

VIRGINIA

EPIDEMIOLOGY BULLETIN

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Parasitic Infections due to Cyclospora

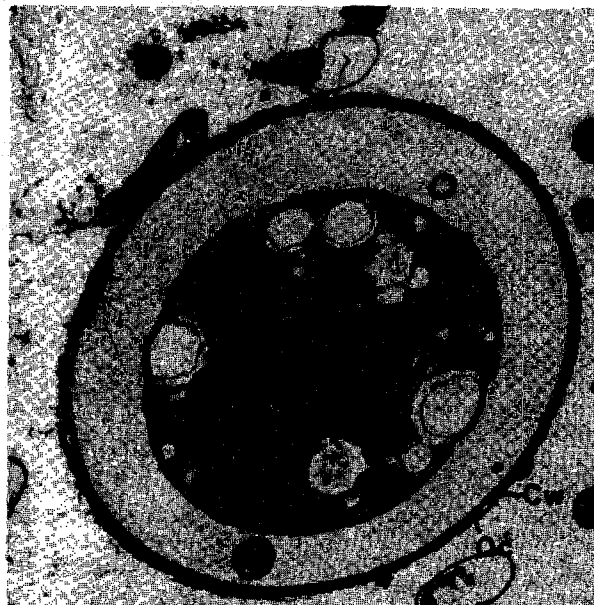
Introduction

During May and June 1996, over 300 cases of suspected or confirmed *Cyclospora* infections were reported to the Centers for Disease Control and Prevention (CDC), from several states and one Canadian province. The CDC has been working with state health departments to investigate these outbreak-related cases of *Cyclospora* infections. The investigation of one outbreak in Houston, Texas, has epidemiologically linked illness with the consumption of strawberries. The Texas Department of Health released a statement on June 8, 1996, advising Houston residents not to eat fresh strawberries until more information regarding their safety was available. Tracebacks are in progress to determine the source of the strawberries.

In Virginia, the Office of Epidemiology is aware of one confirmed case and a second suspected case identified in Virginia during May. We have been unable to determine how these persons became infected.

Background

Cyclospora cayetanensis is a newly recognized parasite that causes gastrointestinal illness. These organisms used to be known as coccidian-like bodies or cyanobacterium-like bodies because they have certain characteristics that are similar to other protozoa or the blue-green algae, cyanobacteria. The first known cases of *Cy-*



clospora infection were identified in 1977, but the incidence has increased since the mid-1980s. Initial cases were identified in persons with AIDS and travelers to tropical regions such as Mexico, the Caribbean islands, or Southeast Asia.

Epidemiology of Cyclospora

There are still many questions regarding the epidemiology of *Cyclospora*. Transmission of the organism is fecal-oral, i.e., people are infected when they ingest something that has been contaminated with fecal matter. This parasite appears to be different from other organisms that are spread via the fecal-oral route, such as *Salmonella*, *Shigella* or *Giardia*, in that the organism is not infectious upon excretion. It appears that the parasite must be out of the body for days to weeks, depending upon the temperature and humidity, before it can cause illness in another person. Therefore, direct

person-to-person transmission of the infection is highly unlikely. Transmission of this organism seems to depend upon fecal contamination of things in the environment, such as water or food, to which other persons are subsequently exposed.

Persons of all ages appear to be at risk for *Cyclospora* infections, with more infections identified in the spring and summer. Also, as mentioned above, travelers to tropical countries are at an increased risk for contracting *Cyclospora* diarrhea.

There are only limited data regarding the incubation period for *Cyclospora* illness. In most studies it has been difficult to identify the exposure and therefore not

possible to calculate an incubation period. From what has been learned, the length of time between exposure and development of symptoms is probably at least several days and may be as long as a week. However, one case has been identified where the suspected source of the organism, exposure to a large amount of sewage, occurred only 24 hours prior to illness. It is suspected that intervals longer than one week are also possible.

Symptoms

Many persons who become infected with *Cyclospora* will have asymptomatic disease. When symptoms do occur they are very similar to those seen with cryptosporidiosis. The most common symptoms are prolonged watery diarrhea, abdominal cramps, nausea, vomiting, muscle aches, fatigue and loss of appetite. Low-grade fever is sometimes present for a day before

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diarrhea begins. If untreated, patients may be ill for four weeks or more and often go through cycles of remission followed by recurrence of diarrhea.

