 11, 1986, which was 8 to 10 months after the peak of the rubella outbreak (Figure 1). All eight infants had congenital heart disease: five of them had patent ductus arteriosus; four, peripheral pulmonary artery stenosis, and one, an atrial septal defect. In addition, six of the infants had cataracts; three, hearing loss; two, purpura; one, hepatosplenomegaly; one, congenital glaucoma; and one, microcephaly. Four (50%) of the mothers reported a rubella-like illness with a rash during the first 2 months of pregnancy. However, even though two were evaluated by physicians, none were diagnosed as having rubella. None of the seven mothers interviewed were linked to any other known cases of rubella.

In an effort to determine how this outbreak might have been prevented, information on the mothers of infants with CRS was obtained from hospital records and from personal interviews

# TABLE 1. CDC criteria for classification of congenital rubella syndrome (CRS) cases

- 1 CRS CONFIRMED Defects present and one or more of the following:
  - A. Rubella virus isolated.
  - B. Rubella-specific IgM present.
  - C. Rubella hemagglutination-inhibition (HI) titer in the infant persisting above and beyond that expected from passive transfer of maternal antibody (i.e., rubella HI titer in the infant which does not fall off at the expected rate of one 2-fold dilution/month).
- II. CRS COMPATIBLE—Laboratory data insufficient for confirmation and any two complications listed in A or one from A and one from B:
  - A. Cataracts/congenital glaucoma (either or both count as one), congenital heart disease, loss of hearing, pigmentary retinopathy.
  - B. Purpura, splenomegaly, jaundice, microcephaly, mental retardation, meningoencephalitis, radiolucent bone disease.
- III. CRS POSSIBLE—Some compatible clinical findings present, but not sufficient to fulfill the criteria for a compatible case.
- IV. CONGENITAL RUBELLA INFECTION ONLY Laboratory evidence of infection, but no defects present.
- V. STILLBIRTHS Stillbirths which are thought to be secondary to maternal rubella infection.
- VI. NOT CRS—One or more of any of the following inconsistent laboratory findings in a child without evidence of an immunodeficiency disease:
  - A. Rubella HI titer absent in a child  $\leq$  24 months.
  - B. Rubella HI titer absent in mother.
  - C. Rubella HI titer decline in an infant consistent with the normal decline of passively transferred maternal antibody after birth (the expected rate of decline of maternal antibodies is one 2-fold dilution/month).

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# Rubella – Continued

with seven of the eight women (Table 2). Information on race and ethnicity was available for all eight women: four (50%) were Hispanic, two were black, one was Asian, and one was a non-Hispanic white. In contrast, Hispanics accounted for only 28.4% of total live births in NYC in 1985 (NYC Department of Health, Bureau of Health Statistics and Analysis, unpublished data, 1985). Four of the women were immigrants: two were from the Dominican Republic (year of immigration, 1983 and 1985, respectively); one was from Guyana (1981); and one, from Poland (1976). One woman lived in a welfare hotel. The women ranged from 18 to 29 years of age (median = 24 years), and they had received from 8 to 12 years of formal education (mean = 9.6 years). Five of the women were married; none were employed. Only one lived in the South Bronx. Five of them had previously delivered live infants in NYC hospitals; two of the women had each had two previous live births. At least one woman had undergone rubella screening during a previous pregnancy and was found to be susceptible, but had not been immunized postpartum. None of the seven women interviewed had attended family planning clinics prior to conception.

Five of the seven women interviewed reported receiving prenatal care at clinics affiliated with major medical centers, beginning in the first or second trimester. Two women reported no prenatal care. Based on their ages and personal histories, only two of the eight women (ages 18 and 19) could have been enrolled in NYC schools at a time when rubella vaccine was required by law. The 18-year-old reported rubella vaccination in 1970, but investigators were unable to obtain provider verification. The 19-year-old, an intravenous drug abuser, could not be located. In addition, a 29-year-old woman reported having previously received rubella vaccine in a public clinic prior to entering school. This claim was discounted because the reported immunization would have occurred before the licensure of rubella vaccine. None of the other seven women who were interviewed reported previous rubella vaccination.

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Editorial Note: This is the first reported cluster of CRS cases in the United States since the occurrence of outbreaks in Chicago (1978-1979, 30 cases) (6) and the San Francisco Bay area (1979-1980, 13 cases) (7). So far in 1986, nine cases of CRS have been reported to the National Congenital Rubella Syndrome Register, a passive surveillance system maintained at the Division of Immunization, CDC (5). The outbreak in NYC accounts for eight of these and underscores two serious concerns. First, 10% to 20% of postpubertal women still lack serologic evidence of immunity to rubella (8-10), and, second, the continued occurrence of rubella in the childbearing-aged population means that potentially preventable CRS cases will

TABLE 2. Characteris	ics of m	nothers of	infants with	congenital	rubella syndrome	
New York City, 1986						

Case #	Age	Race/ Ethnicity	History of illness with rash	Prenatal care	Number of previous live births
1	24	Hispanic	Yes	Yes	1
2	26	Hispanic	No	Yes	2
3	29	Black	Yes	Yes	0
4	27	Asian	Yes	Yes	0
5	18	Hispanic	No	No	1
6	29	White	Yes	Yes	1
7	19	Hispanic	No	No	0
8	19	Black	Unknown	Unknown	2

#### Rubella – Continued

occur during the next 10 to 30 years until highly immune cohorts of persons vaccinated as children make up the entire childbearing-aged population.

Since the spring of 1985, the NYC Department of Health has maintained a pregnancy log to follow prospectively the outcomes of pregnant women with serologically confirmed rubella. Nine such women were enrolled for followup in 1985; seven of them elected to carry their pregnancies to term. No CRS cases have been identified from these pregnancies. None of the mothers of the infants with reported cases of CRS were included in this pregnancy log. This observation and the failure to directly link any CRS cases with recognized outbreaks of rubella in NYC emphasize the fact that reported rubella cases monitored only the trend in rubella activity in NYC and did not include all rubella cases that occurred in 1985.

To increase levels of rubella immunization in the childbearing-aged population, a multifaceted approach is necessary. Rubella vaccine should be offered to susceptible postpubertal women whenever they have contact with the health care system. Specific settings where immunization of hard-to-reach adult populations might be accomplished include colleges, family planning clinics, health care institutions, and places of employment. There should also be both followup immunization of women found to be susceptible by premarital rubella screening and postpartum and postabortion immunization of susceptibles identified by screening during pregnancy.

(Continued on page 779)

	5	Oth Week End	ing	Cumu	ative, 50th We	ek Ending
Disease	Dec. 13, 1986	Dec. 14, 1985	Median 1981-1985	Dec. 13, 1986	Dec. 14, 1985	Median 1981-1985
Acquired Immunodeficiency Syndrome (AIDS)	417	176	N	12,405	7,653	N
Aseptic meningitis	205	179	170	10,257	9,999	9,340
Encephalitis: Primary (arthropod-borne						
& unspec)	13	29	24	1,164	1,264	1,478
Post-infectious	2	-	3	95	114	91
Gonorrhea, Civilian	15,596	17,444	20,470	852,103	853,899	869,203
Military	482	211	358	16,309	19,805	23,154
Hepatitis: Type A	471	414	460	21,768	22,043	22,043
Type B	496	534	534	24,559	25,209	23,130
Non A, Non B	47	70	N	3.324	3,910	N
Unspecified	95	124	124	4,214	5,536	6,951
Legionellosis	15	9	N	773	734	N
Leprosy	12	1	5	245	346	233
Malaria	8	15	10	1.049	988	988
Measles: Total*	169	9	18	6,133	2,726	2,548
Indigenous	165	7	Ň	5,830	2,290	N
Imported	4	2	Ň	297	436	N
Meningococcal infections: Total	36	54	54	2,321	2,308	2,600
Civilian	36	54	54	2,319	2,301	2,584
Military	-	-		2	7	13
Mumps	171	74	75	5,344	2,843	3,237
Pertussis	34	62	40	4,041	3,406	2,197
Rubella (German measles)	3	4	12	483	605	938
Syphilis (Primary & Secondary); Civilian	452	431	622	25,914	25,676	30,023
Military	10	2	5	160	153	357
Toxic Shock syndrome	4	4	Ň	333	353	N
Tuberculosis	419	482	597	21.047	20,594	22,663
Tularemia	6	1	5	160	173	276
Typhoid fever	14	3	8	306	369	385
Typhus fever, tick-borne (RMSF)	6	2	3	744	685	956
Rabies, animal	64	98	70	5,134	5,194	5,719

TABLE I. Summary-cases specified notifiable diseases. United States

TABLE II. Notifiable diseases of low frequency, United States

	Cum. 1986		Cum. 1986
Anthrax		Leptospirosis (La. 1)	39
Botulism: Foodborne	18	Plague (Calif. 1)	9
Infant (Upstate N.Y. 1, Ohio 1, Idaho 1)	67	Poliomyelitis, Paralytic	1 1
Other	1 1	Psittacosis (Ohio 2)	90
Brucellosis	78	Rabies, human	
Cholera	17	Tetanus (Ind. 1)	61
Congenital rubella syndrome (N. Y. City 1)	11	Trichinosis	31
Congenital syphilis, ages < 1 year	107	Typhus fever, flea-borne (endemic, murine) (Ohio 1)	
Diphtheria	-		

\*Four of the 169 reported cases for this week were imported from a foreign country or can be directly traceable to a known internationally imported case within two generations.

