EPIDEMIOLOGY BULLETIN

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Outbreak of Histoplasmosis

In mid-March, 1984, 10 construction workers who had been involved in restoration of an old farmhouse in Dinwiddie, Virginia became ill with pneumonia. The etiology of the pneumonia was determined to be *Histoplasma capsulatum* for several workers. The clinical and radiographic presentations for the other workers were consistent with acute histoplasmosis. Five were hospitalized. One worker, a 19 year old black man died with fulminant acute histoplasmosis. He had no known underlying disease and was not immunosuppressed.

The only common source of exposure for these 10 workers was the site of restoration. An epidemiologic and environmental study was conducted by the local and state health departments in conjunction with researchers from the Division of Infectious Diseases, Medical College of Virginia. Multiple environmental samples were taken in an attempt to isolate *H. capsulatum;* results are still pending. One suspicious area on the site was a pile of fibrous building material, possibly organic in nature, lying outside the farmhouse. It appeared that this material may have been contaminated by bird excreta.

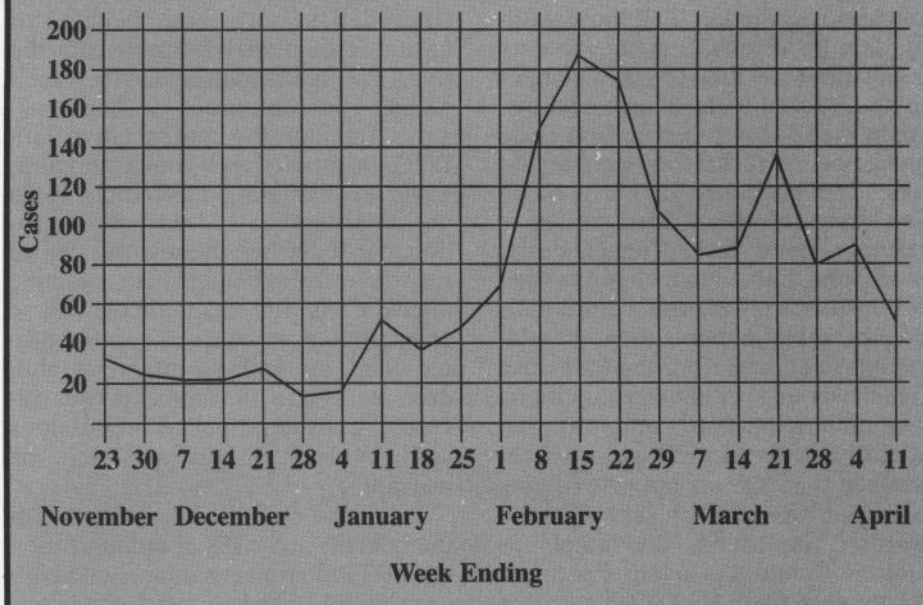
Editor's comment: Soil is the reservoir for *H. capsulatum*. Soil enriched with bird or bat droppings has been found to stimulate the growth of the organism. It remains to be seen whether or not the described fibrous building material was a sufficient medium for the growth of the organism and whether growth might have occurred because this material was contaminated with bird excreta.

The vast majority of cases of acute pulmonary histoplasmosis are asymptomatic. Severe, and sometimes fatal disease, as was seen in this outbreak, is presumed to follow exposure to heavily contaminated sites. Individuals with no previous exposure to the fungus may be at greater risk for severe disease. In the patient reported here, the severe acute disease was probably the result of massive exposure to *H. capsulatum*.

Influenza Update

As shown in Figure 1 the number of reports of influenza-like illness showed a late rise in mid-March and then continued to decrease towards baseline level. The rise in mid-March was due to increased reports from physicians in Roanoke City and Arlington County. The earlier peak in February was due to increased reports from all areas* except Roanoke City.

Figure 1. Reports of Flu-Like Illness by 35 Sentinel Physicians in Virginia, 1983-84.



