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Control of *Legionella pneumophila* in Hospital Hot-Water Supply

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Heat treatment and application of copper-silver ionization often are used for controlling *Legionella pneumophila* in high-volume hospital plumbing systems. However, the comparative efficacies of these measures in high-volume systems are unknown.

Investigators from Children's Hospital of Pittsburgh have reported on studies that show differences in efficacy. Thermal treatment of a hot-water circuit was accomplished by flushing hot water (>60°C) through distal fixtures for 10 minutes. Copper-silver ionization was conducted in three circuits by installing units into

return lines immediately upstream from hot-water tanks. Recovery rates of *L pneumophila* were monitored by culturing swab samples from faucets. Concentrations of copper and silver in water samples were determined by atomic absorption spectrophotometry. Four heat-flush treatments failed to provide long-term control of *L pneumophila*. In contrast, ionization treatment reduced the rate of recovery of *L pneumophila* from 108 faucets from 72% to 2% within 1 month and maintained effective control for at least 22 months. Only three samples (1.9%) of hot water from faucets exceeded Environmental Protection Agency standards for silver, and none exceeded the standards for copper. Of 24 sam-

ples obtained from hot-water tanks, 42% and 50% exceeded the silver and copper standards, respectively.

The authors concluded that copper-silver ionization effectively controls *L pneumophila* in high-volume plumbing systems and is superior to thermal treatment. However, high concentrations of copper and silver can accumulate at the bottom of hot-water tanks.

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