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MORBIDITY AND MORTALITY WEEKLY REPORT

Current Trends

New Issues in Newborn Screening for Phenylketonuria and Congenital Hypothyroidism: A Commentary from the Committee on Genetics of the American Academy of Pediatrics

The following policy statement was developed by the American Academy of Pediatrics Committee on Genetics and published in Pediatrics 1982;69:104-6. CDC believes that it is an excellent statement of public health policy regarding newborn screening of phenylketonuria and congenital hypothyroidism and concurs with its recommendations.

Screening for phenylketonuria (PKU) and congenital hypothyroidism (CH) is of concern to parents, physicians, and public health professionals. Parents have an abiding interest in a predictive activity that can prevent disease in their offspring. Physicians and their consultants must counsel parents and interpret a positive screening test. Public health personnel are concerned with the specificity and sensitivity, efficiency, and effectiveness of newborn screening.

The Committee on Genetics has previously published recommendations on newborn screening for PKU and CH (*1*). Further recommendations are required because PKU and CH screening are widely practiced joint procedures in the newborn and because most full-term newborn infants are now being discharged from North American nurseries within the first 3 days after birth. This new practice is likely to have an effect on the validity of newborn screening and on screening for PKU, in particular.

A recent statement from the Committee on Fetus and Newborn (Pediatrics 65:651, 1980) addressed the problem of so-called "in and out deliveries." However, the statement was ambiguous on the issue of whether such infants should be screened routinely on the initial discharge from the nursery. The Committee on Genetics believes that all infants, regardless of age, should be screened for PKU and CH at discharge from the nursery.

The Committee believes that screening is not the equivalent of diagnosis; some cases of PKU and CH will inevitably be missed by screening. Whereas an important reason for missed cases may be the biology of the target disorders, none should slip through the screening mesh because of flaws in the program and its components. Accordingly, we have examined the allied problems of initial screening and rescreening at a later age, in relation to early discharge from the nursery and our previous recommendations (*1*). The new statement emphasizes 4 issues; 1) organization of newborn screening programs for PKU and CH; 2) biologic adequacy of the blood sample and how it may influence the rate of false-negative results, and the need for routine rescreening; 3) performance of the screening method and how it may influence the frequency of false-negative test results; and 4) disorders of tetrahydrobiopterin homeostasis and their significance for diagnosis and treatment of infants with positive PKU tests.

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RECOMMENDATIONS

1. An adequate screening PROGRAM for the persistent hyperphenylaninemias (PHP), including PKU, and for CH (in its various forms) should assure: a) total participation by the eligible population; b) notification of parents about newborn screening and their participation in this activity; c) reliable and prompt performance of the screening test; d) prompt follow-up of subjects with positive tests; e) accurate diagnosis of subjects with confirmed positive tests; f) appropriate counseling and treatment of patients.

2. A blood SAMPLE should be obtained from every infant before he/she leaves the nursery, regardless of age.* Siblings of children with PKU/PHP and CH deserve special priority for collection of the sample. An adequate sample is defined as follows: a) for PKU/PHP, it is heel blood obtained as close as possible to time of discharge from the nursery in a full-term infant (cord blood is not sufficient); b) for CH, it is cord blood at birth or heel blood at discharge; c) in a premature infant, for any infant receiving parenteral feeding, or any newborn infant being treated for illness, it is a blood sample obtained at or near the seventh day of age.

3. Infants initially screened before 24 hours of age should be rescreened for PKU/PHP because the probability of missing cases by the initial screening test is greatly increased. The repeat screening test should be completed before the third week of life.

4. Accurate ANALYSIS requires meticulous standardization of the screening method. Accuracy is improved when the cutoff level delineating an abnormal result is defined and specificity of the test is monitored regularly; to do so requires a high volume of samples per unit time. This analytical component in the program should be centralized to enhance ongoing evaluation of efficiency, accuracy, participation, and adequacy of samples.

5. All patients with persistent hyperphenylalaninemia should be investigated to rule out the tetrahydrobiopterin-deficient forms of PKU.

6. Systematic follow-up of infants with positive CH screening tests is necessary to evaluate the efficacy of CH prevention.

COMMENTARY

1. Phenylketonuria and Other Forms of Persistent Hyperphenylalaninemia Associated with Disease.

Early diagnosis and treatment largely prevent the mental retardation associated with untreated PKU, and a properly executed program is clearly cost effective (*2*). PREVENTION requires an adequate PROGRAM, a satisfactory SAMPLE for the screening test, and reliable ANALYSIS of the sample.

1.1. The Program. Programs that reach every infant, perform the test reliably, provide timely follow-up of subjects with positive tests, assure accurate diagnosis, and provide appropriate counseling and treatment conform to published guidelines (*1,3*). Programs lacking any of these components cannot be recommended. Missed cases of PKU/PHP in screening programs may reflect faults of program organization, in particular, failure to obtain the blood sample or to perform a reliable analysis. On the other hand, cases can be missed because of biologic variation in the expression of hyperphenylalaninemia and are not necessarily the result of negligence in screening.

1.2. The Sample. Cases of PKU have been missed because the level of blood phenylalanine was not elevated above normal, even after the third day of life (B. Wilcken et al., personal

*This recommendation pertains to North American perinatal practices. In countries where there is a systematic home visit following early discharge or home delivery, it is appropriate to screen all babies on a sample drawn at home in the first week by the health visitor.

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communications, 1981). In general, however, the chance of false-negative test results for PKU and other forms of PHP is greater when the blood sample is obtained before 72 hours of age. This statement is based on the following evidence (*4-8*). 1) Serial measurements in PKU infants during the first 3 days of life show that blood phenylalanine concentrations <4 mg/100 ml are more likely to occur in this period than after 72 hours of age; 2) The incidence of false-negative test results in PKU (either actual or predicted on statistical grounds) is higher in the first 3 days of life than in older infants.

Extrapolations from available data suggest that 16.1% of PKU cases could be missed on the first day (1 to 24 hours) of life because the screened blood sample contained <4 mg of phenylalanine/100 ml; 2.2% of cases could be missed when screening is done on the second day (25 to 48 hours); and 0.3% on the third day (49 to 72 hours) of life. However, these are only statistical estimates of the frequency of missed cases. They are based on the distribution of blood phenylalanine in the PKU and non-PKU populations during the first 3 days of life where skewness and other factors in the variance contribute to the probability statements. An evaluation of routine repeat blood screening (*9*) indicated that routine follow-up blood testing of infants for PKU was not productive.