Diagnosis

The increase in identification of *Cyclospora* cases is probably due in part to improvements in techniques for distinguishing the organism in stool samples. As with all Ova and Parasite (O&P) examinations it is important to test more than one specimen. The recommendation is to collect three stools, preserved in 10% formalin, one every other day. When examined on a wet mount, *Cyclospora* oocysts are oval to round organisms, approximately 8-9 μm in diameter (as compared to *Cryptosporidium spp.* which are 4-6 μm). They are wrinkled, with nonrefractile well-defined external walls and internal granular material. *Cyclospora* do not stain with Giemsa or Gram stain but most are acid-fast, and in fresh stools these bodies fluoresce as blue under ultraviolet light. These organisms do not react with the *Cryptosporidium/Giardia* Direct Immunofluorescence Assays. If you have questions regarding the identification of *Cyclospora*, please call Mary Mismas or Sally Henderson at the state laboratory, (804) 786-5146. If the laboratory that does your O&P examinations has identified an organism suspected of being *Cyclospora*, the specimen may be sent to the state laboratory for confirmation.

Treatment

Treatment with trimethoprim-sulfamethoxazole is recommended for persons infected with *Cyclospora*. Infected persons who have diarrhea should rest and drink plenty of fluids.

Prevention

Currently, the only known way to prevent infection with *Cyclospora* is to avoid eating or drinking items that may be contaminated with fecal matter. Infected persons should wash their hands often to prevent the spread of infection. Persons who have been infected with *Cyclospora* can become infected again but there is some evidence that reinfection is not as severe.

Conclusion

Although the Office of Epidemiology is aware of only one confirmed case of *Cyclospora* in Virginia, it is possible that there are cases occurring that are not being identified. Because laboratories are unfa-



New Epidemiologists

The Office of Epidemiology will be home to some new faces in July.

• **John Rullan, M.D., M.P.H.**, will be joining the staff as the Deputy State Epidemiologist. Dr. Rullan was an Epidemic Intelligence Service (EIS) officer in South Carolina, the State Epidemiologist in Puerto Rico for seven years and has spent the last two years as a CDC consultant, working in Spain to organize a Field Epidemiology Training Program. Dr. Rullan is board certified in Preventive Medicine. We look forward to Dr. Rullan's arrival and the knowledge and expertise he brings.

• **Denise Benkel, M.D.**, will be our EIS officer for the next two years. Dr. Benkel has been working in New York City for Healthmasters and spent four years working on the NHANES III study. She is looking forward to learning more about public health on the state level. Please join us in welcoming Dr. Benkel to Richmond.

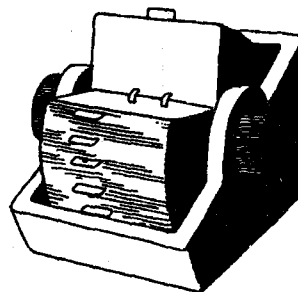
miliar with these organisms, the necessary confirmatory tests may not be performed. Physicians who have a patient with a diarrheal illness lasting more than three days may want to consider requesting testing for *Cyclospora*.

Cyclospora infections are not reportable in Virginia, but the Office of Epidemiology is interested in learning of

any cases. Investigating new cases is the only way we can further elucidate epidemiologic characteristics of this infectious agent, such as common vehicles for transmission, incubation periods and risk factors for infection. If you have questions regarding this disease or if you identify any cases, please call the Office of Epidemiology, (804) 786-6261.