**sentinel physicians are located in the cities of Petersburg, Roanoke and Charlottesville and in Arlington County.*

Pertussis Vaccine: Supplementary Statement Regarding Contraindications

Recommendation of the Immunization Practices Advisory Committee (ACIP) of the U.S. Public Health Service

The following statement updates some of the previous recommendations regarding pertussis vaccine (1). The Immunization Practices Advisory Committee (ACIP) reviewed the available data concerning the risks of pertussis disease and pertussis vaccine to infants and children with personal or family histories of convulsions. Based on available evidence, the ACIP does not consider a family history of convulsion to be a contraindication to receipt of pertussis vaccine. However, a personal history of a prior convulsion should be evaluated before initiating or continuing immunization with vaccines containing a pertussis component (i.e., diphtheria and tetanus toxoids with pertussis vaccine [DTP]) (Table 1).

Deferral of DTP for Infants and Children With Personal Histories of Convulsion(s)

Although there are uncertainties in the reported studies, recent data suggest that infants and young children who have previously had convulsions (whether febrile or nonfebrile) are more likely to have seizures following pertussis vaccination than those without such histories (2). Available data do not indicate that seizures temporally associated with vaccine administration predispose to permanent brain damage or exacerbate existing conditions. The incidence of pertussis in most areas of the United States is presently quite low. Consequently, for infants and young children who have histories of seizures before initiation of DTP immunization or who develop seizures before the four-dose primary series is completed, initiating or continuing pertussis immunization should be deferred until it can be determined that there is not an evolving neurologic disorder present. If such disorders are found, the infants or children should be given diphtheria and tetanus toxoids (DT) instead of DTP. If DT is used, three doses at least 4 weeks apart, followed by a fourth dose 6-12 months later, are recommended for infants. For children 1 year of age or older, two doses of DT at least 4 weeks apart, followed by a third dose 6-12 months later, are recommended.

Recommendations for Beginning or Continuing DTP After Deferral

For infants and children whose DTP immunizations are deferred because of histories of convulsion(s), the decision whether to proceed with DTP immunization can usually be made within the next few months. For infants who have received fewer than three doses of DTP, such a decision in most instances should be made no later than at 1 year of age. Following individual assessment, it may be decided to proceed with DTP, because infants and young children with convulsive disorders also appear to be at higher risk of adverse outcomes if they contract pertussis disease. Further, if unimmunized infants attend day-care centers, special clinics, and residential-care settings where other children may be unimmunized or if they travel to or reside in areas where the disease is endemic, they may be at increased risk of exposure to pertussis.

For infants and children with stable neurologic conditions, including well-controlled seizures, the benefits of pertussis immunization outweigh the risks, and such children may be vaccinated. The occurrence of single seizures (temporally unassociated with DTP) in infants and young children, while necessitating evaluation, need not contraindicate DTP immunization, particularly if the seizures can be satisfactorily explained. An example might be a febrile seizure in the course of exanthem subitum in a 14-month-old child. As with all infants or children with one or more febrile seizures, consideration of continuous anticonvulsant prophylaxis may be warranted.

Parents should be fully informed of the benefits and risks of immunization with DTP. Parents of infants and children with histories of convulsions should particularly be made aware of the slightly increased chance of post-immunization seizures. A minimum of three doses of DTP given at intervals of at least 4 weeks is necessary to provide adequate protection against pertussis. A fourth dose 6-12 months later is also recommended.

Contraindications to Pertussis Vaccine

Hypersensitivity to vaccine components, presence of an evolving neurologic disorder, or a history of a severe reaction (usually within 48 hours) following a previous dose all remain definitive contraindications to the receipt of pertussis vaccine. Severe reactions include collapse or shock, persistent screaming episode, temperature 40.5 C (105 F) or greater, convulsion(s) with or without accompanying fever, severe alterations of consciousness, generalized and/or local neurologic signs, or systemic allergic reactions. Although hemolytic anemia and thrombocytopenic purpura have previously been considered contraindications by the ACIP, the evidence of a causal link between these conditions and pertussis vaccination is not sufficient to retain them as contraindications.