It is now firmly established (*7,8,10*) that cord blood cannot be used for PKU/PHP screening. Whether or not feeding practices influence the accuracy of screening in the first 3 days of life remains uncertain; it is the opinion of the Committee that this factor is of only minor importance, and the Recommendations should be followed regardless of the feeding protocol.

1.3. The Analytical Method. Accurate analysis of the sample is a critical facet of prevention. The Guthrie test is a threshold (cutoff) method that estimates phenylalanine concentration above a certain level in the blood sample. Quantitative methods permit the age-specific distribution of phenylalanine to be described and the corresponding cutoff level to be defined statistically. In practice, either method has predictive validity for PKU screening.

1.4. Tetrahydrobiopterin-deficient PKU. Infants with disorders of tetrahydrobiopterin homeostasis are likely to experience progressive neurologic deterioration when treated with low-phenylalanine diet alone (*2,11,12*). Current estimates indicate that 0.5% to 3% of infants with persistent hyperphenylalaninemia have a disorder of tetrahydrobiopterin metabolism. Their prognosis is quite different from that for infants with benign PHP or typical PKU treated and counseled in the conventional manner. Accordingly, prognosis for any patient with persistent hyperphenylalaninemia must be guarded, until experience with early diagnosis and treatment of tetrahydrobiopterin-deficient hyperphenylalaninemia has been accumulated and evaluated. Prompt consultation with the appropriate regional center for further investigation is recommended for all cases of PKU with persistent hyperphenylalaninemia.

1.5. Rescreening. Whereas the ideal screening program achieves perfect specificity (no false-positive tests) and perfect sensitivity (no false-negative tests), in practice this is seldom attained. Errors of classification do occur in the real world. It is our belief that errors should not occur because of organizational and technical flaws in the screening program. Yet, the Committee recognizes the fact of biologic variability when PKU/PHP screening is done before 24 hours of age; accordingly, routine rescreening of these infants is recommended.

1.6. Maternal PKU and PHP. Exposure to unmodified maternal PHP, in any of its forms, constitutes a risk to the fetus (*13*). Current screening programs for PKU/PHP should consider their responsibility for long-term follow-up of female patients so that physicians can initiate appropriate counseling in due course (*14*).

2. Congenital Hypothyroidism

All foregoing statements about adequacy of PROGRAM, SAMPLE, and ANALYSIS pertain

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equally to CH screening. The Committee cannot document other issues of CH screening with an authority comparable to that associated with PKU screening because the former is still an ongoing development. Proceedings of an international conference on CH screening (*15*) are available for guidance.

Effective approaches to CH screening include thyroxine (T_4) and thyroid-stimulating hormone (TSH) measurements on all samples, TSH measurements alone, and T_4 with supplemental TSH measurement. Cord blood and heel blood have both been used effectively. Rapidly changing technology makes overcommitment to any particular sample protocol or laboratory analysis unwise at present (*16*). Two general comments are pertinent to programs utilizing a primary T_4 measurement: 1) The risk of a false-negative test result in CH screening is increased when infants with incomplete absence of thyroid tissue are screened by the T_4 assay alone; 2) Rescreening with combined T_4 and TSH measurements is always recommended when the initial T_4 value is abnormally low.

All infants classified as CH should be treated and systematically reevaluated to determine whether the initial condition was transient.

Reported by Committee on Genetics, 1980-1981, CR Scriver, MD, Chairman, NA Holtz, MD, RR Howell, MD, P Mamunes, MD, HL Nadler, MD, AF Manley, MD, G Oakley, MD, JL Simpson, MD, Liaison Representatives.

Editorial Note: Early diagnosis, coupled with optimal therapy and timely follow-up of newborns with PKU and CH, has been shown to be effective in preventing mental retardation and other adverse clinical sequelae normally associated with the untreated states of these disorders. A study of children with PKU treated from birth to 6 years of age showed a strong positive correlation between adherence to treatment and IQ scores (*16*). Similarly, IQ testing performed in a group of infants with CH detected through neonatal screening and treated before clinical manifestations were apparent (*17*) showed that prompt treatment was highly correlated with final IQ scores.

In the United States approximately 300 infants are born with PKU each year. Almost all of these infants would be severely retarded if untreated. A recent study suggested that for 10%-15% (*9*) of infants born with PKU, the condition may remain undetected because of possible failures in specimen collection, laboratory/administrative errors, lack of centralized programs, and poor quality control in general. Similar factors are likely to produce errors in CH diagnosis also. There is no active, systematic surveillance or registry for detected and missed cases of these conditions. The exact number of missed cases and the reasons for their being missed are, therefore, unknown. The lack of these data hampers health officials in their attempts to make sure mental retardation due to PKU and CH is reduced to zero. Until such data are available, the recommendations of the American Academy of Pediatrics should serve as a guide toward the goal of eliminating mental retardation from these 2 preventable causes.

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Influenza Update — United States

ANTIGENIC ANALYSIS OF INFLUENZA A(H3N2) ISOLATES

Influenza A(H3N2) viruses isolated during early March 1982 in association with sporadic cases in Texas and Florida (*1*) have been shown by hemagglutination-inhibition tests to resemble most closely A/Bangkok/2/79. A previously unreported H3N2 isolate collected from Houston in January by the Influenza Research Center at Baylor University, as well as an isolate recovered in Spain during September 1981 from a US Air Force person with illness, have also been found to resemble A/Bangkok/2/79.

Reported by WHO Collaborating Center for Influenza, Div of Viral Diseases, Center for Infectious Diseases, CDC.

Editorial Note: A/Bangkok/2/79 was originally identified simultaneously with A/Bangkok/1/79, from which it shows recognizable antigenic variation (*2*). Since that time, A/Bangkok/2/79-like virus has been detected occasionally in parallel with other H3N2 variants, of which the majority have usually more closely resembled A/Bangkok/1/79. It is unusual to detect A/Bangkok/2/79-like strains in the absence of the other recent H3N2 variants. However, it would be premature, because of the small number of H3N2 isolates from the US population this year, and the presence of different variants in other populations, to attach predictive significance to the recent identification of sporadic A/Bangkok/2/79-like virus isolates from US citizens.

