

Much more is expected from nations to counter antimicrobial resistance: World Health Organization

Sir,

Antimicrobial resistance refers to the phenomenon under which an antimicrobial drug is no longer effective against the microorganism.^[1] This is a major public health concern, as because the standard treatment becomes ineffective, the infection will persist and can be transmitted to others, eventually resulting in a number of complications, disabilities, and mortality.^[1,2] In addition, it will result in an enormous financial burden for the individual, the community, and the health system.^[1,2] Furthermore, amidst the globalization and increasing trends of trade and travel, no section of the world is immune to the public health menace of antimicrobial resistance.^[3] As it is very well-known that not many newer drugs are going to come for treating medical illnesses in the near future, it is very much crucial that the health sector should realize the gravity of the problem.^[1,3]

Even though, emergence of antimicrobial resistance is a natural evolutionary phenomenon, resulting because of the survival of resistant organisms (and death of susceptible organisms), on exposure to an antimicrobial agent, many human-related factors have aggravated the problem to an enormous extent.^[2] These factors include limited commitment from the policy makers and minimal orientation of the treating physicians about the importance of prescription of drugs in right dose for appropriate duration, and to only those patients in which it is indicated.^[1-3] In addition, factor like inappropriate usage (overuse or underuse or misuse) of medicines; exposure of patients to poor quality medicines and hence suboptimal drug dose; expansion of the counterfeit medicine market; and administration of subtherapeutic dosage of medicines to animals at times of their rearing, have also contributed to the global emergence of the problem.^[3,4] However, at no stage the importance of parameters like existence of multiple lacunae's in the infection prevention and control measures; infrastructure constraints (viz., no uniform availability and access to the laboratories where resistant microorganisms can be detected); and weaker surveillance mechanism because of which no

comprehensive information is available regarding drug resistance, can be undermined.^[1,3,5]

Findings of a recently released survey conducted across 133 nations of the world revealed that even though there is a positive intent from the policy makers in some of the nations, multiple gaps such as nonexistence of a holistic action plan to fight antimicrobial resistance; poor infrastructure support with limited laboratory capacity; and poor quality of monitoring and supervision, have been identified.^[3,6] In fact, it has been even highlighted that issues such as absence of standardized guidelines for treatment of an illness; over-the-counter sale of drugs without prescription; poor public awareness; and limited number of strategies to combat nosocomial infections have also contributed to a great extent.^[3,6] Thus, it is very important to understand that antibiotic resistance has spread to the entire world (viz., resistance to third generation cephalosporins used for treating gonorrhoea, drugs used for treating tuberculosis/HIV/malaria/influenza, etc.), and is jeopardizing the act of treating common infections in both community and healthcare establishment settings.^[2,6]

Acknowledging the role of multiple factors and the complex nature of the problem, the need of the hour is to look for a prompt and coordinated response, in which roles and responsibilities of each stakeholder, namely:

- Community — by adhering to practice of hand washing, getting immunized, discouraging self-medication, completing the full course of therapy, etc.;
- Health professionals and pharmacists — implementing measures such as appropriate infection prevention and control measures in hospitals, prescribing antibiotics incorrect dosage and that too only when indicated, supporting public health sector by not selling antibiotics over-the-counter without prescription, etc.;
- Program managers — by creating awareness among the general population, facilitating epidemiological studies to identify the extent and causes of resistance, strengthening infection control and monitoring practices, regulating and promoting appropriate use of antibiotics;
- International agencies — by assisting nations to strengthen their ability to tackle antimicrobial resistance, conducting research and trials for development of new drugs or vaccines, development of tools for prompt diagnosis of infection, etc., is clearly specified.^[3-5,7,8]

However, there is an immense need to simultaneously develop linkages with other sectors such as animal

husbandry, and food and agriculture, to promote optimal practices so that antibiotics are used only in optimal dosages in both humans and animals.^[1,4]

To conclude, in order to arrest the progress of the world toward postantibiotic era, it is high time that all the stakeholders should sit together and work out a global action plan to avoid the emergence and spread of antimicrobial resistance.

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