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		Aseptic	Encer	ohalitis	Gon	orrhea	н	epatitis (V	Iral), by ty	pe	Legionel-	
Reporting Area	AIDS	Menin- gitis	Primary	Post-in- fectious		vilian)	A	В	NA,NB	Unspeci- fied	losis	Leprosy
	Cum 1986	1986	Cum 1986	Cum 1986	Cum 1986	Cum 1985	1986	1986	1986	1986	1986	Cum 1986
UNITED STATES	12,405	205	1,164	95	852,103	853,899	471	496	47	95	15	245
NEW ENGLAND	489	7	30	3	23,080	21,828	16	40	1	3	-	8
Maine N H	20 13	1	2 2	-	800 562	1,110 547	-	1	-	-	-	-
Vt Mass	5 272	2 3	4 6	2	260 8,297	326 9,145	1 7	1 29	1	3	-	- 8
R I Conn	31 148	1	16	1	1,780 11,381	1,811 8,889	8	9	:	-	-	-
MID ATLANTIC	4,510	12	107	10	148,431	124,888	8	34	4	35	-	19
Upstate N Y N Y City	471 2,998	12	36 20	6 1	17,983 85,702	17,413 61,145	3	18	4	2	-	1
NJ	738		10	-	19,444	18,909	5	14		2	-	-
Pa	303	-	41	3	25,302	27,421	-	-		-	-	1
EN CENTRAL Ohio	756 154	26 15	354 137	11 3	109,959 28,160	111,454 30,288	27 16	41 21	1	2 1	6 6	4
Ind	59	2	82	3	12,131	12,389	3	6		-	-	-
lli Mich	363 139	9	50 57	4	25,710 36,344	25,656 32,462	8	14	1	ī	-	4 1
Wis	41	-	28	-	7,362	10,659	-	-	-	-	-	-
W N CENTRAL Minn	230	8	88	9	36,594	39,873	13	19	1	!	-	4
lowa	88 19	1	39 27	-	5,272 3,717	5,867 4,215	5 1	4	1	1	-	2
Mo N Dak	73 3	5	3 4	-	18,075 298	19,410 272	1	11		-	-	
S Dak Nebr	2	1	11	-	749	767	6	-	-	-		-
Kans	11 34	1	1 3	1 8	2,682 5,801	3,339 6,003	-	2	-	-	-	2
S ATLANTIC	1,812	28	147	39	221,248	222,493	28	91	2	12	5	3
Del Md	23 180	3	6 33	1	3,625 26,316	4,319 28,291	5 4	1 16		-	1	
D C Va	229	4	1 40	1	16,592 18,337	15,289 18,589	1 7	2 12		4	1 2	- 1
W Va	152 8	1	45	-	2,114	2,472	-	2	1	2	-	-
N C S C	78 49	10	18	2	34,548 18,737	35,283 20,954	-	8 11	-	2	1	-
Ga Fla	262 831	1 9	4	1 33	36,722 64,257	43,165 54,131	3 8	8 31	1	2 2	-	2
ES CENTRAL	150	34	66	4	67,716	73,927	3	40	3	1	-	1
Ky Tenn	28 70	19 8	32 8	1	7,516 25,494	8,467 28,354	2	4 16	2	-	-	-
Ala	28	5	25	2	19,946	22,148	-	13	•	-	-	1
Miss	24	2	1	-	14,760	14,958	1	7	1	1	-	-
WS CENTRAL Ark	1,090 29	59 8	183	6 2	99,547 9,311	106,680 10,074	53 3	59 4	4 1	13 1	2	25 1
La Okla	149 41	32 5	16 21	-	17,401 11,331	20,123 11,938	11	17 2		1		1
Tex	871	14	146	4	61,504	64,545	39	36	3	11	2	23
MOUNTAIN	323	2	39	1	25,061	27,110	72	51	2	10	1	13
Mont Idaho	5 3	-	1	1	650 841	771 941	2	1 2	-	1	-	-
Wyo Colo	4 154		2 5	-	510 6,426	606 7,845	12	- 6	-	4	-	-3
N Mex	23	1	3	-	2,673	3,028	10	6		-	1	-
Ariz Utah	79 19	1	18 8	-	8,057 1,077	8,284 1,301	40 3	26 4	1	1 2	-	7
Nev	36	-	2	-	4,827	4,334	3	6	1	2	-	2
PACIFIC Wash	3,045 153	29 1	150 15	12	120,467 8,694	125,646 9,699	251 5	121 8	29 4	18	1	168 17
Oreg	61	-	-	-	5,232	6,158	41	20	-		:	-
Calif Alaska	2,766 12	25 2	127 7	12	103,002 2,543	105,150 3,012	191 13	93	23 2	17 1	1	115
Hawan	53	1	1	-	1,248	1,627	1	-	•	•	-	35
Guarn P R	115	-	- 5	1	212 2,329	192 2,976	1	;	1	4	-	1 7
VI	4	U	-	÷	259 467	386 766	Ú	ú	ΰ	Ŭ	U	
Pac Trust Terr Amer Samoa	-		-	-	467	/00	-	-		-		63 3

# TABLE III. Cases of specified notifiable diseases, United States, weeks ending December 13, 1986 and December 14, 1985 (50th Week)

N Not notifiable

T		<u> </u>	Mea	sles (Rub	eola)	·	Menin-			<b>r</b>			r		
Reporting Area	Malaria	Indig	enous	Impor		Total	gococcal Infections	Mu	mps		Pertussis	•	Rubella		
	Cum 1986	1986	Cum 1986	1986	Cum 1986	Cum 1985	Cum 1986	1986	Cum 1986	1986	Cum 1986	Cum 1985	1986	Cum 1986	Cum 1985
UNITED STATES	1,049	165	5,830	4	297	2,726	2,321	171	5,344	34	4,041	3,406	3	483	605
NEW ENGLAND Maine	63	-	88		16	126	165	-	68	2	175	209		9	13
NH	2 4	-	12 43		1	1	28 6	•	14	-	2 82	9 112	-	-	- 3
Vt Mass	2	-				-	19		4	-	3	4	-	i	-
RI	32 7		24		13	118	49 22	-	14 13	-	56	51	-	4 2	6
Conn	16	-	7	-	2	7	41	-	23	2	6 26	22 11		1	4
MID ATLANTIC Upstate N Y	145 51	138	1,869 77	4	38	232	369	6	212	8	212	255		37	229
NY City	31	138	861	2†	24 6	85 79	132 71	5	73 29	8	134 10	123 29	-	27 5	19 185
N J Pa	37 26	•	905	2 † §	6	28	30	1	52		20	11		5	11
	20	-	26	-	2	40	136	-	58	-	48	92	-	-	14
EN CENTRAL Ohio	61	3	1,123	-	28	582	346	118	3,494	1	384	817	1	50	38
Ind	19 2	-	27	•	10 11	60 57	141	1	136	-	167	120	-	1	1
lli Mich	16	2	705	-	4	346	39 74	47 24	90 2.560	1	36 37	201 76	1	39	20
Wis	20 4	1	107 284		-	60	74	45	430	-	36	49		8	16
WN CENTRAL	32			•	3	59	17	1	278	-	105	371	•	2	1
Minn	10		324 45		17	13 6	109 23	11	182	-	1,408 48	256 133	-	14	19 2
lowa Mo	1	-	133	-	1	-	11	11	20 73	-	19	33	-	i	1
N Dak	12	-	26 25	•	6	4	39	-	25	-	24	33	-	1	7 2
S Dak	2		25		1	2	1	-	4	-	5 14	10 6		1	2
Nebr Kans	4 3	-	1 94	-	-	-	11		2	-	10	11	-	-	
	3		94	•	5	1	19	-	57	-	1,288	30	•	10	7
S ATLANTIC	125	15	790	-	57	342	421	3	250	10	773	557	-	12	55
Md	1 14	-	1 26	•	9	115	.7	-	1	-	227	2	-	1	2 6
DC	5	-	-		2	31	47 5	1	30 1	1	165	321			-
Va W Va	34 4		36 2	•	24	28	74	-	45	5	55	21	-	-	2
NC	7		3		1	33 9	4 67	-	49	-	26	4 38	-	-	9 1
S C Ga	6	-	274	-	-	3	45	1	28 16	3	85 18	2	-	-	3
Fla	13 41	15	79 369	:	14 7	8 115	59 113	1	28 52	1	133 64	98 71		11	3 29
ES CENTRAL	21		61		9	7								4	3
Ky	6	-	-		6	5	116 27	10	234 6	-	47 5	70 8		4	3
Tenn Ala	10	-	55 1	-	1	1	37	10	223	-	16	28	-	-	
Miss	4	-	5		1	i	38 14	2	4	-	25 1	27 7	2	-	-
W S CENTRAL	106		680		38	452	217	-				553	2	73	42
Ark La	1	-	276		2	452	30	7	279 61	1	253 20	553		1	1
Okla	18 12	-	4 37	:	2	42	26	-	3	-	15	17	-	-	2
Tex	75	-	363		34	409	31 130	N 7	N 215	1	129 89	169 351	2	72	39
MOUNTAIN	39		303		29	541	107			_				24	6
Mont Idaho	1	-	-	-	29	137	107 10	6	258 6	3	281 20	239 10	-	24	-
Wyo	1		1	-	-	137	4		9	2	51	27	-	÷	2
Colo	12	-	2		8	5 15	2 20	:	17	-	4 66	1 94	-	1	-
N Mex Ariz	5 13	-	33	-	7	6	12	Ň	Ň		28	14	-	-	2
Utah	4	-	252 13	-	6	241	22	5	200	-	65	40	-	2 15	1
Nev	3	-	2	-	-		10 27	i	15 11	1	43 4	53	-	3	1
PACIFIC	457	9	592		65	431								260	200
Wash Oreg	32	8	148	-	28	431	471 63	10 2	367 21	9 3	508 155	450 86	:	17	14
Calif	19 405	1	7 410		4	5	36	N	N	-	16	50	-	4	2 135
Alaska Hawaii			-	-	31	260	346 14	8	314 8	4	302 5	267 30		233	1
	1	-	27	-	2	24	13	-	24	2	33	17	-	6	48
Guam P R	1	-	4	-	1	11	1		4		-	-	-	4	3
VI	4	8 U	44	U	-	67	4	-	34	-	19	16	÷	62	27
Pac Trust Terr		-			-	10	1	U	17 11	U	-	-	U	3	-
Amer Samoa	-	-	2	-	-	-		-	5			-	-	1	-

# TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending December 13, 1986 and December 14, 1985 (50th Week)

For measles only, imported cases includes both out-of-state and international importations N Not notifiable U Unavailable † International

Reporting Area	Syphilis (Civilian) (Primary & Secondary)		Toxic- shock Syndrome	Tuber	culosis	Tula- remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies Animal
	Cum 1986	Cum 1985	1986	Cum 1986	Cum 1985	Cum 1986	Cum 1986	Cum 1986	Cum 1986
UNITED STATES	25,914	25,676	4	21,047	20,594	160	306	744+6	5,134
NEW ENGLAND	473	565		647	680	1	16	13	8
Maine N H	19	17	-	34	45	-		-	
NH Vt	13 9	40 7	-	23 16	22 8	-		2	1
Mass	258	280	-	359	401	1	13	4	2
RI	19	17	-	46	52			3	3
Conn	155	204	•	169	152	-	3	4	2
MID ATLANTIC	3,604	3,472		4,101	3,622	1	24	40	642
Upstate N Y N Y City	174 2,052	254 2.101		603	627	-	4	20	82
NJ	618	662	-	2,152 688	1,782 479	1	11	5	
Pa	760	455		658	734	-	8 1	2 13	17 543
EN CENTRAL	820	939		2,473	2,515	1	23	46	139
Ohio	125	143	-	435	434	-	9	40	16
Ind III	108 370	-80 414	-	269 1,073	325	-	2	-	17
Mich	177	240	-	589	1,106 512	1	3 6	2 4	41 25
Nis	40	62		107	138	-	3	4	25 40
W N CENTRAL	203	222	3	623	594	45	9	51 <b>+3</b>	803
Minn	33	45	3	146	120	-	ž	1	132
owa	8	18	-	48	57	1	-	1	183
Vło N Dak	106	122	-	307	289	34	6	27 <b>3</b>	68
5 Dak	5 9	2 6		10 28	10 31	3	-	1	151
Nebr	11	7		16	18	1		5	178 37
ans	31	22		68	69	6	1	10	54
ATLANTIC	7,820	7,371	-	4,264	4,291	13	46	333 +2	1,301
Del	58	36	-	46	46	-	1	1	1
Md DC	448 291	478 322		299 158	389 149	2 1	16 4	29	566
√a	323	291	-	356	426	3	10	51	36 196
N Va	20	26	-	123	105	-	3	10	58
NC	515	657	-	641	596	3	4	129	10
5 C	684	782	-	537	502		-	71	65
Ga Ha	1,449 4,032	1,343 3,436		718 1,386	725 1,353	4	8	40	197 172
S CENTRAL		0.005		1.004		10			
(v	1,705 66	2,005 65	1	1,864 424	1,784 444	16 7	4	111 22	360 105
lenn	599	642		545	536	7	1	46	138
Ala	498	633	-	575	519	i	1	25	114
Aiss	542	665	-	320	285	1	2	18	3
V S CENTRAL	5,054	5,894	-	2,716	2,627	68	34	139 <b>+  </b>	700
Ark	253	314	-	374	316	49	-	16	158
.a Dkla	896 142	1,033 189	-	392 248	383 245	1 13	3 2	1 103	22 59
ex	3,763	4,358		1,702	1,683	5	29	19	461
OUNTAIN	599	734		518	554	12	16	10	645
Aont	7	6	-	31	46	ĩ	1	4	212
Jaho	15	7	-	23	25	-	-	2	9
Vyo Colo	4	14	-		7	1		1	271
.010 I Mex	133 68	207 120	-	55 98	89 83	3 2	1	3	29 6
ATIZ	247	308	-	240	245	-	9	-	100
ltah	18	12	-	31	21	4	3	-	7
lev	107	60	-	40	38	1	1	-	11
ACIFIC	5,636	4,474	-	3,841	3,927	3	134	1	536
Vash	168	107	-	207	211	1	3	-	5
)reg alit	115 5,308	105 4,191	-	122 3,281	131 3,307	1	124	1	1 522
Jahr	5,308	4,191	-	3,281	3,307	1	124		522
lawan	34	67		175	183	-	6	-	
iuam	. 1	2	-	35	38	-	1		
R	838	844		329	340	-	5	-	47
'i ac Trust Terr	262	128	U	1 94	1 75	-	49	-	-

# TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending December 13, 1986 and December 14, 1985 (50th Week)

U Unavailable

New Bedroid, Mass 26         23         3         -		December 13, 1986 (50th Week)														
Reporting Ares         Ail Age         Ail Age         Ail Age         Ail Age         >>5         45.64         25.44         1.24         <1			All Caus	es, By A	ge (Year	s)					All Cause	es, By Ag	je (Years	;)		
Boston Mass 1 997 116 53 99 2 17 18 Attanta Ga 1991 103 103 12 12 5 3 Battanore, Ma 396 272 73 29 12 10 24 Cambridge Mass 22 21 7 1 4 Cambridge Mass 22 24 7 1 4 Lovell Mass 32 24 7 1 3 Lovell Mass 32 24 7 1 3 Lovell Mass 32 24 7 1 2 Sameral, Ga 25 1 18 3 - 3 7 Nor Nass 16 12 3 1 2 Sameral, Ga 25 1 18 3 - 3 7 New Nass 16 12 3 1 2 Sameral, Ga 25 1 18 3 - 3 7 New Nass 16 22 3 7 2 Sameral, Ga 25 1 18 3 - 3 7 New Nass 16 22 3 7 2 Sameral, Ga 25 1 18 3 - 3 7 New Nass 22 24 7 1 2 2 Sameral, Ga 25 1 18 3 - 3 7 New Nass 16 12 3 1 1 Nordik va 8 12 9 1 2 2 Sameral, Ga 20 17 5 2 Sameral, Ga 20 17 5 2 Sameral, Ga 20 18 3 1 - 1 Nordik va 8 12 9 1 2 2 Sameral, Ga 20 18 3 1 - 1 Nordik va 8 12 9 1 2 3 MID ALANTIC 2,978 1,901 631 295 59 91 153 Contension N 138 95 28 6 2 6 13 Materious P 18 24 16 1 - 7 Attantoga P 18 24 16 1 - 7 Sameral, Ga 30 7 13 3 14 1 3 Sameral, Ga 20 17 5 15 3 18 3 1 - 1 France fra Materious P 18 34 12 7 5 17 5 0 28 23 37 Brance france N 138 95 28 6 2 6 13 Materious P 18 24 16 1 5 5 2 7 13 3 14 1 7 2 7 Nordika 95 18 3 14 7 2 7 Mobie, Ala 95 19 3 4 2 7 7 3 2 9 N C(x) N 1 18 9 11 7 7 2 - 1 1 Brance france N 13 8 95 28 6 1 2 - 1 1 Brance france N 13 8 95 28 6 1 2 - 1 2 Sameral, Ala 95 59 17 13 3 15 54 6 3 7 N C(x) N 1 51 9 101 2 326 18 3 0 6 3 82 N C(x) N N 151 9 101 2 326 18 3 0 6 3 82 N C(x) N N 151 9 101 2 326 18 13 0 5 54 6 3 7 N Colve N 11 8 0 23 7 7 3 9 N Colve N 11 8 0 23 7 7 3 9 N Colve N 11 8 0 23 7 7 3 9 N Colve N 11 8 0 23 7 7 3 9 N Colve N 11 8 0 23 7 7 3 9 N Colve N 11 8 0 23 7 7 3 9 N Colve N 11 8 0 23 7 7 3 9 N Colve N 11 8 0 23 7 7 3 9 N Colve N 13 8 02 17 4 1 3 1 - 1 1 N Colve Samera 13 12 2 10 2 11 1 1 2 0 1 N Colve Samera 13 12 12 10 2 11 1 1 2 0 1 N Colve Samera 13 12 12 10 2 11 1 1 2 0 1 N Colve Samera 13 12 12 10 2 11 1 1 1 0 1 0 1 0 2 3 1 1 0 1 0 1 0 2 3 1 1 0 0 1 0 0 2 3 1 1 0 0 0 0	Reporting Area		≥65	45-64	25-44	1-24	< 1		Reporting Area		≥65	45-64	25-44	1-24	<1	
Boaton Mars. 197 116 53 19 2 7 18 Atlanta Ga 191 103 50 21 12 5 3 Battimore, Ma 396 227 73 29 11 2 5 2 Fall Rever Mass. 20 27 72 29 12 10 225 Fall Rever Mass. 20 27 72 29 12 10 225 Fall Rever Mass. 20 27 71 2 9 2 10 Locket Mass. 32 24 7 1		709	486	150	53	7	13	45	S ATLANTIC	1,533	955	341	130	49	57	68
Cambridge Mass 27 21 5 1 4 Fairflord, Mass 20 17 2 1 4 Fairflord, Conn 52 32 12 9 2 2 3 Marking Conn 52 32 12 9 1 13 3 - 10 Froweler RI 60 39 16 3 1 1		197	116				7		Atlanta, Ga	191	103	50	21	12	5	3
Fall Rev: Mass       20       17       2       1       -       -       Jackstonvike, Fia       113       73       25       10       3       21       0       2       2       3       Marriely, Market, Mass       36       10       11       13       73       25       10       3       21       10       11       11       13       73       25       10       3       3       1       1       11       11       13       33       3       1       1       11       13       33       3       10       11       11       11       13       33       3       10       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       10       11 <td></td> <td></td> <td></td> <td></td> <td></td> <td>1</td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						1	-									
Hartford, Conn Siz 24 Tirron Mass Siz 24 Tirron	Cambridge, Mass				•	-	-	4							5	
Lowell Mass 32 24 7 1 - 6 2 Lowell Mass 36 12 23 3 2 New Berlinde Mass 26 23 3 2 Samerule Mass 12 9 1 2 3 Waterbury Conn 28 20 6 1 3 1 2 3 Waterbury Conn 28 20 6 1 3 1 1 - 1 Waterbury Conn 28 20 6 1 3 1 1 - 1 Waterbury Conn 28 20 6 1 1 3 1 1 3 Waterbury Conn 28 20 6 1 1 3 1 1 7 Knowle Lene 1 5 6 5 12 7 7 5 0 28 2 3 7 Waterbury Long 10 2 2 1 2 - 1 2 Waterbury Long 10 2 2 1 2 - 1 2 Waterbury Long 10 2 2 2 1 8 1 1 7 Waterbury Long 10 2 2 2 1 8 1 1 7 7 Waterbury Long 10 2 2 2 1 8 1 1 7 7 Waterbury Long 10 2 2 2 1 8 1 1 7 7 Waterbury Long 10 2 2 2 1 8 1 1 7 7 Waterbury Long 10 2 2 2 1 8 1 1 7 7 Waterbury Long 10 2 2 2 1 8 1 1 7 7 1 1 1 1 7 Waterbury Long 10 2 2 1 1 1 2 2 1 1 1 7 7 1 1 1 1 1 1 1 1	Hartford Conn					-	-	-						3		
Lynn, Mass, 16, 12, 3, 1, -, 2 Rew Bedford, Mass, 26, 23, 3, -, -, -, 2 New Medical, Mass, 26, 23, 3, -, -, -, 2 New Medical, Mass, 26, 23, 3, -, -, -, 2 Savanan, Ga, 38, 25, 8, 3, 1, 1, 1 Tampa, Fa, 10, 2, 5, 19, 13, 3, 6, 10, 10, 10, 10, 10, 10, 10, 10, 10, 10						2	2	3						-		
New Bedroid, Mass 26         23         3         -	Lynn, Mass						:	2						-		7
New Haven. Com Forvæderice, Plase, Be Forvæderice, Plase, Be Forvæderice, Plase, Be Morteshurg, Plase, Be Mor						-	-	-						1	1	1
Somerule Mass.         12         3         1         2         Washington DC §         179         93         45         25         7         9         4           Waterbuy, Conn         28         20         6         2         -         -         3           Workester, Mass         B2         66         11         3         1         1         3         Waterbuy, Conn         28         20         6         2         -         -         3         Waterbuy, Conn         28         20         6         2         -         -         3         Waterbuy, Conn         28         20         1         2         -	New Haven, Conn			17	7	-	2	2			79				-	
Springfleid Mass         41         30         B         3         1         -         1           Waterbuy, Com         28         20         6         2         -         3         E         Schentpelle         42         30         B         3         1         -         1           Waterbuy, Com         28         2         66         1         3         1         1         3         E         Schwingham, Ale         837         15         6         1         -         7         84         18         11         4         6         1         7         7         16         1         1         7						1	1	-								2
Waterbuy, Conn         28         20         6         2         -         3         Example           MUD ATLANTIC         2.978         1.901         631         295         59         91         153         CENTRAL         837         559         177         50         28         23         3         1         -         Attantooga         Fan         70         46         17         6         1         -         7         50         153         3         1         1         6         -         7         7         50         153         3         1         7         Fan         7         29         2         3         1         1         7         7         29         3 <t< td=""><td></td><td></td><td>5</td><td></td><td></td><td>-</td><td>-</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>			5			-	-									
Worcester. Mass         B2         66         11         3         1         1         3         ES CENTRAL         837         559         177         50         28         23         37           MID ATLANTIC         2.978         1.901         631         295         59         91         153         Chattanooga Tenn         70         46         17         6         1         -7           Allention Ya         16         14         4         -         -         -         Lousville, Yv         128         46         17         6         1         -7         Allention Ya         13         3         1         1         Lousville, Yv         128         46         14         15         3         2         7         2         3         3           Strateson NJ         153         16         17         3         3         2         7         4         3 <td></td> <td></td> <td></td> <td></td> <td></td> <td>-</td> <td>-</td> <td>3</td> <td>wilmington, Del</td> <td>42</td> <td>30</td> <td>8</td> <td>3</td> <td></td> <td>-</td> <td>'</td>						-	-	3	wilmington, Del	42	30	8	3		-	'
Burmingham, Ala         127         88         18         11         4         6         3           Albary, N.Y         54         39         10         2         1         2         -         Linetown, Family         2         1         2         -         Linetown, Family         3         15         3         1         1         7         Albary, N.Y         54         3         1         1         7         Albary, N.Y         54         3         15         3         1         1         7         Albary, N.Y         54         3         1         1         7         Albary, N.Y         54         2         6         11         Minite Alia         120         120         13         1         1         7         3         3         1         1         7         2         3         1         1         7         3         3         1         1         7         3         3         1         1         7         1         1         1         4         4         3         3         1         1         7         1         1         1         1         1         1         1         1         1 <td< td=""><td>Worcester Mass</td><td></td><td></td><td></td><td></td><td>1</td><td>1</td><td>3</td><td>ES CENTRAL</td><td>837</td><td>559</td><td>177</td><td>50</td><td>28</td><td>23</td><td>37</td></td<>	Worcester Mass					1	1	3	ES CENTRAL	837	559	177	50	28	23	37
MID ALLANTIC       2.97       19.01       631       2.95       99       1153       Chattañooga Tenn       70       46       17       66       17       66       17       66       17       66       17       67       18       14       4       -       -       -       -       Lousville       Fin       73       53       15       3       1       1       7         Allentown Pa       18       14       4       -       -       -       -       -       Lousville       Fin       90       124       43       14       7       2       7         Cameen NJ       42       27       9       2       3       1       1       Mobile       Ala       95       76       13       3       6       3       3       3       5       2       7       2       7       2       7       2       7       2       7       3		02	00		3	'		3	Birmingham Ala							
Allentow, Pa 18 14 4		2,978	1,901	631	295	59	91	153		70					-	7
Burfalo, NY 138 95 28 6 2 6 13 Carnden, NJ 42 27 9 2 3 1 1 Eixabeth, NJ 19 11 7 1 1 Eixabeth, NJ 19 11 7 1 1 Eixabeth, NJ 19 11 7 1 1 Dersey City, NJ 63 24 16 15 3 5 2 Jersey City, NJ 63 24 16 15 3 5 2 Jersey City, NJ 63 24 16 15 3 5 2 Jersey City, NJ 63 24 16 15 3 5 2 Jersey City, NJ 63 24 16 15 3 5 2 Jersey City, NJ 63 24 16 15 3 5 2 Newark, NJ 53 22 16 10 4 1 3 Philadepha Pa 400 25 9 6 35 10 6 18 Corpus Christi. Tex 56 37 8 7 1 3 1 Philadepha Pa 400 25 2 9 6 3 10 6 18 Corpus Christi. Tex 56 37 8 7 1 3 1 Trenton Pa 4 57 28 6 1 1 - 4 Noston Fax 417 239 106 48 11 13 9 Scraton Pa + 35 28 6 1 1 2 Scraton Pa + 35 28 6 1 1 2 Scraton Pa + 35 28 6 1 1 1 Scraton Pa + 35 28 6 1 1 2 Scraton Pa + 35 28 6 1 1 1 Scraton Pa + 35 28 6 1 1 2 Scraton Pa + 35 28 6 1 1 2 Scraton Pa + 35 28 6 1 2 Scraton Pa + 35 28 7 - 2 Scraton Pa + 35 28 7 - 2 Scraton Pa + 37 7 8 E N CENTRAL 2.402 1,573 504 172 60 93 107 Trenton, NG 136 87 7 3 8 5 4 5 4 1 2 Scraton Pa + 37 7 8 E N CENTRAL 2.402 1,573 504 172 6 17 7 Scraton Pa + 37 7 Scraton Pa					2	1	2	-								
Camden N J 42 27 9 2 3 1 1 7 1 - 1 Mobie Ala 95 70 13 3 6 3 2 3 Erabeth N J 19 11 7 1 - 1 Motigonery Ala 40 27 10 - 3 - 2 Nashville Tenn 115 65 32 7 2 9 3 Jersey CH, N J 63 24 16 15 3 5 2 N Y CH N Y 1.619 1.012 326 188 30 63 82 N Y CH N Y 1.619 1.012 326 188 30 63 82 N Y CH N Y 1.619 1.012 326 188 30 63 82 N Schwark AJ 53 22 16 10 4 1 3 Baten Son AJ 52 25 5 4 - 2 2 1 Pittsburgh Pa 4 60 25 3 6 4 - 2 2 Pittsburgh Pa 4 60 25 3 6 4 - 2 2 Scratton, Pa 4 60 25 3 6 4 - 2 3 Pittsburgh Pa 4 60 25 3 6 4 1 1 - 4 Schenetady, N Y 31 23 6 1 1 - 4 Schenetady, N Y 31 23 6 1 1 - 4 Unce, N Y 29 21 7 1 - 1 1 2 Scratton, Pa 4 35 29 6 6 - 1 - 2 1 Unce, N Y 29 21 7 1 - 1 1 2 4 Unce, N Y 29 21 7 1 - 1 1 2 Schenetady, N Y 31 38 6 23 7 - 3 9 Svatuse, N Y 113 80 23 7 - 3 9 New Orleans La 95 59 21 11 2 2 1 1 Son Artono Tex 181 120 34 16 5 6 4 Soratton, Pa 4 35 26 6 1 1 Unce, N Y 29 21 7 1 1 Schenetady, N Y 31 38 62 125 60 9 3 107 Arton Arton Oho 59 1 37 10 2 1 1 8 Son Artono Tex 181 122 92 31 3 5 1 8 MOUNTAIN 7 10 451 146 59 25 28 4 4 Shereyort, La 41 32 92 31 3 5 1 8 MOUNTAIN 7 122 3 1 6 13 7 5 4 10 2 Columbus, Oho 131 75 31 13 7 5 - 4 Concand, Oho 134 87 35 8 4 4 4 12 Columbus, Oho 131 75 31 13 7 5 - 4 Detroit, Mich 267 156 68 24 6 13 7 7 7 8 Bate Arton Oho 114 73 25 8 4 4 3 Poenix, Ariz 138 85 29 8 6 6 10 2 Satt Lae Cry, Ulah 70 42 11 9 2 6 - Satt Lae Cry,					-	-	-									5
