National and State Action
– for AMR containment

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National Conclave on Sustainable Food Systems
Sustainable food from animals to keep antibiotics effective | 21 April 2022 | AAETI, Neemli
Ten threats to global health in 2019

Antimicrobial resistance

The development of antibiotics, antivirals and antimalarials are some of modern medicine’s greatest successes. Now, times when these drugs were turning out antimicrobial resistance – the ability of bacteria, parasites, viruses and fungi to resist these medicines – threaten to send us back to a time when we were unable to easily treat infections such as pneumonia, tuberculosis, gonorrhea, and syphilis. This liability to prevent infections could seriously compromise surgery and procedures that had been considered relatively safe.

Resistance to tuberculosis drugs is a formidable obstacle to fighting a disease that causes around 1.5 million people to fall ill and 1.6 million to die, every year. In 2017, around 400,000 cases of tuberculosis were resistant to rifampicin, the most effective first-line drug – and 62% of these patients had multidrug-resistant tuberculosis.

Drug resistance is driven by the overuse of antimicrobials in people, as well as in animals, especially those used for food production, as well as in the environment. WHO is working with these sectors to implement a global action plan to tackle antimicrobial resistance by increasing awareness and knowledge, reducing infection, and encouraging prudent use of antimicrobials.

Urgent health challenges for the next decade

13 January 2020

As a new year and a new decade kick off, we have a shared responsibility to act and approach, the United Nations General Assembly.

This means advocating for national funding towards the most vulnerable doing nothing is one we cannot afford to achieve these critical goals. There are r

Dr Tedros Adhanom Ghebreyesus, WHO Director-General

NOTE: The challenges are not listed in order of priority. All are urgent, and many are interconnected.
THE IMPACT OF AMR BY 2050 WOULD BE WIDE-RANGING

28 MILLION PEOPLE
 projected to fall into poverty because of AMR

UP TO 7.5% decline in global livestock production

UP TO 1 TRILLION US $ global increases in healthcare cost

UP TO 3.8% decline in global exports

AMR WILL AFFECT THE POOREST COUNTRIES THE MOST

Financial crisis - GDP growth drop in 2008-9 compared to 2004-7

Low AMR Scenario

High AMR Scenario

Percent of GDP (annual)

ECONOMIC IMPACTS OF DRUG-RESISTANT INFECTIONS

Under a worst-case scenario, AMR could cause a reduction in global GDP equal to that of the 2008 financial crisis. However, the economic impacts would be worse in lower income countries and would likely last longer.

Drug Resistant Infections: A Threat to Our Economic Future (worldbank.org)
... IACG calls on all Member States to phase out the use of antimicrobials for growth promotion, consistent with guidance from the Tripartite agencies (FAO, OIE and WHO) and Codex Alimentarius, starting with an immediate end to the use of antibiotics categorized as the Highest Priority Critically Important Antimicrobial Agents on the WHO List of Critically Important Antimicrobials for Human Medicine.
AMRSN 4th report, 2021 (65,561 isolates)

- **Imipenem susceptibility**
  - *E. coli* 72%
  - *Klebsiella pneumoniae* 45%

- **A. baumannii**
  - 10-20% susceptibility against cephalosporins, carbapenems, monobactams and β-lactam-β-lactamase inhibitors

- **Pseudomonas aeruginosa**
  - 40% susceptibility for fluoroquinolones
  - 60-70% to cephalosporins, carbapenems, and aminoglycosides
E. coli and Klebsiella spp.
• 3rd gen Cephalosporins – 77-79% R
• 4th gen Cephalosporins – 63-69% R
• High carbapenem R
• 4% colistin R

Pseudomonas spp. in ICU patients
• Ceftazidime – 60% R
• Piperacillin/tazobactam – 49% R

Acinetobacter spp.
• >50% resistant to almost all antibiotics tested
• Minocycline – 26% R
AMR containment needs **One Health action**

- Human health
- Animal health
- Food
- Environment

**AMR bacteria**

**AM use**

**Animal health**

**AM residues**
NAP-AMR strategic priorities

1. Awareness & understanding
   - Communication & IEC
   - Education, Training

2. Knowledge & evidence
   - Surveillance of AMR
   - Laboratories

3. Infection prevention & control
   - Healthcare, HAI
   - Animal health
   - Community & environment

4. Optimise use
   - Regulations, AMC/AMU
   - Antimicrobial stewardship - human
   - AMS - animals, agriculture

5. Innovations R&D
   - New medicines, diagnostics, vaccines
   - Innovations
   - Financing

6. Collaborations
   - International collaborations
   - National collaborations
   - State Action Plans on AMR

All sectors
6. Human health and sanitation, hospitals & dispensaries
14. Agriculture, agricultural education and research
15. Animal diseases, veterinary training and practice
17. Water (environment)
21. Fisheries

→ India needs National and State Action Plans on AMR
AMR containment in India

- NAP-AMR 2.0 and SAPCAR (all states)
- Ministry – Department – Organization specific action plans
- Government leadership
- AMR governance mechanisms
- AMR focal points – full-time nodal officers
- Public awareness and civil society engagement
- Mission AMR