National Programme on Containment of Anti-Microbial Resistance

Introduction

Antimicrobial resistance in pathogens causing important communicable diseases has become a matter of great public health concern globally including our country. Resistance has emerged even to newer & more potent antimicrobial agents like Carbapenems.

The rapid spread of multi-resistant bacteria and the lack of new antibiotics to treat infections caused by these organisms pose a rapidly increasing threat to public and animal health and needs to be tackled if we are to contain the problem and prevent untreatable illness becoming a reality.

India has given due cognizance to the problem of Antimicrobial resistance (AMR) and to tackle this issue, Government of India has launched a "National Programme on Containment of Antimicrobial Resistance" under the 12^{th} five year plan (2012-2017).

The main objectives of this programme are:

1. To establish a laboratory based AMR surveillance system of 30 network labs in the country and to generate quality data on antimicrobial resistance for pathogens of public health importance.
2. To strengthen infection control guidelines and practices and promote rationale use of antibiotics.
3. To generate awareness among healthcare providers and in the community about rationale use of antibiotics.

Activities to be carried out under the programme

a) Surveillance for Containment of Antimicrobial Resistance in various geographical regions.
b) Rational use of antibiotics.
c) Development & implementation of national infection control guidelines.
d) Training and capacity building of professionals in relevant sectors.
e) IEC for dissemination of information about rational use of antibiotics.
f) Development of National Repository of Bacterial strains / cultures.

Current status of AMR programme (2015-2016)

A. AMR Surveillance:

NCDC is the focal point for implementation of the programme. 10 Network laboratories were identified in the first phase (Annexure 1) to initiate antimicrobial resistance surveillance on four common bacterial pathogens of public health importance to determine the magnitude and trends of AMR in different geographical regions of the country: Klebsiella, *Escherichia coli, Staphylococcus aureus, and Enterococcus species*.

As per trends obtained from the 10 network laboratories for the year 2015, resistance rates to most of the antimicrobials are high in these common pathogens including fluoroquinolones, third generation cephalosporins and carbapenems. However, no resistance has been observed in reserve drugs such as vancomycin in *S. aureus* and colistin in gram negative pathogens.

B. National Treatment Guidelines:

1. A common unified National Treatment Guidelines for antimicrobial use in infectious diseases has been released. It can serve as a guide to all the hospitals to formulate their own guidelines on basis of which physicians will be trained.

C. Hospital Infection Control guidelines:

1. An interim concise guideline on infection control has been uploaded on NCDC website as a ready reference for the hospitals to start implementing infection control practices in their settings.

2. National Infection control policy has been drafted and is in the process of finalization.

D. IEC Activities:

1. An International Conference on AMR was organized by MOHFW in February 2016 which was attended by approximately 200 participants including Policy makers- Ministry of health, Ministry of Animal Husbandry, Agriculture, Environment, and Clinicians and Microbiologists.

Activities planned in near future:

1. Surveillance for Hospital acquired infections, implementation of strengthening of Infection control practices, Antibiotic use patterns in hospitals and IEC activities in community as well as health care settings to spread awareness for rational use of antibiotics are being planned in near future and will be carried out in phased manner under this programme.
2. Trainings will be carried out on Antibiotic Stewardship Program for different stakeholders for promoting rational use of drugs.
3. Expansion of network labs and inclusion of two more bacterial pathogens (Pseudomonas aeruginosa and Acinetobacter species) in AMR surveillance. Strengthening Laboratory capacity for AMR detection. Molecular characterization of resistant bacterial isolates from network laboratories will be carried out at the nodal centre.