Elizabeth NJ 19 11 7 1 6 7 1 6 7 1 8 7 1 8 7 1 7 1 6 7 1 2 7 1 7 2 9 3 Jersey City, NJ 63 24 16 15 3 5 2 Jersey City, NJ 63 24 16 15 3 5 2 Nevark, NJ 53 22 16 10 4 1 3 Phiadelphia Pa 400 253 96 35 10 6 18 Phiadelphia Pa 400 253 96 35 10 6 19 Phiadelphia Pa 400 253 96 35 10 6 18 Phiadelphia Pa 400 253 96 35 10 6 19 Phiadelphia Pa 400 253 96 3 10 7 Hitter Morter 148 95 26 11 7 11 19 Scranton Pt 1 33 28 6 1 1 1 1 Scranton V 42 26 9 6 - 1 2 2 San Antomo Tex 181 120 34 16 5 6 4 Vonkers, N Y 49 34 11 3 1 - 4 Vonkers, N Y 49 34 11 3 1 - 4 Vonkers, N Y 49 34 11 3 1 - 4 Vonkers, N Y 49 34 11 3 1 - 4 Concago III § 564 362 125 45 10 2 16 Carton Ohio 51 37 10 2 1 1 1 8 Concago III § 564 362 125 45 10 2 16 Colo Springs.Colo 114 73 22 12 3 4 4 Concurs Colo 116 114 73 22 1 3 5 12 5 Gary, Ind 14 6 4 2 1 1 - 7 Fresno, Calif 56 66 45 15 5 2 7 2 1 9 Pueblic, Colo 114 73 22 1 3 5 12 5 Gary, Ind 14 6 4 2 1 1 - 7 Fresno, Calif 26 356 21 5 2 1 12 0 San Francsoc.Calif 26 366 12 5 1 2 1 13 5 Sorterment, Calif 28 12 4 2 2 1 3 San Francsoc.Calif 182 113 35 14 4 2 Sorterment, Calif 182 113 35 14 4 2 Sorterment, Calif 182 113 35 14 4 2 Sorterment, Calif 182 12 4 1 4 4 7 12 Sorterment, Calif 182 11 3 5 14 4 5 Sorterment, Ca																
Erre, Pat       40       31       6       2       -       1       2       Nashville Tenn       115       65       32       7       2       9       3         D Y City N V       1.61       1.53       5       2       N       No first NV       1.51       65       32       7       2       9       3         Pirtsburgh, Pat       63       22       16       63       63       82       WS CENTRAL       1.576       981       343       135       54       63       63       63       82         Pirtsburgh, Pat       63       42       18       2       -       1       2       Datas. Tex       56       17       9       8       6       1       -       3       Elesso Tex       85       56       15       5       4       5       7       7       11       14       3       4.6       11       3       3       3       3       5       7       7       11       14       3       4.6       11       3       3       5       7       7       11       14       3       4.6       11       3       3       5       7       7       11       <						3	1						3		3	
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N Y City, N Y 1, 619 1, 012 326 188 30 63 82 Newark, N J 53 22 16 10 4 1 3 Paterson N J 24 15 5 4 2 Pritsburgh Pa t 63 42 18 2 - 1 2 Pritsburgh Pa t 63 42 18 2 - 1 2 Pritsburgh Pa t 63 42 18 2 - 1 2 Pritsburgh Pa t 63 42 18 2 - 1 3 Pritsburgh Pa t 63 42 18 2 - 1 3 Pritsburgh Pa t 63 42 18 2 - 1 3 Pritsburgh Pa t 63 42 18 2 - 1 3 Pritsburgh Pa t 63 42 18 2 - 1 3 Pritsburgh Pa t 63 42 18 2 - 1 3 Pritsburgh Pa t 63 42 18 2 - 1 3 Pritsburgh Pa t 63 42 18 2 - 1 3 Pritsburgh Pa t 63 42 18 2 - 1 3 Pritsburgh Pa t 63 42 18 2 - 1 3 Pritsburgh Pa t 63 42 18 2 - 1 3 Pritsburgh Pa t 63 42 18 2 - 1 3 Pritsburgh Pa t 63 42 18 2 - 1 3 Pritsburgh Pa t 63 42 18 2 - 1 3 Pritsburgh Pa t 63 42 18 2 - 1 3 Pritsburgh Pa t 63 42 18 2 - 1 3 Pritsburgh Pa t 63 42 18 2 - 1 3 Pritsburgh Pa t 63 42 18 2 - 1 1 2 Pritsburgh Pa t 63 42 11 7 4 1 1 4 Pointers 417 238 106 48 11 3 9 Pritsburgh Pa t 63 2 7 - 3 9 Pritsburgh Pa t 63 2 7 - 1 3 9 Little Rock, Arx 71 43 17 4 3 4 16 5 Pritsburgh Pa t 63 2 7 - 1 3 9 Little Rock, Arx 71 43 17 4 3 4 16 5 6 4 Pritsburgh Pa t 63 2 7 - 1 8 Pritsburgh Pa t 63 2 7 - 1 8 Pritsburgh Pa t 64 5 1 3 6 3 2 - 1 1 2 Pritsburgh Pa t 64 5 1 3 6 3 2 - 1 1 8 Pritsburgh Pa t 64 5 1 3 6 3 2 - 1 1 8 Pritsburgh Pa t 64 5 1 3 6 3 2 - 1 1 8 Pritsburgh Pa t 64 5 1 3 6 3 2 - 1 1 8 Pritsburgh Pa t 64 5 1 3 6 3 2 - 1 1 8 Pritsburgh Pa t 64 5 1 3 6 3 2 - 1 1 8 Pritsburgh Pa t 64 5 1 3 6 3 2 - 1 1 8 Pritsburgh Pa t 64 5 1 3 7 0 2 1 1 8 Deriver Colo 51 129 11 4 4 2 7 1 9 2 4 Deriver Colo 51 129 11 4 4 2 7 1 9 2 4 Deriver Colo 51 129 11 4 4 2 7 1 9 2 4 Deriver Colo 51 129 11 4 4 2 7 1 9 2 4 Pritsburgh Pa t 13 3 7 5 - 1 12 Dayton Oho 131 75 31 13 7 5 - 1 12 Dayton Oho 131 75 13 3 7 5 - 1 12 Dayton Oho 131 75 13 3 7 5 - 1 12 Dayton Oho 14 16 6 4 2 1 1 - 2 2 1 Dayton Oho 14 6 10 2 1 1 7 Pritsburgh Pa t 11 19 2 6 - 1 1 2 Dayton Oho 14 16 6 4 2 1 1 - 2 1 19 2 6 - 1 1 2 Dayton Oho 13 7 13 3 1 2 1 3 5 12 5 1 Dayton Pa t 13 3 1 2 1 3 5 12 5 12 3 13 12 Dayton Oho 13 7 13 13 7 5 2 1 2 1						3						01	•	-	U	Ũ
Paterson N J 24 15 5 4 2 Philadelpha, Pa 400 253 96 35 10 6 18 Pritsburgh, Pa t 63 42 18 2 1 2 Pritsburgh, Pa t 63 42 18 2 1 2 Reading, Pa 27 21 4 2 3 Schemetady, N 31 23 6 1 1 4 Schemetady, N 31 23 6 1 1 4 Schemetady, N 31 23 6 1 1 1 Little Rock, Ark 71 43 17 4 3 16 5 6 New Orleans, La 95 59 21 11 2 2 1 Schemetady, N 42 26 9 6 1 2 Schemetady, N 42 26 7 11 1 3 6 4 Yonkers, N 4 49 34 11 3 1 4 Yonkers, N 4 49 34 11 3 1 4 Schemetady, N 49 34 11 3 1 4 Yonkers, N 49 34 11 3 1 4 Yonkers, N 49 34 11 3 7 5 Phoenix, La 95 29 21 1 4 4 2 7 Chicago, Ill 5 564 362 125 45 10 22 16 22 16 20 11 1 6 Canton Ohio 51 37 10 2 1 1 1 8 Colos Springs, Colo 51 29 11 4 4 2 7 Denver, Colo 114 73 22 12 3 4 4 4 Cancing, Max 86 7 35 8 4 4 4 12 Usavegas, Nev 86 55 21 7 7 2 1 9 Ogden Utah 16 12 1 1 2 2 Revelad, Ohio 176 107 44 15 5 5 4 Pueblo, Colo 22 18 3 1 6 Detrot, Mich 267 156 68 24 6 13 7 Sott Lake City, Utah 70 42 11 9 2 6 . Fort Wayne, Ind 72 49 9 9 2 3 5 Garw, Ind 14 6 4 2 1 1 Grand Rapids, Mich 60 46 10 2 1 1 1 7 Berkeley, Calif 23 83 24 8 6 2 8 PACIFIC 2.040 1.339 408 176 61 56 127 Berkeley, Calif 26 45 12 5 1 3 5 Sott Berd, Mich 28 9 2 3 Dak Mex 190 44 31 10 1 - 2 2 8 SoutBend, Calif 66 45 12 2 1 3 5 Sott Berd, Win 140 9 2 1 1 1 9 5 7 7 8 SoutBend, Ind 44 31 10 1 - 2 2 8 SoutBend, Ind 44 31 10 1 - 2 2 8 SoutBend, Ind 44 32 9 3 3 Dakande Calif 56 356 121 50 18 11 18 SoutBend, Ind 44 31 10 1 San Jose Calif 56 356 121 50 18 11 18 SoutBend, Ind 44 31 10 1 San Jose Calif 56 356 121 50 18 11 18 SoutBend, Ind	N Y City, N Y								W S CENTRAL	1,576	981	343	135	54	63	
Philadelphia, Pa 400 253 96 35 10 6 18 Corpus Christ. Fex 56 37 8 7 1 3 1 Pritsburgh, Pa 4 63 42 18 2 - 1 2 Partsburgh, Pa 4 63 42 18 2 3 Fort Worth. Fex 230 140 56 17 9 8 6 Reading, Pa 27 21 4 2 3 Fort Worth. Fex 230 140 56 17 9 8 6 Pachester. N 119 83 24 7 4 1 3 Scranton, Pa 1 35 28 6 1 1 Fort Worth. Fex 148 92 27 11 7 1 1 14 Schenectady, N Y 31 23 6 1 1 4 Houston, Tex 417 239 106 48 11 13 9 Syracuse. N Y 113 80 23 7 - 3 9 New Orleans La 95 59 21 11 2 2 1 San Antono Tex 181 120 34 16 5 6 4 Unca N Y 29 21 7 1 1 San Antono Tex 181 120 34 16 5 6 4 Unca N Y 29 21 7 1 1 Sherveport La 41 32 5 3 1 - 4 Vonkers. N Y 49 34 11 3 1 - 4 Wourder, N W 30 45 13 6 3 2 - Christon Dhio 51 37 10 2 1 1 8 EN CENTRAL 2.402 1.573 504 172 60 93 107 Christon Dhio 51 37 10 2 1 1 8 EN CENTRAL 2.402 1.573 504 172 60 93 107 Christon Dhio 51 37 10 2 1 1 8 EN CENTRAL 2.402 1.573 504 172 60 93 107 Christon Dhio 51 37 10 2 1 1 8 EN CENTRAL 2.402 1.573 504 172 60 93 107 Christon Dhio 51 37 10 2 1 1 8 EN CENTRAL 2.402 1.573 504 172 60 93 107 Christon Dhio 51 37 10 2 1 1 8 EN CENTRAL 2.402 1.573 504 172 60 93 107 Christon Dhio 138 87 35 8 4 4 12 Colos Daryngs. Colo 51 29 11 4 4 2 7 Christon Dhio 138 87 35 8 4 4 12 Colos Daryngs. Colo 21 9 54 24 10 1 1 6 Colos Springs. Colo 21 9 9 8 6 10 2 Dayton Dhio 114 73 22 18 3 - 1 - 6 Colos Daryngs. Colo 22 18 3 - 1 - 6 Garyn ad 175 113 37 5 - 1 3 Gravindar 2015 13 3 5 12 5 1 Gravindar 2015 13 3 1 4 2 Columbus. Christon 14 6 4 2 2 1 1 7 Gravindar 31 14 5 1 7 Gravindar 32 4 8 4 1 2 Foreno. Calif 8 69 49 12 4 2 2 1 3 Gravindar 2015 14 10 1 - 2 8 Gravindar 2015 14 10 1 - 2 8 Colos Angeles Calif 556 356 121 50 18 11 18 South End Ind 44 32 9 3 - 1 3 Gravindar 31 10 1 - 2 4 Foreno. Calif 8 69 49 12 4 2 2 4 13 South End Ind 44 32 9 3 - 1 3 South End Ind 44 32 9 3 - 1 3 South End Ind 44 32 9 3 - 1 3 South End Ind 44 32 9 3 - 1 3 South End Ind 44 32 9 3 - 1 3 South End Ind 44 32 9 3 - 1 3 South End Ind 44 32 9 3 - 1 3 South End In						4	1									
Pittsburgh, Pa t       6.3       4.2       1.8       2       -       1       2       Datas. Tex       2.30       140       56       17       9       8       6         Reading, Pa       27       21       4       2       -       -       3       6       1       1       3       6       17       9       8       6       5       5       7       7       8       6       17       9       8       6       17       9       8       6       17       9       8       6       17       9       8       6       17       9       8       6       17       9       8       6       17       9       8       6       17       9       8       6       17       9       8       6       17       9       8       6       17       9       8       6       17       9       8       6       17       9       8       6       17       9       8       6       17       13       3       7       13       13       17       13       17       13       17       13       13       13       13       13       13       13				5			-									
Reading Pa       27       21       4       2       -       3       ElPaso. Tex       85       56       15       5       4       5       7       7       11       14         Schenetady, N Y       31       23       6       1       1       -       4       Houston. Tex       417       239       106       48       11       13       9         Scranton, Pat       35       28       6       1       -       -       1       New Orleans. La       95       59       21       11       2       2       1         Trenton, N       42       26       9       6       -       1       San Antonio. Tex       181       120       34       16       5       6       4       6         Vinkers, N Y       49       34       11       3       1       -       4       Tuisa. Okia       132       92       31       3       5       1       8       7       23       1       8       Colorsprings. Colo       51       29       14       4       2       7       2       12       3       4       1       1       6       10       2       1       1						10										
Rochester, NY       119       83       24       7       4       1       3       Fort Worth, Tex       148       92       27       11       7       11       14         Schenectady, NY       31       23       6       1       -       -       1       Houston. Tex       117       23       106       48       11       3       4       6         Stratuse, NY       13       80       23       7       -       3       9       New Orleans, La       95       59       21       11       2       2       1         Trenton NJ       42       26       9       6       -       1       2       San Antonon Tex       181       120       34       16       5       6       4         Yonkers, NY       49       34       11       3       1       -       4       Streeport, La       181       120       34       16       5       6       4       Usa. Skeeport, La       132       92       31       3       5       1       4       2       7       1       14       4       2       7       1       1       -       2       2       11       1       1						-										
Schenectady, N Y       31       23       6       1       1       -       4       Houston. Tex       417       239       106       48       11       13       9         Scranton, Pat       35       28       6       1       -       -       1       Lttle Bock. Ark       71       43       17       4       3       4       6         Syracuse, N Y       113       80       23       7       -       3       9       New Orleans, La       95       59       21       11       2       2       1         Trenton NJ       42       26       9       6       -       1       2       Snantonio Tex       181       120       34       16       5       6       4         Yonkers, N Y       49       34       11       3       1       -       4       Shreveport, La       132       92       31       3       5       1       8         Concinati, Ohio       51       37       10       2       1       1       8       6       29       11       4       4       2       7       2       1       9       11       13       7       5       11<						4	1									
