

wellcare® information for health care providers: Drinking Water & Individuals with Compromised Immune Systems

Basic Information You Should Know

High levels of certain contaminants found in drinking water may not affect a healthy person; however, it could be deadly to a patient with a weakened immune system.

Patients that are at higher risk of developing certain water-borne diseases include:

- HIV patients (CD4+ count < 100 cells/mm³)
- Patients who have been diagnosed with hematological malignancies, specifically those currently going through active treatment, as well as those in remission who have been off treatment for less than 1 year
- Transplant patients
- Patients with less common congenital or acquired immune system dysfunction

The primary waterborne protozoa that leads to waterborne disease outbreaks is *Cryptosporidia*. There have been more reported hospitalizations and deaths from cases of cryptosporidiosis than giardia. *Cryptosporidium parvum* is a human pathogen that is deadly to immuno-compromised patients, specifically for AIDS patients. Although exposure to *cryptosporidium parvum* is especially dangerous for people with weakened immune systems, there have been outbreaks and incidences in healthy populations as well. It is highly infectious, resistant to chlorine, and difficult to filter. Symptoms of previously healthy patients with cryptosporidiosis include:

- Watery, non-bloody diarrhea (can last anywhere from 7 to 20 days)
- Nausea
- Abdominal cramping
- Loss of appetite
- Headache
- Fever

Immuno-compromised patients may experience chronic *Cryptosporidiosis*.

The [Archives of Internal Medicine](#) suggests that increased testing for cryptosporidium can reduce its public health impact. Standard ova and parasite examination does not include cryptosporidium testing.

In addition, patients should also be aware of:

- Disseminated Mycobacterium Avium Complex (MAC), particularly in HIV/AIDS patients
- Disseminated adenovirus infections, particularly in transplant patients
- Toxoplasmosis

The Center for Disease Control advises patients with weakened immune systems request blood tests for toxoplasma from their health care provider. When results are positive, appropriate treatment should be recommended to avoid reactivation of the infection. Results that are negative indicate no infection, however, precautions should be recommended to avoid infection.

Warning signs of toxoplasmosis include flu-like symptoms and achy muscles. Although rare, toxoplasmosis may result in brain, nerve, and eye damage.

Physicians for Social Responsibility (PSR) suggests that “it is important for the health care provider to consider a patient’s individual susceptibilities and the relative risks from microbial pathogens and chemicals.” They add, “...decisions need to be based on knowledge of likely contaminants in a specific source of water, an understanding of the risks and benefits of the various alternatives to tap water, and understanding of the individual’s susceptibility.”

Actions for Health Care Providers to Take

Report all possible cases

- o Local or state health departments should be informed of waterborne disease cases to improve surveillance efforts.

Inform yourself

- o Ask your patients where they get their water – a public water supplier, community water system or a private well.
- o Know the contaminants in your area and the associated possible health risks.

Inform your patients

- o Tell your patients that it is important that they know where their water comes from and that they know whether their water is safe.
- o Counsel your patients, particularly those at increased risk from waterborne exposures.
- o Recommend your patients on well water contact the wellcare® hotline for FREE information on how to test their well water.

Become a resource

- o Recommend your patients on wells join the FREE wellcare® Well Owners Network to learn more about well water.

Talk to your peers

- o Share information with colleagues, for example through presentations

Get involved

- o Become part of advocacy groups working to protect drinking water sources
These actions are recommended by PSR to reduce the public health impact of water contamination.

Guidance from CDC and EPA

The Environmental Protection Agency (EPA) and Centers for Disease Control and Prevention (CDC) co-released guidance for people with severely weakened immune systems that want to take extra precautions. The guidance states:

*Although data are not sufficient for EPA/CDC to recommend that all severely immunocompromised persons take extra caution with regards to their drinking water, individuals who wish to take extra measures to avoid waterborne *Cryptosporidium* can bring their drinking water to a full boil for one minute. Boiling water is the most effective way of killing *Cryptosporidium*.*

As an alternative to boiling water, people may use the following measures:

- **A point-of-use (personal use, end-of-tap, under-sink) filter.** *Only point-of-use filters that remove particles one micrometer or less in diameter should be considered. Filters in this category that provide the greatest assurance of *Cryptosporidium* removal include those that use reverse osmosis, those labeled as “Absolute” one micrometer filters, or those labeled as certified by NSF International under standard 53 for “Cyst Removal.” The “Nominal” one-micrometer rating is not standardized and many filters in this category may not reliably remove *Cryptosporidium*. As with all filters, people should follow the manufacturer’s instructions for filter use and replacement. Water treated with a point-of-use filter that meets the above criteria may not necessarily be free of organisms smaller than *Cryptosporidium* that could pose a health hazard for severely immuno-compromised individuals.*

- **Bottled water.** *Many, but not all, brands of bottled water may provide a reasonable alternative to boiling tap water. The origin of the source water, the types of microorganisms in that water, and the treatment of that water before it is bottled vary considerably among bottled water companies and even among brands of water produced by the same company. Therefore, individuals should not presume that all bottled waters are absolutely free of Cryptosporidium. Bottled waters derived from protected well and protected spring water sources are less likely to be contaminated by Cryptosporidium than bottled waters containing municipal drinking water derived from less protected sources such as rivers and lakes. Water passed through a commercial filter that meets the above criteria for a point-of-use device before bottling will provide nearly the same level of Cryptosporidium removal as distillation or reverse osmosis. Bottled waters meeting the above criteria may not necessarily be free of organisms other than Cryptosporidium that could pose a health hazard for severely immunocompromised individuals.*

