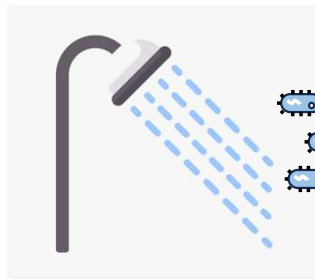


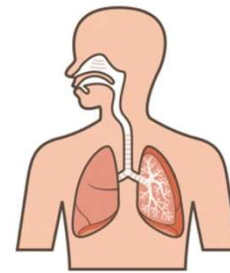


Aerosol Exposures and Legionellosis

Quantitative Microbial Risk Assessment of *Legionella pneumophila* relating shower monitoring results to infection risks



Aerosolization of *L. pneumophila*



Exposure to aerosols from inhalation



Risk modeling and web application



Schweizerische Eidgenossenschaft
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eawag
aquatic research **ooo**

Lucerne University of
Applied Sciences and Arts

**HOCHSCHULE
LUZERN**

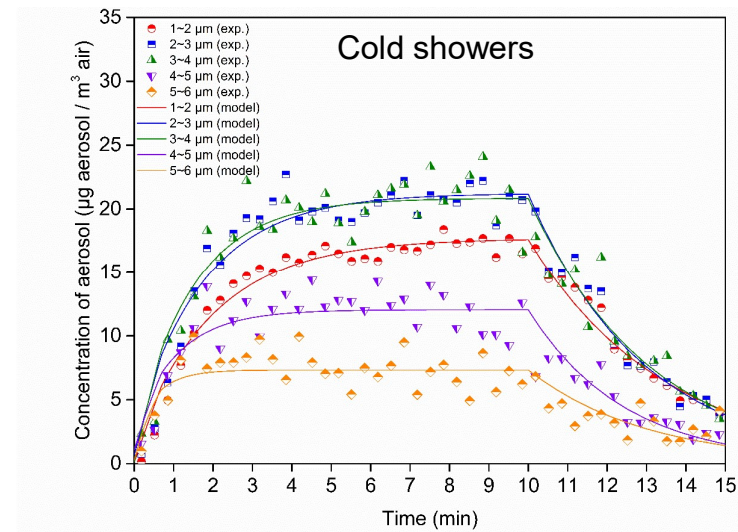
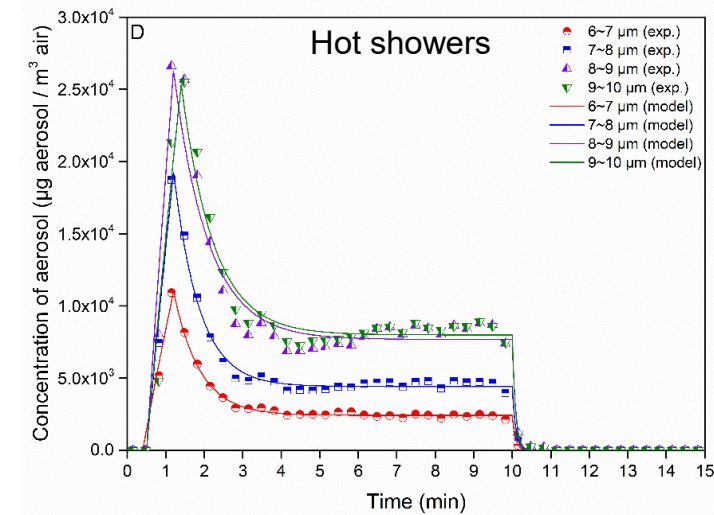
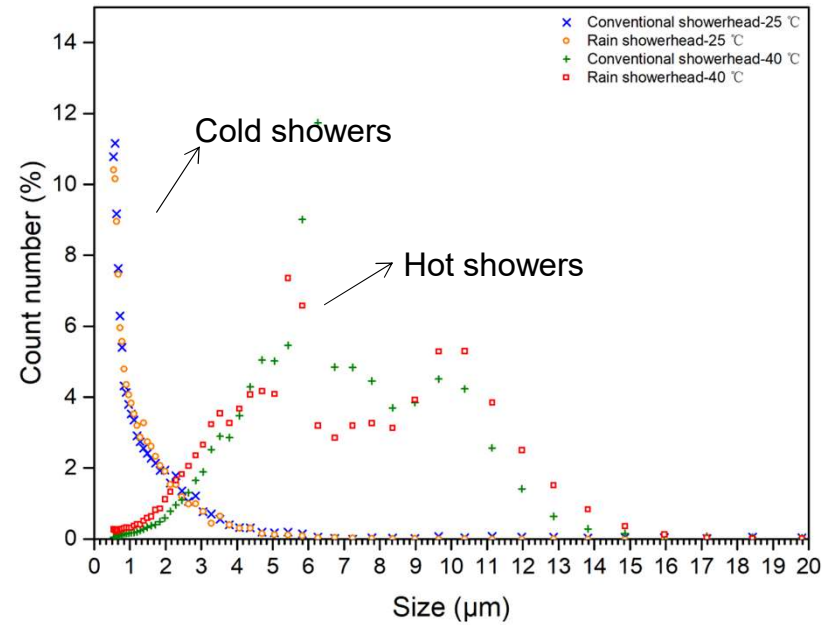
Swiss TPH



