



State of Maryland

Department of Health and Mental Hygiene

POLICY AND PROCEDURES FOR THE PREVENTION AND CLEANUP OF FECAL ACCIDENTS AT PUBLIC POOLS AND SPAS

Swimming has become one of the most popular forms of exercise and recreation in the USA. An increase in recreational water disease transmission has unfortunately come along with popularity. But the majority of disease organisms found in public swimming water may be killed very quickly using the right amount of disinfectant, chemical balance, and filtration in your pool or spa. The policies and procedures outlined in these fact sheets have been developed to reduce the potential for the growth and transmission of waterborne diseases in pools or spas. **Specific procedures are provided for the cleanup and disinfection of solid stool, loose stool, vomit, and blood in a pool or spa.**

Constant maintenance of the disinfection levels, water chemistry, and filtration required in the Code of Maryland Regulations (COMAR) 10.17.01, Public Swimming Pools & Spas is normally enough to prevent the spread of disease at pools and spas.

But fecal (bathroom) accidents in a pool or spa need special treatment to kill disease organisms released from the intestines into the water. Some of the fecal organisms are mildly (Giardia, Hepatitis A) to extremely (Cryptosporidia) chlorine-resistant. The table below shows the approximate disinfection times for some disease organisms.

Disinfection Times for Fecal Contaminates in Chlorinated* Water
(*1 PPM chlorine at pH 7.5 and 25 °C / 77°F.)

E. coli Bacteria	<1 minute
Hepatitis A Virus	16 minutes
Giardia Parasite	20-45 minutes
Cryptosporidium Parasite	9600 minutes (6.7 days)

Formed or solid stool accidents are considered less of a risk than diarrhea or loose stool accidents. Formed stool may have only a few organisms that can cause illness, but diarrhea can release millions of organisms in a single fecal accident.

These public pool and spa policies and procedures provide:

1. Public education guidelines on the problems and prevention of fecal contamination,
2. Guidelines for cleanup and disinfection of solid stool accidents,
3. Guidelines for cleanup and disinfection of diarrhea (loose stool) accidents,
4. Guidelines for cleanup and disinfection of vomit and blood accidents, and
5. Maryland's regulation requirements for disease free public pool and spa water.



State of Maryland

Department of Health and Mental Hygiene

If these procedures are followed the possibility of transmitting a waterborne disease from one person to another may be significantly reduced. Guidelines on the Prevention of Fecal Contamination Incidents in a Pool or Spa

The purpose of these guidelines is to help reduce the number of fecal contamination incidents at a pool or spa by increasing public awareness of the risk of disease transmission and by providing some simple ways to prevent fecal contamination.

Suggested pool and spa rules

- 1. Bathers should rinse off in a shower before entering the pool.**
- 2. Bathers must wash their hands thoroughly with soap and hot water after using the restroom or after changing a diaper.**
- 3. Diaper-age children or children who are not toilet trained must wear a swimsuit diaper or closely fitting plastic pants.**
- 4. Parents must make frequent diaper checks of their children's diapers. A diaper check must be made before placing the child in a pool. Diaper checks must be made with the child out of the water.**
- 5. Diaper changing is not allowed at poolside. Please use changing tables in restrooms.**
- 6. Any person suffering from diarrhea or a waterborne transmitted communicable disease shall not be allowed in the pool.**
- 7. Any person with open cut, blister, or lesion shall not be allowed in the pool.**
- 8. Please alert the pool attendant immediately if there has been a fecal accident.**
- 9. If there is a fecal accident in the water, the pool will be closed until a cleanup is completed. Fecal accidents are a public health risk that can cause the spread of disease from person to person in the water.**

If these guidelines are followed the risk of disease contamination at pools and spas should be greatly reduced. These suggested rules should be posted at poolside.