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Influenza — Continued

INFLUENZA VACCINE EFFICACY IN NURSING HOME OUTBREAKS REPORTED DURING 1981-1982

Four outbreaks of influenza-like illness in nursing homes, from which influenza type B virus was isolated and serologic evidence of influenza B infection was obtained, have been reported to CDC this winter (*1-3*). In all of these nursing homes the residents were elderly, with an average age in excess of 80 years. Three of the homes had resident populations of about 120 persons, but 1 institution had just over 40 residents.

Clinical attack rates for influenza averaged 27% (range 25% to 38%), and the duration of the outbreaks averaged 2 weeks (range 1-4 weeks). The percentage of recently vaccinated residents ranged from less than 10% to almost 90%. In 2 of the nursing homes, there were relatively equal numbers of vaccinated and unvaccinated residents. Laboratory diagnosis confirmed influenza B infections for 21 of 34 (62%) and 7 of 13 (54%) of ill residents from whom specimens were collected in these 2 homes, and the calculated rates of vaccine efficacy in preventing clinical influenza illness were 37% and 25%. Mortality associated with influenza-like illness among vaccinated and unvaccinated persons during the 4 outbreaks reported this winter led to an overall case-fatality ratio of 10%, but the total sample size was such that meaningful analysis of vaccine efficacy in reducing mortality was not feasible.

Reported by Influenza Br, Div of Viral Diseases, Center for Infectious Diseases, CDC.

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

DISEASE	15th WEEK ENDING			CUMULATIVE, FIRST 15 WEEKS		
	April 17 1982	April 18 1981	MEDIAN 1977-1981	April 17 1982	April 18 1981	MEDIAN 1977-1981
Aseptic meningitis	60	58	47	1,076	962	713
Brucellosis	4	2	1	31	25	42
Encephalitis: Primary (arthropod-borne & unspec.)	18	10	9	202	209	174
Post-infectious	1	2	2	15	26	45
Gonorrhea: Civilian	15,081	18,779	17,540	261,245	278,152	270,038
Military	256	566	518	7,567	8,431	7,724
Hepatitis: Type A	378	487	545	6,404	7,267	7,947
Type B	402	372	314	5,644	5,395	4,616
Non A, Non B	43	N	N	546	N	N
Unspecified	141	186	186	2,624	3,067	2,948
Legionellosis	14	N	N	86	N	N
Leprosy	7	–	2	54	57	46
Malaria	22	30	11	202	353	139
Measles (rubeola)	82	60	640	334	830	4,937
Meningococcal infections: Total	81	68	68	1,027	1,456	1,021
Civilian	81	67	67	1,023	1,452	1,011
Military	–	1	–	4	4	9
Mumps	137	111	506	2,139	1,594	6,011
Pertussis	23	18	18	311	303	303
Rubella(German measles)	75	66	623	739	802	4,510
Syphilis (Primary & Secondary): Civilian	536	612	434	9,499	8,775	6,991
Military	17	4	6	116	108	92
Tuberculosis	504	624	556	7,014	7,159	7,620
Tularemia	2	2	3	27	29	25
Typhoid fever	10	9	8	109	142	114
Typhus fever, tick-borne (RMSF)	5	3	3	27	22	22
Rabies, animal	165	199	142	1,545	2,021	1,110

TABLE II. Notifiable diseases of low frequency, United States

	CUM. 1982		CUM. 1982
Anthrax	–	Poliomyelitis: Total	1
Botulism	20	Paralytic	1
Cholera	–	Psittacosis (Calif. 1)	23
Congenital rubella syndrome (Ill. 1)	3	Rabies, human	–
Diphtheria	–	Tetanus (La. 1)	13
Leptospirosis (La. 1)	18	Trichinosis (Calif. 1)	34
Plague	2	Typhus fever, flea-borne (endemic, murine) (Miss. 1, Tex. 1)	5

N: Not notifiable

TABLE III. Cases of specified notifiable diseases, United States, weeks ending April 17, 1982 and April 18, 1981 (15th week)

