

# MMWR

## MORBIDITY AND MORTALITY WEEKLY REPORT

- 621 Impact of Policy and Procedure Changes on Hospital Days among Diabetic Nursing-Home Residents — Colorado
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### *Perspectives in Disease Prevention and Health Promotion*

#### November is National Diabetes Month

### **Impact of Policy and Procedure Changes on Hospital Days among Diabetic Nursing-Home Residents — Colorado**

The National Nursing Home Survey (1) estimated that 14.5% of U.S. nursing-home residents (189,000 persons) were diagnosed as having diabetes mellitus in 1977. In Colorado, there are approximately 16,000 diabetic nursing-home residents. A review of 1977 and 1978 hospitalization data showed that diabetic nursing-home residents in Colorado had consistently higher proportions of hospitalizations for diabetic ketoacidosis and coma, insulin reactions, and amputations than diabetic persons aged 65 years and older not residing in long-term care facilities. Some of the increased hospital utilization by nursing-home residents may be due to concurrent illness, medication regime, and disability. However, in a setting with care and supervision provided by health professionals, complications, such as insulin reactions and acute hyperglycemia, should be largely preventable or recognized early enough to avoid hospitalization. Therefore, it was postulated that education for professional staff in nursing homes to improve care practices would be effective in reducing excess hospital utilization and the associated costs.

Written policies and procedures are one means by which standards of care within a facility can be measured. The Colorado Diabetes Control Program (DCP) adapted criteria for diabetes-care policies and procedures from the "Guidelines for Diabetes Care in Skilled Nursing Facilities," developed by the American Diabetes Association and the American Association of Diabetes Educators (2). One hundred twenty-five criteria were developed covering 10 content areas: dietary department practices, care during acute illness, foot and skin care, care of hypoglycemic reactions, activity planning, administering medication, urine testing, blood testing, diet management by nursing staff, and patient education. When appropriate, individual criteria within each content area included: patient assessment, methods for specific tasks, minimum frequency for performing tasks, reporting actions, and documentation. The Colorado DCP staff reviewed each facility's policies and procedures for the presence or absence of the 125 criteria.

In 1981, before the professional education intervention conducted by the Colorado DCP, written diabetes-care policies and procedures in 29 Denver metropolitan-area nursing homes were compared to the 125 criteria. The average institution met 40.6 (range 17-69) criteria. Areas with major deficiencies were care during acute illness, care of hypoglycemia, and foot and skin care.

*Diabetic Nursing-Home Residents — Continued*

Workshops and follow-up consultation were then offered to administrative nursing-home staff to assist them in developing and implementing diabetes-care policies and procedures. These consisted of a series of three workshops for directors of nursing, inservice program directors, dietitians, food-service supervisors, and administrators. The first workshop reviewed diabetes care of the elderly; the second covered policy and procedure development and focused on definitions, benefits, format, implementation, and diabetes-care recommendations; and the third covered educational principles and the development of inservice programs. In addition, staff inservice and orientation workshops were conducted. At the completion of the workshops, the DCP staff offered consultation services to all participants to assist them in developing policies and procedures, as well as educational programs. The staff also contacted the participants periodically during the following year to offer them assistance and to monitor progress.

One year after this intervention (1982), the average number of diabetes policies and procedures had increased significantly to 48.9 ( $p < 0.01$ ). In 1983, after repeat workshops and continued consultation, the average number of policies and procedures increased to 63.5.

In an effort to determine the effect of intervention on frequency and duration of hospitalization, hospitalization data on diabetic residents of the facilities for the 1-year period before intervention (1981) and a corresponding period 2 years later (1983) were obtained from an audit of nursing-home records, which were the primary data source for this project. Nursing homes routinely request hospitalization information when patients return after hospitalization. The information the nursing homes receive varies with each hospital. If the hospital does not send information as requested or if the patient does not return to the facility, it is difficult to obtain the patient's permission to release records, since many patients are legally incompetent, and family members are not always accessible. For this study, the nurse reviewer was instructed to determine reasons for hospitalization from the following sources: hospital admission summary, hospital discharge summary, hospital transfer to nursing home form, nursing-home progress notes, nursing-home transfer to hospital form. Laboratory values, when available, were used to classify acute hyperglycemic and hypoglycemic reactions; otherwise, physician diagnosis or symptom history was used. Other problems with using nursing-home records were limited physician progress notes and nursing-care documentation. Often, nursing activity flowsheets are not in current records.

There were 471 diabetic patients (mean age 78.0; 76%, female; 47%, using insulin; average length of nursing-home stay, 23.5 months) in the 29 facilities (33.8% skilled-nursing homes). Hospitalizations included in the analysis were limited to those for acute hyperglycemia, diabetic ketoacidosis, hyperosmolar nonketotic coma, hypoglycemia, and lower-extremity lesions with or without amputations. There were 33 such hospitalizations among 325 residents preintervention and 39 diabetes hospitalizations among 358 residents postintervention. No significant change occurred in the diabetes hospitalization rates from preintervention to postintervention (12.9 hospitalizations/100 person years to 13.8 hospitalizations/100 person years,  $p < 0.05$ ). However, the hospital-days rate (the number of hospital days divided by the number of days at risk for hospitalization from nursing home) decreased significantly from 185.5 hospital days/100 person years to 133.8 hospital days/100 person years (28%) ( $p < 0.001$ ). In addition, the average length of stay decreased by 4.7 days from 14.4 days preintervention to 9.7 days postintervention ( $p = 0.06$ ). By contrast, the average length of stay for all Colorado hospitalizations was stable during this period at 6.1 days (3).