Other Immunizations for Infants and Children for Whom Pertussis Vaccine is Contraindicated

Immunization with DT and/or oral polio vaccine is not known to be associated with an increased risk of convulsions. Therefore, a history of prior convulsions is not a contraindication to receipt of these toxoids and vaccine. In addition, a history of prior convulsion(s) is not a contraindication for measles-mumps-rubella (MMR) vaccine. Further details concerning DTP vaccine or DT toxoids can be found in the 1981 ACIP statement (*1*).

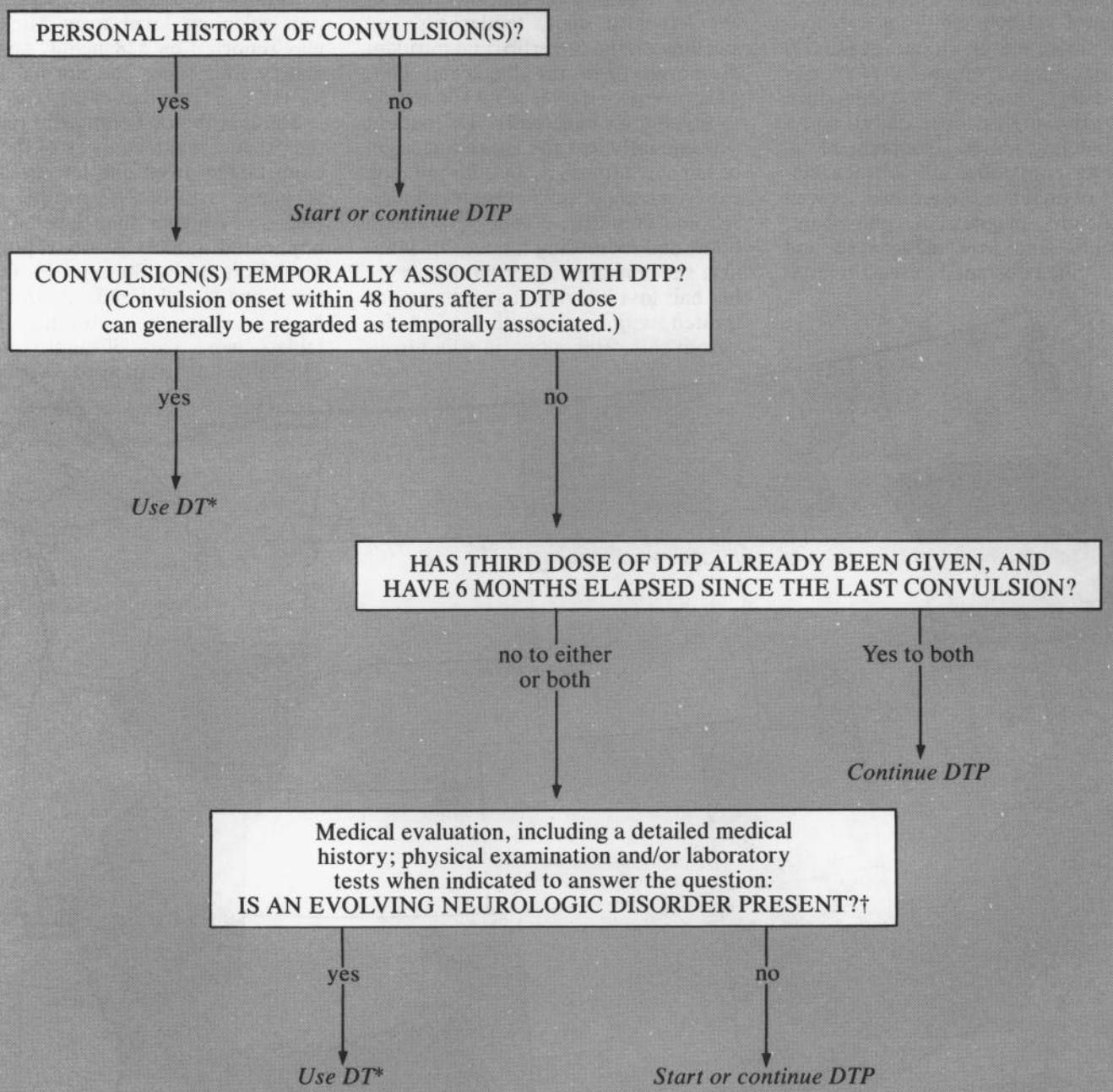
References

1. ACIP. Diphtheria, tetanus, and pertussis: guidelines for vaccine prophylaxis and other preventive measures. MMWR 1981;30:392-6, 401-7.
2. CDC. Adverse events following immunization. Surveillance Report No. 1, 1979-1982 (in press).