REPORTING AREA	ASEPTIC MENINGITIS	BRUCELLOSIS	ENCEPHALITIS		GONORRHEA (Civilian)		HEPATITIS (Viral), by type				LEGIONELLOSIS	LEPROSY
			Primary	Post-infectious			A	B	NA,NB	Unspecified		
	1982	CUM. 1982	CUM. 1982	CUM. 1982	CUM. 1982	CUM. 1981	1982	1982	1982	1982	1982	CUM. 1982
UNITED STATES	60	31	202	15	261,245	278,152	378	402	43	141	14	54
NEW ENGLAND	1	–	10	3	6,275	6,682	5	17	2	10	9	1
Maine	–	–	–	–	303	354	–	1	–	–	–	–
N.H.	–	–	–	–	188	238	–	–	–	1	6	–
Vt.	–	–	–	–	135	110	1	–	–	–	–	–
Mass.	–	–	3	–	2,888	2,698	1	4	–	7	–	–
R.I.	–	–	–	–	439	325	1	–	–	–	–	–
Conn.	1	–	7	3	2,322	2,957	2	12	2	2	3	1
MID. ATLANTIC	4	–	25	2	32,136	31,935	38	67	5	15	–	3
Upstate N.Y.	2	–	12	–	5,243	5,074	11	28	1	5	–	–
N.Y. City	1	–	5	–	13,623	12,675	12	12	–	2	–	1
N.J.	–	–	4	–	5,732	6,556	15	27	4	8	–	1
Pa.	1	–	4	2	7,538	7,630	U	U	U	U	–	1
E.N. CENTRAL	6	–	46	4	34,419	44,493	58	61	3	17	1	1
Ohio	2	–	15	2	10,716	16,122	14	19	2	9	1	1
Ind.	3	–	13	2	4,156	3,520	17	19	1	8	–	–
Ill.	–	–	–	–	6,953	11,826	10	6	–	–	–	–
Mich.	1	–	16	–	9,005	9,190	13	14	–	–	–	–
Wis.	–	–	2	–	3,589	3,835	4	3	–	–	–	–
W.N. CENTRAL	–	2	11	–	12,396	13,163	14	13	2	4	1	–
Minn.	–	–	–	–	1,767	2,117	2	4	1	–	–	–
Iowa	–	1	6	–	1,369	1,349	5	3	–	–	–	–
Mo.	–	1	3	–	5,696	5,963	4	6	1	4	1	–
N. Dak.	–	–	–	–	172	178	–	–	–	–	–	–
S. Dak.	–	–	–	–	359	348	1	–	–	–	–	–
Nebr.	–	–	1	–	769	969	2	–	–	–	–	–
Kans.	–	–	1	–	2,264	2,239	–	–	–	–	–	–
S. ATLANTIC	22	11	26	3	66,262	69,291	41	83	11	24	2	4
Del.	–	–	–	–	1,057	1,030	1	–	–	1	–	–
Md.	–	–	9	–	8,744	7,410	4	13	3	2	1	2
D.C.	–	–	–	–	3,458	4,495	1	4	–	–	–	–
Va.	1	4	7	–	5,737	6,467	7	11	3	9	1	–
W. Va.	–	–	–	–	787	1,046	–	–	–	–	–	–
N.C.	2	–	3	–	11,142	11,004	1	11	–	4	–	–
S.C.	1	1	–	–	6,450	6,277	6	9	–	–	–	–
Ga.	1	1	–	–	9,483	13,592	5	9	–	–	–	–
Fla.	17	5	7	3	19,404	17,970	16	26	5	8	–	2
E.S. CENTRAL	6	3	12	1	21,926	22,646	23	32	–	2	–	–
Ky.	–	–	–	–	2,922	2,908	12	2	–	–	–	–
Tenn.	2	1	8	–	8,405	8,476	8	17	–	2	–	–
Ala.	3	1	3	1	6,571	7,164	1	11	–	–	–	–
Miss.	1	1	1	–	4,028	4,098	2	2	–	–	–	–
W.S. CENTRAL	8	7	17	–	37,542	38,087	91	28	1	33	–	4
Ark.	–	3	–	–	3,088	2,518	–	1	–	3	–	–
La.	3	–	4	–	6,532	5,986	20	8	1	5	–	–
Okla.	1	2	6	–	3,971	3,778	10	4	–	1	–	–
Tex.	4	2	7	–	23,951	25,805	61	15	–	24	–	4
MOUNTAIN	1	–	10	1	9,673	11,322	40	17	2	16	1	1
Mont.	–	–	–	–	406	395	3	–	–	–	–	–
Idaho	–	–	–	–	415	434	2	–	–	–	–	1
Wyo.	–	–	–	–	263	240	1	1	–	1	–	–
Colo.	–	–	2	1	2,576	2,932	5	3	–	–	1	–
N. Mex.	–	–	–	–	1,214	1,257	3	2	–	–	–	–
Ariz.	–	–	4	–	2,636	3,741	16	5	1	11	–	–
Utah	–	–	–	–	417	506	5	1	1	3	–	–
Nev.	1	–	4	–	1,746	1,817	5	5	–	1	–	–
PACIFIC	12	8	45	1	40,616	40,533	68	84	17	20	–	40
Wash.	–	–	5	–	3,446	3,748	18	18	4	3	–	3
Oreg.	–	–	–	–	2,272	2,984	5	7	2	1	–	–
Calif.	12	7	38	1	33,176	31,860	44	58	11	16	–	23
Alaska	–	1	2	–	1,014	1,109	1	–	–	–	–	–
Hawaii	–	–	–	–	708	832	–	1	–	–	–	14
Guam	U	–	–	–	19	39	U	U	U	U	U	–
P.R.	1	–	1	–	826	941	8	6	–	7	–	–
V.I.	U	–	–	–	51	27	U	U	U	U	U	–
Pac. Trust Terr.	U	–	–	–	36	129	U	U	U	U	U	1

N: Not notifiable U: Unavailable

TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending April 17, 1982 and April 18, 1981 (15th week)

REPORTING AREA	MALARIA		MEASLES (RUBEOLA)			MENINGOCOCCAL INFECTIONS (Total)		MUMPS		PERTUSSIS	RUBELLA		
	1982	CUM. 1982	1982	CUM. 1982	CUM. 1981	1982	CUM. 1982	1982	CUM. 1982	1982	1982	CUM. 1982	CUM. 1981
UNITED STATES	22	202	82	334	830	81	1,027	137	2,139	23	75	739	802
NEW ENGLAND	–	15	1	6	29	5	57	13	121	–	1	9	66
Maine	–	–	–	–	2	–	2	–	22	–	–	–	31
N.H.	–	1	1	1	4	1	10	–	11	–	–	8	23
Vt.	–	–	–	2	2	–	3	–	4	–	–	–	–
Mass.	–	10	–	1	15	2	16	11	66	–	1	1	7
R.I.	–	1	–	–	–	–	9	1	8	–	–	–	–
Conn.	–	3	–	2	6	2	17	1	10	–	–	–	5
MID. ATLANTIC	6	22	1	33	279	15	156	27	135	5	2	54	102
Upstate N.Y.	2	4	1	19	164	10	44	1	28	5	1	29	41
N.Y. City	–	7	–	12	26	–	26	–	20	–	1	15	21
N.J.	3	7	–	–	21	2	39	3	25	–	–	10	36
Pa.	1	4	–	2	68	3	47	23	62	–	–	–	4
E.N. CENTRAL	2	12	1	19	44	16	124	68	1,245	5	5	83	170
Ohio	1	3	–	–	13	2	47	44	893	–	–	–	–
Ind.	–	1	–	1	3	4	11	3	22	–	3	12	55
Ill.	–	–	1	9	6	10	32	11	68	5	2	22	42
Mich.	1	7	–	9	22	–	25	10	191	–	–	32	22
Wis.	–	1	–	–	–	–	9	–	71	–	–	17	51
W.N. CENTRAL	–	7	–	1	4	–	41	2	147	1	1	22	37
Minn.	–	–	–	–	1	–	9	–	75	1	1	3	6
Iowa	–	3	–	–	1	–	4	1	20	–	–	–	–
Mo.	–	1	–	1	–	–	15	1	13	–	–	13	2
N. Dak.	–	–	–	–	–	–	4	–	–	–	–	–	–
S. Dak.	–	–	–	–	–	–	1	–	–	–	–	1	–
Nebr.	–	2	–	–	1	–	3	–	–	–	–	–	1
Kans.	–	1	–	–	1	–	5	–	39	–	–	5	28
S. ATLANTIC	1	35	1	22	229	15	213	5	142	6	1	20	73
Del.	–	–	–	–	–	–	–	–	3	–	–	–	–
Md.	–	6	1	2	1	1	8	–	11	–	–	5	–
D.C.	–	3	–	1	1	–	1	–	–	–	–	–	–
Va.	1	16	–	11	3	–	19	2	21	1	1	9	2
W. Va.	–	–	–	1	7	–	7	3	65	–	–	1	15
N.C.	–	–	–	–	2	3	32	–	4	3	–	–	4
S.C.	–	2	–	–	–	1	26	–	9	–	–	1	4
Ga.	–	2	–	–	80	4	59	–	2	–	–	1	19
Fla.	–	6	–	7	135	6	61	–	27	2	–	3	29
E.S. CENTRAL	–	1	–	5	–	5	66	1	22	–	–	30	17
Ky.	–	1	–	1	–	–	6	–	8	–	–	15	11
Tenn.	–	–	–	4	–	2	27	–	8	–	–	–	6
Ala.	–	–	–	–	–	3	30	1	4	–	–	–	–
Miss.	–	–	–	–	–	–	3	–	2	–	–	15	–
W.S. CENTRAL	–	6	3	17	72	2	137	4	70	2	3	49	50
Ark.	–	–	–	–	–	–	8	–	3	–	–	–	–
La.	–	1	–	–	–	–	19	–	1	–	–	–	6
Okla.	–	–	–	–	5	–	9	–	–	–	–	2	–
Tex.	–	5	3	17	67	2	101	4	66	2	3	47	44
MOUNTAIN	2	5	–	–	15	6	66	2	37	2	3	22	40
Mont.	–	–	–	–	–	–	4	–	3	–	–	1	1
Idaho	–	–	–	–	–	–	4	–	2	–	–	–	2
Wyo.	–	–	–	–	–	–	4	–	2	–	–	4	1
Colo.	1	3	–	–	4	2	25	–	6	–	–	1	21
N. Mex.	1	1	–	–	–	–	9	–	–	–	–	1	2
Ariz.	–	1	–	–	2	3	13	–	13	2	1	5	6
Utah	–	–	–	–	–	1	4	2	9	–	2	8	3
Nev.	–	–	–	–	9	–	3	–	2	–	–	2	4
PACIFIC	11	99	75	231	158	17	167	15	220	2	59	450 *	247
Wash.	–	7	1	15	1	–	21	2	39	1	–	16	37
Oreg.	1	3	–	–	–	6	32	–	–	–	–	2	31
Calif.	10	87	74	214	157	10	106	11	174	1	57	424	179
Alaska	–	–	–	–	–	1	6	1	5	–	–	1	–
Hawaii	–	2	–	2	–	–	2	1	2	–	2	7	–
Guam	U	2	U	1	4	U	–	U	1	U	U	1	–
P.R.	–	2	–	44	118	–	3	–	15	–	–	3	3
V.I.	U	–	U	–	5	U	–	U	–	U	U	–	–
Pac. Trust Terr.	U	–	U	–	–	U	–	U	–	U	U	–	1

