

Control Measures for the Child Care Setting During an Outbreak of Cryptosporidiosis

Cryptosporidiosis is an infectious diarrheal disease caused by the *Cryptosporidium* parasite. Cryptosporidiosis is a common cause of diarrhea in children, especially in child care settings. Symptoms usually include watery diarrhea and stomach ache, but can also include nausea and vomiting, fever, and a general sick feeling. Healthy people who contract cryptosporidiosis almost always get better without any specific treatment. An unusual feature of cryptosporidiosis is that some people seem to get better only to have the diarrhea come back in a few days. Symptoms can come and go for up to 30 days, but usually subside sooner. However, cryptosporidiosis can cause severe illness in persons with compromised immune systems, such as those with HIV infection or those taking drugs that suppress the immune system.

Cryptosporidiosis is spread through fecal-oral transmission by feces of an infected person or an object that has been contaminated with the infected person's feces. Infection can also occur if someone ingests food or water contaminated with the parasite. Cryptosporidiosis outbreaks in child care settings are most common during late summer/early fall (August/September), but may occur at any time. The spread of cryptosporidiosis is highest among children who are not toilet-trained and their caregivers (i.e., those who change diapers).

Cryptosporidium is resistant to chlorine disinfection so it is tougher to kill than most disease-causing organisms. The usual disinfectants, including most commonly used bleach solutions, have little effect on the *Cryptosporidium* parasite. An application of either hydrogen peroxide or ammonia seems to work best. Hydrogen peroxide is probably the best choice in the child care setting, because ammonia has a strong odor and produces hazardous gas when mixed with bleach or other chlorinated solutions. If an outbreak of cryptosporidiosis occurs in the child-care setting:

- Exclude any child with diarrhea from the child care setting until the diarrhea has stopped.
 - Children who are infected with *Cryptosporidium* but do not have diarrhea may be allowed to return.
 - Recently returning children can be grouped together in one classroom to minimize exposure to uninfected children.
 - Move adults with diarrhea to jobs that minimize opportunities for spreading disease (e.g., administrative work instead of food preparation).
- Terminate all water play or swimming activities (water tables, inflatable or rigid temporary swimming pools, public pools). These can become contaminated and facilitate the spread of infections.
- Practice good hygiene. The measures below should be routine but are especially important during outbreaks.
 - Enforce good hand washing technique for all children and adults, using disposable towels. *Cryptosporidium* is not killed by alcohol gels and hand sanitizers and these materials are of little use in controlling an outbreak.
 - Good hand washing means:
 - Wet your hands with clean running water and apply soap.

- Rub hands together to a lather and scrub all surfaces.
 - Continue rubbing hands for 20 seconds (imagine singing “Happy Birthday” twice).
 - Rinse hands well with water.
 - Dry hands with paper towels or an air dryer. If possible, use a paper towel to turn off the faucet.
 - For children:
 - Observe hand washing or assist when needed. Wash children’s hands when they arrive at the child care facility, after they use the toilet, after having their diapers changed, and before eating snacks or meals.
 - For adults:
 - Wash hands after using the toilet, after helping a child use the toilet, after diapering a child, and before preparing or serving food. (Note: Where staffing permits, people who change diapers should not prepare or serve food).
- Improve diaper changing practice.
 - Separate diaper changing areas from children’s play and food preparation areas.
 - Use disposable gloves and change after each diaper changing.
 - Use disposable paper over the diaper changing surfaces and change after each use.
 - Ensure children wear clothing over their diapers to reduce the opportunity for leakage.
- Disinfect surfaces and objects
 - Disinfect bathrooms and food preparation surfaces daily.
 - Instead of a bleach solution, use a 3% (99% kill rate) or, if available, 6% (99.9% kill rate) concentration of hydrogen peroxide to soak contaminated surfaces for 20 minutes. Ammonia can also be used (5% solution for 18 hours) but it has a strong odor and, if accidentally mixed with bleach or other chlorine-containing solutions, produces hazardous chlorine gas. (These are not routine measures, but may be necessary if an outbreak occurs; usually 2 or more cases in the same child care group).
 - Disinfect toys, tabletops, and high chairs more frequently than usual (at least twice daily).
 - Dishwasher-safe toys may be washed in a commercial dishwasher that has a dry cycle or a final rinse that exceeds 113°F for 20 minutes or 122°F for 5 minutes or 162°F for 1 minute. Cloth toys may be washed and heat-dried in clothes dryer for 30 minutes.
- Notify concerned parties
 - State or local health department about an excessive level of diarrhea in the daycare. *Cryptosporidium* infections are reportable in most areas.
 - Parents of children who have been in direct contact with a child or an adult caregiver with diarrhea. Parents should contact the child’s healthcare provider if their child develops diarrhea.
 - Child care provider, parents of any children, or household contacts of a person known to have an impaired immune system. They should consult their healthcare provider.