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Current Trends

Comparison of Observed and Self-Reported Seat Belt Use Rates – United States

To measure compliance with seat belt use laws, most states have estimated belt use by direct observation of vehicle occupants. In addition, since 1984, several states have recorded seat belt use data as part of the Behavioral Risk Factor Surveillance System (BRFSS) telephone survey (*1–3*). Previous studies indicate that telephone surveys usually report higher belt use than do observation surveys conducted in similar areas at similar times (*4,5*). A systematic comparison of self-reported belt use rates in 15 states* from the 1987 BRFSS with observed belt use rates in 1987 in the same states follows.

The BRFSS telephone surveys used similar designs in each state. A statistically valid random sample of all adults in each state was obtained by random digit dialing. Each survey asked the same questions and classified the responses into the same five categories. Thus, the BRFSS surveys in each state can be considered replications of the same survey.

For the observation surveys, some states used probability sampling techniques to select locations and times. These surveys produced statistically valid estimates of the actual belt use rates under the conditions surveyed.† Other states used locations and times selected by judgment. The accuracy of the estimates from these surveys is unknown.

In the BRFSS self-reported surveys, the number of affirmative answers was derived in two ways: as the total number of respondents who reported "always" using seat belts and as the sum of those who reported "always" and "nearly always" using them. The average self-reported "always" use exceeded observed use by about 8% and ranged from 11% below observed use to 24% above. The average "always or nearly always" self-reported use exceeded observed use by 27%, with a range of 12% above observed use to 39% above. To further examine the relationship between observed and reported seat belt use, simple linear regressions were used for each state (Figures 1 and 2). The relation is described moderately well by either regression; approximately 54% of the variation in prevalence of observed use was accounted for

*California, Florida, Hawaii, Illinois, Indiana, Maryland, Minnesota, Missouri, New Mexico, New York, North Carolina, Ohio, Tennessee, Utah, and Washington.
†Most surveys took place during daylight hours and measured belt use by the driver and right front seat passenger.

Seat Belt Use — Continued

by the prevalence of self-reported use. In the regression line for which "always" was used as the definition, a 1 percentage point increase in self-reported use accounted for a 0.7 percentage point increase in observed use. When "always" and "nearly always" were used, a 1 percentage point increase in self-reported belt use accounted for a nearly 1 percentage point increase in observed use. However, these figures are valid only within the range of the self-reported seat belt use data.

Reported by: Office of Driver and Pedestrian Research, National Highway Traffic Safety Administration. Div of Nutrition, Center for Health Promotion and Education, CDC.

Editorial Note: Worldwide experience has demonstrated that seat belt use laws can substantially reduce deaths and injuries on highways. More than 30 foreign countries, 31 states, and the District of Columbia now have laws requiring adult drivers and passengers to use seat belts.

FIGURE 1. Comparison of observed and self-reported seat belt use ("always") — selected states, 1987

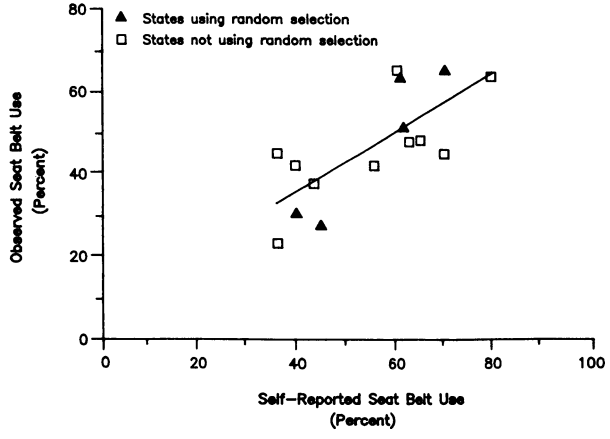
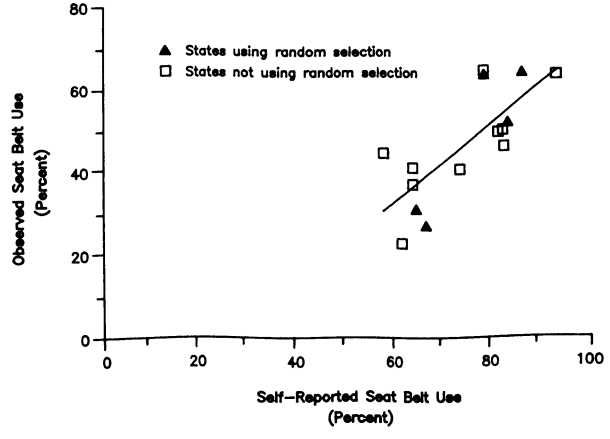


FIGURE 2. Comparison of observed and self-reported seat belt use ("always" plus "nearly always") — selected states, 1987



Seat Belt Use – Continued

Direct observation surveys of seat belt use, if properly designed and conducted, can produce accurate estimates of use. However, observation surveys are expensive to conduct and usually observe only shoulder belt use. Furthermore, although they can estimate a driver's or occupant's age and sex, they cannot gather other information useful in understanding belt use, such as trip purpose or attitudes about belt use laws. Telephone surveys provide the opportunity to collect these additional data. They may also be less expensive to design and conduct than observation surveys. However, telephone surveys can record only the respondents' stated behavior, not their actual behavior.

Some of the divergence in the data analyzed here may be due to the fact that the self-reported data were collected each month throughout 1987 and thus estimate average belt use throughout the year. The observed data were collected at different times in each state. Furthermore, the self-reported data were drawn from a sample of the entire state while observed data from some states came from only a few sites. The moderate fit of the regression lines means that they are useful in describing general relations between observed and self-reported belt use, but they should not be used to predict observed use in a single state when only one self-reported survey is available.

More studies such as these are needed to establish reliably the relationship between the results from observation surveys and BRFSS telephone surveys. The results from observation surveys could then be used to help interpret the BRFSS responses and translate them into approximate actual belt use levels. The BRFSS data in turn could be used to investigate characteristics of belt users and nonusers that cannot be determined from observation surveys and to provide information on temporal trends without the expense of observation surveys. In these ways, the usefulness of both types of surveys would be enhanced.

References

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2. CDC. Behavioral risk-factor surveillance in selected states—1985. MMWR 1986;35:441–4.
3. CDC. Behavioral risk factor surveillance—selected states, 1986. MMWR 1987;36:252–4.
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Quarterly Report to the Domestic Policy Council on the Prevalence and Rate of Spread of HIV and AIDS – United States

This article summarizes the third report to the Domestic Policy Council (DPC) on the prevalence and rate of spread of human immunodeficiency virus (HIV) infection and acquired immunodeficiency syndrome (AIDS) in the United States. The first report (*1*) extensively reviewed data on the prevalence and incidence of HIV infection. The second report was summarized in April 1988 (*2*). The third report was delivered to the DPC on July 22, 1988; its major points are summarized below, with information updated where appropriate.

