

LEGIONELLA CONTROL IN REPURPOSED BUILDING OR SPACES

COVID-19 Preparedness and Control

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Pan American
Health
Organization



World Health
Organization
REGIONAL OFFICE FOR THE Americas

Source of Legionella Infection:

1. Indoor plumbing incl.

- Water heaters
- Showers, especially shower heads,
- Water outlets, taps and faucets, especially faucet aerators
- Toilet cisterns
- Dead ends

2. Jacuzzi's, hot tubs, therapeutics tubs,

3. Respiratory therapy equipment (see manufacturers guidelines)

Temperature control for Legionella

Indoor plumbing

1. Lowest temperature in hot water system:
> 50°C (122°F)
2. Highest temperature in cold water system:
< 20°C (68°F)

Where cold-water supplies are routinely warmer than 20 °C, the water should be treated as a warm water supply.

Except for mountainous areas, most water systems in the Caribbean can be considered WARM for legionella control as ambient temperature is 27°C (80°F) or higher.

Reopening after period of DORMANCY

1. Drain hot-water tanks, remove sediment and scale (vinegar or other weak acids) and disinfect with 20 ppm chlorine solution.
2. Remove all showerheads and faucet aerators, remove scale (vinegar), clean and disinfect in 0.01% chlorine solution.
3. Rinse hot-water tank thoroughly to remove excess chlorine before re-heating and re-use (chlorine is very corrosive).
4. Pasteurize hot water system by raising the water-heater temperature to a minimum of 70 °C (158 °F) for 24 hours and then flushing each hot water outlet (taps, showers etc.) for 20 minutes.
5. It is important to flush all outlets connected to the hot water with the hot water because stagnant areas can "re-seed" the system.
6. Exercise caution to avoid serious burns from the high-water temperatures used in Pasteurization.

Reopening after period of DORMANCY

7. Shock chlorinate the water supply system Hot and “Cold” with 20 ppm free residual chlorine in furthest point for 1-2 hrs. and flush all taps until a distinct odor of chlorine is evident.
8. Re-install all disinfected showerheads and faucet aerators after the whole system has been disinfected.
9. Ensure continuous chlorination (sodium hypochlorite) of at least 0.5 mg/l free residual (in hospitals – and other HCF) in the furthest point of supply (in case of past legionella infection in hospital or many dead ends in water system, a 1.0 mg/l residual chlorine is advisable). On-line chlorinators will be required to maintain 0.5-1.0 mg/l residual chlorine.
10. Maintain a minimum 50 °C (122 °F) in the hot-water lines (at the furthest tap or shower). Consider running hot-water recirculation pumps continuously with insulated hot water pipes.

Reopening after period of DORMANCY

11. When selecting facilities for health care, high consideration and preference should be given to circular water supply systems without dead ends.
12. Inspect the water supply system for "dead legs" and areas where water may stagnate and remove these "dead ends" if possible or select other facility.
13. Close collaboration between the HCF management, the water utility and environmental health departments will be required to maintain the higher residual chlorine levels, quality control and water testing.

Hot- Therapeutic Tubs Control

1. Clean all hot tubs, remove any the slime or biofilm layer by scrubbing and cleaning walls; and repeat every week.
2. Remove slime and biofilm from piping by pressure-prop or super-chlorinating weekly and repeat weekly.
3. Maintain a free residual chlorine of 2.0-4.0 ppm and check morning, noon and evening!
4. Replace water in hot tub every week.
5. Backwash sand filters daily or replacement of water filter according to manufacturer's recommendations!

Advantages: Injection of hypochlorite solution relatively easy and cheap



MIOX System at QEH, Barbados



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