



# Patient / Staff Focused Water

*Helping the HealthCare Industry provide the Best Water in the Patient Environment*



# The Voice of Consumers

Product Function	% Saying Importance is High/Extremely High		
	Total	Men	Women
Filtration Device or product that provides the clean fresh taste of natural pure water	89%	85.50%	93.50%
Device or product that filters and purifies removing any and all germs or bacteria from water coming in	83.40%	79.40%	88.20%

\*Pentair Research Conducted on general consumers 4/8/2005  
 Normal randomized general population (not HealthCare specific)



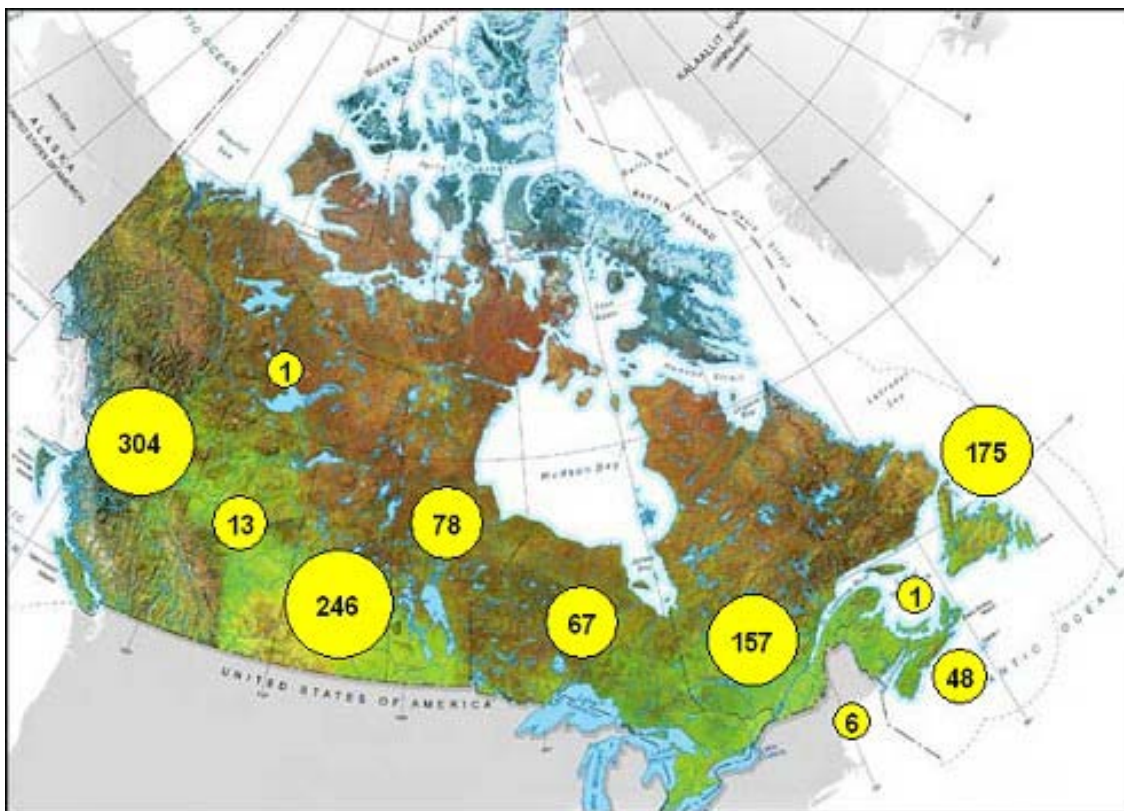
# Levels of Concern

Contaminants in our Water	Levels of Concern	
	Concern	Not at all
Lead	87%	13%
Bacteria	85%	15%
Sediment/Dirt	84%	16%
Virus	82%	18%
Arsenic	81%	19%
Chlorine	79%	21%
MTBE	78%	22%
Iron	77%	23%
Chloramine	75%	25%
Asbestos	75%	26%
Cysts	72%	28%
Volitile Organics or THM	71%	29%