HIV and AIDS — Continued

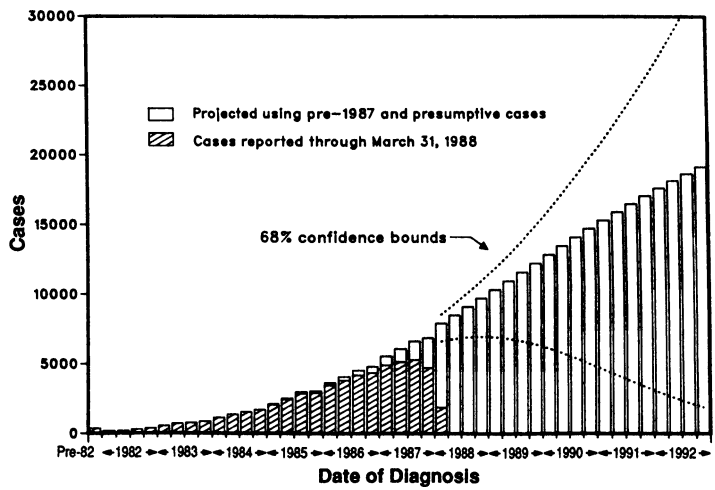
A. Trends in Reported Cases of AIDS

- By August 29, 1988, a total of 72,024 AIDS cases had been reported in the United States, including over 12,500 cases since the last summary on April 15, 1988.
- In 1986, the Public Health Service (PHS) projected that approximately 270,000 cumulative AIDS cases would be diagnosed by the end of 1991, including 15,800 cases diagnosed in 1986 and 23,000 in 1987. The actual numbers of cases for these years, adjusted for reporting delays, are 17,100 and 25,200 cases, respectively.
  Using a method similar to that used in 1986 (*3*), the PHS now projects a cumulative total of 365,000 cases diagnosed by the end of 1992, with 263,000 cumulative deaths (Figure 1).
- In 1992 alone, 80,000 cases are expected to be diagnosed and 66,000 deaths to occur. A total of 172,000 AIDS patients will require medical care in 1992 at a cost expected to range from $5 billion to $13 billion.
- In September 1987, the AIDS case definition was revised to include a broader spectrum of HIV-associated diseases and to allow for presumptive diagnoses of certain conditions. Comparisons of cases reported from the 12-month period before September 1987 with those reported since then show this change has led to an increase in the proportion of reported AIDS cases among blacks from 24% to 36% of all reported cases and an increase in the proportion of reported cases among Hispanics from 13% to 16%. Cases in persons thought to have been infected through heterosexual contact also increased from 2.6% of all cases to 3.6%.

B. Trends in Prevalence and Incidence of HIV Infection

- In April 1988, CDC convened a meeting of experts in mathematical modeling techniques to help estimate the number of Americans now infected with HIV.

FIGURE 1. Incidence of AIDS,* by quarter and year of diagnosis — United States, pre-1982–1992



*Projected from cases diagnosed as of June 30, 1987, and reported as of March 31, 1988.

HIV and AIDS — Continued

Based on two mathematical approaches, these experts agreed that the current CDC estimate of 1.0 million to 1.5 million is a reasonable working estimate of the number of persons now infected.

- Recent data, including prevalence rates in childbearing women in three states (*2*), patients at six sentinel hospitals, and prisoners in 15 states (see below), are consistent with this estimate.
- The current estimate for the number of infected Americans is the same as the estimate made in 1986. This does not mean that no new infections have occurred. The 1986 estimate was based on preliminary data and was probably too high.
- Data on the prevalence rate of HIV infection (based on antibody prevalence) are now available from six urban and suburban sentinel hospitals, predominantly in the midwest. In the first 18,809 tests conducted in persons admitted for reasons not associated with HIV infection, the overall seroprevalence was 0.3%. The observed rate is three to four times that found in military recruit applicants in the same cities. The higher rate in hospital patients is expected because persons with risk behaviors are to some extent excluded from military service.
- Seroprevalence in inmates from 15 state correctional systems and the Federal Bureau of Prisons ranges from 0 to 15% (median 0.4%). The risk factor most often reported in seropositive inmates is a history of intravenous-drug abuse.
- Seroprevalence in Job Corps entrants has been 0.4% for the first 65,960 persons tested. Infection rates are highest in males, blacks and Hispanics, and applicants from urban areas.
- Infection rates in sentinel populations that have been followed over time have not shown significant increases. These populations include first-time blood donors (33 months of observation), applicants for military service (30 months of observation), and admissions to sentinel hospitals (15 months of observation). These findings are consistent with some continued HIV transmission (which is also seen in seroconversions in repeatedly tested active-duty military personnel and in repeat blood donors) but argue against an explosive spread of HIV in the population.

C. Status of HIV and AIDS-Associated Surveys

- *Implementation of the Comprehensive Family of HIV Surveys*

To conduct sentinel surveillance for HIV in 30 metropolitan areas, funding was awarded to health departments of 23 states, the District of Columbia, and Puerto Rico on January 29, 1988, with additional funds awarded May 1, 1988. More than 420 different surveys will be conducted in sexually transmitted diseases clinics, drug abuse treatment centers, tuberculosis clinics, women's health clinics, sentinel hospitals, and newborn infant screening programs (in which a sample of specimens routinely collected from newborns are anonymously tested to indicate the prevalence of HIV infection in childbearing women).

A program to evaluate HIV seroprevalence in college students has begun. By the end of 1988, a total of 20 colleges will participate, and approximately 20,000 serum samples will have been tested.

HIV and AIDS — Continued

- *National Household Seroprevalence Survey (NHSS)*
  A contract for the NHSS was awarded to the Research Triangle Institute. The NHSS will be conducted in two phases. Phase I will be a pilot phase to determine the feasibility of conducting household interviews to obtain demographic information, HIV risk factors, and a blood test for HIV. If Phase I shows that the NHSS is feasible and if funds are available, Phase II, a probability sample of households from throughout the United States, would begin late in 1989 and would include approximately 50,000 respondents.
- *National Health Interview Survey: AIDS Attitudes and Knowledge Survey*
  An AIDS questionnaire was developed for the National Health Interview Survey to provide estimates of public knowledge and attitudes about AIDS and changes in knowledge and attitudes over time. The first phase of the survey was conducted from August 1987 through January 1988 and showed continuous increases in knowledge of how HIV is transmitted. A second phase that began in early May 1988 contains additional questions to assist in the evaluation of the "Understanding AIDS" mailing (*4*).

