



PART 2

Read the text below and answer questions 14–26.

THE SILENT PANDEMIC: ANTIMICROBIAL RESISTANCE

Antimicrobial resistance (AMR) is often described as a “silent pandemic” because it spreads gradually yet threatens to undermine some of the most basic assumptions of modern healthcare. AMR occurs when bacteria, viruses, fungi and parasites adapt in ways that allow them to withstand medicines that once killed them. Although resistance can emerge naturally through pathogen evolution, the speed and scale of the present problem are largely driven by human practice. When antimicrobial drugs are used too often or inappropriately, they exert powerful selective pressure, favouring organisms that carry resistance traits. If this process continues unchecked, infections that were once minor could become untreatable, and procedures that rely on dependable infection control—surgery, chemotherapy, intensive care, organ transplantation—could become far riskier than they are today. The reality of this threat is already visible in pathogens such as multidrug-resistant tuberculosis (MDR-TB) and carbapenem-resistant Enterobacteriaceae (CRE). Often dubbed “nightmare bacteria”, these organisms cause infections that are extremely difficult and costly to treat, and are associated with high mortality rates.

The underlying biology is straightforward but relentless. When an antibiotic is introduced into a mixed population of microbes, the most susceptible organisms are eliminated first. Resistant organisms, by contrast, remain alive and therefore survive, multiply, and gradually dominate. This is not a moral failing of microbes; it is a predictable outcome of selection. Problems arise when the drug exposure is unnecessary, too brief, or too broad. Over-prescription for viral infections, for example, accelerates resistance because antibiotics do nothing to the virus yet still pressure the bacterial communities living in and on the patient. Likewise, patients who stop treatment early can leave behind partially resistant survivors, and the next infection becomes harder to treat. The same logic applies to prophylactic use and routine “just in case” prescribing, where uncertainty in diagnosis pushes clinicians toward medication even when the probability of bacterial disease is low.

A second mechanism makes AMR especially difficult to contain: microbes are not restricted to passing resistance only to their direct descendants. Through horizontal gene transfer, bacteria can exchange genetic material—sometimes even across unrelated strains—rapidly spreading resistance traits through a microbial community. In practical terms, this means that once resistance genes become common in a hospital ward, a wastewater system, or an animal-rearing environment, they can be shared, recombined, and amplified. The problem is therefore not only clinical; it is ecological. Resistant



organisms can circulate quietly, especially where epidemiological surveillance is limited, and may remain undetected until a cluster of treatment failures forces attention. In a world of travel, trade and dense urban networks, resistant strains can move between regions long before they appear in official statistics.

Agriculture complicates the picture further because it creates large, concentrated reservoirs in which antimicrobials are used at scale. In many systems, antibiotics have been deployed not only to treat illness in animals but also as routine prevention or to promote growth. When livestock are exposed repeatedly, resistant bacteria can proliferate in animals and spread outward. Humans can be exposed via direct contact, through water contaminated with animal waste, or through contaminated food moving along supply chains. Regulation in this arena is difficult precisely because the pathways cross farms, processing facilities, retailers, and borders. Effective control requires coordination and monitoring across multiple sectors, otherwise restrictions in one jurisdiction can be undermined by weak standards in another.

Efforts to improve prescribing practice face sociological hurdles as well as technical ones. Antimicrobial stewardship aims to ensure that the right drug is used, at the right dose, for the right duration, and only when genuinely indicated. However, prescribers often operate under time pressure, with ambiguous symptoms and incomplete information. Meanwhile, patients may arrive expecting a prescription as proof that their complaint is being taken seriously. In these interactions, antibiotics can become a symbol of care rather than a carefully rationed resource. Changing habits therefore requires more than issuing guidelines: it often depends on training, feedback systems, supportive workplace cultures, and communication strategies that help clinicians manage expectations without damaging trust.

Diagnostics are frequently called a missing link in the AMR response. A clinician who cannot rapidly distinguish viral from bacterial disease may prescribe “just in case”, especially if follow-up is uncertain. Rapid point-of-care testing could reduce unnecessary antimicrobial use and support targeted treatment, but developing devices that are accurate, cheap, quick, and scalable remains a technical challenge. Even when tests exist, integrating them into routine practice can be hard: clinics need equipment, staff training, supply chains, and funding models that reward careful diagnosis rather than speed alone. Without reliable diagnostics, many health systems remain stuck in a cycle where uncertainty drives broad prescribing, and broad prescribing fuels resistance.