Neither EPA nor CDC maintains a list of point-of-use filters or bottled water brands that meet the above criteria. NSF International can provide a list of filters that meet the NSF criteria. The NSF address is 789 N. Dixboro Road, PO Box 130140, Ann Arbor, Michigan 48113-0140; phone number (800) NSF-MARK (<http://www.nfs.org/>). Individuals who contact bottlers or filter manufacturers for information should request data supporting claims that a brand of bottled water or filter can meet the above criteria.

Note: Completely evaluate your patients' health conditions and health risks before recommending boiling water, as it can increase the levels of certain chemical contaminants in drinking water.

Additional Patient Information

Patients with Public Water Supply. Water utilities are required by law to issue annual Consumer Confidence Reports (CCRs) to their customers, giving patients more information about drinking water and their health. These reports can prompt questions that patients may bring to health care providers as a trusted source for answers.

Patients on Private Wells. Contamination of well water can occur if a well is not properly constructed. Shallow wells and wells that are drilled in fractured rock can cause contamination if water is drawn from the surface of the ground.

Private well owners are responsible for maintaining their wells to make sure their water supply is safe. Well water testing should be performed annually. There are state-certified laboratories that can do the test. A list of state-certified laboratories for each area can be obtained from state or local health departments. Local health departments may provide testing at no or low-cost.

Patients and healthcare providers can also contact the wellcare® Hotline for testing resources, including discounts on test kits from at 1-888-395-1033 or www.wellcarehotline.org.

Sources of More Information about Drinking Water

General information:

- wellcare® Hotline: 1-888-395-1033 or www.wellcarehotline.org
- Water Systems Council: www.watersystemscouncil.org
- EPA's Safe Drinking Water Hotline: 800-426-4791
- EPA's Safe Water Website : www.epa.gov/safewater

Local and Regional Drinking Water Quality

- EPA Regional Offices: www.epa.gov/epahome/locate2.htm

Water Treatment

- NSF International: 800-673-8010 or www.nfs.org

For more information about wells and other wellcare® publications

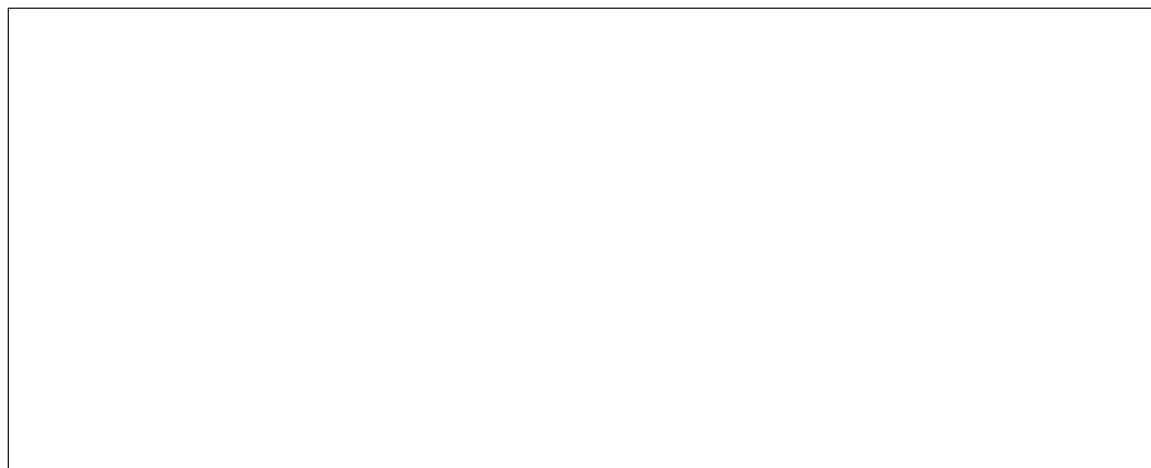
wellcare® is a program of the **Water Systems Council (WSC)**. WSC is the only national organization solely focused on protecting the health and water supply of the 43 million people nationwide who depend on wells for their water supply.



This publication is one in a series of wellcare® information sheets that can be downloaded for FREE from the WSC website at www.watersystemscouncil.org. Healthcare providers, well owners and others with questions about wells or ground water can contact the wellcare® hotline at 1-888-395-1033 or visit www.wellcarehotline.org. You may also want to join the wellcare® Well Owners Network. To join call 1-888-395-1033 or visit www.watersystemscouncil.org. MEMBERSHIP IS FREE!

Association of Clinicians for the Underserved

The Association of Clinicians for the Underserved (ACU) participated in the writing and research for this information sheet. The ACU is a nonprofit, transdisciplinary organization of clinicians, advocates and health care organizations united in a common mission to improve the health of America's underserved populations and to enhance the development and support of the health care clinicians serving these populations. Please visit the ACU at www.clinicians.org.



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well water is naturally better... Contact your local water well professional