(Continued on page 559)

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

Disease	36th Week Ending			Cumulative, 36th Week Ending		
	Sep. 10, 1988	Sep. 12, 1987	Median 1983-1987	Sep. 10, 1988	Sep. 12, 1987	Median 1983-1987
Acquired Immunodeficiency Syndrome (AIDS)	128	U *	140	21,337	13,254	5,267
Aseptic meningitis	227	467	418	3,782	7,313	6,206
Encephalitis: Primary (arthropod-borne & unspec)	17	40	40	523	860	768
Post-infectious	4	4	2	88	83	83
Gonorrhea: Civilian	10,653	13,920	15,540	463,960	538,187	601,533
Military	184	267	342	8,322	11,649	14,591
Hepatitis: Type A	430	388	412	16,855	16,960	15,040
Type B	393	445	479	15,584	17,756	17,597
Non A, Non B	42	43	65	1,805	2,154	2,510
Unspecified	27	55	85	1,457	2,152	3,364
Legionellosis	20	6	18	638	658	487
Leprosy	1	4	3	115	137	172
Malaria	32	30	30	632	637	646
Measles: Total†	21	13	29	2,178	3,254	2,417
Indigenous	19	12	19	1,952	2,860	2,043
Imported	2	1	6	226	394	267
Meningococcal infections	24	35	30	2,097	2,137	2,011
Mumps	32	35	24	3,412	10,260	2,421
Pertussis	109	134	134	1,720	1,716	1,716
Rubella (German measles)	7	7	10	158	290	543
Syphilis (Primary & Secondary): Civilian	540	818	438	27,858	24,220	19,147
Military	-	1	2	113	126	126
Toxic Shock syndrome	6	1	8	224	229	271
Tuberculosis	297	366	366	14,271	14,572	14,613
Tularemia	2	3	5	140	145	145
Typhoid Fever	10	2	11	231	224	234
Typhus fever, tick-borne (RMSF)	29	17	27	490	476	556
Rabies, animal	67	91	122	2,878	3,369	3,735

TABLE II. Notifiable diseases of low frequency, United States

	Cum. 1988		Cum. 1988
Anthrax	-	Leptospirosis	21
Botulism: Foodborne	17	Plague (Co. 1)	12
Infant	25	Poliomyelitis, Paralytic	-
Other	3	Psittacosis (Ct. 1; Wi. 1; Ia. 1; Or. 1; Ca. 1)	61
Brucellosis (Upstate N.Y. 1; Tx. 1)	43	Rabies, human	-
Cholera (Co. 1)	2	Tetanus (Tn. 1)	34
Congenital rubella syndrome	3	Trichinosis	36
Congenital syphilis, ages < 1 year	304		
Diphtheria	-		

*Because AIDS cases are not received weekly from all reporting areas, comparison of weekly figures may be misleading.
†Two of the 21 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.

TABLE III. Cases of specified notifiable diseases, United States, weeks ending September 10, 1988 and September 12, 1987 (36th Week)

Reporting Area	AIDS	Aseptic Meningitis	Encephalitis		Gonorrhea (Civilian)		Hepatitis (Viral), by type				Legionellosis	Leprosy
			Primary	Post-infectious			A	B	NA,NB	Unspecified		
	Cum. 1988	Cum. 1988	Cum. 1988	Cum. 1988	Cum. 1988	Cum. 1987	Cum. 1988	Cum. 1988	Cum. 1988	Cum. 1988	Cum. 1988	Cum. 1988
UNITED STATES	21,337	3,782	523	88	463,960	538,187	16,855	15,584	1,805	1,457	638	115
NEW ENGLAND	957	235	19	4	14,564	16,261	619	867	100	71	27	15
Maine	26	10	1	-	288	489	17	44	4	1	5	-
N.H.	24	31	1	3	187	282	37	54	7	4	3	-
Vt.	9	13	6	-	91	142	9	29	5	3	1	-
Mass.	533	94	8	1	4,980	5,932	289	521	67	48	15	14
R.I.	58	56	-	-	1,208	1,462	70	66	10	-	3	1
Conn.	307	31	3	-	7,810	7,954	197	153	7	15	-	-
MID. ATLANTIC	7,209	367	46	4	69,458	85,884	1,141	2,185	128	166	169	8
Upstate N.Y.	931	225	27	1	9,516	12,014	516	526	48	15	69	-
N.Y. City	3,904	81	8	3	28,013	44,429	231	906	12	120	29	7
N.J.	1,770	61	11	-	10,340	11,272	203	520	44	28	40	1
Pa.	604	-	-	-	21,589	18,169	191	233	24	3	31	-
E.N. CENTRAL	1,555	576	128	12	76,736	81,193	1,120	1,656	164	82	129	4
Ohio	345	201	41	3	17,736	17,987	243	378	26	15	52	-
Ind.	80	58	16	-	6,157	6,390	106	231	17	20	13	-
Ill.	730	69	27	9	22,108	24,651	336	358	58	19	-	3
Mich.	322	221	32	-	25,192	24,979	267	492	42	25	46	-
Wis.	78	27	12	-	5,543	7,186	168	197	21	3	18	1
W.N. CENTRAL	509	160	37	7	19,848	21,715	963	725	80	24	59	1
Minn.	113	27	9	3	2,682	3,365	78	94	15	3	2	-
Iowa	28	24	8	-	1,471	2,041	37	69	13	1	15	-
Mo.	256	60	1	-	11,423	11,439	539	421	35	12	13	-
N. Dak.	4	-	4	-	112	206	4	7	2	4	1	-
S. Dak.	5	14	1	1	361	396	8	4	2	-	14	-
Nebr.	30	5	8	2	1,069	1,368	42	36	1	-	5	-
Kans.	73	30	6	1	2,730	2,900	255	94	12	4	9	1
S. ATLANTIC	3,583	833	75	30	133,224	140,401	1,548	3,323	272	233	107	1
Del.	52	25	3	-	2,051	2,311	26	101	6	2	10	-
Md.	359	107	7	3	13,691	15,768	204	476	29	21	15	1
D.C.	334	16	1	1	9,596	9,312	12	32	3	1	1	-
Va.	225	90	23	3	9,203	10,309	286	224	56	149	8	-
W. Va.	14	20	14	-	950	1,036	10	47	3	3	-	-
N.C.	201	99	16	-	18,752	20,360	227	586	68	-	28	-
S.C.	116	14	-	1	10,332	11,559	31	364	9	5	16	-
Ga.	503	94	1	-	25,723	25,044	347	456	11	6	15	-
Fla.	1,779	368	10	22	42,926	44,702	405	1,037	87	46	14	-
E.S. CENTRAL	527	235	45	6	36,956	40,578	514	940	127	7	28	1
Ky.	65	66	11	1	3,742	4,091	385	169	44	2	9	-
Tenn.	235	21	13	-	12,433	14,147	78	478	34	-	7	-
Ala.	136	123	21	2	11,274	12,976	34	228	41	5	9	1
Miss.	91	25	-	3	9,507	9,364	17	65	8	-	3	-
W.S. CENTRAL	1,816	480	59	3	51,660	60,345	1,976	1,309	154	366	15	19
Ark.	67	9	3	-	5,145	6,924	230	73	3	12	3	-
La.	251	78	17	1	10,510	10,930	96	242	20	11	5	1
Okla.	99	45	4	-	4,855	6,732	379	130	34	22	7	-
Tex.	1,399	348	35	2	31,150	35,759	1,271	864	97	321	-	18
MOUNTAIN	642	140	22	2	10,294	14,202	2,364	1,177	189	117	33	1
Mont.	10	2	-	-	320	394	27	42	10	3	1	-
Idaho	8	1	-	-	256	510	110	80	5	3	-	-
Wyo.	5	2	-	-	147	303	5	11	3	-	3	-
Colo.	230	51	3	-	2,271	3,128	158	146	53	55	8	1
N. Mex.	36	12	2	-	993	1,552	425	171	16	2	1	-
Ariz.	208	41	8	1	3,711	4,849	1,234	460	56	36	13	-
Utah	50	20	4	1	391	442	233	95	31	14	3	-
Nev.	95	11	5	-	2,205	3,024	172	172	15	4	4	-
PACIFIC	4,539	756	92	20	51,220	77,608	6,610	3,402	591	391	71	65
Wash.	273	-	6	4	4,716	6,003	1,493	582	145	42	14	4
Oreg.	135	-	-	-	2,204	2,836	962	418	61	21	-	1
Calif.	4,043	668	82	16	43,144	67,014	3,834	2,318	376	317	54	52
Alaska	15	14	2	-	725	1,160	313	45	5	6	-	1
Hawaii	73	74	2	-	431	595	8	39	4	5	3	7
Guam	1	-	-	-	97	153	9	11	-	2	1	4
P.R.	844	39	3	1	947	1,459	31	187	34	32	-	3
V.I.	32	-	-	-	297	188	1	5	2	-	-	-
Amer. Samoa	-	-	-	-	65	59	3	2	-	5	-	2
C.N.M.I.	-	-	-	-	34	-	1	2	-	4	-	1