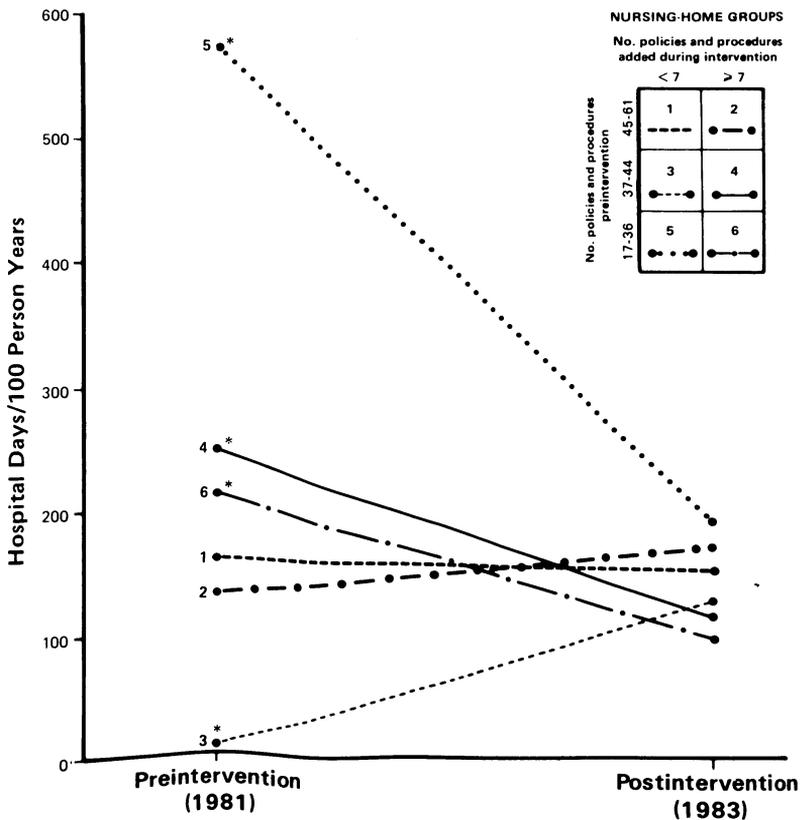
To further evaluate the effectiveness of the intervention, the 29 nursing homes were divided into six groups according to the number of policies and procedures at baseline (low = 17-36 policies; medium = 37-44; high = 45-61) and the increase in the number of policies

*Diabetic Nursing-Home Residents – Continued*

and procedures 1-year postintervention (low change—less than seven policies added; high change—seven or more policies added). The distribution of patients by age, sex, and level of care did not differ significantly among these six groups. The average length of hospital stay dropped consistently in all six groups following the intervention. Figure 1 shows the change in the hospital-days rate from preintervention to postintervention for the six groups. Two of the groups had patterns that were difficult to analyze; group 5 is a single, large nursing home, and group 3 had preintervention rates that were much lower than expected based on rates in all facilities. The two groups with the highest numbers of baseline policies and procedures (groups 1 and 2) had lower hospital-days rates preintervention, and these rates did not change significantly after intervention. However, groups 4 and 6 with low and medium baseline policies and procedures and a higher level of change had higher preintervention hospital-days rates which decreased significantly ( $p < 0.001$ ) following intervention.

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**FIGURE 1. Changes in hospital-days rate per 100 nursing-home resident years at risk in nursing-home groups classified by the number of policies and procedures reintervention and changes in policies and procedures during the intervention — Colorado, 1981 and 1983**



*Diabetic Nursing-Home Residents — Continued*

**Editorial Note:** It appears that intervention aimed at changing the policies and procedures of nursing homes is an effective way to decrease hospital days for diabetic residents. Furthermore, targeting the intervention at facilities with the fewest policies should be more efficient in effecting this change. Better monitoring following intervention may result in earlier referral to the hospital and admission of less acutely ill patients. This would account for a shorter length of stay but no decline in the hospital episode rate. The 28% reduction in the hospital-days rate suggests that substantial economic savings in hospital costs could occur by widespread use of this type of intervention.

Although Medicaid is the primary source of payment for most nursing-home care, most hospitalizations in this population are reimbursed by Medicare. This project was completed before the implementation of Medicare payment for hospitalization by Diagnosis Related Groups (DRGs) in October 1983. Therefore, the decrease in length of hospital stay cannot be attributed to the change in reimbursement policy. Since the implementation of DRGs, which encourage shorter length of hospital stay, nursing-home personnel in this study have reported to the Colorado DCP admitting more acutely ill patients to the nursing home from early hospital discharge. Patients are also being admitted to Denver-area nursing homes for interim care  
(Continued on page 629)

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

Disease	44th Week Ending			Cumulative, 44th Week Ending		
	Nov. 3, 1984	Nov. 5, 1983	Median 1979-1983	Nov. 3, 1984	Nov. 5, 1983	Median 1979-1983
Acquired Immunodeficiency Syndrome (AIDS)*	173	37	N	3,623	1,679	N
Aseptic meningitis	197	306	268	6,709	10,848	8,044
Encephalitis: Primary (arthropod-borne & unspec.)	45	45	33	998	1,610	1,305
Post-infectious	1	2	4	79	80	80
Gonorrhea: Civilian	15,267	18,182	20,158	707,155	764,479	848,795
Military	203	329	413	17,583	20,592	23,221
Hepatitis: Type A	480	455	455	18,098	18,085	21,239
Type B	579	572	424	21,806	20,221	17,301
Non A, Non B	90	87	N	3,125	2,869	N
Unspecified	127	123	192	4,835	6,196	8,752
Legionellosis	19	32	N	562	627	N
Leprosy	1	5	3	193	205	191
Malaria	55	17	17	834	696	916
Measles: Total**	6	15	15	2,416	1,365	2,753
Indigenous	4	11	N	2,138	1,100	N
Imported	2	4	N	278	265	N
Meningococcal infections: Total	37	58	46	2,285	2,322	2,322
Civilian	37	58	46	2,280	2,307	2,307
Military	-	-	-	5	15	15
Mumps	24	66	96	2,488	2,809	4,632
Pertussis	26	28	28	1,925	2,035	1,453
Rubella (German measles)	8	8	25	678	863	2,134
Syphilis (Primary & Secondary): Civilian	473	720	679	23,397	27,563	26,181
Military	6	4	N	255	343	329
Toxic Shock syndrome	6	4	N	406	362	N
Tuberculosis	373	454	547	18,082	19,777	22,933
Tularemia	2	6	5	265	255	231
Typhoid fever	4	6	10	297	401	437
Typhus fever, tick-borne (RMSF)	16	3	9	806	1,066	1,066
Rabies, animal	81	101	101	4,566	5,299	5,407