U: Unavailable

TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending April 17, 1982 and April 18, 1981 (15th week)

REPORTING AREA	SYPHILIS (Civilian) (Primary & Secondary)		TUBERCULOSIS		TULAREMIA	TYPHOID FEVER		TYPHUS FEVER (Tick-borne) (RMSF)		RABIES, Animal
	CUM. 1982	CUM. 1981	1982	CUM. 1982	CUM. 1982	1982	CUM. 1982	1982	CUM. 1982	CUM. 1982
UNITED STATES	9,499	8,775	504	7,014	27	10	109	5	27	1,545
NEW ENGLAND	186	193	22	199	-	-	10	-	-	5
Maine	1	1	3	16	-	-	-	-	-	5
N.H.	-	8	2	10	-	-	-	-	-	-
Vt.	-	11	-	6	-	-	2	-	-	-
Mass.	131	115	14	135	-	-	7	-	-	-
R.I.	11	13	-	8	-	-	-	-	-	-
Conn.	43	45	3	24	-	-	1	-	-	-
MID. ATLANTIC	1,267	1,369	57	1,194	2	1	12	-	-	17
Upstate N.Y.	124	121	16	216	2	-	2	-	-	11
N.Y. City	782	860	22	466	-	1	8	-	-	-
N.J.	148	159	19	224	-	-	2	-	-	1
Pa.	213	229	-	288	-	-	-	-	-	5
E.N. CENTRAL	480	599	108	1,090	-	2	10	-	-	172
Ohio	95	82	16	197	-	2	6	-	-	22
Ind.	64	38	11	145	-	-	-	-	-	32
Ill.	194	342	48	418	-	-	1	-	-	76
Mich.	96	106	25	266	-	-	3	-	-	-
Wis.	31	31	8	64	-	-	-	-	-	42
W.N. CENTRAL	189	152	10	211	6	-	3	-	1	377
Minn.	33	56	2	38	-	-	-	-	-	71
Iowa	7	8	3	32	-	-	1	-	-	126
Mo.	115	76	5	92	5	-	1	-	1	49
N. Dak.	4	2	-	5	-	-	-	-	-	40
S. Dak.	-	-	-	6	-	-	-	-	-	18
Nebr.	7	3	-	7	-	-	-	-	-	38
Kans.	23	7	-	31	1	-	1	-	-	35
S. ATLANTIC	2,638	2,317	98	1,382	6	2	14	2	15	245
Del.	7	7	5	18	-	-	-	-	-	-
Md.	150	177	13	178	1	1	4	-	8	14
D.C.	175	209	3	52	-	-	-	-	-	-
Va.	193	218	12	140	1	-	2	-	-	124
W. Va.	7	6	2	35	-	-	2	-	-	11
N.C.	197	177	16	225	-	-	-	-	4	3
S.C.	123	162	6	144	3	-	2	2	3	16
Ga.	567	590	14	194	-	-	-	-	-	63
Fla.	1,219	771	27	396	1	1	4	-	-	14
E.S. CENTRAL	709	583	40	595	4	-	9	-	5	207
Ky.	35	23	20	160	-	-	-	-	-	39
Tenn.	187	230	11	205	4	-	2	-	1	139
Ala.	243	162	9	183	-	-	6	-	3	29
Miss.	244	168	-	47	-	-	1	-	1	-
W.S. CENTRAL	2,418	2,047	53	749	5	1	6	3	5	292
Ark.	57	36	6	75	4	1	1	1	1	41
La.	506	446	3	130	-	-	-	-	-	7
Okla.	49	52	9	113	1	-	2	-	1	67
Tex.	1,806	1,513	35	431	-	-	3	2	3	177
MOUNTAIN	252	211	23	201	3	-	5	-	-	27
Mont.	1	8	-	15	-	-	-	-	-	13
Idaho	16	2	3	10	1	-	-	-	-	-
Wyo.	9	2	-	2	1	-	-	-	-	2
Colo.	82	71	-	19	-	-	1	-	-	-
N. Mex.	45	46	2	39	-	-	-	-	-	3
Ariz.	55	44	8	83	-	-	3	-	-	9
Utah	7	4	5	11	1	-	1	-	-	-
Nev.	37	34	5	22	-	-	-	-	-	-
PACIFIC	1,360	1,304	93	1,393	1	4	40	-	1	203
Wash.	41	47	8	86	1	-	-	-	-	-
Oreg.	39	30	3	52	-	-	1	-	-	-
Calif.	1,244	1,194	80	1,157	-	4	38	-	1	146
Alaska	6	4	-	18	-	-	-	-	-	57
Hawaii	30	29	2	80	-	-	1	-	-	-
Guam	-	-	U	2	-	U	-	U	-	-
P.R.	174	208	3	83	-	1	1	-	-	14
V.I.	-	2	U	1	-	U	-	U	-	-
Pac. Trust Terr.	-	-	U	19	-	U	-	U	-	-