Reprinted from MMWR 1984; 33: 169-71.

TABLE 1. Guidelines for diphtheria-tetanus-pertussis (DTP) immunization of infants and young children with histories of convulsion(s)

The following general guidelines cannot cover every situation. Individualized medical judgment in specific cases may indicate a different course of action.



**For infants and children who received diphtheria-tetanus (DT), but who, on further evaluation, can be given pertussis vaccine, a separate pertussis vaccine is available. It is distributed by the Michigan State Department of Public Health.*

†If the presence or absence of an evolving neurologic disorder cannot be established within 6 months after deferral of DTP, DT should be given rather than further delaying immunization.

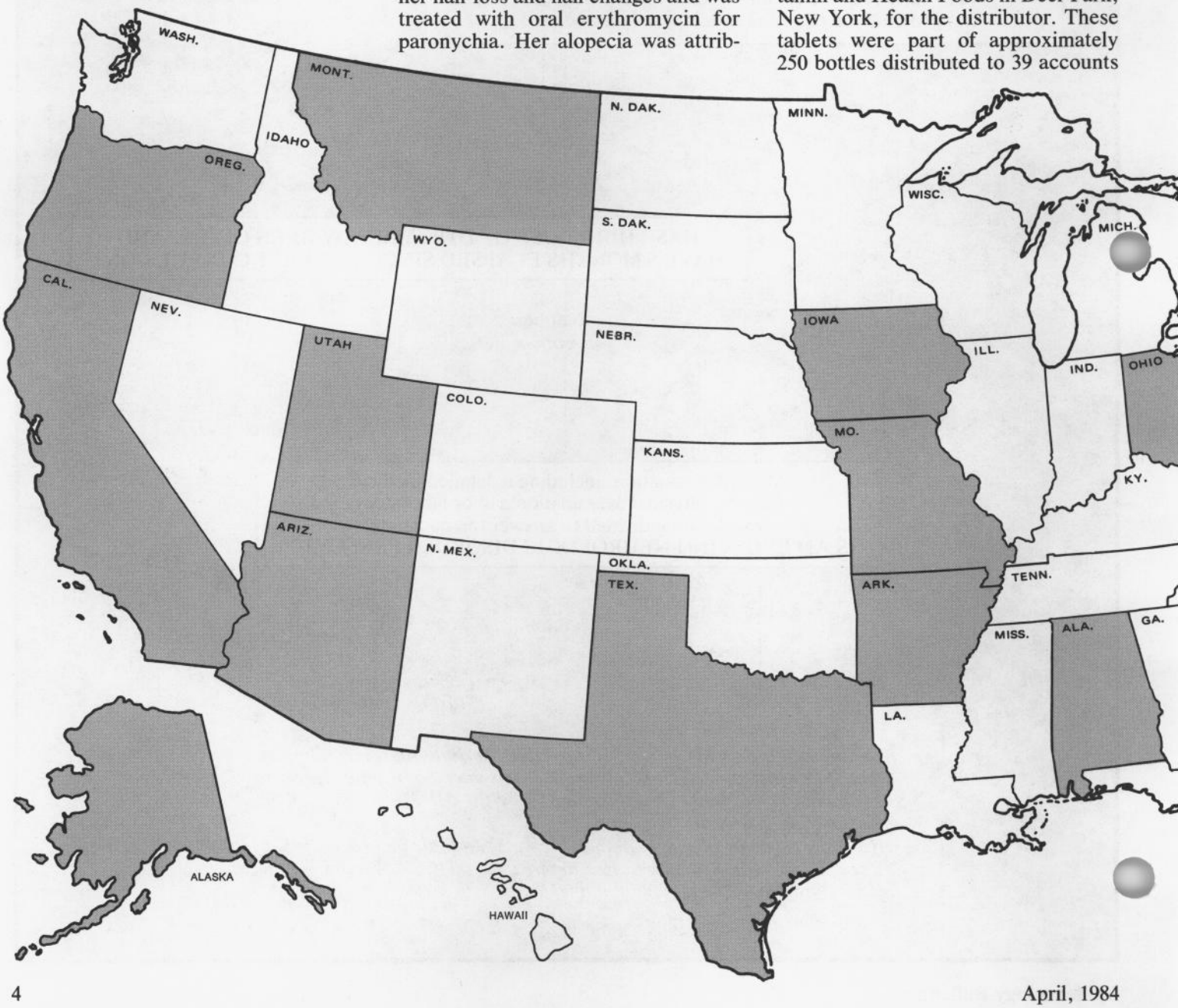
Selenium Intoxication—New York

On December 27, 1983, a 57-year-old female in New York began taking a daily selenium supplement distributed by Brite Years, Inc., of Tempe, Arizona. The label on the 90-tablet bottle recommended taking one of the 150-mcg tablets daily. She took the prescribed number in addition to her usual daily vitamins, which included: vitamin C (1,000 mg, plus bioflavinoids, thrice daily); vitamin A (10,000 units once daily); vitamin D (400 units once daily); vitamin E (400 units once daily); B complex (once daily); and a high-potency mineral supplement labeled as containing all 72 trace elements in undefined quantities, as well as calcium, magnesium, phosphate, potasium, zinc, iron, manganese, and iodine. She consumed at least one vitamin C tablet (1,000 mg) simultaneously with the selenium supplement.