**TABLE II. Notifiable diseases of low frequency, United States**

	Cum. 1984		Cum. 1984
Anthrax	1	Plague	30
Botulism: Foodborne	16	Poliomyelitis: Total	3
Infant (Ky. 1, Tex. 1, Wash. 1, Calif. 2)	79	Paralytic	3
Other	6	Psittacosis (Mass. 1, Ohio 1)	78
Brucellosis (Mo. 1, Nebr. 1, Ark. 1)	104	Rabies, human	2
Cholera	-	Tetanus (Ga. 1, Miss. 1)	52
Congenital rubella syndrome	4	Trichinosis	61
Diphtheria	1	Typhus fever, flea-borne (endemic, murine) (Calif. 2)	28
Leptospirosis	26		

\*The 1983 reports which appear in this table were collected before AIDS became a notifiable condition.

\*\*Two of the 6 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  
November 3, 1984 and November 5, 1983 (44th Week)

Reporting Area	AIDS	Aseptic Mening- itis	Encephalitis		Gonorrhoea (Civilian)		Hepatitis (Viral), by type				Legionel- losis	Leprosy
			Primary	Post-in- fectious			A	B	NA,NB	Unspeci- fied		
	Cum. 1984	1984	Cum. 1984	Cum. 1984	Cum. 1984	Cum. 1983	1984	1984	1984	1984	1984	Cum. 1984
UNITED STATES	3,623	197	998	79	707,155	764,479	480	579	90	127	19	193
NEW ENGLAND	117	9	43	2	19,801	19,564	14	37	1	18	2	10
Maine	-	-	-	-	848	964	-	-	-	-	-	-
N.H.	2	-	7	-	613	630	-	4	-	-	-	-
Vt.	1	-	5	-	321	382	2	1	-	1	-	-
Mass.	67	2	19	-	8,459	8,313	10	19	1	16	1	6
R.I.	6	5	-	-	1,376	1,087	1	1	-	-	1	4
Conn.	41	2	12	2	8,184	8,188	1	12	-	1	-	-
MID ATLANTIC	1,600	24	117	9	95,473	97,586	49	98	7	4	3	36
Upstate N.Y.	137	15	39	7	15,363	15,966	8	7	1	-	-	3
N.Y. City	1,172	4	11	-	37,289	38,481	15	42	-	2	3	31
N.J.	209	-	26	-	16,710	18,376	13	14	3	2	-	-
Pa.	82	5	41	2	26,111	24,763	13	35	3	-	-	2
E.N. CENTRAL	157	32	284	18	99,877	111,094	30	60	7	5	8	6
Ohio	20	15	91	9	26,084	28,690	13	20	3	3	7	2
Ind.	23	6	73	-	11,051	10,760	3	15	3	1	-	-
Ill.	79	U	27	6	22,013	32,462	U	U	U	U	U	2
Mich.	25	11	59	-	29,562	29,410	14	25	1	1	1	2
Wis.	10	-	34	3	11,167	9,772	-	-	-	-	-	-
W.N. CENTRAL	35	28	85	3	35,090	36,193	10	22	5	1	1	3
Minn.	9	3	35	-	5,295	5,006	-	-	-	-	-	2
Iowa	2	3	29	-	3,808	3,888	5	5	1	-	-	1
Mo.	20	10	11	-	16,838	17,783	3	13	3	1	-	-
N. Dak.	-	3	-	-	340	387	-	-	-	-	-	-
S. Dak.	-	-	2	1	828	909	1	-	-	-	-	-
Nebr.	2	1	1	-	2,502	2,338	-	3	-	-	1	-
Kans.	2	8	7	2	5,479	5,882	1	1	1	-	-	-
S ATLANTIC	488	17	154	16	176,333	197,246	16	84	13	11	5	8
Del.	5	1	1	-	3,366	3,633	-	1	1	-	2	-
Md.	41	U	28	-	20,456	25,469	U	U	U	U	U	1
D.C.	75	-	-	-	12,952	13,689	-	5	-	-	-	1
Va.	32	2	28	5	17,089	18,027	-	4	1	1	2	4
W. Va.	4	-	36	-	2,251	2,171	-	1	-	-	-	-
N.C.	10	2	30	7	29,275	30,545	3	6	-	-	-	-
S.C.	7	-	4	-	18,402	18,397	1	24	2	1	-	-
Ga.	51	5	2	2	28,722	39,529	-	15	2	1	-	1
Fla.	263	7	25	2	43,820	45,786	12	28	7	8	1	1
ES CENTRAL	22	18	51	7	64,402	64,211	4	34	2	1	-	-
Ky.	9	9	13	-	7,713	7,524	2	2	-	-	-	-
Tenn.	6	2	16	1	25,979	26,536	-	11	1	-	-	-
Ala.	5	3	19	5	19,544	19,736	2	18	1	1	-	-
Miss.	2	4	3	1	11,166	10,415	-	3	-	-	-	-
WS CENTRAL	257	12	88	4	96,674	107,148	80	54	3	41	-	17
Ark.	1	-	-	2	8,659	8,435	1	6	-	1	-	1
La.	38	1	8	-	21,202	20,441	21	13	-	3	-	1
Okla.	9	-	19	1	10,598	12,436	6	1	2	2	-	-
Tex.	209	11	61	1	56,215	65,836	52	34	1	35	-	15
MOUNTAIN	58	6	30	11	23,312	24,307	50	35	9	12	-	8
Mont.	-	U	2	-	901	1,017	U	U	U	U	U	-
Idaho	-	3	-	-	1,117	1,091	1	1	-	-	-	-
Wyo.	1	-	-	-	631	640	-	-	-	-	-	-
Colo.	30	1	9	-	6,546	6,811	22	12	1	7	-	-
N. Mex.	1	-	-	-	2,862	2,988	2	3	-	-	-	-
Ariz.	13	1	10	3	6,469	6,893	10	12	8	4	-	6
Utah	7	1	9	8	1,115	1,159	6	1	-	1	-	1
Nev.	6	-	-	-	3,671	3,708	9	6	-	-	-	1
PACIFIC	889	51	146	9	96,193	107,130	227	155	43	34	-	105
Wash.	46	2	7	-	7,131	8,410	8	8	5	1	-	3
Oreg.	7	-	-	-	5,673	5,748	32	8	5	1	-	1
Calif.	822	46	136	9	79,286	88,164	185	139	32	32	-	86
Alaska	1	-	-	-	2,429	2,773	1	-	-	-	-	-
Hawaii	13	3	3	-	1,674	2,035	1	-	1	-	-	15
Guam	-	U	-	-	103	117	U	U	U	U	U	-
P.R.	51	2	3	2	2,893	2,427	14	34	-	10	-	5
V.I.	-	U	-	-	365	253	U	U	U	U	U	-
Pac. Trust Terr.	-	U	-	-	-	-	U	U	U	U	U	-