The economic dimension introduces another layer of difficulty. New antibiotics are urgently needed because existing medicines are losing effectiveness, yet the market incentives to develop them are weak. This is a classic market failure: a new antibiotic is



most valuable when it is held in reserve and used sparingly to preserve efficacy, but that conservation logic reduces sales volumes and therefore reduces profitability. Companies may prefer drugs for chronic conditions that guarantee long-term demand, rather than short-course antibiotics that stewardship programmes aim to restrict. As a result, many experts argue for alternative economic models, including public-private partnerships, subscription-style payments, or market entry rewards that detach revenue from volume while still encouraging innovation.

Because AMR links hospitals, farms, waterways and communities, many specialists argue that the only workable response is a One Health approach, which recognises that human health, animal health and environmental health are inseparable. Practical strategies include strengthening epidemiological surveillance, regulating agricultural use, enforcing stewardship in clinics, and investing in diagnostics and new treatments. Public messaging is also necessary, but it must be realistic: antibiotics are powerful tools, not universal solutions, and overuse imposes costs on everyone by accelerating resistance. Ultimately, AMR is not a problem that can be solved by one country or one sector in isolation. It is a collective-action challenge that demands sustained cooperation, consistent standards and a long-term shift in how societies value antimicrobial medicines.

Questions 14–18

Complete the flow-chart below. Choose **NO MORE THAN TWO WORDS** from the text for each answer.

AMR pathway and response

- **Misuse/overuse:** antibiotics are sometimes prescribed for **14**
- **Selective pressure:** susceptible microbes die, while resistant organisms gradually **15** the microbial population.
- **Transmission:** resistant strains can reach humans through **16** moving along supply chains.
- **Economic impact:** new antibiotics are urgently needed because existing medicines are losing **17**
- **Response:** tackling AMR requires a **18** approach.

Questions 19–22

Match each AMR measure with the correct challenge, **A–F**, below.

List of Challenges



- A** Changing entrenched prescriber behaviour and patient expectations
- B** Weak commercial incentives because new antibiotics must be conserved
- C** Coordinating regulation and monitoring across farms, supply chains and borders
- D** Technical difficulty in producing fast, accurate point-of-care devices at scale
- E** Uneven implementation of national action plans
- F** Limited testing capacity allowing resistant strains to circulate unnoticed

19 Developing new antibiotics

20 Implementing antibiotic stewardship in clinics

21 Expanding rapid diagnostic testing

22 Regulating antibiotic use in agriculture internationally

Questions 23–26

Select the correct answer.

23 What is the main function of the first paragraph?

- A** To argue that resistance is mainly an environmental issue
- B** To suggest AMR can be solved by reducing travel
- C** To define AMR and stress how it could undermine modern healthcare
- D** To explain why microbes evolve more slowly than humans

24 Which practice is identified as accelerating AMR because antibiotics are used when they are ineffective?

- A** Over-prescribing antibiotics for viral illness
- B** Restricting antibiotic use to severe infections only
- C** Replacing antibiotics with alternative treatments in clinics
- D** Using rapid diagnostics in routine appointments

25 Why does horizontal gene transfer make antimicrobial resistance especially difficult to contain?

- A** It restricts resistance traits to the direct descendants of bacteria.
- B** It prevents resistant organisms from surviving outside hospitals.
- C** It allows bacteria to exchange resistance traits, even across unrelated strains.
- D** It makes antibiotics effective against viral infections.



26 According to the passage, why is the antibiotic development pipeline described as fragile?

- A** Companies lack the scientific ability to develop new drugs
- B** New drugs are less profitable because they must be used sparingly
- C** Governments have already banned antibiotic research
- D** Resistant strains cannot spread internationally

Answer Key

14. viral infections

15. dominate

16. contaminated food

17. effectiveness

18. One Health

19. B

20. A

21. D

22. C

23. C

24. A

25. C

26. B