

## **Recreational Water Illnesses (RWIs)**

RWI's may affect each of us at some time. Pool use is associated with a spectrum of illness in treated aquatic venues.

- Diarrheal illness (Cryptosporidium, toxigenic E. coli, Giardia, Shigella, noroviruses)
- Skin infections (Pseudomonas dermatitis/folliculitis, athlete's foot)
- Outer ear and eye infections (Pseudomonas, adenoviruses)
- Respiratory and brain infections (Legionella, Mycobacterium, echovirus)
- Misc. hepatitis A
- Urinary tract infections (Communal bathing permits entry of pathogens via all body openings)

### **Gastrointestinal Bacteria**

We work in the water which usually looks clean but often harbors unseen triggers to health issues. Waterborne germs are common. There is an emergence of new fecal/oral germs (Cryptosporidium parvum, toxin-producing E. coli) which are common in our environment and our population. They are environmentally stable and some are chlorine resistant. They can cause serious to life-threatening illness especially in immunocompromised, pregnancy and young children.

### **Respiratory Bacteria**

Legionella is a bacterium widely distributed in natural and manmade water systems. There are two forms of illness: Pontiac fever is milder with flu-like symptoms 2-48 hours after exposure. Legionellosis is severe pneumonia occurring 2-14 days after exposure.

Legionellosis loves high temperatures with best growth at 72 – 108 degrees F. People don't need to get in the water to get it. They just need to breathe air in the vicinity.

There is no person-to-person transmission so legionella patients pose NO risk to others.

### **Sanitizers**

The chemicals in our pools can't help because Cryptosporidium (a water transmitted fecal/oral germ) and Legionella (an air transmitted bacteria) are chlorine/bromine resistant.

### **Prevention Response**

#### *Community Health Updates*

We need to establish a communication network to:

- Alert the community early even if the source is unknown.

- Update and educate pool operators, daycares, schools, swim coaches, nursing homes and restaurants regarding causes, protection and prevention.

### ***Indoor Air Quality and All Water Quality Solutions***

The Centers for Disease Control (CDC) representative Dr. Michael Beach suggests Ultraviolet Light (UV) as the water sanitation system for all new and retrofit pools. UV is shown to inactivate the chlorine-resistant pathogen cryptosporidian in all studies. Current studies are showing that using UV as the water sanitizer prevents legionella from growth in the air.

The CDC is continuing to test the efficacy of UV systems to improve indoor air quality. Kiefer and Associates is financially supporting the study. They measure indoor pool chloramine levels in water and air before and after installation of a UV system. As an added bonus the dosage to break down chloramines in the air far exceeds the dosage needed to inactivate pathogens such as cryptosporidium.

The water flows past the UV Light and the UV kills everything in the water. UV is being used more and more in drinking water as cities are trying to clean up what we drink.

USA Swimming's Facilities Development Department highly recommends medium pressure 100% flow through Ultra Violet pool treatment systems. Mick Nelson, Director of Club Facilities Development reports "*Our design advice for new pool projects always incorporates UV for every indoor pool. We also recommend retro-fitting existing indoor pools. Kiefer and Associates is a preferred provider for UV Systems for the USA Swimming Facilities Development Department.*"

The CDC website has a brochure, several fact sheets and posters that can be downloaded free. [www.healthyswimming.org](http://www.healthyswimming.org).

Published in AKWA August 2006