MOTT MACDONALD

Time to tackle the superbugs

Protecting your people and your organisation from the growing threat of antimicrobial resistance

What is AMR?

Antimicrobial resistance (AMR) is when microorganisms (bacteria, fungi, viruses and parasites) no longer respond to the drugs – antimicrobials – intended to kill them. As these drugs become ineffective, previously treatable or preventable infections will become widespread, causing illness, death and disruption.

Impact on health and the economy

The COVID-19 pandemic has shown the huge impact that a global public health crisis can have. While the pandemic was caused by a new coronavirus strain, AMR could lead to at least as many deaths if a common pathogen becomes untreatable.

Many, including the World Health Organization, describe AMR as a 'silent pandemic'. Without targeted efforts to control it, AMR could result in an estimated 10M annual deaths globally by 2050 – more than all forms of cancer currently combined, with cumulative global economic costs of up to US$100trn.

Increasing political recognition

The United Nations (UN) considers AMR a major threat to global health and prosperity. This follows the Global Action Plan on AMR which was adopted by the World Health Assembly in 2015. One year later, in 2016, UN member states adopted a political declaration on AMR.

In 2021, the Group of Seven (G7) advanced economies reaffirmed its commitment to tackling AMR as a priority health issue. Most countries have developed and are implementing national action plans on AMR.

Not just a health issue

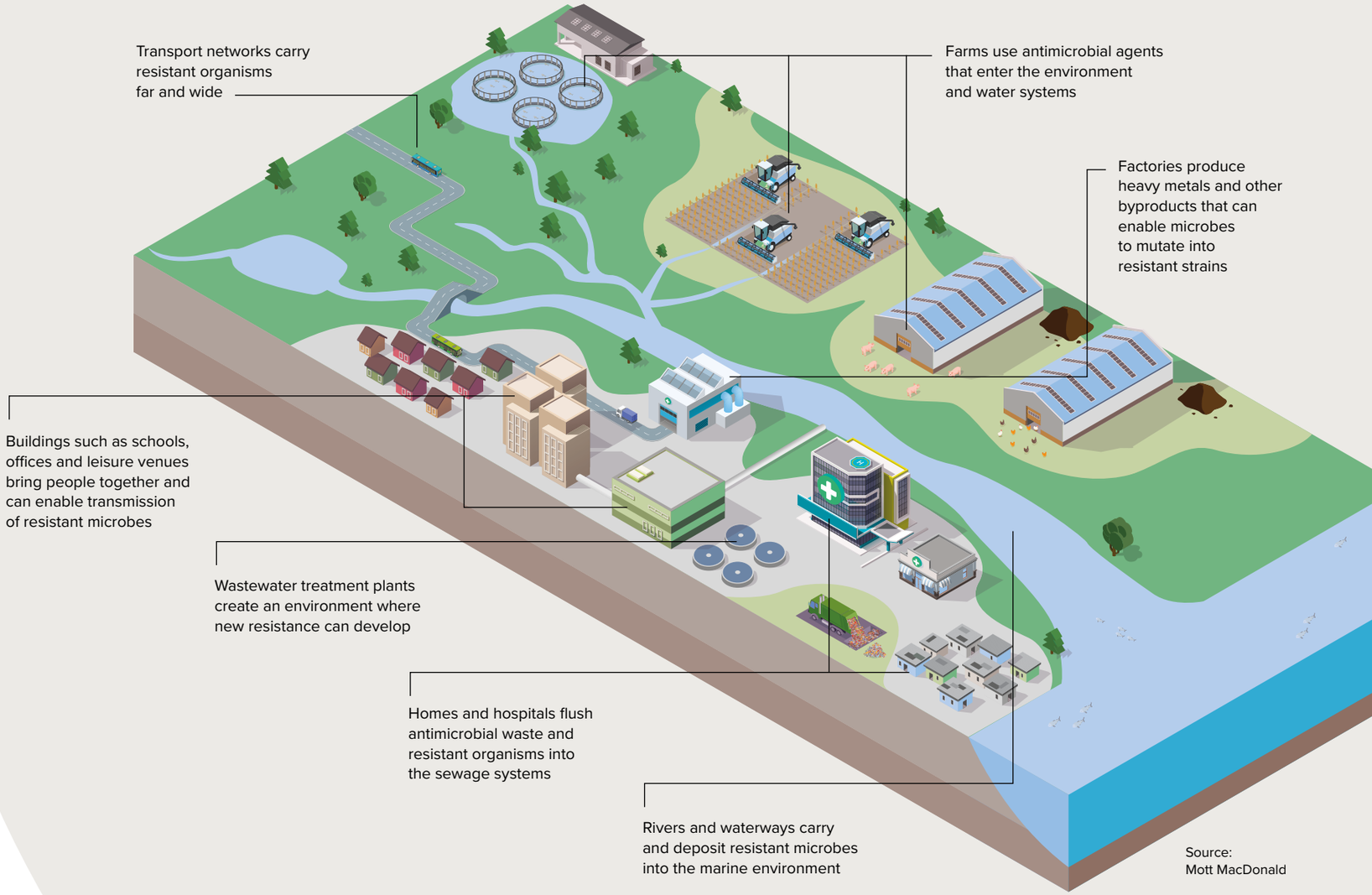
Resistant microbes can end up anywhere, meaning a multisector approach is needed to address AMR.