N: Not notifiable

U: Unavailable

TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending  
November 3, 1984 and November 5, 1983 (44th Week)

Reporting Area	Malaria		Measles (Rubeola)				Menin- gococcal infections	Mumps		Pertussis			Rubella		
	Cum. 1984	1984	Indigenous		Imported *			Cum. 1984	1984	Cum. 1984	1984	Cum. 1984	Cum. 1983	1984	Cum. 1984
			1984	Cum. 1984	1984	Cum. 1984	1984								
UNITED STATES	834	4	2,138	2	278	1,365	2,285	24	2,488	26	1,925	2,035	8	678	863
NEW ENGLAND	46	-	94	-	12	20	158	-	83	2	57	67	-	20	15
Maine	-	-	-	-	-	-	1	-	26	-	2	5	-	1	-
N.H.	-	-	33	-	3	3	9	-	16	-	9	9	-	1	4
Vt.	6	-	2	-	5	-	28	-	5	-	23	8	-	-	5
Mass.	26	-	49	-	-	8	64	-	17	2	16	35	-	18	6
R.I.	4	-	-	-	-	-	15	-	10	-	3	5	-	-	-
Conn.	10	-	10	-	4	9	41	-	9	-	4	5	-	-	-
MID ATLANTIC	131	1	119	1	41	116	388	1	291	2	176	345	-	223	144
Upstate N.Y.	25	1	25	1 <sup>†</sup>	13	16	125	-	84	2	99	111	-	99	29
N.Y. City	43	-	90	-	18	70	79	1	26	-	7	55	-	103	86
N.J.	36	-	4	-	3	27	75	-	132	-	12	19	-	17	3
Pa.	27	-	-	-	7	3	109	-	49	-	58	160	-	4	26
E.N. CENTRAL	73	-	617	-	75	701	366	5	961	2	434	457	1	89	123
Ohio	17	-	3	-	6	87	124	3	465	2	72	138	-	2	2
Ind.	2	-	2	-	1	406	46	-	59	-	229	54	-	5	23
Ill.	25	U	179	U	1	200	78	U	177	U	25	156	U	53	53
Mich.	15	-	411	-	54	7	72	2	174	-	28	39	1	21	16
Wis.	14	-	22	-	13	1	46	-	86	-	80	70	-	8	29
W.N. CENTRAL	21	-	48	-	8	8	142	-	102	2	121	128	-	39	41
Minn.	7	-	44	-	3	1	29	-	6	-	15	44	-	4	9
Iowa	2	-	-	-	-	-	22	-	23	-	12	6	-	1	-
Mo.	6	-	4	-	-	1	43	-	10	1	20	23	-	-	-
N. Dak.	1	-	-	-	-	-	2	-	2	-	-	2	-	3	-
S. Dak.	1	-	-	-	-	-	6	-	-	-	9	8	-	-	-
Nebr.	2	-	-	-	-	-	13	-	4	2	13	3	-	-	-
Kans.	2	-	-	-	5	6	27	-	57	-	52	42	-	31	32
S. ATLANTIC	116	1	19	1	33	205	477	1	181	3	152	243	-	23	96
Del.	4	-	-	-	-	-	7	-	2	-	2	5	-	-	-
Md.	28	U	8	U	14	10	36	U	37	U	13	31	U	1	3
D.C.	1	-	-	-	5	-	8	-	-	-	-	-	-	-	-
Va.	29	-	1	-	4	23	55	-	17	-	15	50	-	-	2
W. Va.	1	-	-	-	-	-	5	-	38	-	11	9	-	-	-
N.C.	11	-	-	1 <sup>†</sup>	1	1	76	-	17	1	33	27	-	-	10
S.C.	2	-	-	-	-	4	54	-	5	-	1	13	-	-	1
Ga.	14	1	1	-	1	8	88	-	22	-	17	66	-	2	13
Fla.	26	-	9	-	8	159	148	1	43	2	60	42	-	20	67
E.S. CENTRAL	9	-	4	-	2	6	128	1	53	-	14	33	-	20	17
Ky.	1	-	1	-	-	1	49	-	11	-	2	14	-	14	16
Tenn.	2	-	-	-	2	-	31	-	17	-	7	8	-	-	-
Ala.	6	-	3	-	-	5	33	-	6	-	1	5	-	3	1
Miss.	-	-	-	-	-	-	15	1	19	-	4	6	-	3	-
W.S. CENTRAL	74	-	540	-	25	77	249	3	144	10	303	415	-	61	113
Ark.	-	-	8	-	-	13	45	-	7	-	16	21	-	3	-
La.	9	-	8	-	-	28	47	-	-	-	8	11	-	-	10
Okla.	9	-	-	-	8	1	24	N	N	-	236	303	-	-	-
Tex.	56	-	524	-	17	35	133	3	137	10	43	80	-	58	103
MOUNTAIN	24	-	113	-	32	18	75	3	231	1	112	224	-	21	30
Mont.	1	U	-	U	-	3	2	U	8	U	19	1	U	-	3
Idaho	2	-	-	-	23	10	8	-	9	-	7	16	-	1	8
Wyo.	-	-	-	-	-	1	3	-	2	-	6	6	-	2	4
Colo.	6	-	-	-	6	3	26	-	23	-	39	133	-	2	1
N. Mex.	1	-	88	-	-	-	8	N	N	1	9	13	-	1	-
Ariz.	9	-	-	-	1	1	16	3	174	-	23	24	-	4	6
Utah	5	-	25	-	2	-	7	-	11	-	7	31	-	7	7
Nev.	-	-	-	-	-	-	5	-	4	-	2	-	-	4	1
PACIFIC	340	2	584	-	50	214	302	10	442	4	556	123	7	182	284
Wash.	13	-	138	-	15	21	48	-	49	1	312	16	-	1	9
Oreg.	12	-	-	-	-	10	44	N	N	1	30	8	-	2	14
Calif.	311	2	287	-	31	179	202	9	354	2	138	92	7	173	259
Alaska	-	-	-	-	-	2	7	-	15	-	1	4	-	1	1
Hawaii	4	-	159	-	4	2	1	1	24	-	75	3	-	5	1
Guam	1	U	83	U	2	2	1	U	5	U	-	-	U	2	-
P.R.	4	-	1	-	-	94	4	1	163	-	1	13	2	16	6
V.I.	-	U	-	U	-	5	-	U	5	U	-	-	U	-	2
Pac. Trust Terr.	-	-	-	U	-	-	-	-	-	U	-	-	-	-	-

\*For measles only, imported cases includes both out-of-state and international importations.

N Not notifiable U Unavailable <sup>†</sup>International <sup>§</sup>Out-of-state

TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending  
November 3, 1984 and November 5, 1983 (44th Week)

Reporting Area	Syphilis (Civilian) (Primary & Secondary)		Toxic- shock Syndrome	Tuberculosis		Tula- remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1984	Cum. 1983	1984	Cum. 1984	Cum 1983	Cum. 1984	Cum. 1984	Cum. 1984	Cum. 1984
UNITED STATES	23,397	27,563	6	18,082	19,777	265	297	806	4,566
NEW ENGLAND	458	592	-	546	605	7	18	5	46
Maine	8	19	-	27	31	-	-	-	12
N.H.	14	20	-	25	31	-	-	-	16
Vt.	1	3	-	8	9	-	-	-	-
Mass.	261	376	-	302	322	7	15	4	10
R.I.	19	19	-	45	54	-	-	-	-
Conn.	155	155	-	139	158	-	3	1	8
MID ATLANTIC	3,113	3,619	-	3,264	3,495	1	48	25	439
Upstate N.Y.	254	343	-	522	550	-	12	8	94
N.Y. City	1,897	2,098	-	1,310	1,377	1	14	31	-
N.J.	557	695	-	730	739	-	16	3	33
Pa.	405	483	-	702	829	-	6	11	312
E.N. CENTRAL	1,105	1,466	1	2,342	2,676	8	51	56	196
Ohio	199	384	1	424	423	-	7	37	24
Ind.	120	105	-	275	296	-	9	6	21
Ill.	400	696	U	964	1,152	8	21	10	70
Mich.	320	203	-	535	663	-	7	3	21
Wis.	66	78	-	144	142	-	7	-	60
W.N. CENTRAL	317	338	3	546	636	80	10	50	671
Minn.	84	128	2	92	134	1	3	1	74
Iowa	11	21	-	56	59	-	-	6	135
Mo.	157	124	-	272	321	42	5	15	59
N. Dak.	9	2	-	11	6	-	-	-	132
S. Dak.	-	11	-	21	36	34	-	5	182
Nebr.	15	15	-	29	20	-	-	5	41
Kans.	41	37	1	65	60	3	2	18	48
S. ATLANTIC	6,799	7,445	1	3,806	3,942	7	31	383	1,330
Del.	18	31	-	50	54	-	-	1	6
Md.	421	449	U	374	302	-	2	29	725
D.C.	280	326	-	151	164	1	6	-	-
Va.	353	505	-	381	418	1	8	53	188
W. Va.	16	24	-	119	123	-	-	7	38
N.C.	718	740	-	572	603	1	1	164	25
S.C.	664	474	-	452	381	-	1	78	58
Ga.	1,059	1,309	1	580	665	4	1	47	167
Fla.	3,270	3,587	-	1,127	1,232	-	12	4	123
E.S. CENTRAL	1,712	1,884	-	1,710	1,759	6	8	85	221
Ky.	89	151	-	398	452	-	2	17	49
Tenn.	454	504	-	498	524	5	2	43	73
Ala.	566	736	-	501	453	-	2	15	99
Miss.	603	493	-	313	330	1	2	10	-
W.S. CENTRAL	5,755	7,080	1	2,117	2,431	113	18	185	914
Ark.	174	167	-	238	287	80	-	32	98
La.	1,045	1,444	-	288	374	7	1	4	54
Okla.	185	172	1	202	222	19	3	118	93
Tex.	4,351	5,297	-	1,389	1,548	7	14	31	669
MOUNTAIN	534	580	-	481	553	33	13	13	255
Mont.	3	7	U	17	42	3	1	8	109
Idaho	21	7	-	27	30	8	-	1	11
Wyo.	4	12	-	3	12	1	-	3	20
Colo.	141	133	-	56	81	6	5	1	39
N. Mex.	79	160	-	94	95	2	3	-	11
Ariz.	185	147	-	221	216	4	3	-	43
Utah	18	20	-	32	37	4	-	-	6
Nev.	83	94	-	31	40	5	1	-	16
PACIFIC	3,604	4,559	-	3,270	3,680	10	100	4	494
Wash.	120	168	-	170	205	2	3	-	3
Oreg.	102	120	-	134	153	2	2	1	1
Calif.	3,306	4,189	-	2,713	3,054	6	87	2	482
Alaska	6	12	-	65	67	-	1	1	8
Hawaii	70	70	-	188	201	-	7	-	-
Guam	-	-	U	5	7	-	-	-	-
P.R.	683	834	-	325	398	-	4	-	58
V.I.	8	17	U	3	2	-	3	-	-
Pac. Trust Terr.	-	-	U	-	-	-	-	-	-

U Unavailable

TABLE IV. Deaths in 121 U.S. cities,\* week ending  
November 3, 1984 (44th Week Ending)

Reporting Area	All Causes, By Age (Years)						P&I** Total	Reporting Area	All Causes, By Age (Years)						P&I** Total
	All Ages	≥65	45-64	25-44	1-24	<1			All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	630	422	128	36	20	24	46	S. ATLANTIC	1,154	748	250	85	29	42	43
Boston, Mass.	170	100	38	15	7	10	12	Atlanta, Ga.	158	92	44	11	5	6	2
Bridgeport, Conn.	49	34	6	7	2	-	6	Baltimore, Md.	137	86	29	12	3	7	1
Cambridge, Mass.	21	17	4	-	-	-	3	Charlotte, N.C.	59	43	10	2	1	3	7
Fall River, Mass.	27	17	9	1	-	-	3	Jacksonville, Fla.	105	74	22	5	2	2	6
Hartford, Conn.	46	28	10	5	1	2	1	Miami, Fla.	100	53	31	9	2	5	-
Lowell, Mass.	26	21	3	2	-	-	3	Norfolk, Va.	77	47	19	7	2	2	2
Lynn, Mass.	19	16	3	-	-	-	-	Richmond, Va.	80	48	21	7	2	2	7
New Bedford, Mass.	20	16	3	-	1	-	-	Savannah, Ga.	48	39	5	3	1	-	1
New Haven, Conn.	34	23	6	1	1	3	2	St. Petersburg, Fla.	112	102	8	1	-	1	7
Providence, R.I.	66	44	12	2	3	5	4	Tampa, Fla.	79	51	14	5	-	4	3
Somerville, Mass.	4	3	1	-	-	-	-	Washington, D.C.	180	103	42	19	6	10	5
Springfield, Mass.	49	32	12	1	2	2	2	Wilmington, Del.	19	10	5	4	-	-	2
Waterbury, Conn.	34	21	10	1	2	-	3	E.S. CENTRAL	806	504	205	53	18	26	33
Worcester, Mass.	65	50	11	1	1	2	10	Birmingham, Ala.	121	74	29	7	5	6	4
MID. ATLANTIC	2,491	1,633	545	187	59	66	120	Chattanooga, Tenn.	57	35	10	6	2	4	5
Albany, N.Y.	40	27	8	1	2	2	-	Knoxville, Tenn.	78	44	27	5	1	1	3
Allentown, Pa.	18	14	3	1	-	-	-	Louisville, Ky.	125	79	31	7	4	4	4
Buffalo, N.Y.	90	59	22	4	2	3	11	Memphis, Tenn.	196	131	45	17	1	2	9
Camden, N.J.	46	24	9	7	3	3	3	Mobile, Ala.	64	40	23	-	-	1	4
Elizabeth, N.J.	25	18	7	-	-	-	2	Montgomery, Ala.	34	21	8	1	3	1	-
Erie, Pa.†	38	27	10	-	-	1	6	Nashville, Tenn.	131	80	32	10	2	7	4
Jersey City, N.J.	40	19	15	4	-	2	-	W.S. CENTRAL	1,294	762	318	116	49	49	44
N.Y. City, N.Y.	1,383	891	300	126	34	32	52	Austin, Tex.	49	31	8	6	4	-	2
Newark, N.J.	66	37	17	6	2	3	10	Baton Rouge, La.	64	31	18	9	3	3	-
Paterson, N.J.	32	20	3	4	2	3	-	Corpus Christi, Tex.	60	31	17	8	2	2	-
Philadelphia, Pa.†	251	165	62	16	5	3	17	Dallas, Tex.	214	117	51	27	8	11	5
Pittsburgh, Pa.†	69	43	19	4	2	1	5	El Paso, Tex.	52	39	9	2	-	2	3
Reading, Pa.	30	23	6	1	-	-	-	Fort Worth, Tex.	92	64	19	5	4	-	7
Rochester, N.Y.	112	90	15	6	-	1	6	Houston, Tex.	275	151	72	25	18	9	10
Schenectady, N.Y.	29	21	6	1	-	1	1	Little Rock, Ark.	94	56	25	6	2	5	6
Scranton, Pa.†	39	30	4	2	1	2	1	New Orleans, La.	99	52	35	8	1	3	1
Syracuse, N.Y.	97	61	20	4	4	8	2	San Antonio, Tex.	156	101	34	9	2	10	4
Trenton, N.J.	34	23	10	-	1	-	-	Shreveport, La.	52	34	12	5	1	-	2
Utica, N.Y.	23	19	3	-	1	-	1	Tulsa, Okla.	87	55	18	6	4	4	4
Yonkers, N.Y.	29	22	6	-	-	1	3	MOUNTAIN	605	394	125	38	23	25	41
E.N. CENTRAL	2,130	1,472	393	122	57	76	71	Albuquerque, N.Mex.	67	49	8	3	3	4	7
Akron, Ohio	93	62	17	8	3	3	-	Colo. Springs, Colo.	53	35	11	2	2	3	8
Canton, Ohio	36	27	7	1	1	-	2	Denver, Colo.	119	67	29	15	5	3	5
Chicago, Ill. §	457	404	5	10	13	15	12	Las Vegas, Nev.	65	41	13	7	3	1	1
Cincinnati, Ohio	104	74	24	4	-	2	12	Ogden, Utah	15	12	2	-	-	1	3
Cleveland, Ohio	154	84	48	13	3	6	5	Phoenix, Ariz.	138	93	29	4	5	7	6
Columbus, Ohio	121	81	24	6	7	3	4	Pueblo, Colo.	21	13	5	-	2	1	4
Dayton, Ohio	95	54	29	7	1	4	2	Salt Lake City, Utah	46	30	13	1	-	2	1
Detroit, Mich.	255	156	54	23	6	16	4	Tucson, Ariz.	81	54	15	6	3	3	6
Evansville, Ind.	52	37	6	4	5	-	-	PACIFIC	1,902	1,268	362	152	71	43	88
Fort Wayne, Ind.	62	42	11	3	3	3	2	Berkeley, Calif.	18	9	3	6	-	-	-
Gary, Ind.	20	10	3	5	2	-	1	Fresno, Calif.	73	52	12	4	4	1	8
Grand Rapids, Mich.	55	39	10	2	-	4	2	Glendale, Calif.	19	16	3	-	-	1	1
Indianapolis, Ind.	170	95	52	13	2	8	2	Honolulu, Hawaii	62	43	10	4	2	3	6
Madison, Wis.	33	19	7	5	2	-	1	Long Beach, Calif.	105	68	28	7	2	-	3
Milwaukee, Wis.	141	91	39	5	4	2	5	Los Angeles, Calif.	555	350	104	56	33	7	15
Peoria, Ill.	49	35	9	-	-	5	2	Oakland, Calif.	80	60	9	7	3	1	5
Rockford, Ill.	41	30	7	3	1	-	6	Pasadena, Calif.	29	19	5	3	1	1	4
South Bend, Ind.	41	30	9	2	-	2	2	Portland, Ore.	138	100	24	8	4	2	2
Toledo, Ohio	86	62	13	4	4	3	7	Sacramento, Calif.	139	94	27	7	6	5	9
Youngstown, Ohio	65	40	19	4	-	2	-	San Diego, Calif.	147	99	34	8	3	3	9
W.N. CENTRAL	730	499	153	29	21	28	17	San Francisco, Calif.	133	87	27	11	3	5	3
Des Moines, Iowa	68	47	13	2	3	3	1	San Jose, Calif.	154	104	28	13	4	4	12
Duluth, Minn.	23	13	9	1	-	-	1	Seattle, Wash.	130	85	25	13	2	5	4
Kansas City, Kans.	33	18	6	3	3	3	-	Spokane, Wash.	56	37	14	1	-	4	4
Kansas City, Mo.	111	72	26	5	2	6	3	Tacoma, Wash.	64	45	9	4	4	2	3
Lincoln, Nebr.	24	19	4	-	-	1	-	TOTAL	11,742	7,702	2,479	818	347	379	503
Minneapolis, Minn.	101	65	21	7	4	4	2								
Omaha, Nebr.	82	54	19	4	3	2	3								
St. Louis, Mo.	171	120	34	5	5	7	2								
St. Paul, Minn.	46	39	5	1	-	1	-								
Wichita, Kans.	71	52	16	1	1	1	5								

\* Mortality data in this table are voluntarily reported from 121 cities in the United States, most of which have populations of 100,000 or more. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.

\*\* Pneumonia and influenza

† Because of changes in reporting methods in these 4 Pennsylvania cities, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

‡ Total includes unknown ages

§ Data not available. Figures are estimates based on average of past 4 weeks.

*Diabetic Nursing-Home Residents – Continued*

between hospital and home. With DRGs, the greatest outcome of improved diabetes policies and procedures in nursing homes, particularly in the areas of care during acute illness and patient education, may be in preventing readmission to the hospital, thus affecting the number of hospitalizations, as well as the hospital-days rate.

Several factors affect nursing-home care that make established policies and procedures essential for safe, consistent, quality care. First, there is a high turnover rate among the nursing staff, particularly among nonlicensed nurse's aides. In Denver-area nursing homes, the estimated nursing turnover rate was 172% in 1980, 178% in 1981, and 114% in 1982. Second, many nursing homes employ part-time or temporary personnel, resulting in multiple persons providing nursing care for each resident. Third, the ratio of patient-to-licensed nursing staff is high. Licensed nursing personnel must delegate many tasks to minimally trained personnel.

Dietary departments are usually staffed by a food-service supervisor who generally has 90 hours of training in food service; cooks and dietary aides, however, only have on-the-job training. Most registered dietitians are employed on a consulting basis for as few as 4 hours per month. Finally, many nursing homes do not routinely offer diabetes education programs to their staff. In a survey of 444 nursing and dietary nursing-home personnel attending educational programs offered by the Colorado DCP in 1979 and 1980, the median number of diabetes education hours during the previous 5 years reported was less than one-half hour, with 43% reporting having no diabetes education during that time. Established policies and procedures can serve as a resource for all personnel and should be used as a basis for orientation and ongoing inservice education programs.

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3. Colorado Department of Health, Division of Health Policy, Planning and Statistics. 1984 addenda to the 1982 state health plan. Denver, Colorado: Department of Health (in press).

*Current Trends***Influenza Activity – Nevada**

Isolation of two influenza viruses from persons in Las Vegas, Nevada, during late October 1984 has been reported. They have been preliminarily identified as related to A/Philippines/2/82(H3N2). The first isolate was from a 63-year-old woman who developed fever of 39.4 C (103 F), headache, and myalgias on October 24 and was admitted to a local hospital for 6 days. The second was from a 77-year-old man with chronic obstructive pulmonary disease, who was hospitalized on October 29 following onset of fever (38.9 C [102 F]), headache, myalgias, and nausea. No influenza outbreaks have been reported in Nevada.