N: Not notifiable U: Unavailable C.N.M.I.: Commonwealth of the Northern Mariana Islands

TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending September 10, 1988 and September 12, 1987 (36th Week)

Reporting Area	Malaria	Measles (Rubeola)					Menin-gococcal Infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported*		Total									
	Cum. 1988	1988	Cum. 1988	1988	Cum. 1988	Cum. 1987	Cum. 1988	1988	Cum. 1988	1988	Cum. 1988	Cum. 1987	1988	Cum. 1988	Cum. 1987
UNITED STATES	631	19	1,952	2	226	3,254	2,097	32	3,412	109	1,720	1,716	7	158	290
NEW ENGLAND	47	1	81	-	50	254	181	2	107	5	125	108	-	5	1
Maine	2	-	7	-	-	3	7	-	-	-	11	26	-	-	1
N.H.	1	-	66	-	44	152	21	1	96	1	34	27	-	3	-
Vt.	3	-	-	-	-	26	13	1	4	-	3	4	-	-	-
Mass.	26	-	1	-	2	49	83	-	7	3	50	36	-	1	-
R.I.	6	-	-	-	-	2	21	-	-	-	10	1	-	1	-
Conn.	9	1	7	-	4	22	36	-	-	1	17	14	-	-	-
MID. ATLANTIC	97	7	801	1	47	576	214	2	286	4	106	203	-	12	11
Upstate N.Y.	24	-	19	-	18	40	98	2	80	3	65	119	-	2	9
N.Y. City	49	1	41	1†	5	459	52	-	94	1	4	4	-	7	1
N.J.	11	-	217	-	11	39	63	-	35	-	4	10	-	1	1
Pa.	13	6	524	-	13	38	1	-	77	-	33	70	-	2	-
E.N. CENTRAL	34	-	132	1	47	312	284	8	699	3	164	211	2	26	35
Ohio	8	-	2	1†	23	5	97	-	97	-	25	55	-	1	-
Ind.	2	-	57	-	-	-	24	1	69	-	61	13	-	-	-
Ill.	2	-	55	-	15	137	63	6	264	2	28	15	2	21	25
Mich.	19	-	18	-	5	29	62	1	175	1	30	41	-	4	9
Wis.	3	-	-	-	4	141	38	-	94	-	20	87	-	-	1
W.N. CENTRAL	16	-	11	-	1	230	78	-	118	8	106	96	2	2	1
Minn.	5	-	10	-	1	39	17	-	-	7	49	13	-	-	-
Iowa	2	-	-	-	-	-	-	-	31	1	20	31	-	-	1
Mo.	5	-	1	-	-	189	27	-	30	-	15	24	-	-	-
N. Dak.	-	-	-	-	-	1	-	-	-	-	11	11	-	-	-
S. Dak.	-	-	-	-	-	-	3	-	1	-	5	3	-	-	-
Nebr.	1	-	-	-	-	-	11	-	11	-	-	1	-	-	-
Kans.	3	-	-	-	-	1	20	-	45	-	6	13	2	2	-
S. ATLANTIC	77	-	289	-	16	130	367	7	540	17	197	245	1	17	14
Del.	1	-	-	-	-	32	2	-	-	-	7	5	-	-	2
Md.	10	-	11	-	3	5	42	3	103	-	32	11	-	1	2
D.C.	11	-	-	-	-	1	7	1	214	-	1	-	-	-	-
Va.	11	-	141	-	2	1	41	-	119	2	21	47	-	11	1
W. Va.	-	-	6	-	-	-	6	-	9	1	8	35	-	-	-
N.C.	11	-	-	-	4	5	60	1	41	8	55	103	-	-	1
S.C.	8	-	-	-	-	2	33	-	5	-	1	-	-	-	-
Ga.	4	-	-	-	-	1	54	2	27	1	31	23	1	2	1
Fla.	21	-	131	-	7	83	122	-	22	5	41	21	-	3	7
E.S. CENTRAL	10	-	55	-	-	5	199	4	389	5	65	32	-	2	3
Ky.	-	-	35	-	-	-	40	-	174	-	6	1	-	-	2
Tenn.	-	-	-	-	-	-	116	3	200	-	20	9	-	2	1
Ala.	6	-	1	-	-	3	30	1	12	5	37	17	-	-	-
Miss.	4	-	19	-	-	2	13	N	N	-	2	5	-	-	-
W.S. CENTRAL	58	-	11	-	3	409	135	1	669	1	94	216	-	7	11
Ark.	3	-	-	-	1	-	17	-	91	-	11	10	-	3	2
La.	9	-	-	-	-	-	39	-	262	-	16	40	-	-	-
Okla.	9	-	8	-	-	3	14	-	173	1	40	115	-	1	5
Tex.	37	-	3	-	2	406	65	1	143	-	27	51	-	3	4
MOUNTAIN	31	-	118	-	21	491	59	3	162	54	533	145	-	6	24
Mont.	5	-	6	-	19	128	2	-	2	1	2	6	-	-	8
Idaho	1	-	-	-	1	-	7	-	3	21	283	44	-	-	1
Wyo.	-	-	-	-	-	2	-	-	2	-	1	5	-	-	1
Colo.	11	-	112	-	1	9	14	-	28	-	14	50	-	2	-
N. Mex.	1	-	-	-	-	317	11	N	N	6	45	9	-	-	-
Ariz.	8	-	-	-	-	31	15	2	108	26	167	29	-	-	4
Utah	4	-	-	-	-	1	9	-	6	-	20	2	-	3	10
Nev.	1	-	-	-	-	3	1	1	13	-	1	-	-	1	-
PACIFIC	261	11	454	-	41	847	580	5	442	12	330	460	2	81	190
Wash.	15	-	2	-	-	41	52	-	40	7	79	66	-	-	2
Oreg.	11	-	3	-	-	76	31	N	N	1	26	56	-	-	2
Calif.	223	11	446	-	33	726	476	5	369	4	174	161	2	57	121
Alaska	3	-	-	-	-	-	6	-	9	-	6	6	-	-	2
Hawaii	9	-	3	-	8	4	15	-	13	-	45	171	-	24	63
Guam	-	-	-	-	1	2	-	-	2	-	-	-	-	1	1
P.R.	2	-	190	-	-	737	8	-	8	-	13	16	-	2	2
V.I.	-	-	-	-	-	-	-	-	29	-	-	-	-	-	-
Amer. Samoa	-	-	-	-	-	-	2	-	3	-	-	-	-	-	-
C.N.M.I.	1	-	-	-	-	-	1	-	2	-	-	-	-	-	-

