

## **Frequently Asked Questions** *(updated Feb. 26, 2018)* **Nontuberculous mycobacteria infections associated with heater-cooler devices**

Health Canada and the Centers for Disease Control and Prevention (CDC) have alerted hospitals that a device used to heat and cool the blood during heart surgery, known as a heater-cooler, has been linked to a rare bacterial infection caused by *Mycobacterium chimaera*, a type of bacteria known as nontuberculous mycobacteria (NTM). The bacteria may have been present in the machines during manufacturing.

NTM are commonly found in the environment, from sources such as water and soil. They are typically not harmful to persons exposed to them, but in rare cases, NTM organisms may cause infections in very ill patients, including those with compromised immune systems and chronic diseases or health conditions.

### **How are heater-cooler devices associated with infection?**

Heater-cooler devices are used during heart surgery to warm or cool a patient. While these devices are not in direct contact with the patient's blood or body fluids, contaminated water droplets from the tank may transmit bacteria through the air (aerosolize) and land in the operating room environment.

### **Does SickKids use these machines?**

Yes. Like most hospitals in North America and Europe, SickKids uses heater-cooler devices and is aware of the alerts.

### **My child had heart surgery at SickKids a few years ago. When did SickKids begin using the model listed in the alert?**

December 2013.

### **What is the risk of infection?**

The risk of infection is very low – less than one per cent according to the CDC.

### **Are there any confirmed NTM cases linked to SickKids?**

SickKids identified one confirmed case of *M. chimaera* likely linked to a heater-cooler device.

### **Can the machines be tested to see if they are contaminated?**

Methods for sampling and microbiological testing of heater-cooler devices for NTM are neither reliable nor timely. Therefore, negative test results do not necessarily indicate that devices are not presently contaminated or that they have not been contaminated in the past.

### **If my child has been exposed to NTM during heart surgery, what are the chances they have been or will get infected?**

While the risk of infection after surgery is thought to be very low, NTM infections can occur. Patients who have underlying lung disease or a weakened immune system may also be susceptible to NTM infections.

### **What types of infections have been reported in other organizations?**

Infections after surgery have been reported and include heart infections, wound infections, chest infections, bloodstream infections and disseminated infections.

### **What are the symptoms of NTM infections?**

Some NTM bacteria can grow rapidly, but most NTM species associated with heater-cooler infections are slow growing. Because these bacteria grow slowly, it can take several months or even years for an infection to develop.

Symptoms associated with the types of infections listed above may include a combination of the following: prolonged, unexplained fever; night sweats; unexplained weight loss or failure to thrive in infants; and chest pain.

NTMs may also be a cause of surgical site infections not responsive to usual antibiotic therapy. Signs of surgical site infection include pain, redness, heat or pus around a surgical incision. If your child has any of these symptoms you should seek medical attention.

Non-specific signs and symptoms include nausea, vomiting, muscle/joint pains and fatigue. These are common signs and symptoms experienced by children and are likely due to common childhood illnesses.

**What should I do if my child is experiencing symptoms?**

Contact your health-care provider if your child is experiencing symptoms and inform them that your child had heart surgery and you received notification from the hospital about nontuberculous mycobacteria. Physicians will follow their usual routine to rule out the most common causes of fever or other symptoms in children prior to referral for testing for NTM.

**Can NTM infection be treated?**

NTM infections can be treated with combinations of specific antibiotics. Some patients who become infected may need prolonged treatment (from months to years). Additionally, although rare, some patients who develop NTM infections after having heart surgery may require additional surgery.

**Should everyone who was exposed to these devices receive antibiotics just in case?**

The risk that patients will develop an infection following exposure to a contaminated heater-cooler unit is very low. Although antibiotics can be life-saving drugs, preventative antibiotics are currently not recommended.

**Can I become infected through contact with someone who is infected with NTM?**

No. This type of NTM infection is not spread from person-to-person.

For updates to this FAQ please visit [www.sickkids.ca/heater-cooler](http://www.sickkids.ca/heater-cooler).