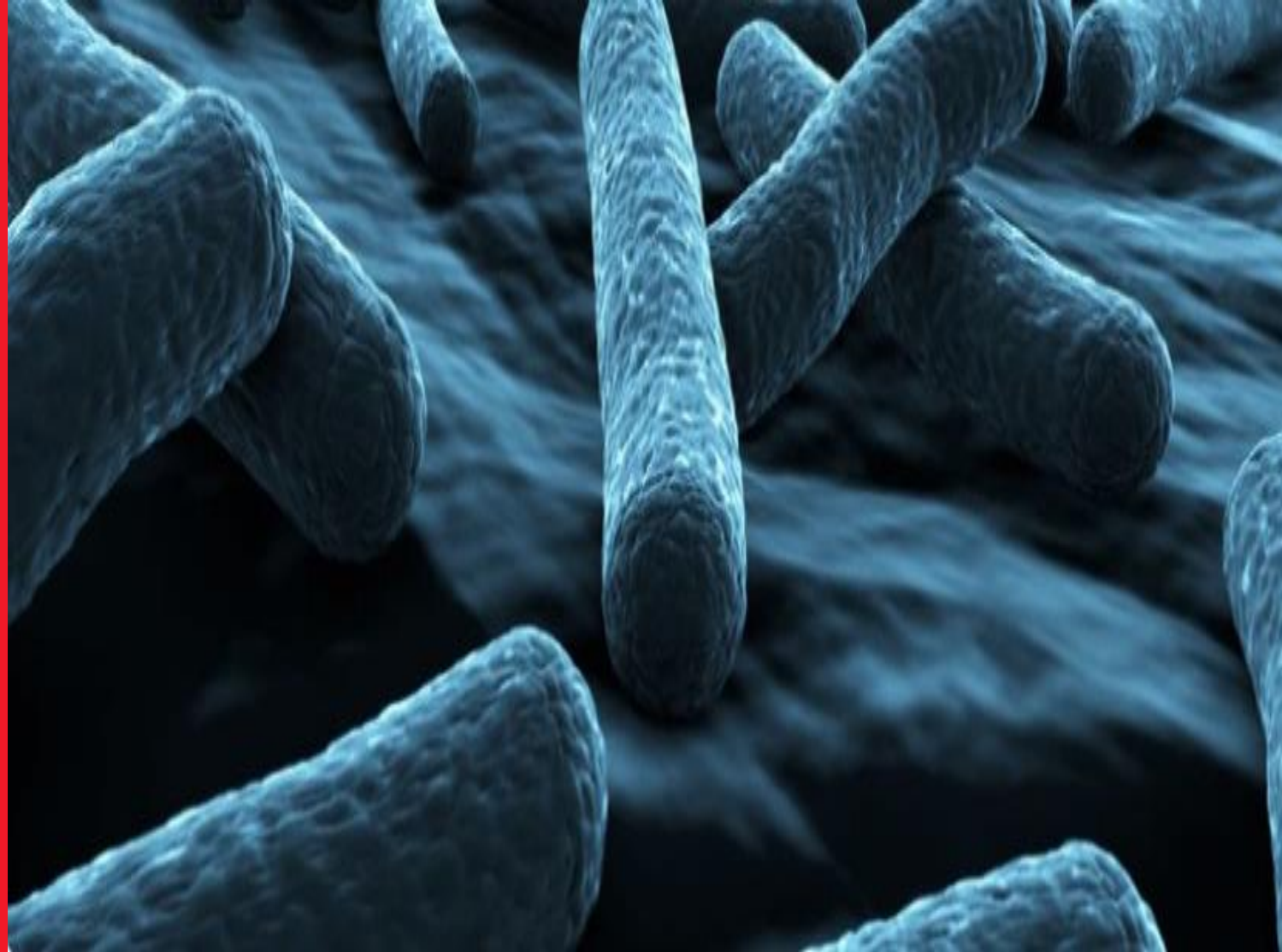


Legionellosis

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Outline

- Introduction
- Background
- Pathogen
- Symptoms
- Transmission and distribution
- Epidemiology
- Risk factors
- Diagnosis and treatment
- Prevention

Introduction

- **Legionellosis** varies in severity from a mild febrile illness to a serious and sometimes fatal form of **pneumonia** and is caused by exposure to *Legionella* species found **in water, and potting mixes**.
- It is often categorized as being **community, travel or hospital acquired** based on the type of exposure.

Background

- The bacterium **L. pneumophila** was first identified in 1977, as the cause of an outbreak of severe pneumonia in a convention centre in the USA in 1976.



Pathogen

- The most common cause of illness is the **freshwater species *L. pneumophila*** which is found in natural aquatic environments worldwide. All species of *Legionella* can cause disease.
- **Artificial water systems** which provide environments conducive to the growth and dissemination of *Legionella* represent the most likely sources of disease.
- **Factors associated with amplification** include warm water temperatures (77°F–113°F [25°C–42°C]); water stagnation; presence of scale, sediment, and biofilm in the pipes and fixtures; and absence of disinfectant.

