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Editorial

Antimicrobial Stewardship: 'Culture of Cultures'

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Antimicrobial resistance (AMR) was recognized as an important global threat by the World Health Assembly, and the Global Action Plan (GAP) on AMR was also adopted in the year 2015.[1] Following this, a spate of activities started globally, and countries that committed to tackling AMR came up with the National Action Plan (NAP) on AMR. India, too, brought out its first NAP-AMR in the year 2017.[2] This indeed was a landmark step because, at the time of the first meeting for NAP-AMR, the available evidence and approaches from Lower- and Middle-Income Countries (LMICs) for delivering on AMR were limited in number. Antimicrobial Stewardship or AMS, often referred to by the acronym AMSP with the last letter of the acronym for 'Program,' was alluded to indirectly through strategic priorities 2 and 4 of the NAP-AMR. Looking back, from a point where we found ourselves explaining the term antimicrobial stewardship, we are standing with a society dedicated to the same, five conferences and the first issue of the journal. