

Mycobacterium chimaera in heater-cooler devices

Frequently Asked Questions

What is the issue?

- Some heater-cooler devices used in cardiac surgery may have been contaminated with a rare environmental bacterium called *Mycobacterium chimaera* (*M. chimaera*).
- Patient exposure to aerosols from these devices may lead to infections that can appear months to years after surgery.
- As at 31 March 2023, no patients have been reported with this infection in South Australia.

Infection of cardiac surgery patients with *M. chimaera*, linked with a particular heater-cooler device type (made by LivaNova [formerly Sorin] in Germany), was first recognised several years ago in Switzerland. These devices, which are widely used around the world, including Australia, were likely contaminated during the manufacturing process in Europe. In South Australia, these devices were used in Flinders Medical Centre, Flinders Private Hospital and Ashford Hospital.

At least 100 patients worldwide have been identified with *M. chimaera* infections after cardiac surgery. As at November 2022, 11 patients have been reported in Australia (from Queensland, New South Wales and Victoria) with *M. chimaera* infection linked to exposure to a heater-cooler device.

What are heater-cooler devices?

Heater-cooler devices are used during open heart surgery to warm or cool a patient's blood during the procedure. It has recently been recognised that there is the potential for *M. chimaera* to grow in a water tank in the device. Although the water in the heater-cooler device does not come into contact with the patient's blood, it is possible for the bacteria in contaminated water drops to become airborne and then settle on a patient during certain types of open-heart surgery. Rarely, this may cause infection.

What is *Mycobacterium chimaera*?

M. chimaera is one of a group of bacteria known as non-tuberculous mycobacteria (NTM). NTM are commonly found in the environment, including soil and water. NTM typically are not harmful; however rarely they can cause infections in post-operative surgical patients. *M. chimaera* bacteria are slow-growing and it may take several months to several years for infection to develop.

What are the symptoms and signs of infection?

Symptoms and signs of a possible *M. chimaera* infection may include:

- > unexplained fevers
- > unexplained weight loss
- > increasing shortness of breath
- > night sweats
- > joint or muscle pains
- > nausea, vomiting or abdominal pain
- > pain, redness, heat or pus around the surgical site.

What are the chances that I have or will become infected?

M. chimaera infections following surgery are very rare. Public Health England estimated that there would only be 1 case of *M. chimaera* infection for every 10,000 patients undergoing cardiac surgery. This is much lower than the background risk of

other infections associated with cardiac surgery (about 120 per 100,000 procedures). It is likely the risk is higher in surgeries that involve the use of prosthetic material, e.g. valve replacement.

You may be at risk if:

- a) you had open heart surgery that involves the insertion of prosthetic material, such as heart valves or aortic grafts, in Flinders Medical Centre, Flinders Private Hospital, or Ashford Hospital (between July 2011 and July 2016).

AND

- b) you have or develop any of the symptoms or signs of infection.

What do I need to do next if I am at risk?

If you have one or more of these signs and symptoms and have had heart surgery between July 2011 and July 2016 it is recommended that you make an appointment with your general practitioner for review and obtain a referral to your cardiac surgeon if necessary. As signs and symptoms are not limited to those listed above, it is important for you to speak to your general practitioner or cardiac specialist if you are concerned.

What will happen to me?

Your doctor will conduct initial examinations. You may be referred to an infectious disease physician for further assessment. *M. chimaera* infections can be treated with antibiotics, but as the treatment is complicated they are only prescribed in patients with confirmed positive results.

What should I do to find out whether I am at risk?

Every patient who has had open heart surgery which may have involved the risk of infection using one of the affected devices in Flinders Medical Centre, Flinders Private Hospital or Ashford Hospital has been contacted.

Is there a risk to my family and friends?

No. The *M. chimaera* bacterium does not spread from person to person.

What is SA Health doing about this problem?

All South Australian public and private hospitals that perform open heart surgery have tested every heater-cooler device currently in use to determine if it has the bacterium. As at 31 March 2023 only the LivaNova (Stöckert 3T) devices have had positive test results, and in these devices appropriate disinfection processes have been undertaken by the manufacturer, or the machines have been replaced.

All hospitals that use heater-cooler devices for open heart surgery have reviewed their maintenance procedures and ensured ongoing protocols are in line with the manufacturer's recommendations.

For more information

Communicable Disease Control Branch
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Adelaide SA 5000
www.sahealth.sa.gov.au/infectionprevention
Public -I1-A2

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*SA Health Safety and Quality Community Advisory Group



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