Syracuse N Y       113       80       23       7       -       3       9       New Orleans La       95       59       21       11       2       2       1         Trenton N Y       29       21       7       1       -       1       2       Santono Tex       181       120       34       16       5       6       4         Yonkers N Y       49       34       11       3       1       -       4       Shreveport. La       41       32       5       3       1       -       4         Yonkers N Y       49       34       11       3       1       -       4       Tulsa. Okla       132       92       31       3       5       1       8         E N CENTRAL       2.402       1.573       504       172       60       93       107       A       A       A       Duchola       16       12       1       1       6       2       2       8       4       2       16       Colo Springs. Colo       51       29       1       4       2       7       1       2       2       1       1       -       2       2       3       5       2<		31	23	6		1	-		Houston, Tex	417	239					
Trenton N J       42       26       9       6       -       1       25       San Antono Tex       181       120       34       16       5       6       4         Yonkers, N Y       49       34       11       3       1       -       4       Tulsa. Okla       132       92       31       3       5       1       8         E N CENTRAL       2.402       1.573       504       172       60       93       107       Altron. Ohio       51       31       1       -       4       Tulsa. Okla       132       92       31       3       5       1       8         Contom Ohio       51       37       10       2       1       1       8       7       0       2       16       16       17       1       1       6       12       1       1       1       2       2       14       4       2       7       1       9       1       1       1       2       2       1       1       1       2       1       1       1       2       1       7       1       2       1       1       1       2       1       1       1       2				6		-	-							3	4	6
Utica NY       29       21       7       1       -       -       1       Shreveport.la       41       32       5       3       1       -       4         Yonkers, NY       49       34       11       3       1       -       4       Tulsa. Okla       132       92       31       3       5       1       8         E N CENTRAL       2.402       1.573       504       172       60       93       107       Abuquerque.NMex       90       54       24       10       1       1       6         Canton. Ohio       51       37       10       2       1       1       8       6       55       21       7       2       1       9       6       7       3       4       10       1       1       6       Colo Springs.Colo       51       29       11       4       4       2       7       1       9       9       2       1       1       -       2       2       2       3       4       4       12       1       1       -       2       1       3       1       4       4       12       1       1       -       2       1						-										
Yonkers, N Y       49       34       11       3       1       -       4       Tulsa, Ökla       132       92       31       3       5       1       8         E N CENTRAL       2,402       1,573       504       172       60       93       107       Akron, Ohio       69       45       13       6       3       2       -       Albuquerque, N Mey       90       54       24       10       1       1       6       50       25       28       44         Akron, Ohio       51       37       10       2       1       1       8       70       564       362       125       45       10       22       16       Colo Springs, Colo       51       29       11       4       4       7       Denver, Colo       114       73       22       12       3       4       4       12       Las Vegas, Nev       86       55       21       7       2       19       Ogden, Utah       16       12       1       -       2       2       13       3       1       -       2       19       Ogden, Utah       16       12       11       7       Turson, Ariz       123       83 <t< td=""><td></td><td></td><td></td><td></td><td></td><td>-</td><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>6</td><td></td></t<>						-	1								6	
Akron Ohio       69       45       13       6       3       2       -       Albuerque N Mex       90       54       24       10       1       1       6         Canton, Ohio       51       37       10       2       1       1       8       Colo Springs, Colo       51       29       11       4       4       2       7         Chicago, III §       564       362       125       45       10       22       16       14       73       22       3       4       4       2       7       2       1       9       Denver, Colo       114       73       22       3       4       4       2       7       2       1       9       2       1       1       -       2       2       18       4       4       2       7       1       2       1       1       -       2       18       3       4       4       2       7       1       3       1       4       2       1       1       -       1       1       -       1       1       -       1       1       -       1       1       1       -       1       1       1						1	:				92		3		1	
Akron Ohio       69       45       13       6       3       2       -       Albugurgue, N.Mex       90       54       24       10       1       1       6         Canton, Ohio       51       37       10       2       1       1       1       6       Colo Springs, Colo       51       29       11       4       2       7       2       1       9         Chicago, III       5       564       362       125       45       10       22       16       Las Vegas, Nev       86       55       21       7       2       1       9       2       1       1       -       2       2       3       4       4       2       7       2       1       9       2       3       5       2       1       4       4       2       7       2       1       9       2       3       5       4       4       3       7       2       1       3       1       3       1       3       1       3       1       3       1       3       1       4       3       1       9       2       3       5       4       4       3       1       1 <td>E N CENTRAL</td> <td>2,402</td> <td>1,573</td> <td>504</td> <td>172</td> <td>60</td> <td>93</td> <td>107</td> <td>MOUNTAIN</td> <td>710</td> <td>451</td> <td>146</td> <td>59</td> <td>25</td> <td>28</td> <td>44</td>	E N CENTRAL	2,402	1,573	504	172	60	93	107	MOUNTAIN	710	451	146	59	25	28	44
Chicago, III § 564 362 125 45 10 22 16 Cincinnati. Ohio 138 87 35 8 4 4 12 Cincinnati. Ohio 176 107 44 15 5 5 4 Columbus, Ohio 131 75 31 13 7 5 - Dayton, Ohio 114 73 22 12 3 4 4 Carceland, Ohio 176 107 44 15 5 5 4 Detroit. Mich 267 156 68 24 6 13 7 Paransville. Ind 53 48 4 1 2 Fort Wayne. Ind 72 49 9 9 2 3 5 Fort Wayne. Ind 72 49 9 9 2 3 5 Gary, Ind 14 6 4 2 1 1 - Gary, Ind 14 6 4 2 1 1 - Gary, Ind 15 113 32 13 5 12 5 Midison, Wis 38 17 13 32 13 5 12 5 Middison, Wis 38 17 13 32 13 5 12 5 Middison, Wis 38 17 13 32 13 5 12 5 Rock ford, III 40 28 9 2 - 1 5 Nockolf, III 40 28 9 2 - 1 5 South Bend, Ind 44 32 9 3 3 Nockolf, III 40 28 9 2 - 1 5 South Bend, Ind 44 32 9 3 3 Nockolf, III 40 22 4 9 1 4 9 Youngstown, Ohio 63 48 10 2 2 1 8 9 Youngstown, Ohio 63 48 10 2 2 1 8 9 Youngstown, Ohio 63 48 10 2 2 1 3 South Bend, Ind 44 132 9 3 3 Youngstown, Ohio 63 48 10 2 2 1 3 South Bend, Ind 44 132 9 3 3 Youngstown, Ohio 63 48 10 2 2 1 3 South Bend, Ind 44 132 9 3 3 Youngstown, Ohio 63 48 10 2 2 1 3 South Bend, Ind 44 12 1 Youngstown, Ohio 63 48 10 2 2 1 3 South Bend, Ind 44 12 - 0 Youngstown, Ohio 63 48 10 2 2 1 3 South Bend, Ind 44 132 9 3 3 Youngstown, Ohio 63 48 10 2 2 1 3 South Bend, Ind 44 132 9 3 3 Youngstown, Ohio 63 48 10 2 2 1 3 Youngstown, Ohio 68 5 4 7 3 3 1 2 Youngstown, Ohio 68 5 4 7 3 3 1 2 Youngstown, Ohio 68 5 4 7 3 3 1 2 Youngstown Wa 57 44 6 5 1	Akron, Ohio						2	-					10	1	1	
Cincinnani, Ohio       138       87       35       8       4       12       Las Vegas, Nev       86       55       21       7       2       1       9         Cincinnani, Ohio       116       107       44       15       5       5       4       Ogden, Utah       16       12       1       1       -       2       2         Dayton, Ohio       114       73       25       8       4       4       3       Puebio, Colo       22       18       3       -       1       -       6         Detroit, Mich       267       156       68       24       6       17       7       123       83       24       8       6       2       8         Gary, Ind       72       49       9       9       2       3       5       7       7       12       1       7       123       83       24       8       6       2       8         Fort Wayne, Ind       72       49       9       2       3       5       12       5       13       7       12       2       1       3       14       2       14       14       14       15       13																
Cleveland, Ohio       176       107       44       15       5       5       4       Opden, Utah       16       12       1       1       -       2       2         Columbus, Ohio       131       75       31       13       7       5       -       Phoemix, Ariz       138       85       29       8       6       10       2         Detroit, Mich       267       156       68       24       6       13       7       5       -       Pueblo, Colo       22       18       3       -       1       -       6       -       Fort Wayne, Ind       72       49       9       9       2       3       5       12       5       Face Fort Wayne, Ind       74       6       61       56       127       1       7       1       2       2       1       3       1       4       6       4       2       1       1       7       8       PACIFIC       2,040       1,339       408       176       61       56       127       1       3       5       12       1       3       5       13       5       2       1       3       5       14       11       14																
Columbus, Ohio       131       75       31       13       7       5       -       Precinx, Ariz       138       85       29       8       6       10       2         Dayton, Ohio       114       73       25       8       4       4       3       Puebio, Colo       22       18       3       -       1       -       6         Detroit, Mich       267       156       68       24       6       13       7       5       -       1       7       6       22       18       3       -       1       -       6         FortWayne, Ind       72       49       9       9       2       3       5       13       7       5       13       39       408       176       61       56       127         Grand Rapids, Mich       60       46       10       2       1       1       -       Fresno, Calif       66       45       15       2       1       3       5       12       5       18       19       11       18       10       1       -       2       1       15       15       2       3       12       12       4       2 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>2</td><td></td><td></td></td<>														2		
Dayton, Ohno       114       73       25       8       4       4       3       Puebio. Colo       22       18       3       -       1       6         Detroit, Mich       267       156       68       24       6       13       7       Salt Lake City. Utah       70       42       11       9       2       6       -         Sart, Ind       14       6       4       2       1       -       1       2       1       9       2       6       -         Grand Rapids, Mich       60       46       10       2       1       1       -       7       Berkeley, Calif       23       17       1       2       2       1       3       1       4       8       6       2       8       17       1       2       1       3       1       4       2       1       1       7       8       Fresno. Calif       66       45       15       2       1       3       5       2       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1								4						6		
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	St. Paul, Minn	68	54	7	3											
	Wichita, Kans	85	56	21		2	1	1								

