Problem clinic Spotlight: Antimicrobial resistance: The fall of modern medicine?

BMJ Future Health Conference

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HANDLE ANTIMICROBIALS WITH CARE

Antibiotic prescription decision support for antimicrobial resistant infections

AMR: the fall of modern medicine?

20 November 2024

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WHAT DOES ANTIMICROBIAL RESISTANCE MEAN FOR EVERYONE?

IT MEANS THAT MOST MEDICINES WE RELY ON TO SAVE LIVES MAY STOP WORKING.

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World Health Organization

HANDLE ANTIMICROBIALS WITH CARE

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Food and Agriculture Organization of the United Nations

UN environment programme

World Health Organization

World Organisation for Animal Health

We urgently need action to address AMR, which is why I will be calling for the ambition of no antibiotic prescriptions without a diagnosis by 2030.

Professor Lord Ara Darzi
Chair of the Fleming Initiative

AMR was highlighted in Times Square in New York at the United Nations General Assembly September 2024

https://www.reactgroup.org/news-and-views/news-and-opinions/year-2024/un-high-level-meeting-on-amr-countdown-begins/

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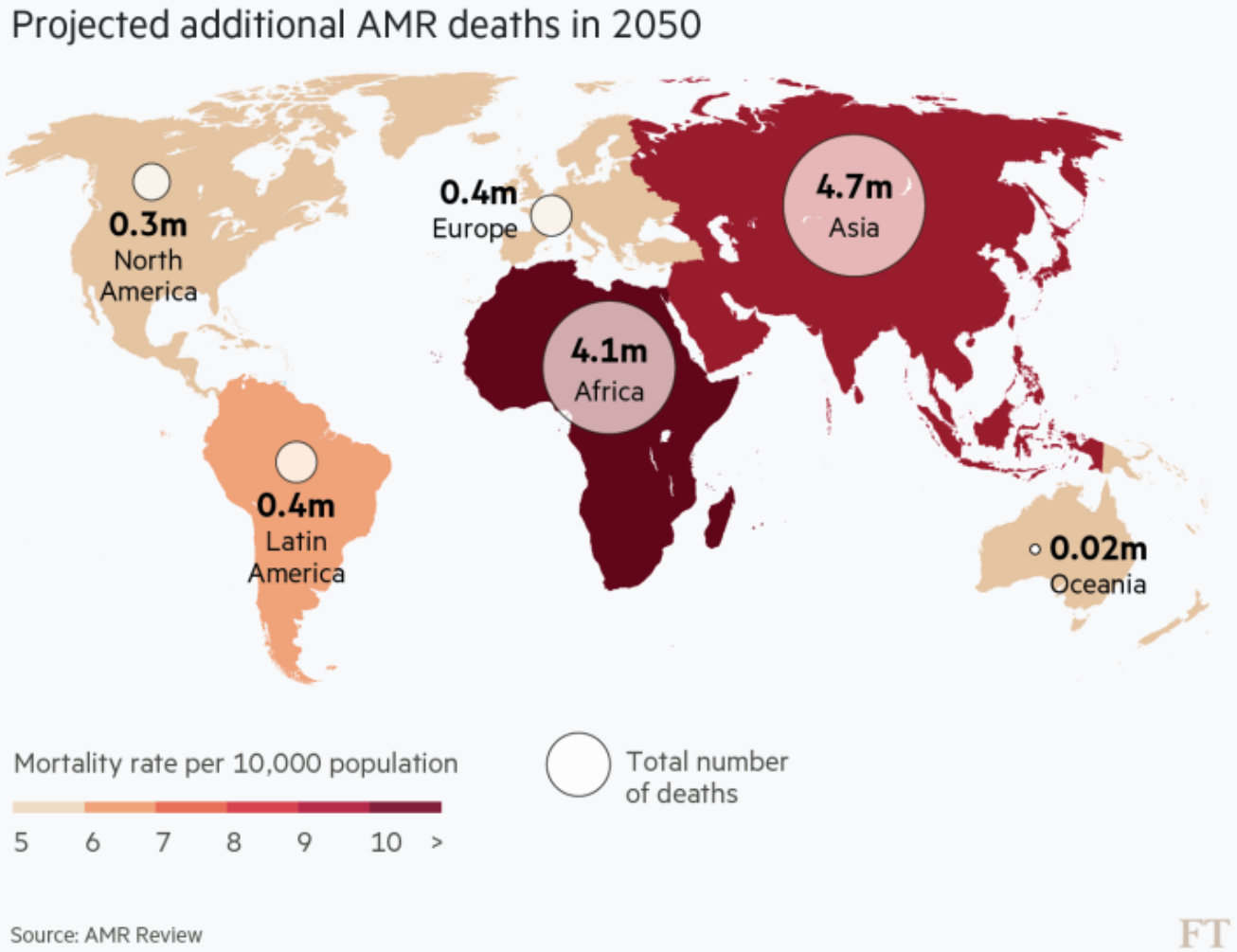
AMR is an economic threat

- The global burden of AMR is enormous, with estimates suggesting that if left unaddressed, AMR could cause 10 million deaths per year by 2050 and a cumulative economic loss of $100 trillion USD.
- The economic consequences of AMR include higher healthcare costs, lower employment rates, and reduced productivity.
- According to World Bank estimates, AMR could increase healthcare costs by $1 trillion in 2050 .