Kanton Zürich
Gesundheitsdirektion
Kantonales Labor



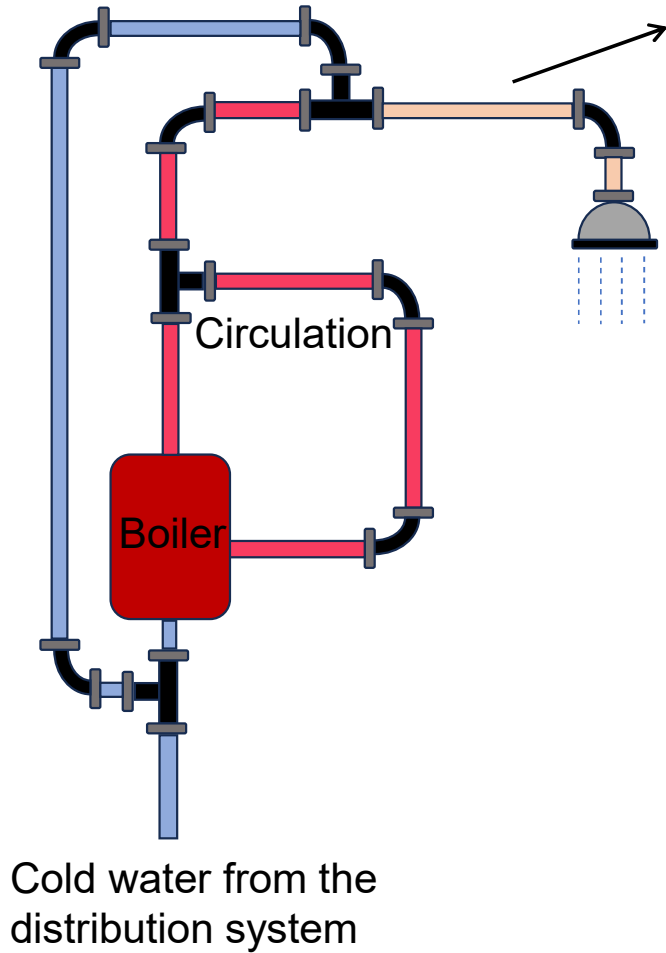
Shower experiments: dynamic aerosol concentrations



