

WORKPLACE INJURY
ALERT

MAY 2006

FOR FURTHER INFORMATION
PLEASE CONTACT

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LEGIONNAIRE'S DISEASE

Legionnaire's disease is a rare and uncommon phenomena. However when there are confirmed outbreaks of the disease dozens to hundreds of people are often affected and media coverage is therefore virtually guaranteed. What is legionnaire's disease? How is it contracted? Can legionnaire's disease be prevented and what legal rights does a victim inflicted with the disease have?

What is Legionnaire's disease?

Legionnaire's is a pneumonia type illness, which affects the lungs. It is contracted by inhalation of airborne particles containing legionella bacteria. *Legionella pneumophila* is the main source of legionella outbreaks caused by the growth of the bacteria in cooling towers, fountains and spa's where there is a mixture of water and moist air, and the water is subject to recirculation and evaporation. In cooling towers, some of the circulating water is evaporated leaving impurities, which concentrates remaining water with impurities. Airborne dust is also introduced into the cooling towers system during operation. Both dust and a higher concentration of impurities inhibit water flow, and create an environment suitable for bacteria which can also be introduced into the system via the dust. The bacteria then grow and multiply.

Legionella longbeachae is a separate species of bacteria, which has been found in potting mix and compost and can also cause legionnaire's disease. It is not found in cooling towers and therefore most reported outbreaks of legionnaires disease is caused by *legionella pneumophila*.

The first reported outbreak of Legionnaire's disease is reported to have occurred in the United States in 1976 at an ex servicemen's conference. The ex- servicemen's organisation was known as the Legion. This name subsequently became associated with the disease, which caused the death of 29 delegates and illness in the form of a lung infection to over 150 others all staying at the same hotel.

How is Legionnaire's disease contracted?

The legionella bacteria attaches itself to airborne particles produced by equipment operating with warm water such as spa baths and cooling towers and is transferred by inhalation. It cannot be transferred through person to person contact and is therefore not a contagion. It cannot be contracted by drinking water contaminated with legionella bacteria.

The bacteria must be high in concentration in its environment before there is a significant risk of exposure. Small quantities of the bacteria are inevitable, as it is so sufficiently abundant in nature it cannot be

eradicated. In small quantities the risk is minimal.

Cooling towers prove to be the most common offender in respect to legionnaires outbreaks. In Victoria, in April 2000 the Melbourne Aquarium 's two cooling towers were responsible for an outbreak of Legionnaires disease in 110 people who went to or in the vicinity of the Melbourne Aquarium between 11 and 25 April 2000.

Can Legionnaire's disease be prevented?

Investigations following an outbreak of legionnaire's disease usually reveal the increased presence of the bacteria Legionella pneumophilla. Whilst the bacteria cannot be completely eradicated, proper maintenance of cooling tower systems prevent multiplication of the bacteria to a concentration resulting in minimal risk of exposure.

Cooling tower design also has a role to play in reducing risk of exposure by making parts readily accessible for cleaning and inspection. Maintaining water temperature in cooling towers below 25 degrees also minimises the multiplication of the bacteria. The introduction of chemicals such as chlorine and bromine also reduce bacteria levels.

Hot water systems used in nursing homes and hospitals can also be a potential source of risk as water temperatures are maintained at a moderate temperature to avoid burns and scalds. Water temperatures sustained above 50 degrees encourage legionella bacteria to die.

The most common cause of an outbreak has been a failure to undertake a preventative strategy to minimise the growth and presence of legionella bacteria.

In Australia, Australian Standard 3666.1 1995 regulates the design, installation operation and maintenance of water systems in Australian buildings. The purpose of the standard is to impose minimum preventative obligations upon owners and operators of cooling towers to minimise legionella growth to maximise health and safety.

Underpinning the Australian Standard in most states are additional guidelines and legislation, systems of registration and in some states mandatory testing by the owner or manager of the cooling tower.