TABLE IV. Deaths in 121 U.S. cities.\* week ending December 13, 1986 (50th Week)

\* 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

counts and interested in reporting methods in these 3 Pennsylvania cities, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

trotal includes unknown ages
 S Data not available Figures are estimates based on average of past 4 weeks

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### Rubella – Continued

An analysis of CRS surveillance data in the United States indicates that nearly one-half of mothers delivering infants with CRS had a previous live birth (11, 12). In this outbreak, five of eight rubella-susceptible mothers had had at least one previous pregnancy in the United States and had remained susceptible during a subsequent pregnancy that was complicated by rubella. Such women might have been immunized in the postpartum period following their earlier deliveries, and failure to do so represents missed opportunities for preventing five CRS births. These data suggest that postpartum vaccination could have a substantial impact on the occurrence of CRS.

While a survey of obstetric services in NYC indicates that serologic testing of pregnant women is universal, only 37% of obstetric departments have a protocol to insure postpartum vaccination of susceptible women (NYC Department of Health, unpublished data). In addition, although the New York State Health Code requires rubella screening and immunization of all hospital employees, the occurrence of cases in five separate medical facilities suggests the need for more stringent screening and/or immunization programs for employees in these hospitals.

The NYC Department of Health, in cooperation with CDC, has begun a Rubella Elimination Program, which will have as its first priorities the development and/or implementation of protocols requiring: 1) rubella screening of pregnant women and postpartum immunization in all NYC hospitals; and 2) rubella screening and immunization of hospital employees to achieve compliance with state law. The expense of implementing such rubella immunization programs loses significance when compared with the cost of ongoing outbreak control and the greater than \$200,000 lifetime cost of a case of CRS (13).

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# **Dengue Hemorrhagic Fever** — Puerto Rico

Dengue activity in Puerto Rico has increased substantially since August of 1986 (Figure 2). Of the 5,564 cases of suspected dengue reported in the first 10 months of the year, 4,640 (83%) occurred from August through October. Seven hundred and forty cases have been

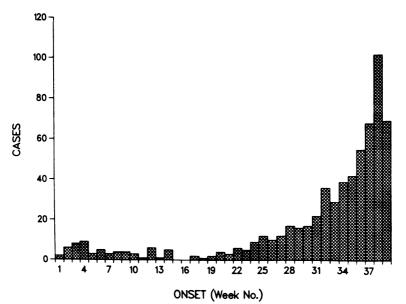
#### Dengue - Continued

virologically or serologically confirmed in 1986 (Table 3), compared with six cases in 1983, 11 cases in 1984, and 133 cases in 1985. The male to female ratio of confirmed cases for 1986 was 1:1, with all ages affected. Cases have been confirmed in 64 of the 78 Puerto Rican municipalities (82%).

Two hundred and eleven dengue viruses have been isolated in 1986, 152 (72%) during August, September, and October. Three dengue serotypes (DEN-1, DEN-2, and DEN-4) have been co-circulating in Puerto Rico since late 1985. In 1986, DEN-1 and DEN-4 have been the predominant serotypes island-wide (45% and 44% respectively), followed by DEN-2 (11%). Since August, however, most transmission has occurred in the San Juan metropolitan area (63% of confirmed cases), and DEN-4 has been the predominant serotype with 75 (49%) isolates, followed by DEN-1 with 58 isolates (38%) and DEN-2 with 19 isolates (13%).

