

Colne
Medical
Centre

Antimicrobials and Resistance



My actions protect antibiotics

**BECOME AN
ANTIBIOTIC GUARDIAN**

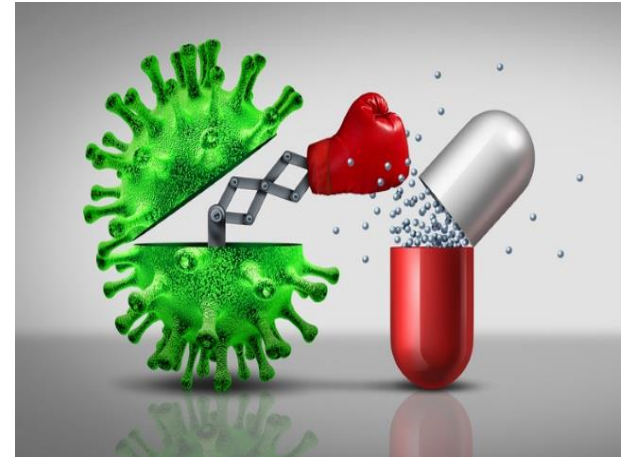
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Keep Antibiotics Working



Contents

- Background to Antimicrobial Resistance (AMR)
- The future of antimicrobials
- What we can do now
- Antimicrobial Stewardship (AMS)
- Making your pledge



Drugs resistance hampers war on HIV and cancer

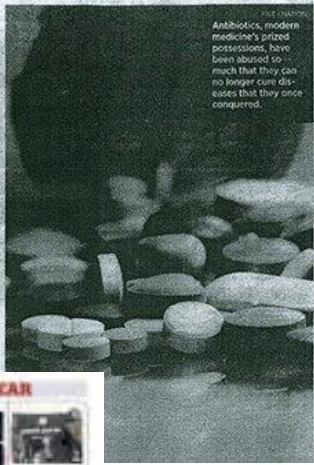
1998, 50 per cent of typhoid fever strains were resistant to prescribed antibiotics, but that figure rose to 82 in certain parts of Africa, India and elsewhere by 2002

BY VERAH OKEYO
@VerahOkeyo
www.theguardian.com

How we got here

So, how did the pathogens become this strong and robust? Prof Sam Karickhoff of Kent says bacteria and other pathogens existed before mankind and learned to survive through a million years. They evolved ways in the Bible, and history books record what they were used as weapons in war.

Then, in 1945, a Scottish biologist called Alexander Fleming developed Penicillin, the world's first antibiotic that subdued them. Very few antibiotics have been developed since then, the last being 25 years ago, because



Antibiotics, modern medicine's prized possession, have been abused so much that they can no longer cure diseases that they once conquered.

conquered, like pneumo malaria, now kill because genes have become "stronger and more agile". According to the 2016 survey, pneumonia is a leading killer in Kenya, claiming 23,475 lives in 11 weeks, malaria (10,693) and tuberculosis (10,183) giving it its misery.

When TB becomes a taxpayer pay as much as £100 to treat one patient. National TB programme that there were nearly 100 million TB infections in 2014. Yet the public and, as the medical fraternity, micro-organisms.

Pharmaceuticals: Prof. Wesley Hightower says that the pharmaceutical industry is not taking it because you are better off exposing your patient rather than they will get the drugs to have changed resistance. When the given antibiotic medicine, again, they don't of the first line antibiotics, we'll leave it of the Lord.



