



## LOSS CONTROL BULLETIN

Another loss prevention service from Bollinger, Inc.

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# SWIMMING POOL WATERBORNE DISEASE TRANSMISSION #111

### Introduction

The transmission of waterborne disease is a liability exposure faced by clubs with pools, spas and related facilities. While there are many water borne diseases, this bulletin concerns an emerging health risk faced by swimming pool users and the responsibilities of pool managers to protect these users. Ingestion of the parasite *Cryptosporidium parvum* has become a major source of a type of waterborne disease called cryptosporidiosis. This disease causes severe and persistent diarrhea and can be life threatening in the elderly, sick, or the very young.

### Case Histories

There have been numerous recent outbreaks of cryptosporidiosis at recreational water facilities. The U.S. Centers for Disease Control and Prevention (CDC) identified 10 significant cryptosporidiosis outbreaks at recreational water facilities in the United States between 1988 and 1999. These outbreaks have included 62 confirmed cases in a Georgia facility and 29 cases at a California location in 1996. Another significant outbreak with 171 confirmed cases occurred at a pool in New Zealand in 1998.

According to a report in Emerging Infectious Diseases ("Chlorine Disinfection of Recreational Water for *Cryptosporidium parvum*," 5.4 (1999)), the most frequent route of transmission for this disease is fecal matter contamination of swimming pools, such as through a diaper leak. Based on recent studies, fecal matter encapsulation dramatically reduces the ability of chlorine to kill this parasite.

Researchers believe that these reported outbreaks are only the tip of the iceberg, since without specific testing, the symptoms resulting from *C. parvum* infection can be attributed to other causes. Researchers believe that outbreaks will be more frequently recognized in the coming years as health care providers increase their testing of patients for cryptosporidiosis.

### Prevention Measures

Measures to reduce the potential for the transmission of *C. parvum* in pools and recreational facilities involve a combination of engineering controls, pool policies, and educational efforts. In 1999, the CDC published recommendations for preventing cryptosporidiosis in pools, waterparks, and other similar venues.

The recommendations include:

- Maintaining circulation and filtration equipment to provide maximum filtration rates, especially during peak periods of use, and improving filtration and water turnover rates where necessary. As a minimum, the circulation system should turn over the entire pool water capacity in eight hours (ANSI/NSPI -1 1991 Article 6.1.1). The water circulation rate must be achieved while maintaining the pressure flow through the filter within the manufacturer's specifications. Local codes may require higher circulation and filtration rates.
- Maintaining chemical feed equipment and pool chemicals at optimal levels. Suggested operational parameters are outlined in ANSI/NSPI -1 Appendix A. The local health department may have specific requirements, which should be followed.
- Developing a policy for pool usage by diaper-aged and toddler children. This policy may require these children to use a separate kiddie pool, require diaper-aged children to wear rubber pants or swim diapers, or may exclude these children from the pool.
- Using separate plumbing and filtration for "high risk" kiddie pools.
- Providing safe and easily accessed diaper-changing areas.
- Prohibiting diaper changing at poolside.
- Developing a fecal accident response policy and procedures, and providing training for all persons responsible for the maintenance and operation of the swimming pool on the prevention of diseases and injuries.
- Training staff to report illnesses they experience to management, and not to swim if ill with diarrhea or abdominal cramps.
- Providing users with information on pool procedures and waterborne diseases and steps they can take to reduce disease risk, such as not swallowing pool water.
- Providing signage in a conspicuous location, before entry into the pool area, notifying users of pool procedures. The procedures should include showering before pool use, using good personal hygiene practices, including proper diaper changing and hand washing, frequently timed bathroom breaks for younger children, and a request to not use the pool if they have or have had diarrhea or abdominal cramps in the past two weeks.

The complete guidelines are available on-line from the Center for Disease Control at the website: [http://www.cdc.gov/ncidod/dpd/parasites/cryptosporidiosis/crypto\\_swim\\_pool\\_oper.htm](http://www.cdc.gov/ncidod/dpd/parasites/cryptosporidiosis/crypto_swim_pool_oper.htm).

For additional information on preventing waterborne diseases at swimming pools go to the website <http://www.cdc.gov/ncidod/dpd/parasiticpathways/swimming/operators.htm>.

**IMPORTANT NOTICE** - The information and suggestions presented by Bollinger Inc. in this Loss Control Bulletin are for your consideration in your loss prevention efforts. They are not intended to be complete or definitive in identifying all hazards associated with your club, preventing workplace accidents, or complying with any safety related, or other, laws or regulations. You are encouraged to alter them to fit the specific hazards of your club and to have your legal counsel review all of your plans and club's policies.

For bulletins on other safety topics see our website [www.bollingerinsurance.com/newver/Golf/index.asp](http://www.bollingerinsurance.com/newver/Golf/index.asp)