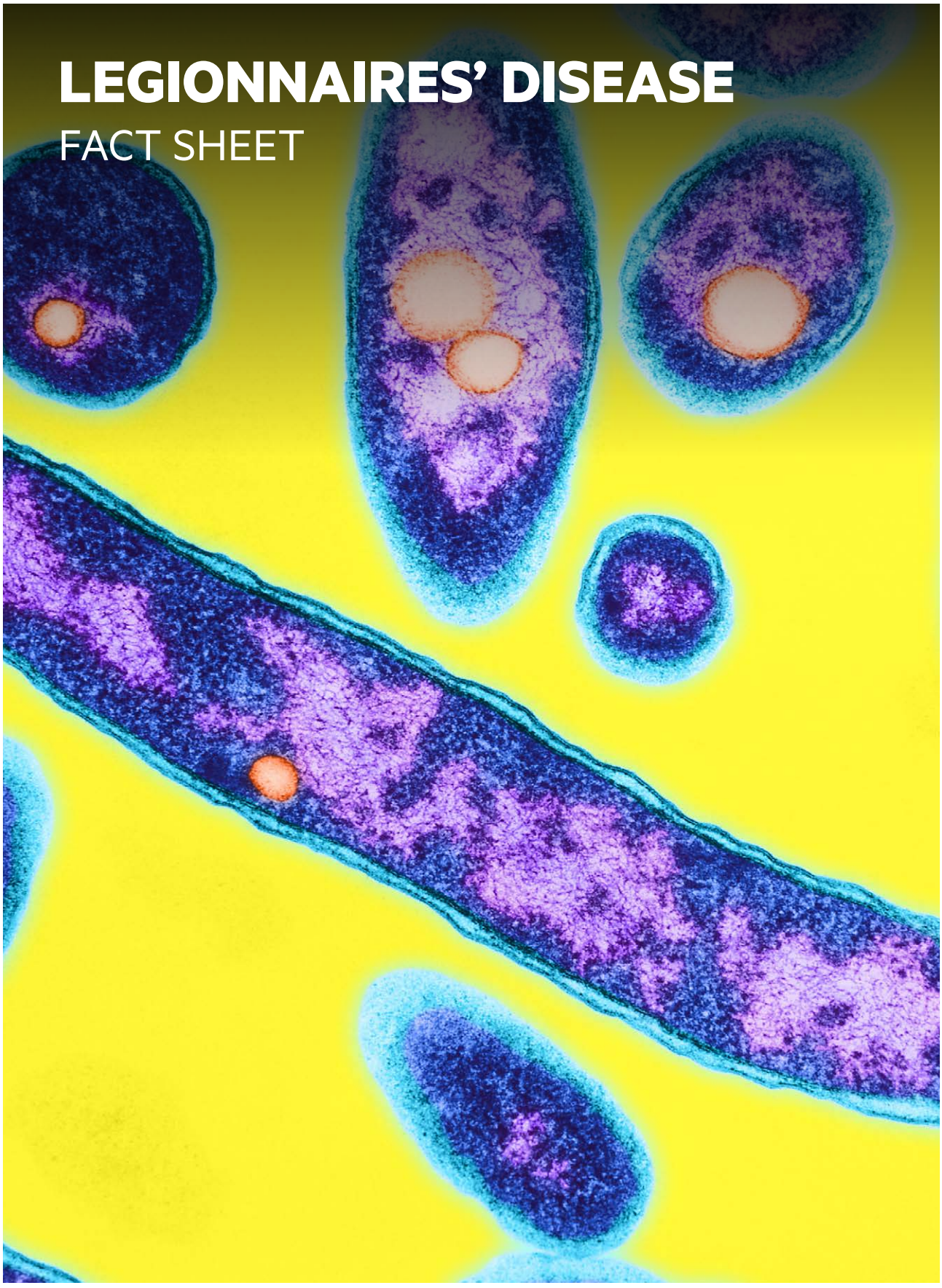
QUEENSLAND MUSEUM

LEGIONNAIRES' DISEASE

FACT SHEET



Q26-027

Queensland Government

WHAT IS LEGIONNAIRES' DISEASE?

Legionnaires' disease is a severe form of pneumonia (lung infection) caused by *Legionella* bacteria. *Legionella pneumophila* is the most common species, responsible for about 90% of cases worldwide. In Australia, *Legionella longbeachae* also causes many cases. People become infected by inhaling aerosolised water (fine mist or droplets) or dust infected with the bacteria.

Outbreaks of Legionnaires' disease are uncommon but gradually on the rise around the world. Increased exposure to cooling systems in large buildings in highly populated areas may be one contributing factor.