Approximately 11 days after starting the selenium supplement, the patient noted marked hair loss limited to her scalp, which progressed over a 2-month period to almost total alopecia. Two weeks later, she noted white horizontal streaking on the fingernail of her left fifth digit, tenderness and swelling on the fingertip, and purulent discharge from the fingernail bed. This progressed over a 3-week period to involve all fingernails. The patient subsequently lost the entire fingernail of her left fifth digit. In addition, she experienced periodic episodes of nausea and vomiting, a sour-milk breath odor, and increasing fatigue. In January, she consulted a dermatologist for her hair loss and nail changes and was treated with oral erythromycin for paronychia. Her alopecia was attributed to emotional stress following the death of her husband a year earlier.

On March 11, 1984, she heard on the radio that the selenium tablets distributed by Brite Years, Inc., were being recalled because of superpotency. She stopped taking the tablets and consulted her internist. She had consumed 77 of the 90 tablets. A serum selenium level from March 15 was reported as 528 ng/ml, approximately four times the normal levels for the U.S. population (*1*).

The distributor voluntarily recalled the product when analysis of the selenium tablets from one lot revealed a selenium level of 27.3 mg per tablet (182 times higher than labeled). The implicated tablets were reportedly manufactured by Superior Health Vitamin and Health Foods in Deer Park, New York, for the distributor. These tablets were part of approximately 250 bottles distributed to 39 accounts