*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 September 10, 1988 and September 12, 1987 (36th Week)

Reporting Area	Syphilis (Civilian) (Primary & Secondary)		Toxic-shock Syndrome	Tuberculosis		Tula-remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1988	Cum. 1987	Cum. 1988	Cum. 1988	Cum. 1987	Cum. 1988	Cum. 1988	Cum. 1988	Cum. 1988
UNITED STATES	27,858	24,220	224	14,271	14,572	140	231	490	2,878
NEW ENGLAND	759	417	19	354	443	4	20	10	12
Maine	12	1	4	18	21	-	-	-	1
N.H.	6	3	3	8	16	-	-	-	4
Vt.	3	2	2	3	9	-	1	-	-
Mass.	288	195	8	200	249	3	14	5	-
R.I.	24	8	-	32	35	-	-	2	-
Conn.	426	208	2	93	113	1	5	3	7
MID. ATLANTIC	7,053	4,515	34	2,762	2,463	-	43	18	332
Upstate N.Y.	373	167	18	368	361	-	7	9	17
N.Y. City	5,137	3,282	5	1,470	1,157	-	25	6	-
N.J.	625	476	3	459	465	-	11	-	12
Pa.	918	590	8	465	480	-	-	3	303
E.N. CENTRAL	765	646	33	1,586	1,657	1	24	42	107
Ohio	74	77	23	297	316	-	6	35	5
Ind.	39	45	-	161	153	-	2	2	17
Ill.	355	348	1	678	733	-	11	2	23
Mich.	275	129	9	377	380	1	4	2	30
Wis.	22	47	-	73	75	-	1	1	32
W.N. CENTRAL	162	137	27	372	434	66	3	72	351
Minn.	16	14	5	61	89	3	2	2	108
Iowa	17	20	5	40	30	-	-	-	13
Mo.	100	66	7	185	238	39	1	44	16
N. Dak.	1	-	2	10	6	1	-	-	72
S. Dak.	-	10	1	26	22	16	-	7	101
Nebr.	22	7	2	10	16	2	-	1	11
Kans.	6	20	5	40	33	5	-	18	30
S. ATLANTIC	9,687	8,252	16	3,084	3,126	4	25	155	951
Del.	74	54	1	22	32	1	-	1	40
Md.	524	420	3	299	283	-	1	20	226
D.C.	473	247	-	132	105	-	1	-	5
Va.	274	205	-	276	311	2	10	14	257
W. Va.	34	6	-	54	77	-	-	2	75
N.C.	549	464	7	313	333	-	1	86	6
S.C.	479	521	2	338	331	-	-	16	73
Ga.	1,639	1,166	-	511	542	1	2	12	191
Fla.	5,641	5,169	3	1,139	1,112	-	10	4	78
E.S. CENTRAL	1,361	1,318	18	1,175	1,249	8	3	64	199
Ky.	46	13	7	270	292	4	1	16	78
Tenn.	583	530	8	326	365	3	-	34	55
Ala.	409	342	3	365	365	-	1	8	64
Miss.	323	433	-	214	227	1	1	6	2
W.S. CENTRAL	2,919	2,922	20	1,791	1,707	42	7	114	388
Ark.	170	187	1	194	200	28	-	20	62
La.	564	516	-	200	188	-	3	1	7
Okla.	107	105	7	168	165	12	-	80	27
Tex.	2,078	2,114	12	1,229	1,154	2	4	13	292
MOUNTAIN	541	479	24	379	435	10	8	11	266
Mont.	3	8	-	12	10	-	1	6	159
Idaho	2	5	3	14	26	-	-	1	9
Wyo.	1	3	-	2	2	2	-	3	32
Colo.	79	80	3	43	126	5	3	1	24
N. Mex.	39	40	-	74	73	2	1	-	7
Ariz.	116	230	9	170	162	-	3	-	30
Utah	12	21	9	18	16	1	-	-	5
Nev.	289	92	-	46	20	-	-	-	-
PACIFIC	4,611	5,534	33	2,768	3,058	5	98	4	272
Wash.	116	102	4	147	179	-	6	1	-
Oreg.	198	203	1	102	80	-	6	1	-
Calif.	4,263	5,217	28	2,382	2,625	3	83	2	264
Alaska	10	3	-	29	42	2	-	-	8
Hawaii	24	9	-	108	132	-	3	-	-
Guam	3	2	-	16	26	-	-	-	-
P.R.	430	648	-	165	208	-	4	-	47
V.I.	1	4	-	4	2	-	-	-	-
Amer. Samoa	-	-	-	3	7	-	1	-	-
C.N.M.I.	1	-	-	17	-	-	-	-	-

U: Unavailable

TABLE IV. Deaths in 121 U.S. cities,* week ending September 10, 1988 (36th Week)