Natural hosts

Legionnaires' disease is not zoonotic, meaning it is not transmitted from animals to humans. Therefore, there are no natural reservoir host organisms.

Legionella bacteria multiply in water and soil.

How is it spread?

Legionella bacteria are not transmitted from animal to human or from human to human. The bacteria are found in freshwater environments (rivers, lakes, streams) and soil. They thrive in warm water (25–45°C) and can multiply rapidly in human-made water systems. In Australia, *L. longbeachae*, found in soil (e.g. potting mix, garden soils and compost), is linked to the spread of Legionnaires' disease. This is unusual compared to other countries, where infection from soil bacteria is less common.

Potting mix is a major source of *Legionella* bacteria in Australia. Always wear a mask and gloves when handling potting mix and wet it down to reduce airborne dust.

Systems that can produce aerosols include:

- cooling towers
- evaporative air conditioning systems
- hot water systems
- spa pools
- decorative fountains
- water features
- misting systems.

Transmission occurs mainly from environmental exposure.

Who is at risk?

- Construction workers, farmers, agricultural workers, landscapers, rangers, field scientists and other people who perform outdoor work.
- People who use potting mix, mulch, compost or garden soils.
- People with chronic lung disease or weakened immune systems.
- People over 50 years of age.
- People who smoke cigarettes or vape.

Severe illness is more common in vulnerable people.



What are the symptoms?

In animals

Legionnaires' disease is extremely rare in animals. While animals can be exposed to *Legionella* bacteria in the environment, similarly to humans, there is no evidence of animal-to-human transmission of the bacteria.

In humans

Some people exposed to *Legionella* bacteria may not develop symptoms or may have very mild symptoms that resolve without diagnosis. Symptoms typically develop 2–10 days (average 5–6 days) after exposure. The mild disease, known as Pontiac fever, is a flu-like illness without pneumonia. People usually recover without treatment within 2–5 days after first showing symptoms.

Pontiac fever symptoms include:

- fever
- chills
- headache
- muscle aches.

The severe form of *Legionella* infection is known as Legionnaires' disease and causes pneumonia that can be fatal.

Symptoms may include:

- high fever (40°C or higher)
- chills
- shaking
- cough (may be dry or produce mucus/blood)
- shortness of breath
- chest pain
- severe headache
- muscle aches
- gastrointestinal symptoms (nausea, vomiting, diarrhoea)
- confusion or other mental changes (especially in the elderly).

Legionnaires' disease can be life-threatening. Seek medical attention promptly for pneumonia symptoms, especially if you've recently handled potting mix or been exposed to water systems.

How can I prevent infection?

No vaccine is currently available for Legionnaires' disease.

To prevent infection from water systems:

- Regularly maintain and clean cooling towers and evaporative air conditioning systems.
- Maintain hot water systems at appropriate temperatures (above 60°C).
- Flush water systems that have been unused for extended periods.
- Regularly clean and disinfect spa pools.
- Service and maintain water features and decorative fountains.

To prevent infection from soil:

- Always wear gloves when handling potting mix, compost or mulch.
- Wear a P2 or N95 mask, or a dust mask, when opening bags of potting mix.
- Open bags of potting mix in a well-ventilated area or outdoors.
- Wet down potting mix to reduce airborne dust.
- Wash hands thoroughly after gardening.
- Store potting mix in cool, dry conditions and reseal bags after use.
- Avoid breathing in dust from potting mix.

Good safety, hygiene and maintenance routines around your home and garden are key to preventing exposure to *Legionella* bacteria.

What treatments are available?

Legionnaires' disease is treatable with antibiotics if diagnosed promptly. Early treatment significantly improves outcomes. Severe cases require hospitalisation with intravenous antibiotics, oxygen therapy and supportive care.

If you develop pneumonia symptoms, especially if you've recently handled potting mix or been in a building with water systems, inform your doctor about these exposures as standard pneumonia tests may not detect *Legionella*. Specific testing may be required.

⚠ Prompt antibiotic treatment saves lives. Don't delay seeking medical care if you develop severe respiratory symptoms.

If you think you may have been exposed to Legionnaires' disease, please contact your doctor or public health agency for further advice.

Cover: Colour-enhanced transmission electron micrograph of *Legionella pneumophila*. Courtesy: Alamy/Science History Images
Page 2: Exercise caution when handling potting mix, which is a major source of *Legionella* bacteria in Australia. Courtesy: Alamy/RooM the Agency
Page 3: Cooling towers on a building rooftop. Courtesy: Alamy/Neil Cox

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