**Science**

Mycoplasma pneumoniae, represented by Mike in this story, is a cause of respiratory tract infection. It is able to cause infection asymptomatically i.e. a person who is infected has no symptoms such as cough. It does this by infecting cells intracellularly where it is able to limit its exposure to the immune system. From an asymptomatic host mycoplasma is able to transmit to new hosts.

Transmission from person to person for mycoplasma is by respiratory droplets.

Most significant infections from mycoplasma are in people with weakened immune systems, as is the case with many infections. The most significant infection mycoplasma causes is infection of the lung, or pneumonia. Patients with pneumonia will become short of breath, and seek medical attention. The most common antibiotic to treat pneumonia is amoxicillin. But as mycoplasma has no cell wall, which amoxicillin binds to, it has no ability to kills Mycoplasma.

Even if a patient with mycoplasma has a respiratory sample sent to the microbiology laboratory it may not be detected. Mycoplasma, and other bacteria without a cell wall like Chlamydia pneumoniae and Legionella pneumophila, are not easily grown, and are often only detected by a PCR test, which is not commonly completed.

In patients who are not improving on antibiotics, and where the laboratory has not been able to find the cause of the infection, it can be helpful to read antibiotic guidelines. Antibiotic guidelines tell you how to treat infections, and they are based on what the common causes of infection are.

For example, treatment guidelines for serious pneumonia recommends an antibiotic such as a macrolide like azithromycin is used which binds to ribosomes.

An antibiotic like this will kill Mycoplasma pneumoniae, Chlamydia pneumoniae and Legionella pneumophila