*Reported by J Clark, P Reichelderfer, PhD, J Oparnico, Sunrise Hospital, N Venger, MD, K Fazekas, MD, Las Vegas, J Constantino, O Ravenholt, MD, Clark County Health Dept, GE Reynolds, MD, State Epidemiologist, Nevada State Dept of Human Resources; WHO Collaborating Center for Influenza, Influenza Br, Div of Viral Diseases, Center for Infectious Diseases, CDC.*

*Influenza — Continued*

**Editorial Note:** It is common for sporadic isolates of influenza to be reported at this time of year in the United States, indicating low-level spread of virus in the population. Both patients in Nevada were hospitalized, illustrating the potential benefit of administering influenza vaccine annually to those persons at greatest risk of complications from influenza infections. The Immunization Practices Advisory Committee (ACIP) has recommended that priority be given to develop special programs for administration of vaccine to two of the groups at high risk: (1) adults and children with chronic disorders of the cardiovascular or pulmonary systems severe enough to have required regular medical follow-ups or hospitalization during the preceding year; (2) residents of nursing homes and other chronic-care facilities (e.g., institutions housing patients of any age with chronic medical conditions) (1).

Influenza vaccine, although normally given in the fall, should continue to be administered to persons in the above high-priority groups, as well as to persons in other groups recommended to receive it (1), up to the time influenza epidemics are occurring. Physicians and administrators of facilities providing care for persons at high risk are also encouraged to evaluate the organization and outcome of present vaccination activities to determine whether changes could improve the delivery of vaccine to high-priority groups during the 1985-1986 season.

CDC will make available to health-care organizations and public health or voluntary agencies camera-ready copies of a revised brochure, "What You Should Know About 'Flu and 'Flu Shots," suitable for reprinting locally. Requests should be sent to the Centers for Disease Control, Influenza Branch, Division of Viral Diseases, Building 7, Room 111, Atlanta, Georgia 30333. In addition, a limited number of printed brochures is available from the above address. Requests for these should include a preaddressed, adhesive label to facilitate mailing the brochures.

*Reference*

1. ACIP. Prevention and control of influenza. MMWR 1984;33:253-60, 265-6.

*Epidemiologic Notes and Reports***Poultry Giblet-Associated Salmonellosis — Maine**

In November 1982 and October 1983, two unrelated outbreaks of foodborne salmonellosis caused by improperly cooked poultry giblets occurred in Maine. The two restaurants involved were located 50 miles apart but were part of the same restaurant chain. Reports of the outbreaks follow.

**Outbreak 1:** One hundred twelve culture-confirmed cases of *Salmonella enteritidis* serotype *enteritidis* were identified following exposure to this restaurant over the Thanksgiving weekend, November 25-27, 1982. A univariate analysis was unable to differentiate five of 42 foods associated with illness (roasted turkey, chef's dressing, giblet gravy, mashed potatoes, and apple cider) ( $p = 0.0001$ ). Further analyses of food histories associated the giblet gravy most strongly with illness ( $p < 0.0001$ ). All items served with the turkey dinner had been used by the time the investigation was initiated. Food from five "doggy" bags was retrieved following the outbreak, but the contents contained a nonsegregated mixture of the turkey dinner. Nevertheless, turkey from two bags was positive for *Salmonella*, as were mashed potatoes from the third bag.

*Salmonellosis — Continued*

A review of the method used to prepare the giblet gravy revealed that, 3 days before Thanksgiving, the giblets had been removed from forty-three 22- to 24-pound turkeys, which had been thawed at room temperature for 36 hours before cooking. The giblets were refrigerated, with instructions reportedly given to boil them the day before Thanksgiving at the time the stock was being prepared. However, when each of the 18 foodhandlers was questioned individually, no one admitted to cooking the giblets or recalled seeing the giblets being boiled. The uncooked giblets were ground in a blender and added to a thickened, hot stock mixture. The gravy was not returned to a boil after addition of the ground giblets, so the thickened mixture would not scorch. The mixture was stored on the counter behind the stove at room temperature throughout Thanksgiving Day. Leftover gravy was used for turkey luncheon specials offered November 26 and 27.

**Outbreak 2:** Seven persons, all of whom were culture-positive for *Salmonella* serotype *heidelberg*, became ill after eating at the second restaurant on October 17, 1983. In univariate analysis of the latter outbreak, eating liver pate was associated with illness ( $p = 0.003$ ). No pate remained for laboratory analysis, since the restaurant had been alerted to the problem by a customer and had stopped making the pate 2 days before the investigation. The pate was prepared October 15. Four 5-pound containers of frozen chicken livers had been defrosted under refrigerated conditions for 4 days before use. They were sauteed in a 20-quart vessel and ground in a food processor. After addition of seasoning and diced boiled eggs, the mixture was poured into a large storage pan and refrigerated. The pate was served in a small crock on the salad bar, which was replenished from the refrigerated storage container as needed from October 16 to October 19.

*Reported by KF Gensheimer, MD, Maine Dept of Human Svcs; Enteric Diseases Br, Div of Bacterial Diseases, Center for Infectious Diseases, CDC.*

**Editorial Note:** Poultry products are a frequent source of *Salmonella* infections, and reported outbreaks from turkey increase markedly during the Thanksgiving and Christmas holiday seasons (1). Culture surveys of poultry flocks and market poultry have demonstrated that salmonellae may be recovered frequently (2), a fact that is often not known or is overlooked during rushed holiday preparations.

The outbreaks described here were unusual in that they involved giblets that had been stored under refrigeration for several days and that, because they had oxidized, appeared to have been cooked. Domestic and commercial foodhandlers should be aware of the misleading appearance of giblets and other poultry organs that have been refrigerated for prolonged periods.

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2. Zecha BC, McCapes RH, Dungan WM, Holte RJ, Worcester WW, Williams JE. The Dillon Beach Project—a five-year epidemiological study of naturally occurring salmonella infection in turkeys and their environment. *Avian Dis* 1977; 21:141-59.

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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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