

Deadly germ infests heart operations

Some patients have died, thousands more are at risk, after a bug contaminated machines

Jonathan Leake Science Editor

About 650,000 heart surgery patients may have been exposed to a deadly leprosy-like bacterium from the machines used to cool their bodies during operations, scientists have warned.

Public Health England (PHE) said 21 Britons have already died, with another 18 fighting the infection. The real toll is probably higher because the infection is difficult to diagnose, so some deaths could have been attributed to other causes.

The germ, *Mycobacterium chimaera*, had infested a factory in Germany where the machines were built, causing many of them to become severely contaminated. The machines were exported to hospitals overseas, including the UK.

Up to 50,000 Britons and 600,000 Americans who have had heart operations since 2012 were exposed, scientists have calculated. The final tally could be much higher as the machines were widely sold, travelling as far as Australia.

The NHS recently wrote to 50,000 people who have undergone heart operations since 2012 to warn them of the risk.

Those warnings were too late for Alan Diplock, 65, a fisherman from Brighton, who died in July last year after being infected during a heart operation at the Royal Sussex County Hospital.

"He fought the infection for two years," his daughter, Kerry-Anne Orakwusi, said. "He was so weak he couldn't cook and became a shadow of his former self – the pathologist said he'd never seen such emaciation."

America faces even larger problems. More than 250,000 US people a year have bypass surgery, of whom about 60% were exposed to the contaminated machines, according to the Centres for Disease Control and Prevention (CDC).

A study in the *Journal of Cardio-*

thoracic and Vascular Anesthesia called it a "public health crisis".

The mycobacterium genus contains other deadly microbes, including those that lead to leprosy and tuberculosis.

The machines causing the infections are called Stöckert 3T heater-coolers and were made at a factory in Munich by Sorin, an Italian company. In 2015 Sorin merged with Cyberonics to create the London-based LivaNova.

Another investigation, commissioned by PHE, shows that the bacteria killing people in Britain, America, Denmark and Ireland are all genetically identical and so come from the same source.

The team, led by Jessica Hedge, a zoologist at Oxford University, found that the bacteria thrived in the damp pipes in the 3T machines.

Switching on the machines activated a cooling fan which sprayed microbes into the air, with some entering the patient via surgical incisions.

Lawyers acting for the UK victims and their families are seeking compensation from LivaNova. They are also critical of PHE which, they say, knew of the threat as early as 2012 but failed to alert GPs fully until this year.

"The risk of contracting *M chimaera* during surgery remains far lower than the risk of not having surgery. It is a small incremental risk on top of the risks inherent in cardiac surgery," PHE said.

Deanna Wilke, of LivaNova, said it would offer hospitals a deep disinfection of all contaminated machines, plus modifications to prevent future infection or the loans of new machines: "Care for our patients and the quality of our products are at the forefront of everything we do."

Orakwusi believes the machines are too deeply flawed to remain in service. "I would like to see them banned across the UK," she said.

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