In Queensland the obligations imposed by the Workplace Health & Safety Act 1995 and Workplace health & Safety Regulations 1997 apply to ensure plant is safe and without risk to health. The "Plant Advisory Standard Supplement No 2 (2000)" and "Legionella Control in Airconditioning Units and Cooling Towers" Standards also apply requiring compulsory registration of all cooling tower units of 50KW or

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more. The requirements of the Advisory Standard concerning testing for legionella is not mandatory but TBC (Total Bacteria Count) testing is required monthly by the owner or manager. In other Australian states testing ranges from a recommendation only for monthly testing, to mandatory monthly or 6 monthly testing for legionnaires by building owners and managers of the cooling towers.

Tragically the requirements for mandatory building owner/manager testing appear to be in place in those states where legionnaire's outbreaks have occurred. States to date not having experienced a significant outbreak are those less rigorous in inspection and reporting requirements.

In Queensland it appears whilst some cooling tower systems require registration, others below 50KW do not. Further mandatory government inspections are not required and the onus is on the owner/ manager to ensure plant is safe and without risk to health. However ensuring plant is safe and without risk to health falls short of compulsory monthly self-inspection or independent inspection and testing.

Whilst some drugs assist to combat lung disease caused by the legionella bacteria, the disease can be fatal. Prevention of the disease focuses on prevention of the growth and development of the bacteria as a method of risk minimisation.

What legal rights does a victim inflicted with the disease have?

Legionnaire's disease is difficult to diagnose, as the symptoms complained of can be similar to a severe influenza or chest infection. Symptoms do not come on immediately after exposure and can take some days to develop. A diagnosis of legionnaire's disease may have long been made before the place of exposure can be identified. It may take even further time before the cause of the growth of the relevant bacteria is then identified.

Further without clusters of people inflicted and diagnosed with the condition it is difficult to pinpoint possible location of the exposure.

On contact with the disease an individual does not notice any immediate effect. Reconstruction of the prior movements is therefore required in order to try and locate the source of exposure. This is especially difficult when there is contact with multiple air-conditioned premises having cooling towers. Identification becomes easier with multiple victims as the location can be identified by investigation locations, which the victims have in common.

Where the source of exposure can be identified, an individual does not automatically have a legal claim for damages for the harm suffered. The right of action is only successful if the individual can establish

negligence. Specifically this involves establishing a breach of the duty of care by a building owner or manager who has an occupier's liability to entrants of the premises to prevent foreseeable harm.

As the bacteria is inevitably present in nature, the law does not oblige the owner to eradicate it, merely minimise the risk of exposure by minimising the opportunity for growth. An owner/ building manager with well documented regular inspections and maintenance of its cooling towers and supporting mechanical equipment may satisfy a court it took a reasonable response to a recognised risk of foreseeable injury. In so doing an action in negligence may be unsuccessful by the injured party.

However, in most outbreaks investigated to date the presence of the legionella bacteria has been caused by infrequent maintenance, inadequate inspection of cooling towers, poor design making access for cleaning purposes difficult, insufficient chemical additives applied to cooling tower recycled water, and breakdown of mechanical equipment causing increase in water temperature or loss or capacity to syphon and replace water.

If investigation of an incident arising in Queensland did result in a successful prosecution by Workplace Health & Safety for unsafe plant, then an individual suffering legionnaire's disease will have a reasonable prospect in convincing a court harm from unsafe plant was reasonably foreseeable. If it can then be shown that more regular maintenance or monitoring would have prevented the spread of airborne particles of the bacteria then it is open to a court to find the owner or manager of the cooling tower has breached its duty of care.

In Queensland any damages claim brought for legionnaire's disease must be proceeded with via compliance with the requirements of the Personal Injuries Proceedings Act 2002. This requires a compulsory set of pre-court procedures to be completed before legal proceedings (which must be commenced within 3 years of the exposure) can be commenced. The pre-court procedures must be commenced within 9 months of the exposure although lodging at a later time is possible if there is a reasonable excuse for delay in lodging the requisite notice.

Financial dependents of an individual who dies from legionnaire's disease also have a right to make a claim where negligence can be proven for loss of the benefit of the income which they derived from the deceased.

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