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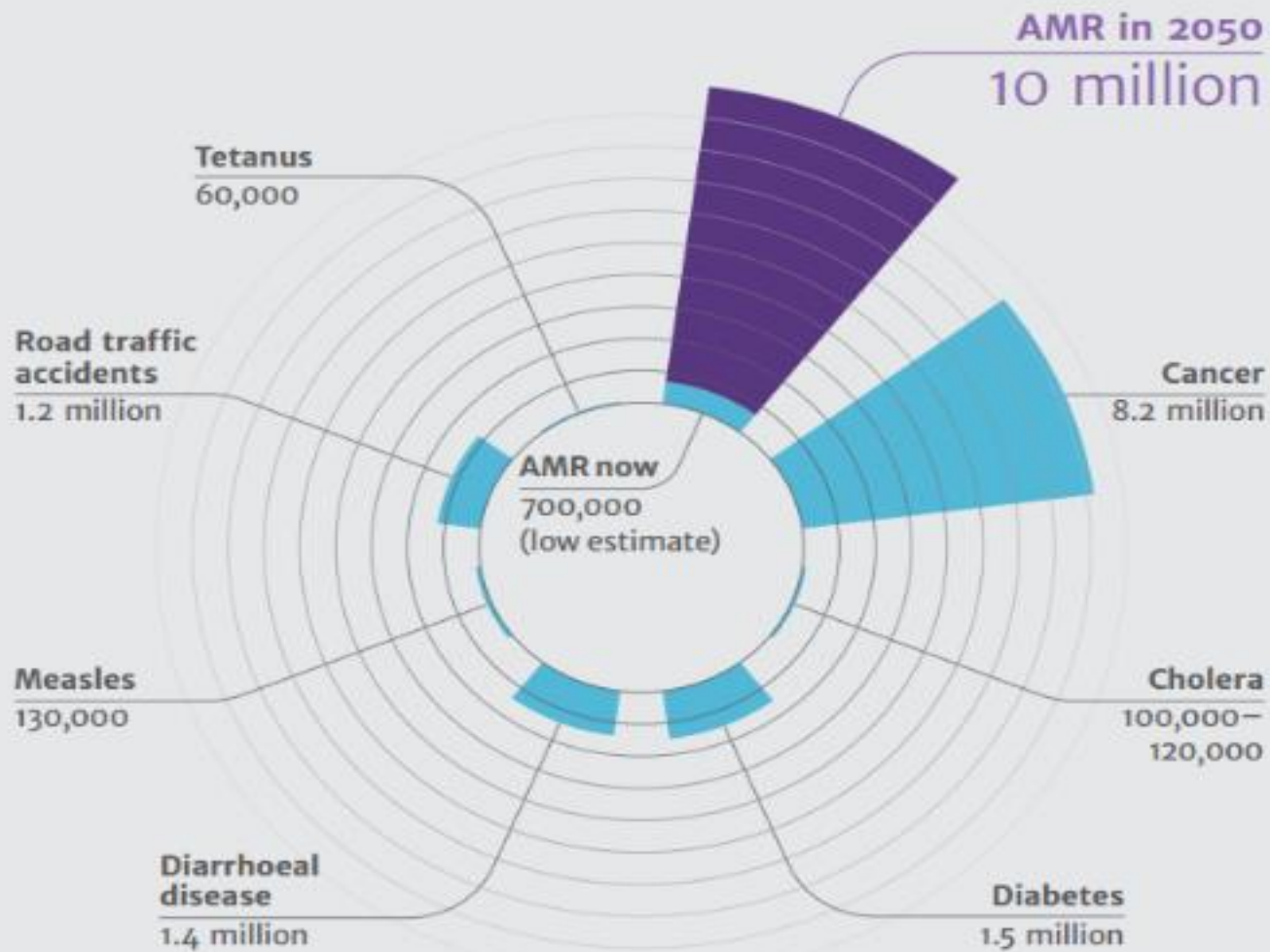
Drug resistance The Observer

'Antibiotic apocalypse': doctors sound alarm over drug resistance

The terrifying prospect that even routine operations will be impossible to perform has been raised by experts alarmed by the rise of drug-resistant genes



Deaths attributable to AMR every year compared to other major causes of death



ANTIBIOTIC RESISTANCE IN NUMBERS

25K

The number of people who die each year across Europe from infections resistant to antibiotics

13%

decrease in antibiotic prescriptions dispensed in General Practice between 2012 and 2016

The period of time since a new class of antibiotics for human treatment was last introduced, despite the fact that growing numbers of bacterial and viral infections are resistant to antibiotics

33
YEARS

10% of the sore throats and 20% of acute sinusitis benefit from antibiotic treatment but the prescription rates are much higher than this

10%



1 IN 3

People in England take at least one course of antibiotics each year

10 million

Estimated number of yearly deaths globally by 2050 if we do not act now

The estimated lost productivity to the global economy (\$100 trillion)

£66 trillion

Background

- Bacterial resistance to antibiotics is on the rise.



