Reduction of *Legionella pneumophila* colonization in two hospital hot water networks after time flow taps installation.


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**BACKGROUND**

*Legionella* spp. control is a critical issue in hospital with old hot water systems. Disinfection methods are applied as control measure over prolonged time periods, but Legionella may be resistant to chemical agents in pipeworks characterized by frequent water stagnation and low flow velocities (1).

**MATERIALS AND METHODS**

After the assessment the hot water consumption (about 60 m³/month) in two 60 and 401 beds hospitals, from May 2016 the continuous disinfections with chlorine dioxide and five and four TFTs were installed (Figure 1). They were programmed in order to obtain an hot water flow 960L/day. Before and after TFTs installation *Legionella* spp. was searched with a monthly basis in sampling points as described by the ISO11731 standard (2).

**RESULTS**

In the both hospitals, before TFTs installation, *Legionella pneumophila* sg1 and 2-14 were detected in all points with means of 4x10^±3.1x10^4 and 9.2x10^±1x10^9 CFU/L. In the first hospital, after eight months, Legionella colonization persisted in one point with counts from 3x10^2 to 6.8x10^3 CFU/L and it was eradicated after thirteen months. Chlorine concentration was detected in the range between 0.05 and 0.31 mg/l while temperature values were from 38.2 to 44.9°C (Figure 2).

In the second hospital, after two months, Legionella growth (900 CFU/L) was detected in one point and from the third month all samples resulted negative. Mean chlorine concentration was 0.29±0.06 mg/l, while mean temperature value was 39.7±3.2°C (Figure 3).

**CONCLUSIONS**

TFTs with chemical disinfection may improve the disinfectants efficacy reducing *Legionella pneumophila* colonization in dead legs.

**BIBLIOGRAPHY**