https://www.ft.com/content/1a3b06fa-57ff-11e7-80b6-9bfa4c1f83d2

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CAUSES OF ANTIBIOTIC RESISTANCE

HANDLE ANTIBIOTICS WITH CARE

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

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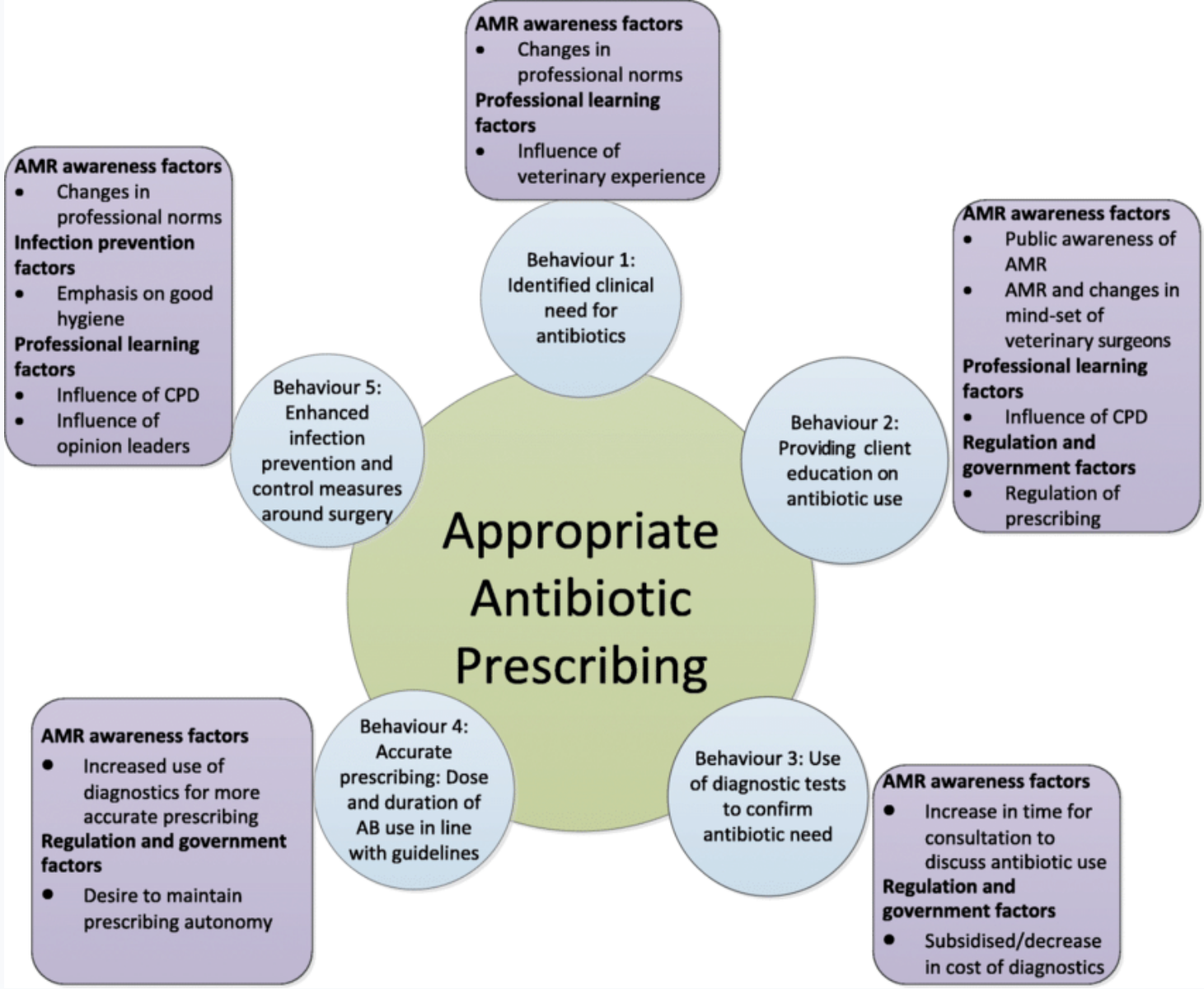
What do we need to make better antibiotic prescription decisions?

Antibiotic Prescription Decisions

1. Harnessing the newest innovations in artificial intelligence to better interpret and utilise complex biological data.

2. Promote the development of novel treatments for drug-resistant infections and novel diagnostics to ensure appropriate use of antimicrobial drugs.

3. Develop our understanding of how drug-resistant infections are transmitted, and how novel surveillance approaches might allow us to better detect and track drug-resistant infections.



King, C., Smith, M., Currie, K. *et al.* Exploring the behavioural drivers of veterinary surgeon antibiotic prescribing: a qualitative study of companion animal veterinary surgeons in the UK. *BMC Vet Res* **14**, 332 (2018). https://doi.org/10.1186/s12917-018-1646-2

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What if?....

- We changed the culture around prescribing antimicrobials from:
  - ‘just in case’ to ‘what are we treating’
  - generic protocol to personal therapy
  - clinical dogma to patient stewardship

- AI diagnostic devices case studies:
  - Primary care respiratory infection
  - Outpatient chemotherapy clinic
  - Prescription compliance and adherence

https://www.reactgroup.org/news-and-views/news-and-opinions/year-2020/new-react-policy-brief-successful-cancer-treatment-relies-on-effective-antibiotics/