Symptoms

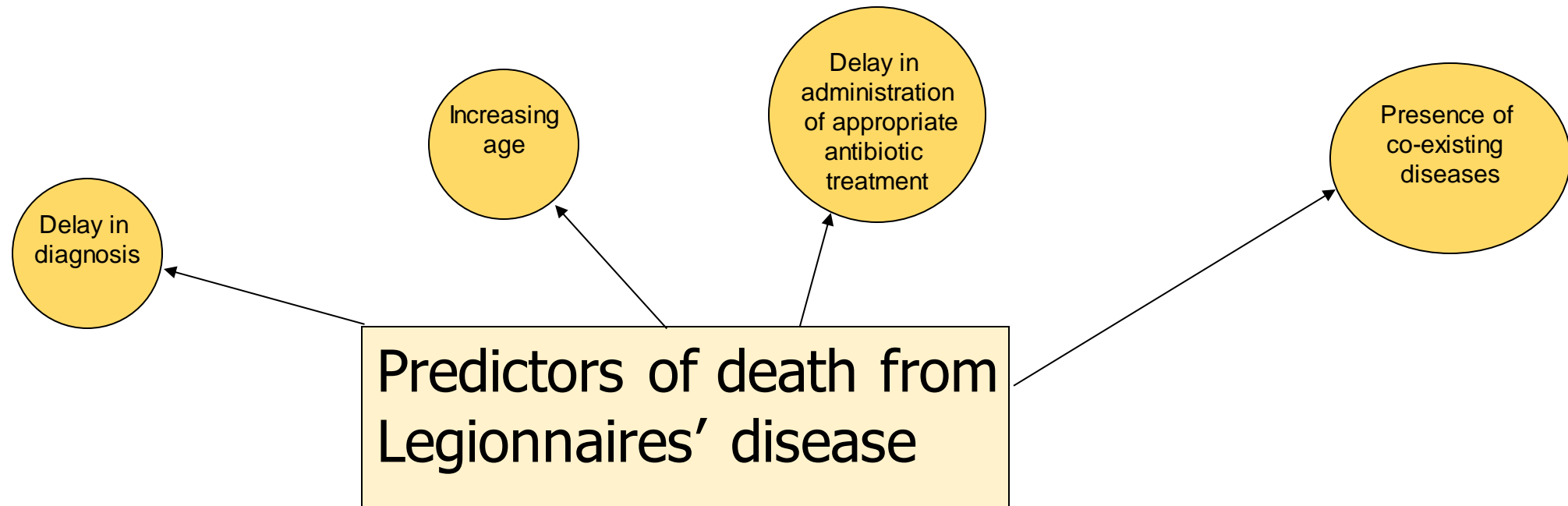
- **Legionellosis** is a generic term describing the **pneumonic** and **non-pneumonic forms** of infection with *Legionella*.
- The non-pneumonic form (**Pontiac disease**) is an acute, self-limiting influenza-like illness usually lasting 2–5 days. The **incubation period** is from a few and up to 48 hours. The main symptoms are fever, chills, headache, malaise and muscle pain (myalgia). No deaths are associated with this type of infection.
- **Legionnaires' disease**, the pneumonic form, **incubation period** of 2 to 10 days. Initially, symptoms are fever, loss of appetite, headache, malaise and lethargy. Blood-streaked phlegm or hemoptysis occurs in about one-third of the patients. The severity of disease ranges from a mild cough to a rapidly fatal pneumonia. Death occurs through progressive pneumonia with respiratory failure and/or shock and multi-organ failure.

Transmission and distribution

- The most common form of transmission - **inhalation of contaminated aerosols**
- **Sources of aerosols:** air conditioning cooling towers, hot and cold water systems, humidifiers and whirlpool spas.
- Infection can also occur by aspiration of contaminated water or ice, particularly in susceptible hospital patients, and by exposure of babies during water births.
- **No direct human-to-human transmission.**
- Legionnaires' disease is believed to occur **worldwide.**

Epidemiology

- The rate of occurrence is unknown, since many countries **lack appropriate methods of diagnosing** the infection or sufficient surveillance systems. In Europe, Australia and the USA there are about 10–15 cases detected per million population per year.
- Of the reported cases 75–80% are **over 50 years** and 60–70% are **male**.
- Overall the **death rate** is usually within the range of **5–10%**.



Risk factors

- For hospital-acquired pneumonia are: recent surgery, intubation, mechanical ventilation, aspiration, presence of nasogastric tubes, and the use of respiratory therapy equipment. The most susceptible hosts are immuno-compromised patients, including organ transplant recipients and cancer patients and those receiving corticosteroid treatment.
- Other risk factors for community-acquired and travel-associated legionellosis include: smoking, a history of heavy drinking, pulmonary-related illness, immuno-suppression, and chronic respiratory or renal illnesses.
- Home and car air-conditioning units do not use water to cool the air, so they are **not a risk for Legionella growth.**

Diagnosis and treatment

- People with Legionnaires' disease have a serious type of pneumonia (lung infection), which can be confirmed by **chest x-ray**. Two preferred types of tests to see if a patient's pneumonia is caused by *Legionella*:
 - Urine test
 - Laboratory test that involves taking a sample of **sputum (phlegm) or washing from the lung**.
 - **PCR** is a newer, evolving technique.
 - Patients with Legionnaires' disease always require **antibiotic treatment** following diagnosis.



Legionnaires' disease symptoms are similar to other types of pneumonia and it often looks the same on a chest x-ray.

Prevention

- There is **no vaccine** currently available for Legionnaires' disease.
- The public health threat posed by legionellosis can be addressed by implementing **water safety plans** by authorities responsible for building safety or water system safety.
- **Good maintenance of devices**, including regular cleaning and disinfection and applying other physical (temperature) or chemical measures (biocide) to minimize growth.
- **National hygienic limits** in drinking and hot water are in operation. Mandatory testing is organised in healthcare facilities and hotels.
- Home and car air-conditioning units do not use water to cool the air, so they are **not a risk for *Legionella* growth**.



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HEALTHY

Thank you for your attention!

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