

labour costs and probably a high proportion of the time is just a waste of water.

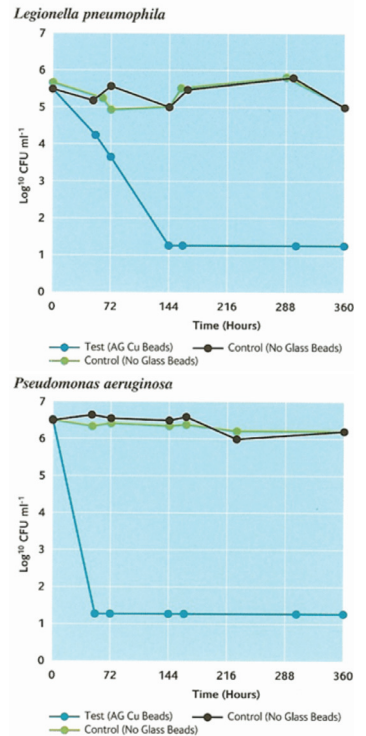
Self purging showers are an automatic way of flushing. However they have the disadvantage that if the shower is used regularly they waste a considerable amount of water. If the shower is not used it does not get

shower after it has been used. It will not contribute to retrograde contamination. It does not waste water or use electricity. It is very simple to install and will last a long time. In fact if the shower is not used it will last forever.

Shower-Safe is a very simple retro-fit kit containing silver and copper mesh beads. Half of the beads are put into the shower head and the remainder into the hose. Filter washers are used at the connections to keep the beads in their respective positions. Silver is a biocide and copper gets rid of biofilm. Together they kill the legionella bacteria and other bad bacteria such as pseudomonas etc. Takes just two minutes to fit to a domestic type shower. In fixed copper pipe work the

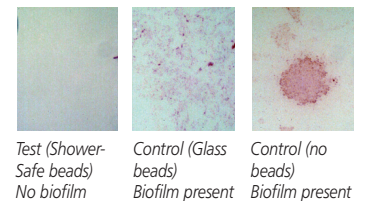


**Figure 2: Effect of Shower Safe Beads on Bacterial Population in Standard Hard Water (Results as Log10 CFU ml<sup>-1</sup>)**



Graphs showing effect of Shower-Safe on legionella pneumophila and pseudomonas aeruginosa Biofilm formation following incubation at 20°C after 408 hours

additional protection. Other typical installations are Spa Hot Tub pipe work, Emergency showers and Eye Wash units, Sluice pipe work, temporary dead



legs, flexible connections particularly after mixer valves etc.

**Further Information**

- For further information visit [www.shower-safe.co.uk](http://www.shower-safe.co.uk) or [www.legionnairesdisease.com](http://www.legionnairesdisease.com) or phone local 0870 SafeH2O (7233420)
- Legionella Control Association [www.conduct.org.uk](http://www.conduct.org.uk)
- Health Protection Agency [www.hpa.org.uk](http://www.hpa.org.uk)
- Research conducted by IMSL [www.imsl-uk.com](http://www.imsl-uk.com)

# Legionella control in showers

## Community Acquired Pneumonia National Health Service Hospitals in England 2005/06

ICD codes	Primary Diagnosis	Hospital admissions (all ages)
J13	Streptococcal pneumonia	4374
J14	Haemophilus influenzae	751
J15	*Bacterial pneumonia unclassified	6366
J18	*Pneumonia, organism unspecified	165,059
J20	Acute bronchitis	2697
J22	*Unspecified acute lower respiratory tract infection	122,093
J16/17	Pneumonia, other infectious organism or classified elsewhere	201
Total all Community Acquired Pneumonia		301,541
*Total all unspecified community acquired pneumonia		293,518 (97.3%)

Data from Hospital Episode Statistics view at [www.hseonline.nhs.uk](http://www.hseonline.nhs.uk)

**The nature of the problem**

Today there are approximately 500 recorded cases of legionnaires' disease annually.

However, leading epidemiologists at the Health Protection Agency believe that this figure could be as high as 9,000 per annum. Cases are not identified for many reasons including, subclinical infections, unclassified bacterial pneumonia and unspecified pneumonia organism.

**Table of community acquired pneumonia in NHS hospitals**

Many of the cases identified are caused by showers and probably the majority of those not identified will be from showers. Showers are the most probable cause because in a well controlled system where the naturally occurring legionella bacteria in the hot water has been killed by the water temperature and it has been too cold for the bacteria to grow in the cold water, the shower mixer valve produces an ideal temperature. If the shower is then not used it allows time for the bacteria to multiply to dangerous levels and the next user finds it easy to breathe in the contaminated water droplets.

**Possible Solutions**

There are several ways of minimising risk. The Approved Code of Practise L8 calls for weekly flushing of little used outlets. Some systems have even been flushed daily to try to keep bacteria at bay but it is only diluting the problem and will not totally eradicate it. Flushing particularly daily flushing is expensive in

flushed. In this case the automatic flushing may not be adequate because of the build-up of contamination and retrograde contamination may be possible.

Shower head filters can be fitted but they are expensive and require changing regularly. If it is the whole system that is infected, that should be treated, otherwise every single outlet will need filters fitting to protect all users.

UV shower head disinfection (Steri Spray) treats the flowing water through the shower. They require regular maintenance to maintain their efficacy and it is conceivable that dirty water on the incoming main, from say a fractured pipe, could cause all the outlets to shut down. They are expensive to install, maintain and run on 24/7 electricity usage.

If the whole system is infected then every outlet needs to be covered.

**A New Environmentally Friendly Sustainable Solution**

Shower-Safe is a new environmentally friendly, sustainable solution that treats the stagnant water left in the

**Summary Table**

The following table summarizes the benefits of Shower-Safe in comparison with other products

	Sustainable	Environ Friendly	Kills bacteria	Eliminates biofilm	Will not contribute to retrograde contamination	Capital costs	Running costs	Labour costs	Does Not Waste Water	Does Not Use electricity
Shower-Safe	✓	✓	✓	✓	✓	low	nil	nil	✓	✓
Filters	✗	✗	✓	✗	✗	medium	high	medium	✓	✓
Self Purge	✗	✗	dilutes	✗	✗	high	low	nil	✗	✗
Steri Spray	✗	✗	✓	✗	✗	high	medium	medium	✓	✗
Flushing	✗	✗	dilutes	✗	✗	nil	low	high	✗	✓