Changing the Address on Your VEB

We receive numerous letters requesting that we change the address at which you receive your *Virginia Epidemiology Bulletin*. We do not control the addresses for physicians or veterinarians. Rather, we purchase our mailing labels from the Virginia Depart-

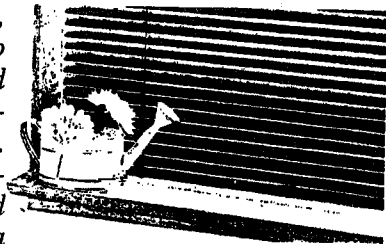


ment of Health Professions and the labels reflect the addresses listed on your medical or veterinary licenses. Therefore, you will receive the *Bulletin* at the location that is listed on your license. If you wish to change the address on your license you must send your request to the Department of Health Professions, Board of Medicine or Veterinary Medicine, 6606 W. Broad St., 4th Floor, Richmond, Virginia 23230. If you are no longer licensed or living in Virginia, you may call the Office of Epidemiology at (804) 786-6261 and we will add your name to our separate mailing list. Thank you.

Epidemiology Notes...

Mini-blinds and Lead Poisoning in Children

• On June 25, 1996, the U.S. Consumer Product Safety Commission (CPSC) issued a statement describing the hazard of childhood lead poisoning associated with imported vinyl mini-blinds. After several states, including Virginia, notified the CPSC of an identified association between these mini-blinds and lead poisoning in young children, the CPSC initiated a study. The study found that vinyl mini-blinds imported from China, Taiwan, Mexico and Indonesia had lead added to stabilize the plastic. Over time, exposure to heat and sunlight causes a lead dust to form



on the surface of the blinds. Young children can then ingest the lead by wiping their hands on the blinds and putting their hands in their mouths. The CPSC recommends that "In homes where children ages six and younger may be present, ... consumers remove these vinyl mini-blinds." The CPSC has worked with the Window Covering Safety Council to recall these imported vinyl blinds and to modify the way in which they are manufactured. New mini-blinds, without added lead, should appear in stores by July 1, 1996. These new blinds will be labeled to indicate that they are made without lead.

In Virginia, imported plastic mini-blinds were identified as a source of lead poisoning in two 18-month old children in Portsmouth. As part of a well-child care examination, the children's pediatrician ordered routine blood-lead testing. Both children were confirmed to have significant blood-lead elevations, with one child requiring hospitalization and chelation. An environmental assessment was conducted but no obvious source was identified. The family lived in a new town home that was well maintained with no renovations or remodeling taking place. Also, there was no heavy industry in that area of the city.

Officials became suspicious of the mini-blinds and laboratory analysis of the blinds revealed that they contained lead.

The two cases in Portsmouth are the first two cases of childhood lead poisoning associated with mini-blinds in Virginia, but other states have previously identified blinds as a possible lead source. The Arizona Department of Health Services issued a news release dated December 7, 1995, warning parents that some types of plastic mini-blinds contain dangerous levels of lead and should be kept out of the reach of young children and away from food preparation areas. The warning followed the identification of mini-blinds as the apparent cause of a child lead poisoning incident in Yuma,

Arizona, and as a possible contributing factor in at least 20 other cases investigated by the Arizona Department of Health Services.

The North Carolina Department of Environment, Health and Natural Resources issued a similar statement on March 4, 1996, stating that public health officials in several North Carolina counties had found imported plastic mini-blinds containing lead to be a potential source of lead poisoning in young children. The statement recommended that parents and day care operators remove plastic mini-blinds imported from Southeast Asia and Mexico from areas where young children could reach them.

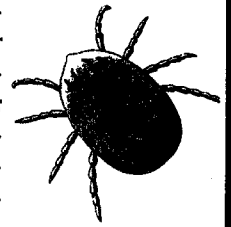
Although the risk for childhood lead poisoning is associated only with imported vinyl mini-blinds, the CPSC re-emphasized its warning to parents of young children regarding the very real strangulation hazard presented by the blind cords on all older types of mini-blinds.

Submitted by Paul Sandman of the Childhood Lead Poisoning Prevention Program, Virginia Department of Health.

Tick-Borne Illnesses

• Anecdotal evidence indicates that the number of ticks in Virginia has been unusually high this spring.

Although monitoring for the number of ticks is not routinely done, experts at Virginia Tech report that the environmental conditions during 1996, including heavy snowfalls and a wet spring, favored increased tick populations. This increase in the tick population may result in an increase in the number of cases of tick-borne illnesses. Physicians who suspect that a patient may have a tick-borne disease, may send serum specimens to the state immunology laboratory for testing for Rocky Mountain spotted fever and Lyme disease. The state laboratory will also forward specimens to the CDC for testing for both types of human ehrlichiosis. Please call the Immunology Lab at the state laboratory (804/786-5142) for further information.