State of Maryland

Department of Health and Mental Hygiene

Pool and Spa SOLID STOOL FECAL CONTAMINATION POLICY

PROCEDURES FOR SOLID STOOL FECAL CLEANUP AND DISINFECTION AT A PUBLIC, SEMI-PUBLIC, OR LIMITED PUBLIC –USE POOL AND PUBLIC SPA

1. All bathers must be instructed to exit the pool water and the pool must be closed.
2. Signs must be posted stating that the pool is temporarily closed.
3. Scoop and remove as much fecal matter as possible from the pool and dispose of in a sanitary sewer, toilet, or other approved waste disposal system. Disinfect the scoop in bleach and water. Do not collect the fecal waste in the filters.
4. Clean up as much remaining fecal matter as possible using the vacuum system, but only if you can vacuum directly to a sanitary sewer waste line or other approved waste disposal system. Do not collect the fecal waste in the filters. Clean and disinfect the vacuum equipment after use.
5. Keep the filters running through the following procedures.
6. Add disinfectant directly to the water starting at the accident area and continuing all around the pool or spa edge. The free chlorine level must be raised to at least 10 parts per million (PPM) in the entire pool or spa. Keep the filters running.
7. Maintain the pH between 7.2 and 7.5 to allow the disinfectant to work properly.
8. After 30 minutes take chlorine and pH readings every 15 feet around the water's edge. You must verify that the free chlorine level is a minimum of 10 PPM and the pH is between 7.2 and 7.5 throughout the entire pool. You may check the chlorine using a FAS/DPD kit, approved test strips, or dilutions to get accurate chlorine readings. Be careful with the pH measurements since the chlorine might bleach the pH color. (Add a few drops of sodium thiosulfate to the pH test.)
9. Once you have verified even distribution (10PPM) of the chlorine in the water, backwash the filter to remove any remaining fecal matter then disinfect the filter media using 1 part of bleach to 20 parts water. Restart the filters.
10. Reduce the chlorine level to between 1.5 PPM and 10 PPM for a pool or between 3.0 PPM and 10 PPM for a wading pool or between 4.0 PPM and 10 PPM for a spa. Check and re-balance the water chemistry.
11. Document the pool closure and record all readings in the daily operating records.
12. Reopen the pool.

NOTE: For spas and wading pools you may drain the water to waste and scrub the pool or spa with disinfectant. The piping and filter still need to be disinfected using a mixture of 1 part bleach to 20 parts water.

***This policy is based on a CT formula to kill the majority of organism associated with fecal contamination of pool water, where C is the concentration in mg/L of the disinfectant and T is the time in minutes of exposure.**



State of Maryland

Department of Health and Mental Hygiene

Pool and Spa

DIARRHEA OR LOOSE STOOL FECAL CONTAMINATION POLICY

PROCEDURES FOR **DIARRHEA (LOOSE STOOL) FECAL CLEANUP AND DISINFECTION AT A PUBLIC, SEMI-PUBLIC, OR LIMITED PUBLIC –USE POOL AND PUBLIC SPA**

1. All bathers must be instructed to exit the pool water and the pool must be closed.
2. Signs must be posted stating that the pool is closed.
3. Scoop and remove as much fecal matter as possible from the pool and dispose of in a sanitary sewer, toilet, or other approved waste disposal system. Disinfect the scoop in bleach and water. Do not collect the fecal waste in the filters.
4. Clean up as much remaining fecal matter as possible using the vacuum system., but only if you can vacuum directly to a sanitary sewer waste line or other approved waste disposal system . Do not collect the fecal waste in the filters. Clean and disinfect the vacuum equipment after use.
5. Keep the filters running through the following procedures.
6. Add disinfectant directly to the water starting at the accident area and continuing all around the pool or spa edge. Raise the free chlorine level to at least 10 parts per million (PPM) in the entire pool or spa.
7. Maintain the pH between 7.2 and 7.5 to allow the disinfectant to work properly.
8. **Take periodic readings and maintain the free chlorine at or above 10 PPM and the pH between 7.2 to 7.5 throughout the entire pool for 16 hours.** You may check the chlorine using a FAS/DPD kit, approved test strips, or dilutions to get accurate chlorine readings. Be careful with the pH measurements since the chlorine might bleach the pH color. (Add sodium thiosulfate to the pH test.)
9. After sixteen hours with the chlorine level at 10 PPM, backwash the filter to remove any remaining fecal matter then disinfect the filter media using 1 part of bleach to 20 parts water. Restart the filters.
10. Reduce the chlorine level to between 1.5 PPM and 10 PPM for a pool, between 3.0 PPM and 10 PPM for a wading pool, and between 4.0 PPM and 10 PPM for a spa. Check and re-balance the water chemistry.
11. Document the pool closure and record all readings in the daily operating records.
12. Reopen the pool.

