

Original Research Article

Antimicrobial Stewardship to curb menace of growing antimicrobial resistance

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Background:

Antimicrobial resistance has been recognized as one of top ten threats to public health by the World Health Organization.^[1] Although emergence of antimicrobial drug resistance is inevitable but it is accelerated several folds by overuse and misuse of antibiotics.^[2] Currently about 700,000 people die globally owing to drug resistant infections. If the current situation prevails; these figures could rise to 10 million by 2050.^[3] Growing AMR resistance and dried up pipeline of newer effective antibiotics has made possibility of post antibiotic era a real one.^[4] By post antibiotic era we mean a situation where antibiotics will lose their effectiveness against microbes. This would mean that people could soon start dying of trivial microbial infections which are currently curable with short courses of appropriate antibiotic therapy. Given the gravity of situation; it is understandable that there is global need to preserve effectiveness of available antibiotics for a longer time span. Through the present review, which is intentionally kept concise; we aim to sensitize practising physicians, resident doctors and nursing staff about key concepts of Antimicrobial Stewardship Programs (ASPs/AMSP) which are hospital-based programs to promote judicious use of antibiotics. We shall briefly discuss what is meant by antimicrobial stewardship; goals of AMSPs and impact of ASP interventions on health outcomes besides outlining stepwise approach to starting ASP in your hospital setting.

What is Antimicrobial Stewardship?

Antimicrobial stewardship refers to the “responsible use” of antimicrobials by healthcare professionals. This involves multidisciplinary team approach to promote actions that balance both the individual’s need for appropriate treatment and longer societal need for sustained access to effective antimicrobial therapy.^[5]

What are the goals of Antimicrobial Stewardship Programs (ASPs)?

The primary goal of ASPs is to promote rational use of antimicrobials by assisting clinicians in selection of right antimicrobial agent in right dose for the right duration through appropriate route and initiating timely de-escalation of antimicrobial therapy so as to optimize health outcomes for the patient. This indirectly also leads to reduction in

misuse and overuse of antibiotics. Other goals of ASPs include reducing antibiotic induced collateral damage such as selection of drug resistant pathogens, antibiotic associated adverse effects and reducing healthcare costs.^[6]

Is there any scientific evidence to suggest that ASPs really impact healthcare outcomes?

Antimicrobial stewardship programs have shown promising results in different health care settings across numerous scientific studies. The benefits include improved infection cure rates; decreased mortality rates; decreased consumption of antimicrobials; reduced incidence of nosocomial infections, reduced Clostridium difficile infection rates, reduction in antimicrobial resistance rates and hospital cost savings.^[7-10]

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