\*Pentair Research Conducted on consumers 4/8/2005

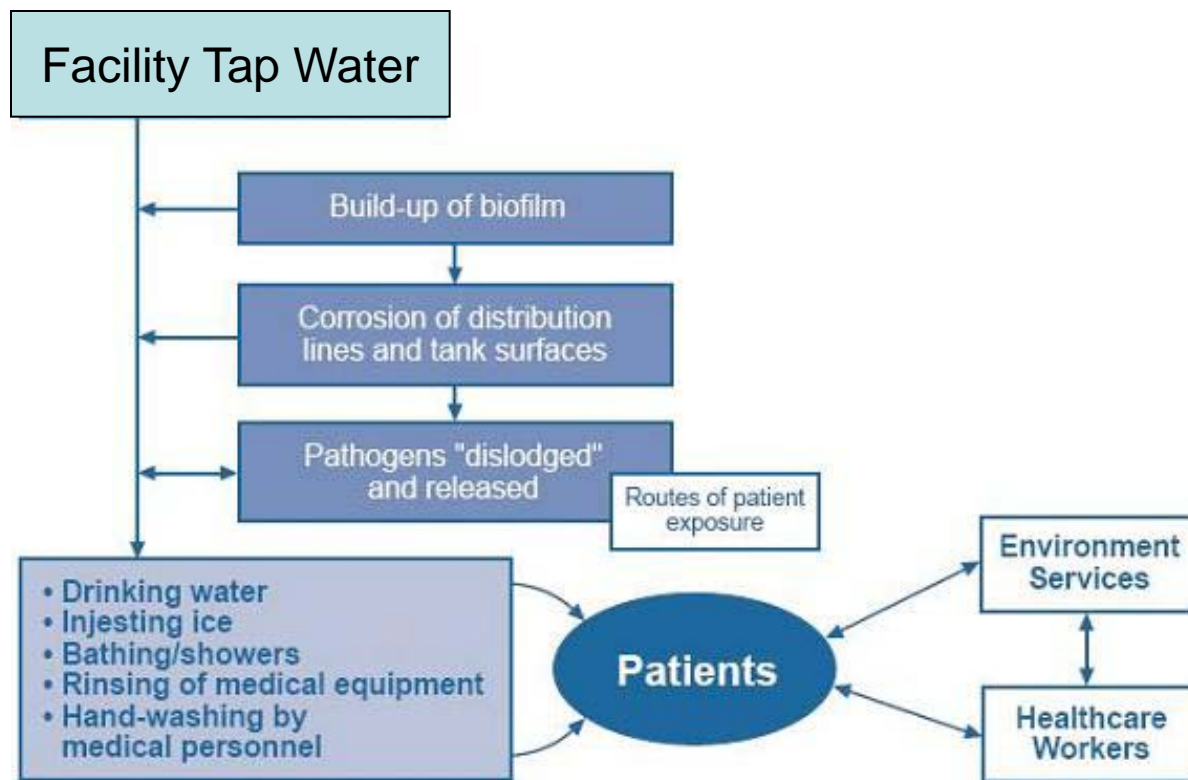


# Boil Water Advisories





## Why a Multi-Barrier Approach for Resident/Patient / Staff Water?





## Health Canada

### Environmental and Workplace Health

- The multi-barrier approach
- The best way to make sure drinking water supplies are kept clean, safe and reliable is to take a preventive risk management approach. This means understanding each water supply from its beginning in nature to where it reaches you, the consumer. This understanding--about the water's characteristics, the ways it could become contaminated, and the type of treatment it needs--comes from collecting and studying data.
- The drinking water supply can be broken down into three parts: the source water, the drinking water treatment system, and the distribution system which carries the treated water to homes, businesses, schools, and other buildings. The plumbing inside your home is an extension of the distribution system.
- As drinking water travels on its journey to you, it can become contaminated in many ways. The multi-barrier approach to managing drinking water supplies is a preventive risk management approach that identifies all known and potential hazards and makes sure barriers are in place to reduce or eliminate the risk of contamination.



## Recommendations from the 2008-2009 Published April 2010 United States President's Cancer Panel Annual Report *Reducing Environmental Cancer Risk- What We Can Do Now*

Filtering home tap or well water can decrease exposure to numerous known or suspected carcinogens and endocrine-disrupting chemicals. Unless the home water source is known to be contaminated, it is preferable to use filtered tap water instead of commercially bottled water.

Storing and carrying water in stainless steel, glass or BPA-and phthalate-free containers will Reduce exposure to endocrine - disrupting and other chemicals that may leach into water from plastics. This action also will decrease the need for plastic bottles, the manufacture of Which produces toxic by-products, and reduce the need to dispose of and recycle plastic bottles.



## Past Water Quality Staff/Patients



- Largely obtained from clean room ice machines, coolers with filtration equipment to better the function of the equipment and not necessarily to better protect the patients
- Semi disposable coolers routinely incorporate reservoirs despite various international hospital standards which have identified open reservoirs of water as high risk areas. While some of these coolers use UV systems none are certified by NSF or meeting International disinfection standards for UV. A overwhelming majority are also not able to certify they are BPA free.
- Often not even meeting the minimum US CDC guidelines for NSF approved filtration devices for immunocompromised individuals. See "A Guide to Water Filters"  
[http://www.cdc.gov/crypto/gen\\_info/filters.html#filter\\_table](http://www.cdc.gov/crypto/gen_info/filters.html#filter_table)





