Antimicrobial Resistance: the silent threat

What is the issue?

- Antimicrobial resistance (AMR) is one of the greatest challenges of the 21st century.
- Tackling the problem calls for engaging the health, agricultural, trade and environment sectors; here is a look at the various aspects of it.

What is AMR and how serious it is?

- Antimicrobial resistance is the phenomenon by which bacteria and fungi evolve and become resistant (drug resistance) to presently available medical treatment.
- AMR is said to be a slow tsunami that threatens to undo a century of medical progress.
- It is already responsible for up to 7,00,000 deaths a year.
- Unless urgent measures are taken to address this threat, the world could soon face an unprecedented health and economic crisis.
- It could lead to 10 million annual deaths and cost up to $100 trillion by 2050.

How does drug resistance develop?

- Drug resistance in microbes emerges for several reasons including -
    i. the misuse of antimicrobials in medicine
    ii. inappropriate use in agriculture
    iii. contamination around pharmaceutical manufacturing sites where untreated waste releases large amounts of active antimicrobials into the environment
- All of these drive the evolution of resistance in microbes.
- This is compounded by the serious challenge that no new classes of antibiotics have made it to the market in the last three decades.
    - This is due to inadequate incentives for their development and production.
- A recent study found that over 95% of antibiotics in development today are from small companies.
- And 75% of this have no products currently in the market.
- Major pharmaceutical companies have largely abandoned innovation in this space.

What are the implications?

- AMR represents an existential threat to modern medicine.
- It could lead to a condition without functional antimicrobials to treat bacterial and fungal infections.
- So, even the most common surgical procedures, as well as cancer chemotherapy, will become fraught with risk from untreatable infections.
- Neonatal and maternal mortality will increase.
- All these effects will be felt globally, but the scenario in the low- and middle-income countries (LMICs) of Asia and Africa is even more serious.
- LMICs have significantly driven down mortality using cheap and easily available antimicrobials.
- In the absence of new therapies, health systems in these countries are at severe risk of being overrun by untreatable infectious diseases.

What does this call for?

- Tackling these diverse challenges requires action in a range of area.
- In addition to developing new antimicrobials, infection-control measures can reduce antibiotic use.
- A mix of incentives and sanctions would encourage appropriate clinical use.
- At the same time, it is critical to ensure that all those who need an antimicrobial have access to it.
- 5.7 million people worldwide die annually because they cannot access drugs for infections that are treatable.
- Further, to track the spread of resistance in microbes, surveillance measures to identify these organisms need to expand beyond hospitals.
- It should encompass livestock, wastewater and farm run-offs.
- Also, microbes will inevitably continue to evolve and become resistant even to new antimicrobials.
- So, there is a need for sustained investments and global coordination to detect and combat new resistant strains on an ongoing basis.

- There is the critical role of manufacturing and environmental contamination in spreading AMR through pharmaceutical waste.
- So, there is a need to look into laws such as those recently proposed by India, one of the largest manufacturers of pharmaceuticals.
    - The law aims to curb the amount of active antibiotics released in pharmaceutical waste.

What is the need for caution?

- Various countries are taking measures at individual an coordinated level.

- The range of initiatives that seek to control the emergence and spread of AMR is welcome.
- But, there is a need to recognise the limitations of a siloed approach.
- Current initiatives largely target individual issues related to AMR (such as the absence of new antibiotics, inappropriate prescription and environmental contamination).
- Thus they focus narrowly defined groups of stakeholders (providers, patients and pharmaceutical companies).
- Regulating clinician prescription of antimicrobials alone would do little in settings where -
    - patient demand is high
    - antimicrobials are freely available over-the-counter in practice, as is the case in many LMICs

What should the approach be?

- Efforts to control prescription through provider incentives should be accompanied by efforts to educate consumers.
- This will help -
    - reduce inappropriate demand
    - issue standard treatment guidelines that would empower providers to stand up to such demands
    - provide point-of-care diagnostics to aid clinical decision-making
- Policy alignment is also needed much beyond the health system.
- Solutions in clinical medicine must be integrated with improved surveillance of AMR in agriculture, animal health and the environment.
- In all, successful policies in individual countries are no guarantee of global success.
- International alignment and coordination are paramount in both policymaking and its implementation.
- Indeed, recent papers have proposed using the Paris Agreement as a blueprint for developing a similar global approach to tackling AMR.

Source: The Hindu

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