Picnic Safety in the Good Old Summertime

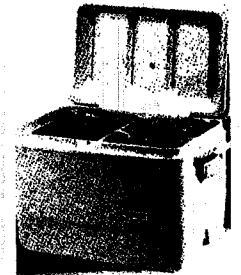
The following are some tips that will help keep picnickers healthy this summer.

• Use a cooler with ice or ice packs to maintain chilled foods at or below 40°F.

• Don't take chilled foods from the cooler until you are ready to serve them. When finished serving, promptly return them to the cooler (latest recommendations are to leave chilled foods out no longer than 2 hours).

• If you are taking meat, poultry or fish to grill, pack these separately and carefully to avoid leakage onto other foods.

• If there will be no soap and water available, take along moistened towlettes to use for washing hands and surfaces after handling uncooked meat, poultry or fish.



Cases of Selected Notifiable Diseases Reported in Virginia.*

Disease	Total Cases Reported, May 1996						Total Cases Reported Statewide, January through May		
	State	Regions					This Yr	Last Yr	5 Yr Avg
		NW	N	SW	C	E			
AIDS	83	7	23	16	28	9	411	479	480
Campylobacteriosis	36	11	3	2	12	8	196	154	171
Giardiasis	23	4	8	5	3	3	106	91	104
Gonorrhea	875	60	116	113	241	345	4092	4411	5657
Hepatitis A	14	1	8	1	3	1	62	79	64
Hepatitis B	11	0	4	2	1	4	62	37	65
Hepatitis NANB	3	0	1	1	0	1	7	4	13
HIV Infection	112	5	24	7	27	49	413	402	531
Influenza	0	0	0	0	0	0	257	917	711
Legionellosis	1	0	0	0	0	1	10	5	5
Lyme Disease	0	0	0	0	0	0	0	11	17
Measles	2	1	1	0	0	0	2	0	6
Meningitis, Aseptic	14	1	5	3	0	5	58	69	73
Meningitis, Bacterial [†]	11	2	3	3	0	3	34	66	52
Meningococcal Infections	8	1	1	5	1	0	28	28	26
Mumps	0	0	0	0	0	0	3	13	21
Pertussis	2	1	0	0	1	0	5	7	9
Rabies in Animals	45	10	8	11	4	12	219	159	142
Rocky Mountain Spotted Fever	1	0	0	1	0	0	1	0	1
Rubella	0	0	0	0	0	0	0	0	0
Salmonellosis	45	6	9	7	12	11	330	312	316
Shigellosis	35	4	9	0	2	20	152	74	140
Syphilis, Early [‡]	55	0	1	2	18	34	401	544	618
Tuberculosis	49	2	10	5	10	22	118	110	122

Localities Reporting Animal Rabies: Accomack 2 raccoons; Albemarle 1 skunk; Bedford 2 raccoons; Fairfax 1 fox, 5 raccoons; Fauquier 1 raccoon; Frederick 1 fox, 1 raccoon; Gloucester 1 raccoon; Grayson 2 skunks; Greenville 1 skunk; Hanover 1 raccoon; Henry 2 raccoons; Louisa 1 dog; Mecklenburg 1 skunk; Middlesex 1 raccoon; Northampton 6 raccoons; Orange 1 horse, 1 raccoon; Patrick 1 raccoon; Pittsylvania 1 raccoon, 2 skunks; Prince Edward 1 skunk; Prince William 2 bats; Shenandoah 2 raccoons; Smyth 1 dog; Stafford 1 cat; Suffolk 1 raccoon; Virginia Beach 1 fox;

Occupational Illnesses: Asbestosis 80; Carpal Tunnel Syndrome 5; Coal Workers' Pneumoconiosis 13; Loss of Hearing 6, Mesothelioma 1.

*Data for 1996 are provisional.

[†]Other than meningococcal.

[‡]Includes primary, secondary, and early latent.

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