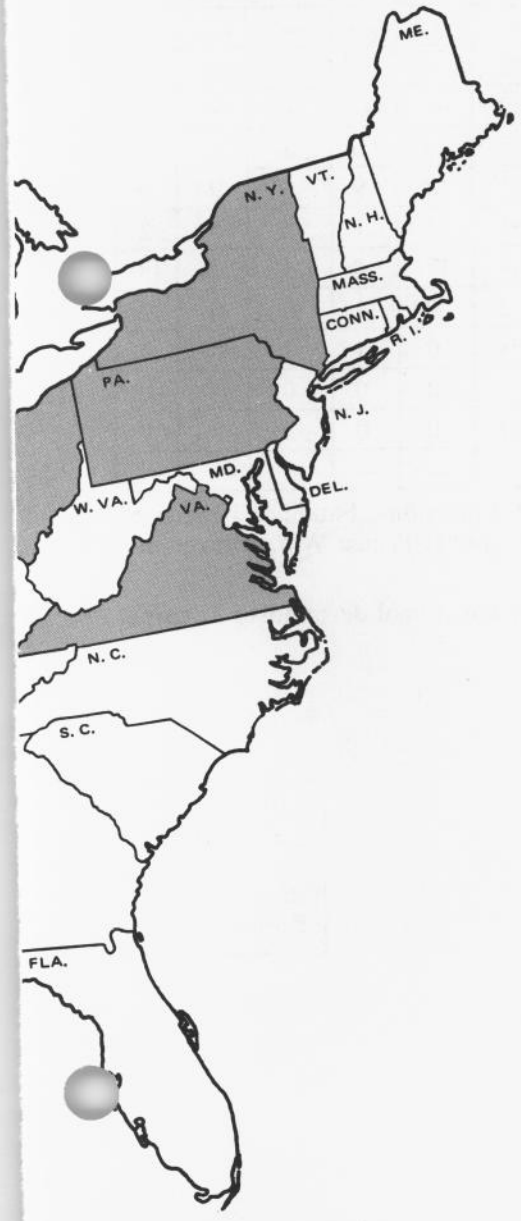


in 15 states (Alaska, Alabama, Arizona, Arkansas, California, Iowa, Missouri, Montana, New York, Ohio, Oregon, Pennsylvania, Texas, Utah, and Virginia) from four distribution lots (codes 012163, 016213, 301216, and 012161). Subsequent analyses of tablets from all four implicated distribution lots have contained 25 mg of sodium selenite and 4 mg-5 mg total of elemental and/or organic selenium. Analysis of tablets taken from the symptomatic woman in New York found 31 mg of total selenium per tablet.

Editorial Note: Selenium is widely, though irregularly, distributed in soil, forages, and grains and has many commercial uses. Human intake of selenium comes mainly from cereal, fish, and meat in the diet, and in residents of one city studied, averaged 81 mcg per day (*2*). While there is no established recommended daily allowance, the proposed adequate and safe intake of selenium in adults is 50 mcg-200 mcg daily (*3*). Until lately, there were no well-documented cases of human selenium toxicity. A recent study reported a number of villages in the People's Republic of China, where high percentages of individuals had nail and hair loss, dermatitis, nausea, garlic odor on their breath, fatigue, irritability, and hyperreflexia (*4*). Individual daily dietary selenium intake in this area ranged from 3.20 mg to 6.69 mg (average 4.99 mg), and whole blood levels of selenium ranged from 1,300 ng/ml to 7,500 ng/ml (average 3,200 ng/ml).*

The signs and symptoms exhibited by the New York woman were almost certainly due to selenium intoxication. The estimated cumulative dose of selenium she ingested over the 77 days was 2,387 mg. Her toxicity was probably minimized by the simultaneous ingestion of large doses of vitamin C. Vitamin C reduces selenite to elemental selenium that is poorly absorbed.

This incident demonstrates that excessive doses of trace elements can have toxic effects. Implementation of improved quality-control measures in the manufacture of these food supplements could help alleviate problems of this nature in the future. With the general increase in use of vitamin and mineral supplements in this country, the public and the medical community should be aware of the potential for toxicity.



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1. Levander OA. Unpublished data.
2. Welsh SO, Holden JM, Wolf WR, Levander OA. Selenium in self-selected diets of Maryland residents. J Am Diet Assoc 1981;79:277-85.
3. Committee on Dietary Allowances, Food and Nutrition Board, Recommended dietary allowances. Ninth revised edition, 1980. National Academy of Sciences, Washington, D.C., p. 162.
4. Yang G, Wang S, Zhou R, Sun S. Endemic selenium intoxication of humans in China. Am J Clin Nutrition 1983;37:872-81.

**Whole blood selenium measurements are approximately 30% higher than serum selenium.*

Reprinted from MMWR 1984; 33: 157-8.