Although the majority of cases have presented as classical dengue fever, 26% of patients with 356 laboratory-confirmed disease have reported at least one hemorrhagic manifestation. The most common of these have been petechiae, purpura/ecchymosis, bleeding of gums, hematuria, and thrombocytopenia. Moreover, hospitalization has increased, with 100 patients (14% of total) with confirmed dengue infection hospitalized. This is a hospitalization rate of 135/1,000 patients with confirmed dengue infection in 1986, compared with 75/1,000 in 1985 and 19/1,000 in 1982 during the last outbreak of DEN-4. As the hospitalization data suggest, there has been an increase in severe hemorrhagic disease associated with the outbreak. The rate of confirmed dengue hemorrhagic fever/dengue shock syndrome (DHF/DSS) per 1,000 persons with confirmed dengue infection was 14 in 1986, compared with 8/1,000 in 1985. Although the rates are still low, they represent a significant increase over previous years when epidemics were larger and there were no cases of DHF/DSS. Also, Puerto Rico has experienced its first virologically confirmed fatal case of DHF/DSS. To date in 1986, 12 cases of severe hemorrhagic disease have been confirmed virologically and/or serologically as dengue. Ten of these cases meet WHO clinical criteria for DHF/DSS; two patients did not have hemoconcentration but had severe hemorrhage and upper gastrointestinal thrombocytopenia.

# FIGURE 2. Confimed cases of dengue, by week of onset, Puerto Rico, 1986



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# Dengue – Continued

The ten cases that meet WHO clinical criteria for DHF/DSS included six children (five infants less than 1 year of age) and four adults. The ratio of males to females was 1:1. There were four patients with dengue shock syndrome (three infants and one adult); two confirmed cases were fatal (one in a 30-year-old female and the other in a 6-month-old male). DEN-4 was isolated from the former, and DEN-2, from the latter. The most common hemorrhagic manifestations observed in patients with confirmed DHF/DSS were petechiae (five patients), hematemesis (five patients), and hematuria (three patients). In addition to the five patients above who had hematemesis, two other patients (one adult and one child) had severe upper gastrointestinal bleeding and thrombocytopenia in the absence of hemoconcentration.

Measures taken to control the outbreak include increased public education on eliminating mosquito larval habitats, initiating education programs in the public school system on environmental sanitation, and widespread application of insecticide with truck-mounted equipment. An emergency hospitalization plan has been developed, but has not yet been fully implemented.

Reported by Puerto Rico Dept of Health; Dengue Br, Div of Vector-Borne Viral Diseases, Center for Infectious Diseases, CDC.

**Editorial Note:** The recent severe illnesses in Puerto Rico are clinically compatible with DHF/DSS in southeast Asia (1). Eleven confirmed cases since September 1985, have met WHO criteria for DHF/DSS with hemoconcentration and evidence of plasma leakage. Two other patients had severe upper gastrointestinal bleeding similar to that observed in Indonesia (2). Seven of the confirmed cases were in children—five of these were infants. In previous Puerto Rican epidemics, most severe disease was in adults (3).

Puerto Rico experienced its first reported dengue outbreak in 1915 (4). Subsequent outbreaks occurred in 1945, 1963, 1969, 1976, 1977, 1978, 1981, and 1982 (Dengue Branch, Division of Vector-Borne Viral Diseases, Center for Infectious Diseases, CDC, unpublished data). Laboratory-based surveillance for DHF/DSS began in 1975. From that time through 1985, 47,196 suspected cases of dengue were reported to the San Juan Laboratories. During the same time period, 19% of cases for which there were adequate laboratory specimens (8,816) were confirmed as dengue; and 230 (3%) of persons with confirmed cases were hospitalized. During 1986, 14% of the 5,564 persons with confirmed dengue infection have been hospitalized, and there have been 10 cases of confirmed DHF/DSS. Thus, both the reporting of severe dengue disease and the number of persons hospitalized with severe dengue disease have increased during 1986.

Some of the present increase in the number of reported dengue cases may relate to improved awareness. When The first fatal case of DHF/DSS in Puerto Rico occurred in August, it was followed by numerous press releases, and clean-up campaigns were initiated. In general, the awareness of dengue in both lay and medical communities has increased. The monthly proportion of patients hospitalized with confirmed cases, however, remained stable, even

Age	S	ex*		Virus typ	e	Serologic response				
	Male	Female	DEN-1	DEN-2	DEN-4	Primary	Secondary	Unknown		
0-4	23	26	4	1	2	14		35		
5-9	29	37	8	5		5	33	28		
10-14	59	40	15	4	8	16	36	47		
15-19	50	45	13	3	18	18	27	50		
20+	198	200	53	10	64	41	152	205		
Unknown	9	13	3			4	11	203		
Total	368	361	96	23	92	98	259	372		

 TABLE 3. Laboratory confirmed cases of dengue by age, sex, virus type, and serologic re 

 sponse
 Puerto Rico, October 31, 1986

\*Does not include five cases with no information on age and sex.

# Dengue – Continued

after the fatality was announced. Moreover, the confirmation rate for dengue began to increase in June (weeks 24 through 25 of the outbreak), 2 months before the response to the press campaign.

Because the 1978 and 1981 dengue outbreaks in Puerto Rico were caused by DEN-1 and the 1982 outbreak was caused by DEN-4, it was considered unlikely that the present outbreak would be very large. DEN-2 is also being transmitted in Puerto Rico, and recent virus isolation data suggest that transmission of this serotype may be increasing. Since the last major epidemic of DEN-2 was in 1976-1977, a large number of individuals in Puerto Rico (mainly children) are susceptible to this virus. Furthermore, studies by CDC on school children in Puerto Rico have shown that by the first grade, 30% to 50% of school children have serologic evidence of a past dengue infection.

Evidence from Thailand and Cuba suggests that secondary DEN-2 infection following DEN-1 infection at a 3- to 5-year interval may be a risk factor for epidemic DHF/DSS. If this is true, Puerto Rico is at increased risk for an epidemic of DHF/DSS. Moreover, with the cocirculation of multiple serotypes, the epidemiologic situation in Puerto Rico is now very similar to that in many southeast Asian countries where DHF/DSS is endemic.

Currently, a major effort is being made to control the vector mosquito, *Aedes aegypti*. The integrated approach being used includes community-based source reduction, insecticide application, and health education.

Risk of dengue infection for travelers to endemic areas appears to be small. However, travelers to and residents of endemic areas should take precaution to avoid mosquito bites and to remain in well-screened areas when possible. Outdoors, exposures to mosquitoes can be reduced by wearing clothing that adequately covers the arms and legs and by applying mosquito repellent.

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# Update: Influenza Activity — United States, Worldwide

### **United States**

On November 6, a 62-year-old resident of Tucson, Arizona, had onset of a febrile respiratory illness with exacerbation of his underlying chronic obstructive pulmonary disease. He was hospitalized on November 7, and a nasopharyngeal swab was collected on the day of admission. Type A influenza virus was confirmed by rapid indirect fluorescent antibody staining, and treatment with amantadine began on the same day. The patient recovered from his acute respiratory illness and was discharged to another hospital for treatment of an unrelated problem. He had not traveled before his illness, and influenza had not been previously identified in Arizona this season. Subsequent testing identified the virus isolate as type A(H3N2). This is the first report of this subtype from the United States this season.

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#### MMWR

# Influenza – Continued

Eighteen states and the District of Columbia have now reported isolates of type A(H1N1) influenza virus (Figure 3). Most isolates have been obtained from children and young adults. Two states, California and Texas, have reported isolates of type B influenza from sporadically occurring cases.

# Worldwide

USSR. Reports from the USSR indicate that during the last week of October acute respiratory disease morbidity reached epidemic levels in 43% of USSR cities (26 of 60) that have surveillance for influenza-like illness. Influenza A(H1N1) and A(H3N2) viruses have been isolated in some cities in the USSR, and there is also preliminary serological evidence of influenza B virus in the country.

Other Reports. In September, an outbreak in a boys' boarding school in England affected about one-third of the students. The outbreak ended within 10 days; influenza A(H1N1) virus was isolated from one student. In November, isolates of A(H1N1) were reported in association with sporadically occurring cases in the German Democratic Republic, the Federal Republic of Germany, and the Democratic Peoples Republic of Korea. Serologic testing implicated influenza A(H1N1) in sporadically occurring cases in France and Norway during November and in outbreaks of influenza-like illness in Jamaica during October.

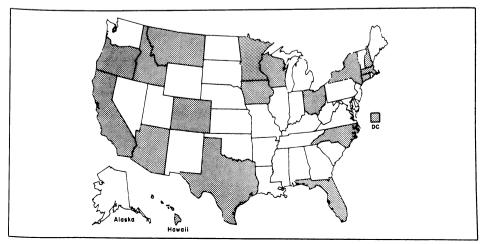
Influenza type A(H3N2) has been reported in association with sporadically occurring cases in the Democratic Peoples Republic of Korea.

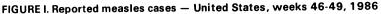
Between late September and early November, influenza B virus was isolated from three children during an outbreak in Panama and from two patients with sporadically occurring cases in Senegal. Serologic testing has also implicated influenza B in sporadically occurring cases in France.

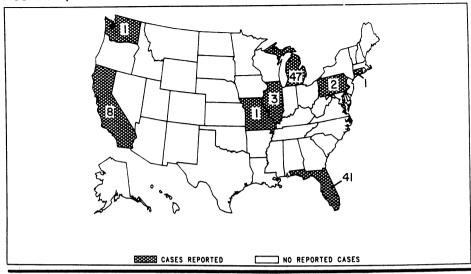
In Turkey, widespread outbreaks of clinically diagnosed influenza among children have forced some schools to close.

Reported by State and Territorial Epidemiologists; State Laboratory Directors; E Petersen, MD, L Minnich, G Ray, MD, University Medical Center, Tucson, Arizona; G Meiklejohn, MD, University of Colorado Medical Center; J Critchon, MD, Helena, Montana; National Influenza Centers, Microbiology and Immunology Support Svcs, World Health Organization, Geneva; AN Slepushkin, V Zdhanov, Ivanovsky Institute of Virology, Academy of Medical Sciences of the USSR, Moscow; WHO Collaborating Center for Influenza, Influenza Br, Div of Viral Diseases, Center for Infectious Diseases, CDC.

# FIGURE 3. States reporting isolates of influenza virus type A(H1N1) — United States, October 1, 1986-December 13, 1986







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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.

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