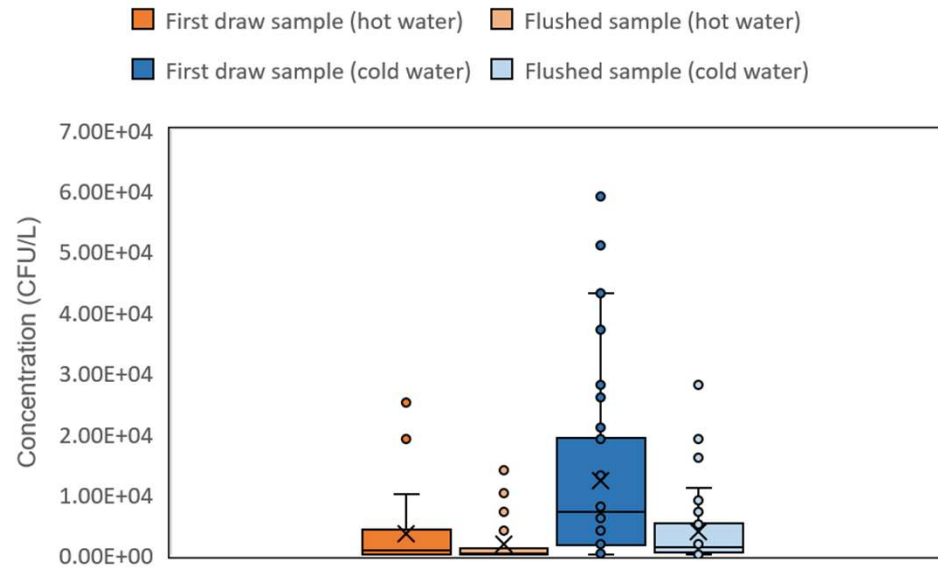


Dynamic concentrations of *L. pneumophila*

Final meters of pipes could be more contaminated with *Legionella* spp. due to favorable growth temperature and longer stagnation period compared to the circulation loop

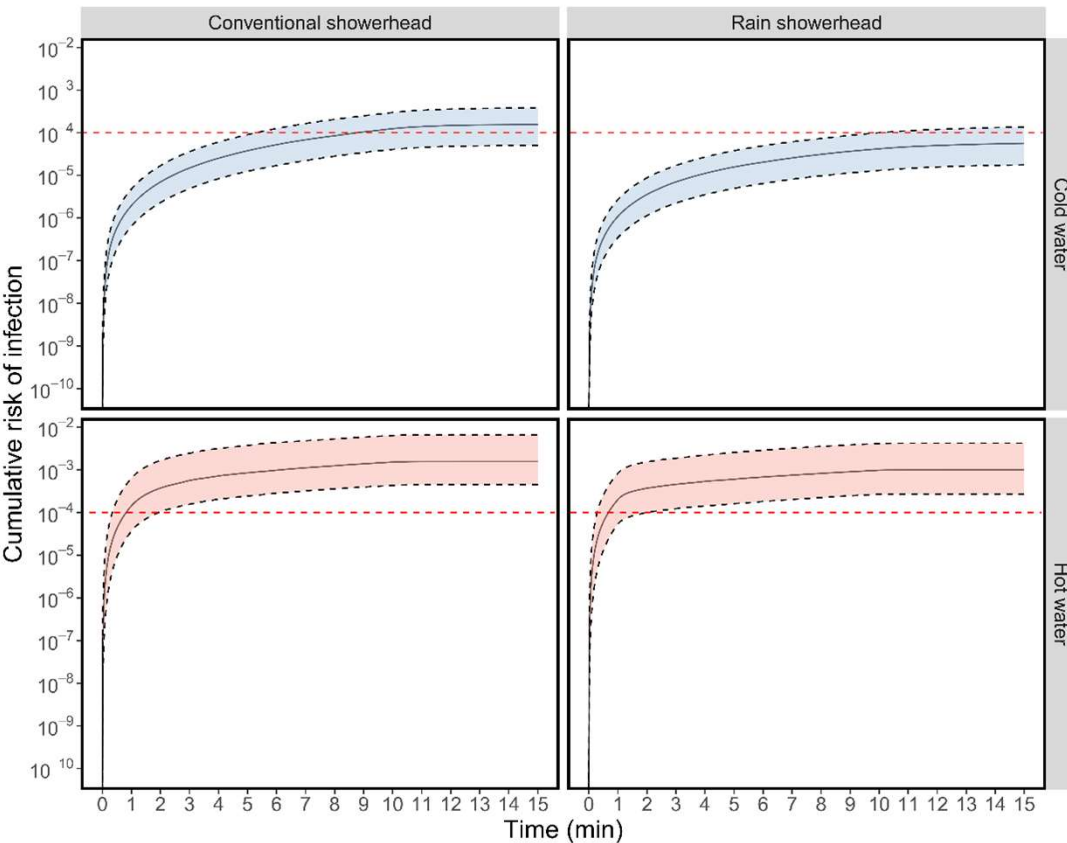


Concentration of *L.pneumophila* sampled from a school





Risk assessment integrating dynamic aerosol concentrations with *L. pneumophila* concentrations



Cumulative risk of infection during showers

Shower frequency (#/day)

Shower time (min)

Water temperature
 Hot water
 Cold water

Showerhead type
 Conventional showerhead
 Rain showerhead

Aerosol generation rate

Do you want to use your own aerosol generation rates?

Generation rate for aerosol of 1-2 μm (g/min)

Generation rate for aerosol of 2-3 μm (g/min)

Morbidity ratio for adults

Development of risk assessment app