U: Unavailable

TABLE IV. Deaths in 121 U.S. cities,* week ending April 17, 1982 (15th week)

REPORTING AREA	ALL CAUSES, BY AGE (YEARS)						P&I** TOTAL
	ALL AGES	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	782	531	177	38	19	17	54
Boston, Mass.	195	116	54	15	3	7	21
Bridgeport, Conn.	54	42	9	2	–	1	4
Cambridge, Mass.	36	30	2	2	2	–	1
Fall River, Mass.	24	19	5	–	–	–	2
Hartford, Conn.	87	57	22	2	2	4	7
Lowell, Mass.	30	23	4	2	1	–	–
Lynn, Mass.	22	14	6	1	1	–	1
New Bedford, Mass.	33	24	8	–	1	–	–
New Haven, Conn.	74	48	17	5	3	1	3
Providence, R.I.	76	49	19	5	3	–	7
Somerville, Mass.	10	9	1	–	–	–	2
Springfield, Mass.	43	29	13	1	–	–	2
Waterbury, Conn.	44	31	7	1	3	2	3
Worcester, Mass.	54	40	10	2	–	2	1
MID. ATLANTIC	2,896	1,967	584	174	78	86	102
Albany, N.Y.	54	40	10	–	1	3	2
Allentown, Pa.	16	16	–	–	–	–	–
Buffalo, N.Y.§	150	139	1	1	4	2	7
Camden, N.J.	40	26	9	2	2	–	4
Elizabeth, N.J.	30	19	8	2	1	–	2
Erie, Pa.†	44	28	5	4	2	5	2
Jersey City, N.J.	77	52	13	5	5	2	–
N.Y. City, N.Y.	1,503	994	308	108	38	55	47
Newark, N.J.	80	33	17	11	9	7	3
Paterson, N.J.	33	19	8	3	1	2	2
Philadelphia, Pa.†	405	262	107	27	6	3	16
Pittsburgh, Pa.†	66	44	17	1	2	2	1
Reading, Pa.	34	23	7	2	2	–	4
Rochester, N.Y.	127	97	21	5	3	1	4
Schenectady, N.Y.	18	12	6	–	–	–	–
Scranton, Pa.†	27	21	6	–	–	–	–
Syracuse, N.Y.	93	66	19	3	2	3	5
Trenton, N.J.	39	26	13	–	–	–	1
Utica, N.Y.	28	24	4	–	–	–	1
Yonkers, N.Y.	32	26	5	–	–	1	1
E.N. CENTRAL	2,421	1,552	602	116	64	87	65
Akron, Ohio	94	64	22	4	3	1	–
Canton, Ohio	60	38	14	5	3	–	3
Chicago, Ill.	505	314	134	27	15	15	15
Cincinnati, Ohio	162	96	47	7	3	9	5
Cleveland, Ohio	217	135	62	6	3	11	4
Columbus, Ohio	91	51	22	5	8	5	1
Dayton, Ohio	111	76	25	5	2	3	2
Detroit, Mich.	264	148	71	25	9	11	3
Evansville, Ind.	63	45	15	3	–	–	4
Fort Wayne, Ind.	69	47	17	3	1	1	4
Gary, Ind.	17	10	4	2	1	–	1
Grand Rapids, Mich.	53	31	16	–	2	4	1
Indianapolis, Ind.	160	106	40	3	4	7	2
Madison, Wis.	31	15	10	1	2	3	5
Milwaukee, Wis.	160	118	36	3	–	3	–
Peoria, Ill.	43	32	5	2	–	4	6
Rockford, Ill.	56	39	9	4	4	–	2
South Bend, Ind.	67	52	8	5	–	2	2
Toledo, Ohio	121	81	27	2	4	7	4
Youngstown, Ohio	77	54	18	4	–	1	1
W.N. CENTRAL	751	516	142	31	26	36	21
Des Moines, Iowa	69	49	10	3	3	4	1
Duluth, Minn.	19	15	3	–	–	1	–
Kansas City, Kans.	35	25	4	2	3	1	2
Kansas City, Mo.	116	77	23	7	5	4	3
Lincoln, Nebr.	49	33	15	1	–	–	4
Minneapolis, Minn.	82	53	16	3	2	8	1
Omaha, Nebr.	84	51	21	3	3	6	1
St. Louis, Mo.	150	108	25	4	4	9	3
St. Paul, Minn.	76	61	9	4	1	1	2
Wichita, Kans.	71	44	16	4	5	2	4