NOTE: For spas and wading pools you may drain the water to waste and scrub the pool or spa with disinfectant. The piping and filter still need to be disinfected using 1 part bleach to 20 parts water.

***This policy is based on a CT formula to kill the majority of organism associated with fecal contamination of pool water, where C is the concentration in mg/L of the disinfectant and T is the time in minutes of exposure. The CT value used for this policy is 10 mg/L (10 ppm) chlorine for 16 hours which is the contact time necessary to disinfect Cryptosporidium.**



State of Maryland

Department of Health and Mental Hygiene

POLICY FOR VOMIT AND BLOOD CLEANUP AT A PUBLIC, SEMI-PUBLIC, OR LIMITED PUBLIC –USE POOL AND A PUBLIC SPA

VOMIT CLEANUP

1. All bathers must exit the water.
2. Post a sign noting that the pool or spa is temporarily closed.
3. Scoop and remove as much vomit as possible from the water and dispose of in a toilet, sanitary sewer, or other approved waste disposal system. Do not collect the vomit waste in the filters. Disinfect the scoop in bleach and water.
4. Clean up as much remaining vomit as possible using the vacuum system, but only if you can vacuum directly to a sanitary sewer waste line or other approved waste disposal system. Do not collect the vomit waste in the filters. The vacuum equipment must be cleaned and disinfected after use.
5. Add disinfectant to the area where the vomit accident occurred. Disinfect approximately a 100 square foot or larger area.
6. Check the chlorine level at the vomit accident area until you reach at least 10 parts per million free chlorine.
7. Reopen the pool.
8. Document the pool closure and the chlorine readings in the daily operating records.
9. Reopen the pool.

BLOOD CLEANUP

– Follow procedures 1-9, except for 3 & 4 above for blood in the water. There is no need to try to remove the blood in water.

-For blood on the deck or pool equipment you must follow bloodborne pathogen cleanup procedures as required by MD Occupational Safety and Health Administration using bloodborne pathogen cleanup materials and personal safety gear such as plastic gloves and eye goggles



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**PUBLIC NOTICE
FOR
SWIMMING POOLS AND SPAS**

ANY INDIVIDUAL WHO HAS THE FOLLOWING CONDITIONS MAY NOT ENTER THE WATER OF A PUBLIC POOL OR SPA PER STATE REGULATION 10.17.01.50:

- 1. An infectious or contagious disease that may be transmitted through water;**
- 2. An open cut, blister, or other lesion; or**
- 3. Diarrhea**

THE OWNER OF A PUBLIC POOL OR SPA HAS THE RIGHT TO DENY ENTRY INTO THE WATER OF A PUBLIC POOL OR SPA IF AN INDIVIDUAL EXHIBITS ANY OF THE ABOVE CONDITIONS UNLESS A PHYSICIAN CERTIFIES THAT THE INDIVIDUAL'S CONDITION IS NOT INFECTIOUS OR CONTAGIOUS BY WATERBORNE TRANSMISSION.



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Maryland's Public Swimming Pool and Spa Regulations

COMAR 10.17.01

.48 Sanitary Quality of Water

Although routine testing is not required, an owner shall ensure that the water in a public pool or spa:

- A. Has a coliform bacteria level of less than 1 coliform per milliliter; and
- B. Is free of pathogenic organisms.

Policy:

If there has been a fecal accident in a pool or spa, the water is normally considered to be free of pathogenic (disease causing) organisms if the pool operator follows the procedures in the Fecal Cleanup and Disinfection Policy.

Additional assurance such as water sampling and testing for bacteria may be done at the discretion of the local health department.



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PUBLIC SWIMMING POOL and SPA
OPERATING RECORD SHEET FOR FECAL ACCIDENT AND CLEANUP

Facility Name _____

Follow Maryland Department of Health & Mental Hygiene cleanup and disinfecting procedures.

Record test readings every 15 feet around the perimeter of pool. For solid stool maintain free chlorine at 10 PPM and pH between 7.2 and 7.5 for ½ hour then pool may be reopened. For loose stool maintain free chlorine at 10 PPM and pH between 7.2 and 7.5 for 16 hours then pool may be reopened.

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Dates and times pool closed _____

Dates and times pool reopened _____

Record any relevant information (such as reports of illness):

Signature of Certified Operator: _____