

Antimicrobial resistance in key bacteria in the community

Some infections, if left untreated or if treated with an ineffective antibiotic, can become life-threatening. Consequences can include blood poisoning (also known as septicaemia or sepsis), which if not treated quickly by medical professionals can result in death.

Enterobacteriaceae

This is a large family of bacteria, all related to *E.coli*, that commonly causes urinary tract infections and may cause infections after surgery or blood poisoning.



Resistance in these bacteria is increasing. Resistant infections may need to be treated in hospital because of a lack of effective antibiotics that can be taken as tablets outside hospital.

Bacteria from this family are resistant to many antibiotics, including to a group of antibiotics known as carbapenems. These 'superbugs' are now found in Australia - in hospitals, but also in the community as well.

Staphylococcus aureus

This is a common germ which lives on the skin of many people. Also known as 'Golden Staph', it causes a wide range of infections, such as boils, impetigo (school sores), wound infections, bone and joint infections, and blood poisoning (septicaemia). Resistance to 'Golden Staph' is reducing in hospitals but increasing in the community.



Accessing information about your medication

If you would like further information about an antibiotic you have been prescribed, you can either talk to your doctor or your local pharmacist.



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What is Antimicrobial resistance?

Antimicrobial resistance (AMR) occurs when agents causing infection become resistant to treatments. AMR is a problem throughout the world, and has been called one of the 'biggest threats to human health'.

The Australian Commission on Safety and Quality in Health Care (the Commission) has established the Antimicrobial Use and Resistance in Australia (AURA) Surveillance System as an important mechanism to inform strategies to prevent and contain AMR.

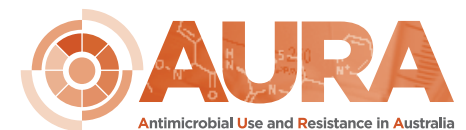
The Australian Government has developed a strategy to address AMR. Part of this strategy involves monitoring AMR and the use of antimicrobials to help in the fight against AMR.

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What are microbes and antimicrobials?

When a microbe (germ) develops a way to protect itself from a drug which could previously treat an infection, this is known as 'antimicrobial resistance' (AMR).

The term 'microbe' includes different sorts of micro-organisms – including parasites, viruses and bacteria.

Antimicrobials are drugs which treat infections caused by these germs; antibiotics are a type of antimicrobial which affect bacteria (but not viruses).

Bacteria are present in many parts of the body, and are frequently good for our health. If there are too many bacteria, or if they grow in a place where they are not normally found, this is known as an infection. Some infections come from germs outside the body (for example, the influenza virus) but many occur due to our own 'good' bacteria multiplying in the wrong place.

What is antimicrobial resistance?

It is important to understand that it is not you, as an individual, that becomes resistant to antibiotics – it is the bacteria causing infection that become resistant.

The more we use antibiotics, the more microbes are exposed to the medication. They then have the chance to develop methods of protecting themselves from the medication, which can persist over time. The microbes can then cause infection later, and sometimes spread to other people.

Antimicrobial resistance results in medications becoming less effective at treating microbes. Eventually, they can no longer cure infections caused by these bacteria.

Why is antimicrobial resistance important to me?

Resistant microbes are harder to treat and the conditions they cause are harder to cure. They raise the risk of complications, and may require the use of other medications that have more serious side effects. They can also cause you (or a family member) to stay in hospital longer. Longer hospital stays and different antibiotics also increase the cost of care to the health system.

Sometimes, even a simple infection may need to be treated in hospital with intravenous antibiotics. This is because the bacteria causing your infection are resistant to all the medicines that can be given by mouth at home. If you pick up and carry a resistant organism, you may spread it to your family or other people close to you.

Many important healthcare treatments, such as surgery and chemotherapy, depend on antibiotics to prevent infection. If there is too much antibiotic resistance, these treatments may become too risky to continue, due to the chance of an infection afterwards – which may not be treatable.

What action can I take to slow antimicrobial resistance?

It is important to realise not all infections require treatment with antibiotics.

Antibiotics will be needed to treat some bacterial infections. But many common conditions, such as colds and flu, are usually caused by viruses, which are not affected by antibiotics. If you take antibiotics for these infections, they have no benefit – but still increase the risks of resistance or other side effects.

For your own personal health, you should only take antibiotics for infections caused by bacteria.

You can prevent antibiotic resistance by:

- Taking steps to avoid infections and prevent them from spreading, such as by:
 - washing your hands after sneezing or touching your eyes, nose or mouth
 - coughing into your elbow instead of your hand
 - don't go to work/school if you are unwell and ask your doctor about vaccinations
- Understanding that antibiotics cannot treat colds and flu, because they are caused by viruses
- Telling your doctor you only want an antibiotic if it is really necessary
- Taking the right dose of your antibiotic at the right time, as prescribed by your doctor
- Taking your antibiotics for as long as your doctor advises
- Ask your doctor if a test would help to identify the bacteria which are causing the infection
- Remember that the antimicrobial you take for your condition may not work for a different condition later. You should not take any leftover antibiotics without seeing your doctor, nor share them with someone else.

How much antimicrobial resistance is there in Australia?

Bacteria resistant to medication can spread easily between people in the community, and especially in hospitals and aged care homes. The spread of these bacteria may go unnoticed until an infection occurs. Australia identifies and monitors highly resistant bacteria so action can be taken to prevent them from spreading once detected.