Reporting Area	All Causes, By Age (Years)						P&I**
	All Ages	≥65	45-64	25-44	1-24	<1	Total
NEW ENGLAND	579	373	135	39	19	13	50
Boston, Mass.	176	108	42	16	4	6	22
Bridgeport, Conn.	34	21	8	3	2	-	-
Cambridge, Mass.	18	11	6	1	-	-	2
Fall River, Mass.	25	16	7	2	-	-	1
Hartford, Conn.	38	27	9	1	1	-	3
Lowell, Mass.	31	17	11	1	2	-	4
Lynn, Mass.	17	14	2	1	-	-	1
New Bedford, Mass.	25	17	4	3	1	-	2
New Haven, Conn.	36	18	10	4	3	1	5
Providence, R.I.	30	21	5	1	1	2	3
Somerville, Mass.	3	2	1	-	-	-	-
Springfield, Mass.	49	31	13	1	-	4	1
Waterbury, Conn.	49	37	7	2	3	-	3
Worcester, Mass.	48	33	10	3	2	-	3
MID. ATLANTIC	2,276	1,439	458	264	65	49	95
Albany, N.Y.	48	33	9	2	2	2	1
Allentown, Pa.	18	17	-	-	1	-	-
Buffalo, N.Y.	90	54	21	8	3	3	7
Camden, N.J.	34	21	6	5	-	2	-
Elizabeth, N.J.	31	22	4	5	-	-	-
Erie, Pa.†	35	24	8	1	2	-	2
Jersey City, N.J.	76	42	17	13	1	3	5
N.Y. City, N.Y.	1,267	780	252	172	38	25	39
Newark, N.J.	41	15	11	13	1	1	1
Paterson, N.J.	42	24	7	7	3	1	2
Philadelphia, Pa.	196	116	52	11	10	7	11
Pittsburgh, Pa.†	27	15	10	1	1	-	1
Reading, Pa.	23	19	3	1	-	-	2
Rochester, N.Y.	109	87	10	8	2	2	6
Schenectady, N.Y.	33	23	5	4	-	1	1
Scranton, Pa.†	40	30	9	1	-	-	4
Syracuse, N.Y.	82	57	20	3	-	2	6
Trenton, N.J.	28	16	8	4	-	-	3
Utica, N.Y.	22	20	-	2	-	-	1
Yonkers, N.Y.	34	24	6	3	1	-	3
E.N. CENTRAL	2,045	1,334	421	164	47	79	65
Akron, Ohio	64	41	16	1	1	5	-
Canton, Ohio	38	26	11	1	-	-	-
Chicago, Ill.§	564	362	125	45	10	22	16
Cincinnati, Ohio	100	70	18	6	3	3	5
Cleveland, Ohio	135	83	34	11	3	4	4
Columbus, Ohio	119	75	15	15	6	8	2
Dayton, Ohio	82	56	18	5	3	-	2
Detroit, Mich.	208	118	36	37	8	9	5
Evansville, Ind.	28	19	8	1	-	-	-
Fort Wayne, Ind.	39	22	8	5	1	3	-
Gary, Ind.	18	6	6	2	2	2	-
Grand Rapids, Mich.	82	56	14	3	2	7	10
Indianapolis, Ind.	152	104	32	9	1	6	4
Madison, Wis.§	36	26	6	2	1	1	2
Milwaukee, Wis.	96	67	20	5	2	2	1
Peoria, Ill.	50	36	7	3	2	2	4
Rockford, Ill.	30	24	2	2	-	2	1
South Bend, Ind.	28	19	8	1	-	-	-
Toledo, Ohio	113	79	23	7	2	2	8
Youngstown, Ohio	63	45	14	3	-	1	1
W.N. CENTRAL	720	489	144	38	25	23	27
Des Moines, Iowa	60	48	9	2	-	1	3
Duluth, Minn.	19	14	4	-	-	1	1
Kansas City, Kans.	23	15	7	1	-	-	-
Kansas City, Mo.	111	68	20	11	6	5	5
Lincoln, Nebr.	34	23	6	2	1	2	2
Minneapolis, Minn.	156	111	30	6	7	2	6
Omaha, Nebr.	80	54	11	6	3	6	3
St. Louis, Mo.	114	67	28	9	5	5	1
St. Paul, Minn.	52	35	15	-	2	-	3
Wichita, Kans.§	71	54	14	1	1	1	3

Reporting Area	All Causes, By Age (Years)						P&I**
	All Ages	≥65	45-64	25-44	1-24	<1	Total
S. ATLANTIC	1,037	605	213	121	54	44	37
Atlanta, Ga.	142	74	33	18	8	9	1
Baltimore, Md.	174	108	33	23	6	4	12
Charlotte, N.C.	62	41	16	3	2	-	8
Jacksonville, Fla.	74	53	10	4	1	6	-
Miami, Fla.	94	46	22	19	4	3	-
Norfolk, Va.	52	32	9	5	4	2	2
Richmond, Va.	71	36	17	8	7	3	4
Savannah, Ga.	53	31	10	2	5	5	4
St. Petersburg, Fla.	58	52	1	1	4	-	4
Tampa, Fla.	60	40	12	4	2	2	1
Washington, D.C.	178	78	49	30	11	10	1
Wilmington, Del.	19	14	1	4	-	-	-
E.S. CENTRAL	660	405	150	48	26	31	38
Birmingham, Ala.	82	52	17	6	1	6	-
Chattanooga, Tenn.	28	21	3	2	1	1	2
Knoxville, Tenn.	119	76	27	4	10	2	11
Louisville, Ky.	55	34	17	1	2	1	3
Memphis, Tenn.	156	83	40	14	6	13	14
Mobile, Ala.	52	36	7	5	3	1	2
Montgomery, Ala.	62	40	12	6	1	3	4
Nashville, Tenn.	106	63	27	10	2	4	2
W.S. CENTRAL	1,600	980	348	165	55	49	54
Austin, Tex.	56	41	7	3	4	1	3
Baton Rouge, La.	43	24	13	5	-	1	1
Corpus Christi, Tex.§	49	38	10	1	-	-	1
Dallas, Tex.	180	102	39	21	8	10	4
El Paso, Tex.	55	38	12	3	1	1	6
Fort Worth, Tex	77	55	7	5	4	6	4
Houston, Tex.§	723	426	168	89	24	16	19
Little Rock, Ark.	35	18	10	6	-	1	-
New Orleans, La.	111	58	27	13	6	4	-
San Antonio, Tex.	135	89	27	9	3	7	8
Shreveport, La.	63	43	14	2	2	2	5
Tulsa, Okla.	73	48	14	8	3	-	3
MOUNTAIN	616	407	115	55	20	19	25
Albuquerque, N. Mex.	93	64	14	9	3	3	5
Colo. Springs, Colo.	42	26	7	7	1	1	-
Denver, Colo.	106	72	21	9	3	1	5
Las Vegas, Nev.	71	44	16	9	1	1	3
Ogden, Utah	18	15	3	-	-	-	1
Phoenix, Ariz.	113	62	22	13	9	7	7
Pueblo, Colo.	20	17	3	-	-	-	1
Salt Lake City, Utah	44	29	9	3	-	3	-
Tucson, Ariz.	109	78	20	5	3	3	3
PACIFIC	1,708	1,071	332	196	62	36	91
Berkeley, Calif.	14	9	2	3	-	-	1
Fresno, Calif.	84	48	19	11	3	3	3
Glendale, Calif.	40	27	11	-	1	1	1
Honolulu, Hawaii	65	35	17	10	-	3	8
Long Beach, Calif.	69	46	11	5	3	4	7
Los Angeles Calif.	477	284	96	57	21	9	11
Oakland, Calif.	44	31	6	3	3	1	2
Pasadena, Calif.	25	17	4	1	1	2	1
Portland, Oreg.	94	54	21	15	4	-	1
Sacramento, Calif.	147	92	26	18	6	4	17
San Diego, Calif.	114	83	17	12	2	-	9
San Francisco, Calif.	152	86	28	32	5	1	5
San Jose, Calif.	156	101	35	12	6	2	17
Seattle, Wash.	135	88	24	13	6	4	-
Spokane, Wash.	45	37	6	1	-	1	5
Tacoma, Wash.	47	33	9	3	1	1	3
TOTAL	11,241††	7,103	2,316	1,090	373	343	482

*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 3 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 available 4 weeks.