REPORTING AREA	ALL CAUSES, BY AGE (YEARS)						P&I** TOTAL
	ALL AGES	≥65	45-64	25-44	1-24	<1	
S. ATLANTIC	1,110	653	301	69	42	43	42
Atlanta, Ga.	136	74	39	10	6	7	6
Baltimore, Md.	146	86	41	12	4	3	3
Charlotte, N.C.	62	26	19	6	3	7	3
Jacksonville, Fla.	104	61	24	9	6	4	3
Miami, Fla.	52	33	14	3	2	–	4
Norfolk, Va.	62	32	19	2	3	6	5
Richmond, Va.	90	55	28	2	3	2	6
Savannah, Ga.	43	26	10	3	1	3	–
St. Petersburg, Fla.	87	68	14	4	1	–	2
Tampa, Fla.	57	36	14	1	3	3	2
Washington, D.C.	222	123	67	16	9	6	5
Wilmington, Del.	49	33	12	1	1	2	3
E.S. CENTRAL	782	489	196	49	30	18	38
Birmingham, Ala.	114	69	34	7	3	1	1
Chattanooga, Tenn.	58	35	17	6	–	–	2
Knoxville, Tenn.	51	32	15	3	1	–	2
Louisville, Ky.	92	66	20	4	1	1	12
Memphis, Tenn.	201	133	45	7	11	5	11
Mobile, Ala.	79	41	19	9	5	5	2
Montgomery, Ala.	44	31	8	1	2	2	2
Nashville, Tenn.	143	82	38	12	7	4	6
W.S. CENTRAL	1,187	710	296	75	65	41	51
Austin, Tex.	33	17	10	1	4	1	–
Baton Rouge, La.	65	35	18	7	5	–	5
Corpus Christi, Tex.	33	18	9	1	4	1	2
Dallas, Tex.	187	103	49	12	15	8	2
El Paso, Tex.	66	37	21	2	2	4	6
Fort Worth, Tex.	94	56	24	6	5	3	7
Houston, Tex.	129	74	36	11	5	3	1
Little Rock, Ark.	83	56	18	6	2	1	9
New Orleans, La.	159	92	47	11	3	6	–
San Antonio, Tex.	164	107	30	9	10	8	4
Shreveport, La.	57	39	12	1	1	4	4
Tulsa, Okla.	117	76	22	8	9	2	11
MOUNTAIN	687	438	132	60	31	26	36
Albuquerque, N. Mex.	91	60	15	10	4	2	3
Colo. Springs, Colo.	43	29	7	4	2	1	5
Denver, Colo.	145	94	33	12	4	2	6
Las Vegas, Nev.	73	40	16	11	4	2	5
Ogden, Utah	17	15	–	2	–	–	2
Phoenix, Ariz.	143	89	29	12	8	5	4
Pueblo, Colo.	17	15	–	1	1	–	–
Salt Lake City, Utah	60	32	14	3	2	9	2
Tucson, Ariz.	98	64	18	5	6	5	9
PACIFIC	1,935	1,295	368	133	63	72	106
Berkeley, Calif.	26	18	7	1	–	–	–
Fresno, Calif.	58	38	11	3	2	4	5
Glendale, Calif.	34	27	4	2	1	–	1
Honolulu, Hawaii	76	50	18	4	3	1	9
Long Beach, Calif.	67	46	17	2	1	1	4
Los Angeles, Calif.	577	386	107	49	23	12	25
Oakland, Calif.	57	39	11	2	1	4	5
Pasadena, Calif.	26	17	5	1	1	2	3
Portland, Oreg.	106	76	22	4	2	2	9
Sacramento, Calif.	77	51	15	6	1	4	3
San Diego, Calif.	219	137	44	15	11	9	17
San Francisco, Calif.	171	108	34	12	4	12	3
San Jose, Calif.	198	130	33	21	12	2	18
Seattle, Wash.	130	91	24	7	–	8	1
Spokane, Wash.	74	47	14	3	1	9	2
Tacoma, Wash.	39	34	2	1	–	2	1
TOTAL	12,551††	8,151	2,798	745	418	426	515

*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.

Influenza — Continued

Editorial Note: The occurrence of several influenza B outbreaks involving nursing home residents, with some associated deaths, illustrates that even during a relatively mild influenza season, such as this year, when virus activity had been predominantly detected among school children, elderly persons are at risk of having moderate to severe influenza infections.

Previous studies have demonstrated that through vaccination it is possible to achieve an approximately 60% to 80% reduction of influenza morbidity among high-risk elderly persons, either living in open (*4*) or closed (*5,6*) populations. The reports from this year, however,as well as retrospective investigations of influenza A or B outbreaks during the past several years (*7,8*) suggest that attack rates can be high for vaccinated nursing home residents, and that the efficacy of current influenza A or B vaccines in reducing influenza morbidity among these persons may be lower than desired. The overall significance of such retrospective investigations is difficult to evaluate. Each of the study groups was selected through passive reporting, possibly introducing bias in selecting only outbreaks in which vaccine efficacy was poor. Accurate vaccine efficacy calculations also depend on several factors, including the validity of the case identification, and the medical basis for vaccine use. There may be many reasons, therefore, why retrospective studies in nursing homes suggesting that vaccine efficacy is low might not be representative of nursing homes in general. To determine whether artifacts of surveillance and investigation substantially affect the validity of conclusions about vaccine efficacy for nursing home residents will require further investigation.

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SWINE INFLUENZA-LIKE ISOLATE — NEVADA

An influenza isolate submitted to CDC from Nevada for reference analysis has been identified as a swine influenza-like virus, antigenically similar to A/New Jersey/76.* This continues a pattern of occasional human infections with swine influenza viruses currently circulating in pigs.

The virus was isolated from a 4-year-old girl who was hospitalized in Las Vegas on February 6 with a temperature of 104 F (40 C), cough, left lower lobe pneumonia, and pancytopenia. The child had been diagnosed in December 1981 as having acute lymphocytic leukemia, for which chemotherapy had been administered continuously since that time. When she visited Los Angeles for intravenous chemotherapy in an outpatient department on January 29, 1982, her leukemia was considered to be in remission, and she had a clear chest on physical examination and no symptoms of respiratory infection. Between January 30, the date of her

*Redesignated as H1N1 subtype following a revision of influenza nomenclature (*1*).

Influenza — Continued

return to Las Vegas, and February 6, the child visited only 2 homes, occupied by close family members and their friends, in residential subdivisions in Las Vegas. She was in contact with 14 persons including 9 children or young adults. Thirteen of the contacts were interviewed recently, and none reported either respiratory illness at the time of the child's influenza illness or reported contact with pigs. None of these contacts had serum hemagglutination-inhibition titers of >10 to swine influenza-like viruses that could not be explained by the individual's age or probable receipt of swine influenza vaccine during military service in 1976-1977. There were no community morbidity indices indicating influenza outbreaks in Las Vegas from January through April, but 2 influenza A(H1N1) (closely related to A/England/333/80) and 18 influenza B viruses were isolated in 2 hospitals performing virus diagnosis.

After the child was hospitalized on February 6, her pneumonia progressed despite therapy with broad-spectrum antibiotics. On February 11 she was transferred to a Los Angeles hospital where she died on February 14. Laboratory tests in Nevada and Los Angeles were negative for any infectious agent except influenza virus. Interviews at the hospitals in Las Vegas and Los Angeles have not identified any unusual respiratory illnesses among patients or staff in contact with the child. Antibody prevalence to swine influenza-like virus in young children in Las Vegas and Los Angeles, as well as contacts of the patients in the Los Angeles hospital, will be studied. No other human isolations of swine influenza-like viruses have been reported to CDC this winter.