## Options for Ice Machines and Food Service



 <b>Homespring Water Filtration System</b>		
<p>Automatic self cleaning high capacity filter maximizes the life of carbon filters and extends cartridge change intervals</p>		
	<p><b>BENEFITS</b></p> <ul style="list-style-type: none"> <li>Delivers consistent high quality ingredient water independent of challenges in water</li> <li>110,000 gallon capacity; 11 gpm peak flow rates</li> <li>High capacity carbon filter for chlorine taste and odor reduction</li> <li>Removes bacteria, parasites, cysts and viruses</li> <li>Removes colloids, turbidity and organics as small as 0.5 microns</li> <li>Automated efficient self-flushing cycle flushes impurities</li> <li>Short-cleaning cycle with very low water waste</li> <li>Low maintenance with minimal consumables</li> <li>Requires minimal water pressure to operate efficiently</li> <li>Sleek design can be mounted floor standing, or wall mounted horizontally</li> </ul>	
	<p><b>Part Numbers:</b></p> <ul style="list-style-type: none"> <li>3050217 HOMESPING SYSTEM, GAC Prefilter, RoHS - DC</li> <li>4000299 HOMESPING SYSTEM, SS Prefilter, RoHS - DC</li> <li>3055501 HOMESPING SYSTEM, California, GAC Prefilter - DC</li> <li>3055500 HOMESPING SYSTEM, California, SS Prefilter - DC</li> <li>3023556 HOMESPING DEMO DISPLAY UNIT</li> </ul> <p><b>KITS and Replacement Cartridges:</b></p> <ul style="list-style-type: none"> <li>3024924 HOMESPING REPL CARBON FILTER</li> <li>3024923 HOMESPING REPL SS FILTER</li> <li>3024907 HOMESPING SURFACE WATER PREFILTRATION KIT</li> <li>3024915 HOMESPING PREFILTER REPL KIT</li> <li>3024908 HOMESPING HORIZONTAL MOUNTING KIT</li> </ul>	
<p><b>INSTALLATION TIPS</b></p> <p>Use minimum 1/4" water line</p> <p><b>Vertical Systems</b>                      Footprint: Minimum 18" x 18" (46 cm x 46 cm)                      Height Clearance: Minimum 74" (188 cm)</p> <p><b>Horizontally Mounted Systems</b>                      Footprint: (including 14" (36 cm) of clearance beyond the system cap)                      Minimum 24" x 74" (61 cm x 188 cm)                      Height Clearance: Minimum 36" (91 cm)</p> <p>Electrical Outlet within 10' (305 cm)</p> <p>Existing water equipment (e.g. water softeners, filter systems and UV downstream)</p> <p>Recommended water pressure is 30 psi minimum</p> <p>Drain within 20' (610 cm) and up to 72" (183 cm) high</p>	<p><b>OPERATION TIPS</b></p> <p>Refer to Installation, Operation &amp; Service Manual for programming details and operation tips</p> <p>With proper operation and flushing procedures, the ultra-filtration membrane cartridge can provide 5-10 years of trouble-free service</p>	<p><b>APPLICATION/SIZING</b></p> <p>Whole store ingredient water applications:</p> <ul style="list-style-type: none"> <li>- Suitable for high turbidity areas that face frequent cartridge changeouts or short life issues</li> <li>- Suitable for poor water quality areas outside US</li> </ul>



## Sustainable Water Opportunities

- ◆ Packages designed for all sustainable water applications within each facility



Waiting and Registration Areas



Waiting Registration

Nursing Stations



Nursing Stations

Dining and Dr.'s Lounge



Cafeteria Patient Meals

Dr.'s Lounge



## Areas where better standards are used in Hospitals

- HEPA filtration used to retain bacteria in most HVAC air systems.
- Water used in wash water for surgery and endoscopy is often filtered for bacteria and cyst's. (virus and NSF certification not addressed with these devices)



## Benefits

- Peace of mind for guests and confidence that the HealthCare Facility is doing everything possible for them.
- Marketability Publicity / Differentiation in the Market
- Less chance of liability in boil water alerts where pathogens are often already in the facility before alerts are issued
- “Green” as it minimizes the reasons for consuming bottled water



## Benefits continued

- Easily retrofitable with often little more than routine maintenance cost.
- Allow Infection Prevention Committees to “worry about one less area” to focus on other areas of concern.
- Although no facility can achieve 0% of HAI’s promotion of providing the safest water in the resident/patient environment demonstrates to the guests, staff and the community that they are doing everything possible to preventively protect their guests/patients.



## References

- ***A Randomized Trial to Evaluate the Risk of Gastrointestinal Disease due to Consumption of Drinking Water Meeting Current Microbiological Standards- 35% of GI attributed to drinking water on general population in Montreal, Quebec-*** *American Journal of Public Health* (Pierre Payment, Phd, Lesley Richardson, MSc, Jack Siemiatycki, Phd, Ron Dewar, MSc, Michael Edwardes, Phd and Eduardo Franco, Phd).
- ***The Sonoma Water Evaluation Trial: A Randomized Drinking Water Intervention Trial to Reduce Gastrointestinal Illness in Older Adults-*** *John M Colford Jr. MD, PhD, Joan F. Hilton, ScD, Catherine C. Wright, MPH, Benjamin F. Arnold, MPH, Sona Saha, MPH, Timothy J. Wade, PhD, MPH, James Scott, PhD, and Joseph N.S. Eisenberg, PhD, MPH- 12% reduction*
- ***Hospital Water A Source of Concern for Infections- Ample evidence of the presence of waterborne bacteria, fungi and protozoa in hospital water.-*** *Judy A. Angelbeck, Phd, Girolamo A. Ortolano, Phd, Francis P. Canonica Phd and Joseph S. Cervia, M.D.*
- (No Randomized trial to date on Patient drinking water !) Not Elderly care etc.