

Mycobacterium chimaera and cardiac surgery

Fact sheet

What is *Mycobacterium chimaera* (*M. chimaera*)?

Mycobacterium chimaera (*M. chimaera*) is a type of bacteria that can be found in water and soil.

M. chimaera only rarely causes infections in people. People with weakened immune systems, who have lung disease or diabetes, or who are undergoing chemotherapy are more likely to get *M. chimaera*.

People having serious surgeries such as open-heart surgery are also at risk. This is because a particular heater-cooler medical device used in open-heart surgery around the world and in Australia can cause *M. chimaera* infection. The device type is LivaNova (Sorin).

What are the symptoms of *M. chimaera* infection?

It can take months to years for symptoms of *M. chimaera* infection to appear. To date, the longest time after surgery for an infection to be identified is 12 years.

The most common symptoms are persistent fevers, increasing or unusual shortness of breath, and unexplained weight loss. Other symptoms of *M. chimaera*:

- fatigue
- persistent cough or cough with blood
- night sweats
- muscle pain
- abdominal pain
- nausea
- redness, heat, or pus at the surgical site
- joint pain
- vomiting.

How does *M. chimaera* spread?

M. chimaera does not spread from person-to-person, but the bacteria can be found in the environment.

The bacteria can grow in the water tank of heater-cooler machines used during open heart surgery. These machines keep the patient's blood at the correct temperature during the heart surgery.

Contaminated water droplets from the tank may spread bacteria through the air to the patient during the surgery. The water does not come into contact with blood or body fluids.

Over 120 patients worldwide have had *M. chimaera* infection after open heart surgery, including eight patients who had surgery in NSW.

***M. chimaera* bacteria are occasionally found in water samples from heater-cooler devices. Who is at risk of *M. chimaera* infection?**

People who have had open heart surgery are at risk of *M. chimaera* infection.

Anyone who had open heart surgery at the following NSW hospitals at a particular time period may have been exposed. Known risk periods in NSW hospitals are shown in the table below.

Table: Risk periods for potential *M. chimaera* exposure during cardiac surgery in NSW by hospital.

	Hospital	Risk period
NSW Public Hospitals	Children's Hospital at Westmead	January 2012 – September 2016
	John Hunter Hospital	June 2019 – April 2021
	Prince of Wales Hospital	January 2012 – September 2017
	Royal North Shore Hospital	January 2012 – August 2017
	St George Hospital	January 2012 – July 2018
	Sydney Children's Hospital	January 2012 – August 2016
NSW Private Hospitals	Newcastle Private	July 2014 – September 2016
	Norwest Private	January 2012 – November 2016
	Prince of Wales Private	January 2012 – August 2016
	St George Private	January 2012 – January 2017
	The Sydney Adventist Hospital, Wahroonga	January – June 2015; and November 2021 – August 2022
	Westmead Private	June 2014 – December 2016

Some people may have been contacted by their hospital directly. Talk to your specialist or general practitioner if you have symptoms or any other concerns.

How is *M. chimaera* infection prevented?

In NSW, hospitals have reviewed their processes to reduce the risk of infection. All heater-cooler devices in NSW public hospitals are tested for *Mycobacteria* every 3 months.

All current LivaNova (Sorin) heater-cooler devices in public hospitals have been retro-fitted with an aerosol collection device. This device removes exhaust from the machine when it is in use, further reducing the risk to patients.

How is *M. chimaera* infection diagnosed?

Blood or other samples can be taken to test for *M. chimaera* in people who have symptoms. There is no

test to show if people who are well are at risk of developing symptoms of the infection in the future.

How is *M. chimaera* infection treated?

M. chimaera infections can be treated with antibiotics. Some patients who become infected may need longer treatment. Some patients may need further surgery. If untreated, *M. chimaera* infection can lead to death.

What is the public health response?

If *M. chimaera* is detected in a heater-cooler device used in open-heart surgery, the hospital will contact patients who may have been exposed to provide advice.

Further information

For further information, call your local Public Health Unit on 1300 066 055 or visit the NSW Health website www.health.nsw.gov.au/Infectious/diseases/Pages/mycobacterium-chimaera.aspx.