Inappropriate disposal of pharmaceutical waste, heavy metals, industrial byproducts, and antimicrobials used in agriculture can leach into surface and ground water, where they can enable microbes to mutate into resistant strains. Plastic particulates also end up in wastewater and can act as a carrier for microbes.

Drug-resistant microbes are spread just like any other microbes – people pick them up via contact with surfaces, ingest or inhale them. The microbes are then communicated more widely via contact between people in the built environment, with transport networks taking them far from where they originated.

Tackling AMR involves action across all sectors. But the infrastructure industry has a key role in monitoring and mitigating against the risks that it presents.

Antimicrobial residues and other drivers of AMR in our communities



Source:
Mott MacDonald

What does AMR mean for your business?

As the COVID-19 pandemic has shown, major disease outbreaks can have global ramifications, putting pressure on all sectors of the economy.

Organisations that fared best were well prepared or agile enough to adapt. To minimise the impacts of future epidemics or pandemics, businesses need to be aware of and address the impacts that infectious disease outbreaks will have on their assets and services.

Another risk in the coming years will come from a changing and increasingly strict legislative and regulatory environment as a result of increasing international focus on AMR.

Proactively addressing these risks and building pandemic resilience is key to protecting assets and services.

The benefits of One Health

A holistic approach encompassing human, animal, plant and environmental health is the best way to effectively fight AMR.

A communique from the health ministers of the G7 group of nations in June 2021 underlined the importance of tackling AMR through a holistic 'One Health' approach which views human, animal, plant and environmental health as interlinked. This has been given impetus by four key international bodies – the United Nations Environment Programme (UNEP), the Food and Agriculture Organization (FAO), the World Organisation for Animal Health (OIE) and the World Health Organization (WHO) – which have joined forces to make a One Health approach central to their work.

A strengthened focus on One Health will impact organisations across all sectors over the coming years, and can be divided into three operational levels:

1. Governance and leadership

AMR countermeasures will be guided by national action plans focused on: AMR surveillance; tightening the use of antimicrobials in humans, animals and plants; environmental monitoring; and legislation and regulation. In addition, businesses and infrastructure should take measures to improve people's health.

2. Data and digital systems

Accurate data collection and analysis are important whether it is to deliver a national action plan for AMR; better understand the role played by infrastructure in disease transmission; spot disease trends and distributions; track antimicrobial levels in solid waste and wastewater; or appreciate the impact of antimicrobial use in agriculture. Many organisations will need to produce much better data than they do today to shine a light on their own contributions to AMR and the transmission of diseases caused by drug-resistant microorganisms.

3. Assets and services

A multisectoral approach will see towns and cities adapted to achieve population-wide health improvements. This includes: encouraging active travel such as cycling and walking; more trees and parks combined with low or zero-emissions public transport to improve air quality; upgrading existing buildings and designing new ones to be thermally efficient; and eliminating toxic materials from building fittings and furniture. Transport and buildings – especially hospitals, schools, universities, stations, supermarkets and offices – will be designed or adapted to reduce disease transmission and to improve pandemic resilience.

Important work is needed in these sectors:

Improve public health
Support all sectors to improve health by encouraging active travel, promoting good nutrition and reducing infection transmission.

Improve access to clean water
Ensure universal provision of clean water to improve hygiene and sanitation and reduce the risk of infection, resulting in fewer hospital visits and reduced use of antimicrobial drugs.

Improve agricultural practices
Explore new technologies and methods to provide good nutrition to our growing populations that does not rely on antibiotics.

Educate on waste/wastewater management
Antimicrobial residues and byproducts, as well as other drivers of AMR such as metals, from farms, hospitals, factories and homes, can end up in waste systems and can increase the risk of microbial mutations.

How we can help

Working with our infectious disease and health security experts, across all core infrastructure sectors, we provide a comprehensive offering that enables you to:

- Understand the risks from AMR to your business
- Understand how your business contributes to the wider problem of AMR
- Develop a strategy which drives down your contribution to AMR
- Understand how to manage waste which contributes to AMR
- Assess operations and processes for AMR risk
- Embed pandemic resilience across all facilities to protect staff and customers

We are helping our clients to manage AMR

Fleming Fund

We are the management agent for the £265M UK government-funded Fleming Fund Grants Programme, set up to address gaps in surveillance of AMR in low- and middle-income countries. It is improving capacity to generate, collect, analyse and report AMR surveillance data in up to 24 countries in Africa and Asia.

UK Water Industry Forum

We have promoted awareness of and dialogue about AMR across the water industry through UK Water Industry Forum webinars. These sessions were attended by UK water providers, water technology companies, regulators, academics and local government and has led to new dialogue on wastewater treatment plant design.

Knowledge sharing in Turkey and Georgia

We conducted infection management audits on two hospital projects in Turkey and Georgia for the European Bank for Reconstruction and Development (EBRD). Our multisector team of infectious disease experts and facilities specialists led workshops to improve hospital design and management, and to develop better capacity for AMR surveillance and data use.

Exploring the role of facilities management in AMR

Our health advisory team has developed thought leadership addressing the role of engineers and facilities managers in addressing AMR at design, build and operation stages.

AMR Innovation Fund

Our AMR Innovation Fund was set up in 2019 to promote a multisector understanding of AMR to help us actively address the challenge. The fund has addressed AMR in healthcare facilities management, water and wastewater, the built environment and transport.

Learn more about how we can turn the tide on antimicrobial resistance

Opening opportunities with connected thinking.

Talk to us.

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