- Overuse & inappropriate use of antibiotics and a lack of new classes of antibiotics since the late 1980s is causing this.



What Causes
Antimicrobial
Resistance?

Antibiotic



Resistance

CAUSES OF ANTIBIOTIC RESISTANCE



Antibiotic resistance happens when bacteria change and become resistant to the antibiotics used to treat the infections they cause.



Over-prescribing
of antibiotics



Patients not finishing
their treatment



Over-use of antibiotics in
livestock and fish farming



Poor infection control
in hospitals and clinics



Lack of hygiene and poor
sanitation



Lack of new antibiotics
being developed

www.who.int/drugresistance

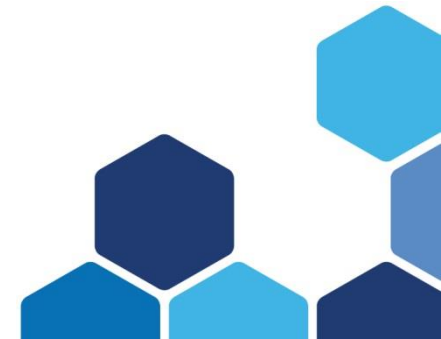
#AntibioticResistance



World Health
Organization

What happens if we run out of effective antibiotics?

- No more complex or 'dirty' surgery
- No more cytotoxic chemotherapy
- Deaths from immunodeficiencies
 - Asplenia
 - HIV/AIDS
 - Primary/Secondary immunodeficiencies
- Deaths from previously treatable infections



The future

- New antibiotics
- New strategies
 - **Bacteriophage** – Viruses that kill bacteria
 - **Vaccines** – Prevent infections
 - **Rapid diagnostics** – Help guide quickly appropriate treatment
 - **Quorum sensing inhibitors** – New initiative early stages



What can we do now?

- Good infection control
 - An infection that doesn't spread is one that doesn't require treatment



- Samples for sensitivities
- Better antibiotic prescribing
- Antimicrobial Stewardship



Antimicrobial stewardship (AMS) is defined as:

“The right antibiotic, for the right indication (right diagnosis), the right patient, at the right time, with the right dose and route, causing the least harm to the patient and future patients.”

**These principles ensure that providers only
prescribe antibiotics for non-self-limiting bacterial
infections**



Why it is relevant to you:

- Without effective antibiotics many routine treatments will become increasingly dangerous. Setting broken bones, basic operations, even chemotherapy and animal health all rely on access to antibiotics that work.



Call to action:

Choose one simple pledge about how you'll make better use of antibiotics and help save these vital medicines from becoming obsolete.

Click the link below to make your pledge:

- [Antibiotic Guardian – Pledge to be an Antibiotic Guardian](#)



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IF NOT TACKLED, RISING AMR COULD HAVE A DEVASTATING IMPACT



By 2050, the death toll could be a staggering
one person every three seconds
if AMR is not tackled now.

Source: Review's own analysis.

Summary

- We need to preserve our current antibiotics
- Overuse and inappropriate use drives resistance
- Course lengths – Complete your prescribed course
- Excellent infection prevention and control!



References:

[Antibiotic Guardian – Pledge to be an Antibiotic Guardian](#)

[Antibiotic awareness: posters and leaflets - GOV.UK \(www.gov.uk\)](#)

[Antimicrobial resistance \(who.int\)](#)

[Antimicrobial resistance \(AMR\) - GOV.UK \(www.gov.uk\)](#)