

Supplementary Material

Table S1. Summary laboratory examination results for *Legionella* spp. by culture per sample type.

Total Samples Collected		
Sample type	Number of samples (%/ 95% Confidence Interval Limits)	Hotels (%)
Cold water distribution system	1885 (56.93/ 55.24-58.61)	132 (-)
Hot water distribution system	1387 (41.89/ 40.22-43.58)	129 (-)
Sediment from room shower water sample and from filtering systems	37 (1.12/ 0.81-1.54)	13 (-)
Soil	2 (0.06/ 0.02-0.22)	1 (-)
Total	3311	-
Positive samples		
Cold water distribution system	320 (46.72/ 43.01-50.46)	71 (53.79)
Hot water distribution system	360 (52.55/ 48.81-56.27)	70 (54.26)
Sediment from room shower water sample and from filtering systems	5 (0.73/ 0.31-1.70)	3 (23.08)
Soil	-	-
Total	685 (100.00)	-

Table S2. Concentrations of *Legionella non pneumophila* spp. in samples collected from water systems (CFU/L).

<i>Legionella non pneumophila</i> <i>spp.</i>	<i>L. anisa</i>	<i>L. rubrilucens</i>	<i>L. erythra</i>	<i>L. londiniesis</i>	<i>L. taurinensis</i>	<i>L. santicrusis</i>	<i>L. oakridgensis</i>	<i>L. birminghamensis</i>	<i>L. tusconensis</i>	<i>L. brunensis</i>	<i>L. maceachernii</i>	Other species
Number of samples	47	25	46	11	20	2	2	3	1	3	1	64
Mean	251,57.4 5	109,59.2	341,56.96	4309.09	348,87.5	50	125	217,33.33	65,000	45,500	330,000	6036.72
Median	3000	650	1100	250	625	50	125	150	65000	52,000	330,000	575
Std. Deviation	61,715.4 4	27,110.403	112,126.94 9	9370.534	144,857.859	0	35.355	37,470.066	-	23,436.083	-	31,328.949
Minimum	50	50	50	50	50	50	100	50	65,000	19,500	330,000	50
Maximum	350,000	130,000	660,000	32,000	650,000	50	150	65,000	65,000	65,000	330,000	250,000
Cold water samples												
Number of samples	29	14	21	3	13	0	0	2	1	3	1	40
Mean	20,741.3 8	17,945	33,124.76	50	3488.46	-	-	32,525	65,000	45,500	330,000	7963.75
Median	2500	400	400	50	700	-	-	32,525	65,000	52,000	330,000	550
Std. Deviation	46,184.7 7	35,087.425	84,553.193	0	5584.508	-	-	45,926.585	-	23,436.083	-	39,453.507
Minimum	50	50	50	50	50	-	-	50	65,000	19,500	330,000	50
Maximum	230,000	130,000	330,000	50	19,500	-	-	65,000	65,000	65,000	330,000	250,000
Hot water samples												
Number of samples	18	11	24	8	6	2	2	1	0	0	0	24
Mean	32,272.2 2	2068.18	36,087.5	5906.25	10,8691.67	50	125	150	-	-	-	2825
Median	6500	650	1125	3025	250	50	125	150	-	-	-	775
Std. Deviation	81,890.5	2862.628	135,463.09 2	10,712.091	265,186.411	0	35.355	-	-	-	-	5641.461
Minimum	50	50	100	50	50	50	100	150	-	-	-	50
Maximum	350,000	6500	660,000	32,000	650,000	50	150	150	-	-	-	21,050
Swab samples*												
Number of samples	0	0	1	0	1	0	0	0	0	0	0	0

*collected from the internal surfaces of showerheads.

Table S3. Inspection results of hotel water distribution systems.

Inspection item	%
No water storage tanks protection	100
* The showers are NOT clean and free of salts	81.2
* The residual chlorine <0.2 mg/L	72.8
The hot water temperature is <50 °C. after 1 min of flushing	63.6
The cold-water temperature in taps is >25 °C. after 2 min of flushing	54.5
Water store and circulation temperature <60 °C	54.5
The water exiting the heating unit <60 °C and returning <50 °C	54.5
The amount of stored water is > 1 day	45.5
There is NO recording book for monitoring	45.5
* The outgoing temperature (cold) water from the tank is >25 °C	36.3
There are leaks in the distribution system	27.2
* NO random sampling for water microbiological examination at least every 6 months	27.2
There is no thermal stratification of the water inside the heaters and storage water	27.2
The water distribution system cannot provide adequate water supply at peak times	18.2
No stable water consumption through the week	18.2
* <i>Legionella</i> detected the last six months (at a concentration of more than 10 ³ CFU/L)	18.2
The filters are NOT in good condition	9
* The distribution system is NOT cleaned and disinfected when remained out of service > 1 month	9
* The distribution system and the tanks NOT cleaned with appropriate disinfectants at least annually	9
The water supply is interrupted for a long time	9
* The difference in temperature between 2 successive measurements of hot water is >10 °C/1 min	9
There is a water taste and odor problem	9