HIV and AIDS — Continued

Reported by: AIDS Program, Center for Infectious Diseases; National Center for Health Statistics, CDC.

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Epidemiologic Notes and Reports

Imported Dog and Cat Rabies — New Hampshire, California

In 1987, rabies was reported in a dog in New Hampshire and a cat in California. Both animals had been recently imported from Mexico.

New Hampshire. The first case of dog rabies in New Hampshire since 1967 was confirmed on January 17, 1988, in a 5-month-old puppy that had been imported into the United States 3½ weeks earlier. The dog was presented to a veterinarian on January 16 because of whimpering, tremors of one leg for 3 days, urinary and fecal incontinence for 12 hours, and excessive salivation for 2 hours. Based on the puppy's history and symptoms, the veterinarian suspected rabies, and the dog was euthanized.

The dog was brought into New Hampshire by a 13-year-old girl who adopted it while visiting her mother near Mexico City. The dog was immunized against parvovirus, but not rabies, by a veterinarian in Mexico who also issued a health certificate for the dog the day before departure. The girl flew with the dog from Mexico City to New York City on December 30. On arrival, a U.S. Customs official at the airport briefly inspected the puppy and questioned the girl about its health. She presented the health certificate, and the dog was permitted entry without proof of rabies immunization or the required isolation at the final destination. The girl and dog arrived in New Hampshire on December 31.

The girl brought the dog to school, various parties, and babysitting jobs. Seventeen people received rabies postexposure prophylaxis primarily because of facial exposure to the dog's saliva. The total cost of doctors' visits, rabies vaccine, and rabies immune globulin was $12,100.

California. A similar case of imported animal rabies from Mexico occurred in a cat in Los Angeles (*1*). In September 1987, a stray cat of unknown rabies immunization status was adopted by a woman vacationing in Acapulco. The cat passed through U.S. Customs even though it was sick at the time. The woman presented the cat to three veterinarians; based on its history and symptoms (including incoordination, nervousness, twitching, salivation), two of the three suspected rabies and recommended euthanasia. Four days after arrival, the cat died and was found positive for rabies. Twenty persons subsequently received rabies postexposure prophylaxis.

All U.S. Customs officials have been notified of these incidents and have been reminded that proof of rabies immunization must accompany all dogs ≥3 months of age entering the United States from rabies-endemic countries and that all animals must be in good health upon entry.

Rabies — Continued

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Editorial Note: Dog and cat rabies is hyperendemic in Mexico and most countries of Africa, Asia, and Central and South America (*2,3*). Dog rabies is extremely rare in the New England states; the most recent cases were reported from Maine and Vermont in 1978 (*4*). Veterinarians should suspect rabies when a dog, cat, or other susceptible animal is imported from a rabies-hyperendemic area and develops an unexplained rapidly progressive neurologic disease.

Public Health Service quarantine regulations (42 CFR 71.51) require that all dogs ≥3 months of age imported from countries not free of rabies have a valid rabies vaccination certificate and be vaccinated at least 30 days before entering the United States (*5*). Unimmunized dogs may be permitted entry if they are vaccinated for rabies and confined for at least 30 days after vaccination. However, a recent case of rabies in an imported dog, which occurred despite appropriate rabies immunization before entry, illustrates that these regulations, even when followed correctly, may not always prevent imported rabies (*6*). It is highly recommended that cats from rabies-hyperendemic countries be immunized before entry. Dogs, cats, and other rabies-susceptible animals should not be imported as pets from rabies-hyperendemic countries. Travelers to such countries should not take their pets with them or acquire pets abroad unless absolutely necessary.

References

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Assessing Exposures of Health-Care Personnel to Aerosols of Ribavirin — California

In April 1986, a hospital in the San Francisco Bay area asked the Occupational Health Surveillance and Evaluation Program (OHSEP) of the California Department of Health Services to evaluate occupational risks to health-care workers of exposure to aerosols of ribavirin, an antiviral agent effective against many RNA and DNA viruses. OHSEP subsequently asked the National Institute for Occupational Safety and Health (NIOSH) for technical assistance in assessing environmental exposures.

From December 1986 through March 1987, OHSEP investigators performed surveys in the pediatric intensive-care units (ICUs) of four San Francisco Bay area hospitals to evaluate exposure levels associated with the various methods of administering ribavirin aerosol. Twelve personal-breathing-zone air samples from 10 nurses and two respiratory therapists and 14 air samples from the bedside area were

Ribavirin – Continued

collected during the administration of ribavirin aerosols through oxygen tents, mist masks, or ventilators. The health-care workers studied spent an average of 50% of their workshifts (range: 20%–80%) at the bedsides of patients who received such therapy. Shifts lasted 7–12 hours, and several health-care workers wore surgical masks while delivering direct patient care.

Personal-breathing-zone air samples were collected on 37-mm glass fiber filters using personal sampling pumps held in open-faced cassettes attached to the lapels of the exposed health-care workers. Samples were collected over full shifts during which workers provided care for patients receiving aerosolized ribavirin, including periods when the workers were away from ribavirin-delivery areas. Air samples were collected in the bedside area with similar pumps and cassettes placed at the heads of the beds of treated patients. NIOSH analyzed environmental samples for aerosolized ribavirin using high-performance liquid chromatography (detection limit: 1.0–1.4 μg per sample). Four of the general bedside-air samples were collected in duplicate for independent confirmatory analysis by a radioimmunoassay technique.