Reported by O Ravenholt, MD, Clark County Health District, J McCusker, MD, RR Belliveau, MD, Southern Nevada Memorial Hospital, P Reichelderfer, PhD, Sunrise Hospital, BA Neyland, MD, Las Vegas, JH Carr, MD, State Epidemiologist, Nevada State Dept of Human Resources; J Cherry, MD, UCLA, B Agee, MD, Los Angeles County Health Dept, R Roberto, MD, J Chin, MD, State Epidemiologist, California Dept of Health Svcs; Field Svcs Div, Epidemiology Program Office, Influenza Br, Div of Viral Diseases, Center for Infectious Diseases, CDC.

Editorial Note: This incident is consistent with the infection in 1974 by swine influenza-like virus of an immunocompromised child, who subsequently died (*2*). Sporadic isolations of swine influenza-like virus from children or young adults were reported in 1976-1977 (*3*) and also in 1978-1979 and 1979-1980 (*4*). The sporadic isolations after 1974 were not associated with unusual clinical symptoms, and the source of these infections, as well as the case in 1974, could be attributed to exposure to swine. Serologic evidence of swine influenza infection involving some members of a farming family exposed to pigs has also been reported (*5*). The single proven outbreak of swine influenza among humans in 1976, at Fort Dix, New Jersey, is believed to have involved person-to-person transmission over a few weeks in the atypical environment of the training camp (*6*). Low-level person-to-person transmission may also have been responsible for 3 reported serologically diagnosed cases of swine influenza in 1975-1977, when, as in the case of the Las Vegas child, no exposure to swine could be identified (*3, 7*).

The lack of other swine influenza-like virus isolations from humans in Nevada or California this winter, despite the isolation of numerous influenza B and human strains of influenza A(H1N1) viruses in these states this winter, and the lack of respiratory illness among any of the child's family contacts (many of them apparently susceptible as judged by their antibody status and age) support the conclusion that swine influenza-like viruses that currently circulate in pigs have not demonstrated the propensity to cause human epidemics. Nevertheless, transmissions from swine to human, and subsequently from person to person at generally low levels will probably continue to be detected occasionally by virus surveillance activities.

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Influenza — Continued

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Epidemiologic Notes and Reports

Pseudomonas aeruginosa Peritonitis Attributed to a Contaminated Iodophor Solution — Georgia

Five infections involving patients at a hospital have been attributed to use of contaminated Prepodyne Solution.* Intrinsic contamination of this iodophor product with *Pseudomonas aeruginosa* has been confirmed by CDC, and investigation by the Food and Drug Administration (FDA) and CDC is continuing.

In the period March 9-April 12, 1982, 5 chronic peritoneal dialysis patients at a municipal hospital in Atlanta became infected with *P. aeruginosa*. Four patients developed peritonitis, and 1 developed a skin infection at the catheter insertion site. All 4 patients with peritonitis had low-grade fever, cloudy peritoneal fluid, and abdominal pain. Three of these patients used an automatic peritoneal dialysis machine; 1 used only a bottle cycling machine. All patients had permanent indwelling peritoneal catheters, which were wiped with a 4x4 gauze soaked with an iodophor, Prepodyne Solution, each time the catheter was connected to or disconnected from machine tubing. Aliquots of Prepodyne Solution were transferred from stock bottles to smaller in-use bottles.

Infection-control personnel at the hospital obtained cultures of the dialysate concentrate, internal areas of the dialysis machines, and a small in-use plastic container that had been filled with Prepodyne Solution. All cultures were negative except the Prepodyne Solution, which yielded a pure culture of *P. aeruginosa*. Subsequently, 2 of 8 unopened 1-gallon containers of Prepodyne Solution, lot C109756, one obtained from the dialysis center and a second from another hospital area, were culture-positive; they, too, yielded a pure culture of *P. aeruginosa*. The antimicrobial susceptibility patterns of the isolates obtained from the Prepodyne Solution were identical to those of 2 available isolates from patients; these organisms were sensitive when tested in the hospital to amikacin, carbenicillin, gentamicin, kanamycin, tetracycline, tobramycin, and trimethoprim-sulfamethoxazole, and were resistant to ampicillin and cephalothin.

Reported by PL Parrott, RN, PM Terry, M(ASCP), B Whitworth, RN, L Frawley, RN, JE McGowan Jr, MD, Grady Memorial Hospital, Atlanta, RK Sikes, DVM, State Epidemiologist, Georgia Dept of Human

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

Pseudomonas aeruginosa Peritonitis — Continued

Resources; Hepatitis and Viral Enteritis Div, Hospital Infections Program, Center for Infectious Diseases, CDC.

Editorial Note: Intrinsic contamination of Prepodyne Solution, lot C109756, has been confirmed by CDC in 1 of 2 unopened 1-gallon containers. The product is manufactured for AMSCO/Medical Products Division by West Chemical Products, Inc. FDA and CDC are currently investigating the source of this intrinsic contamination, the extent of contamination (in terms of products, lots, and distribution), and the factors permitting the survival of *P. aeruginosa* in this product and in the bottles that were used. AMSCO has instituted a voluntary withdrawal of lot C109756 (1-gallon containers), and has notified hospitals that had received the implicated lot. Personnel in hospitals using this product may wish to review patient infections caused by *P. aeruginosa* and notify appropriate local or state health departments about any unusual problems.

This is the second report of contamination of an iodophor solution (*1,2*) and the first of a poloxamer-iodine solution. Poloxamer-iodine and povidone-iodine are the most commonly used iodophor preparations in hospitals; both preparations have now been demonstrated to be vulnerable to intrinsic contamination. Pseudobacteremia has been described in association with the use of a contaminated iodophor preparation; the report above demonstrates that contaminated solutions may lead to true infections. Although several iodophor antiseptic preparations, of which Prepodyne Solution is one, are widely used in hospitals for disinfectant purposes, they are FDA-approved only for antisepsis of skin and mucous membranes.

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The editor welcomes accounts on interesting cases, outbreaks, environmental hazards, or other public health problems of current interest to health officials. Send reports to: Attn: Editor, Morbidity and Mortality Weekly Report, Centers for Disease Control, Atlanta, Georgia 30333.

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