Premarital Syphilis Testing Will No Longer Be Required

The 1984 General Assembly repealed sections 20-1 through 20-12 of the Code of Virginia, effective July 1, 1984. Those sections contained the mandate for premarital syphilis testing.

Editor's comment: As the incidence of syphilis has dropped over the years, premarital syphilis screening has become progressively less cost effective. For calendar year 1982, for instance, it is estimated that the total cost for premarital tests performed in Virginia was $2,669,790 for 124,198 tests. Those tests identified 14 cases of early syphilis, yielding a societal cost per case of early syphilis detected of $190,699. In 1982 the Medical Society of Virginia passed a resolution recommending the repeal of the law mandating premarital syphilis testing.

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1. Kingon RJ, Wiesner PJ. Premarital syphilis screening: weighing the benefits. AJPH 1981; 71: 160-2.
2. Felman YM. Repeal of mandated premarital tests for syphilis: a survey of state health officers. AJPH 1981; 71: 155-9.

Infection Control 1984

1984 APIC—Virginia Annual Educational Conference

Date:
October 5, 1984

Place:
Richmond Hyatt House, Richmond, Virginia

Sponsor:
APIC-Virginia

Contact:
Constance D. Jones, RN

Chairman 1984 APIC-VA. Program Committee
P. O. Box 971
Hopewell, VA 23860

Month: April, 1984

Disease	State					Regions				
	This Month	Last Month	Total to Date 1984	Total to Date 1983	Mean 5 Year To Date	This Month N.W.	This Month N.	This Month S.W.	This Month C.	This Month E.
Measles	0	1	2	12	63	0	0	0	0	0
Mumps	2	3	7	19	40	0	0	0	0	2
Pertussis	0	2	7	22	8	0	0	0	0	0
Rubella	0	0	0	1	16	0	0	0	0	0
Meningitis—Aseptic	7	6	40	48	32	1	1	0	3	2
*Bacterial	18	35	101	102	*80	4	0	3	2	9
Hepatitis A (Infectious)	13	13	37	47	76	1	6	2	0	4
B (Serum)	35	49	169	202	162	4	10	5	7	9
Non-A, Non-B	13	11	40	33	**21	1	4	1	3	4
Salmonellosis	51	98	277	303	276	9	5	9	20	8
Shigellosis	15	25	102	49	139	1	5	2	3	4
Campylobacter Infections	38	39	132	119	**52	10	2	8	11	7
Tuberculosis	30	59	133	129	—	—	—	—	—	—
Syphilis (Primary & Secondary)	24	44	143	202	202	0	1	3	9	11
Gonorrhea	1,354	1,827	6,362	6,242	6,510	—	—	—	—	—
Rocky Mountain Spotted Fever	1	1	2	4	2	0	0	1	0	0
Rabies in Animals	21	40	99	274	85	12	9	0	0	0
Meningococcal Infections	11	14	31	33	33	1	1	2	5	2
Influenza	62	448	941	808	1,364	17	4	21	2	18
Toxic Shock Syndrome	3	0	4	3	2	0	1	0	0	2
Reyes Syndrome	3	0	4	5	8	0	1	1	0	1
Legionellosis	1	3	5	10	5	0	0	0	1	0
Kawasaki's Disease	0	2	4	20	10	0	0	0	0	0
Other:	—	—	—	—	—	—	—	—	—	—

Counties Reporting Animal Rabies: Albemarle 1 raccoon; Arlington 2 raccoons; Fairfax 3 raccoons; Fauquier 1 raccoon; Loudoun 2 raccoons; Louisa 2 raccoons; Madison 1 skunk, 2 raccoons; Orange 2 raccoons; Prince Wm. 2 raccoons; Spotsylvania 1 skunk; Stafford 1 skunk, 1 raccoon.

Occupational Illnesses: Occupational hearing loss 2; occupational pneumoconiosis 22; occupational dermatoses 1; carpal tunnel syndrome 5; lead poisoning 2.

**4 year mean
*other than meningococcal

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