Of the 12 workers evaluated, the six nurses and two respiratory therapists providing direct care to patients who received ribavirin through an oxygen tent were exposed to the highest air levels over the workshift (mean ribavirin concentration in personal air samples: 161 $\mu g/m^3$, range: 69–316 $\mu g/m^3$). The three nurses attending patients who received ribavirin through a ventilator were exposed to the lowest air concentrations (range: <1 to 6 $\mu g/m^3$), and one nurse providing care for a patient who received ribavirin through a mist mask was exposed to a mean concentration of 62 $\mu g/m^3$. Bedside area samples, collected continuously in the ribavirin-delivery areas, showed generally higher ribavirin concentrations than the corresponding personal samples, averaging 317 $\mu g/m^3$ during administration through an oxygen tent. Samples analyzed by radioimmunoassay confirmed the results obtained by high-performance liquid chromatography. In four of the six measurements performed, ventilation in the ICUs exceeded the minimum room-air exchange rate recommended by the U.S. Department of Health and Human Services for hospital ICUs (6 air changes per hour) (*1*). No correlation between unit ventilation and the results of personal or area sampling was noted.

To evaluate the absorption of ribavirin by exposed hospital personnel, samples of serum, red blood cells (RBCs), and urine were collected from each participant at each of three sampling times: before, immediately after, and 3–7 days after the first workshift with ribavirin exposure. Biological samples were analyzed for ribavirin by a radioimmunoassay technique with a detection limit of 0.002 μg/mL (*2*).

Eight nurses and two respiratory therapists submitted a total of 30 serum samples, 30 RBC samples, and 30 urine samples. Ribavirin was not detected in any urine or serum samples but was detected at a concentration of 0.44 μg/mL in one RBC sample collected from a nurse 5 days after the first shift in which she gave direct care to a patient receiving ribavirin through an oxygen tent. Environmental samples collected during the work shift of this nurse showed the highest concentrations of ribavirin in air (personal: 316 $\mu g/m^3$, bedside area: 1048 $\mu g/m^3$) observed in the study. This nurse did not report any unusual or increased activity related to patient care that might have resulted in increased exposure.

No symptoms were reported by any health-care workers in this study.

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Editorial Note: Ribavirin (1-β-5-D-ribofuranosyl-1,2,4-triazole-3-carboxamide [Virazole*])is a synthetic nucleoside analog that appears to restrict the synthesis of viral proteins and interferes with formation of the cap on viral-messenger RNA (*3*). In 1986, the Food and Drug Administration approved it for aerosol treatment of infants and young children with severe respiratory syncytial virus infection (*4–6*). Ribavirin is usually administered through a specific aerosol generator, which produces respirable particles (mass median diameter approximately 1.3 μm) at a rate of 12.5 L of ribavirin/air mixture per minute. The aerosol/air mixture is delivered through a mist mask or oxygen tent to the patient; the excess is exhausted directly into the room. Ribavirin may also be used as an investigational drug administered through a ventilator, with the excess aerosol in expired air being filtered to limit release into patient-care areas (*7*). The administration route is usually determined by clinical considerations. Duration of treatment is generally 3–5 days for 12–20 hours each day, although longer periods may also be employed.

Ribavirin causes reabsorption of the fetus in pregnant rabbits and malformations in the offspring of all rodent species tested (*8,9*). It also causes tubular atrophy in the testes of adult rats (*8*). Based on data from studies in animals, ribavirin is contraindicated for use in pregnant women (*10,11*).

Pharmacokinetic studies indicate that absorbed ribavirin is concentrated in the RBCs of humans (*12*). In the only previous study of occupational exposure, ribavirin was not detected in the RBCs, plasma, or urine of nurses administering ribavirin aerosol; air samples were not collected in that study (*13*). A simple mathematical model, incorporating breathing-zone air level, respiratory minute volume, and a factor of 70% (*14*) for the fraction of the inhaled dose absorbed, estimates an average absorbed dose per workshift (8–12 hours) of 13.5 μg/kg body weight for nurses in the present study who attended patients receiving ribavirin through oxygen tents (*15*). This estimated absorbed dose exceeds 1/100 of the short-term, daily-dose levels that were teratogenic in hamsters and embryolethal in rabbits (*8*).

Until a specifically designed control system is developed to reduce aerosol emissions, health-care workers who are pregnant or may become pregnant should be advised of the potential risks of exposure during direct patient care when patients are receiving ribavirin through oxygen tent or mist mask and should be counseled about risk-reduction strategies, including alternative job responsibilities. Also, because visitors may spend considerable time in close proximity to a patient's bedside, female visitors who are pregnant or may become pregnant should be informed of the potential risks of exposure to aerosolized ribavirin. Because all area samples were obtained only in direct proximity to the bedside, these data cannot be extrapolated reliably to assess possible risks to persons working elsewhere in a room or ward where ribavirin is being administered through oxygen tent or mask.

Ribavirin exposure levels that do not cause adverse health effects cannot be specified because of the lack of dose-response data in humans. Nevertheless, because of the potential for exposure to a potent animal teratogen, employers should

*Use of trade names is for identification only and does not imply endorsement by the US Department of Health and Human Services or the Public Health Service.

Ribavirin — Continued

develop procedures designed to reduce employee exposure. Use of surgical masks to reduce inhaled ribavirin dose is unlikely to be effective (*16*) and therefore does not warrant recommendation as a protective measure. Although patient-care considerations typically determine the route of ribavirin administration, hospital staff should be aware that in this study, exposures to personnel were greatest when ribavirin was administered by oxygen tent, less by mist mask, and least by ventilator. Worker exposures in this and other health-care settings deserve increased attention as the extent and complexity of occupational hazards in this environment become apparent.

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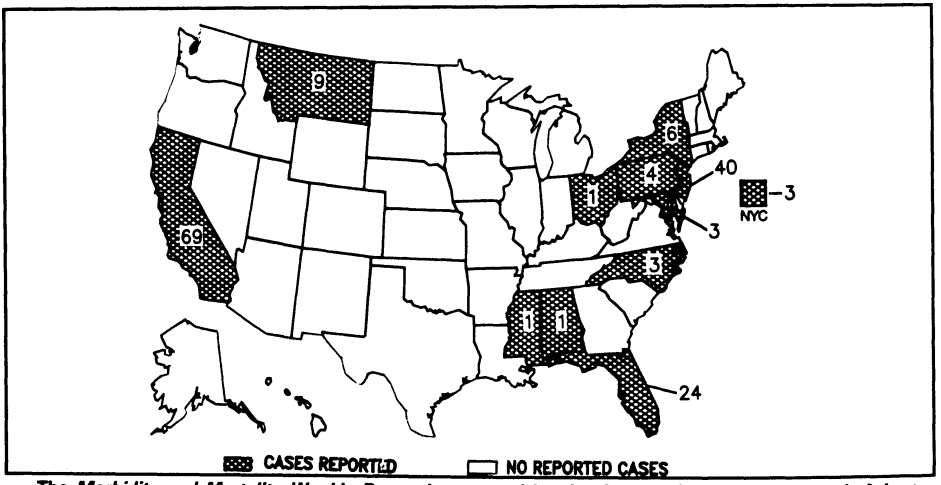
FIGURE I. Reported measles cases — United States, Weeks 32–35, 1988



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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: Editor, *Morbidity and Mortality Weekly Report*, Centers for Disease Control, Atlanta, Georgia 30333.

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