

## 4) Combating antimicrobial resistance:Antibiotic surveillance program in Bangladesh

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Emergence of antimicrobial resistance is becoming a major public health problem in our country. Multi drug resistant organisms like *E.coli*, *Klebsiella*, *Pseudomonas* and *Acinetobacter* species have given new dimensions to the problem of hospital-associated infections. A relatively high prevalence rate of ESBL producers have been documented, varying from 34.56 to 83.61%. Major ESBL producing organisms are *E.coli*, *Klebsiella pneumoniae*, *Proteus*, *Pseudomonas* and *Acinetobacter spp*. The prevalence of MBL producer is 43 to 81.4% among MDR *Pseudomonas* and 63.2% for total *Acinetobacter* isolates. Resistance to first-line anti-TB drugs has become a concern for national TB control programme. MDR-TB was found 1.4% among new cases and 28.5% among previously treated cases and XDR-TB was found in only in 05 cases. Data revealed an increasing trend of development of resistance to commonly used antimicrobials in pathogens like *Salmonella*, *Shigella*, *V.cholerae*, *Staph aureus*, *Neisseria spp*, *Klebsiella*, *Mycobacterium tuberculosis*.

At present there is no population level database on the use of antimicrobial agents. Most of the antimicrobials are available over the counter all over the country and usually prescribed even by unqualified or unauthorized personnel. So far, no prescription records are kept at pharmacy or private sectors. For surveillance of antimicrobial resistance, government is planning to establish a national network of laboratories to be coordinated by a National Reference Laboratory. Plans also include national policy on antimicrobial resistance, national monitoring system on antibiotic use pattern, updating essential drugs, and their rational use at all levels of healthcare facilities, monitoring pharmacy, their sale practice and collaboration among with other countries.

In some institute there is antibiotic guideline for empirical and standard treatment for common infectious diseases of public health concern which are in process of updating. Though a large number of laboratories in the country are carrying out drug susceptibility testing of micro organisms, the data is either not analyzed on a regular basis or not being disseminated for use of clinicians and there is inadequacy of quality assured laboratories. Training programs, seminars, workshops or symposium on rational use of drugs and infection control are being organized for health care professionals including undergrad students. Basic researches in different institutes are being conducted with emphasis on microbial pathogenesis, drug resistance pattern, methods of spread and national impact.

Antimicrobial resistance combat is a big challenge for us that need to be addressed for effective containment of this emerging issue. There is a strong need to formulate treatment guideline and an effective surveillance system to generate reliable information regarding baseline data, trends of antimicrobial resistance, rational use of antimicrobials and the national impact of drug resistance. Development of national antibiotic policy, strict Pharmacy law and infection control guideline and to ensure their applicability in all aspect of health sectors is a national priority for Bangladesh to combat drug resistance.