



ENVIRONMENTAL HEALTH

Recreational Waters Program

5050 Commerce Drive, Baldwin Park, CA 91706

Telephone: (626) 430-5360 • Website: <http://www.publichealth.lacounty.gov/eh>



Instructions for Management of Fecal, Vomit, Blood Contamination, Near Drowning or Drowning Incidents at Public Pools

In responding to a fecal, vomit, blood contamination, near drowning, or drowning incident, the pool operator must perform the following disinfection procedures:

1. Immediately direct everyone to leave the pool and close the pool. If you have multiple pools that use the same filter, close all pools. Do not allow anyone to enter the contaminated pool until all decontamination procedures have been completed.
2. Remove as much of the contaminated material as possible using a net or scoop and dispose of it in a sanitary manner. Clean and disinfect the net or scoop and leave the net or scoop in the pool during the disinfection period. Vacuuming fecal material from the pool is not recommended. If vacuumed, waste should be directed to a sanitary sewer and not through a filtration system of the pool.
3. Test the water to make sure that the pH of the pool water is **7.5 or lower** and the water temperature is **77°F (25°C) or higher**.
4. Disinfect the pool water for fecal, vomit, near drowning or drowning incident as follows:

Formed fecal stool or vomit

Pools with Stabilizer (Cyanuric Acid)

Raise the free-chlorine concentration in the pool to **4 ppm for at least 1 hour**.

The **pH shall be lowered to 6.5**.

Pools without Stabilizer

Maintain the free-chlorine concentration in the pool at **2 ppm (mg/L) for at least 25 minutes**.

Diarrhea or loose stool

Pools with Stabilizer (Cyanuric Acid)

Raise the free-chlorine concentration in the pool to **40 ppm for at least 30 hours**.

The **pH shall be lowered to 6.5**.

Pools without Stabilizer

Maintain the free-chlorine concentration in the pool at **20 ppm (mg/L) for at least 12.75 hours**.

5. **If the contamination is a blood**, the pool operator shall check the free-chlorine concentration in the public pool at the time of the incident. If it is below the required minimum free-chlorine concentration, the pool operator shall immediately close the public pool until the required minimum free chlorine concentration is achieved. (Test at multiple points to ensure the required free-chlorine concentration is achieved throughout the pool for the entire disinfection time).
6. **If a near drowning or drowning incident occurred and confirmation of fecal, vomit, loose stool or blood contamination cannot be made**, the pool operator shall disinfect the pool water according to the requirements for "Diarrhea or loose stool" provided above.
7. Ensure that the filtration system is operating during the entire disinfection process. Also ensure that free available chlorine concentration and pH are maintained at the proper levels.
8. Replace any affected cartridge filters and backwash non-cartridge filters after the disinfection process has been completed. Filter backwash water shall not be returned to the pool. Ensure that the effluent is discharged directly to the sanitary sewer or other approved wastewater-disposal receptacle in accordance with State and local requirements.

9. Document the following information after completing the disinfection process and again before re-opening the pool:
 - a) Date and time of the incident
 - b) The affected pool
 - c) The free-available chlorine concentrations, temperature, and pH at the time of incident
 - d) The facts known about the circumstances and cause of the incident.
 - e) Formed stool or diarrhea
 - f) The procedures followed in responding to the contamination incident.
 - g) The number of pool users in the public pool and the length of time between the occurrence, detection, and resolution of the incident.
10. Ensure that the free-chlorine residual and pH return to normal approved operating levels in accordance with CA Health and Safety Code sections 65529 and 65530, prior to allowing pool users back into the pool.

Important Notes

- A. Short-time (1 Hour) closure is based on the inactivation of 99.9% of Giardia cysts derived from the EPA's Disinfection Profiling and Benchmarking Guidance Manual. Long-time (30 Hours) closure is based on the inactivation of 99.9% of Cryptosporidium oocysts.
- B. The impact of chlorine stabilizers (pools with cyanuric acid) on pathogen inactivation is unclear and warrants further investigation. Stabilized chlorine includes compounds such as dichlor and trichlor. Laboratory studies suggest that Crypto inactivation may not be achieved in the presence of 50 ppm of cyanuric acid even after 24 hours at 40 ppm free available chlorine, pH at 6.5 and a temperature of 77 F (25 C).
- C. Many conventional test kits cannot measure free available chlorine in the range that includes 20 ppm. Use a chlorine test kit that can measure in this range or use a conventional kit and make dilutions using chlorine-free water.
- D. High levels of chlorine may damage pool equipment. Exercise caution or consult with an experienced aquatic professional.
- E. Non-chlorine disinfectants are not addressed in this procedure and should not be used.
- F. If the pool is low volume, such as a small pool, spa pool or wading pool, the pool may be drained. The pool should be refilled, the water balanced, and the proper CT value achieved before being reopened.
- G. 1 ppm = parts per million or mg/L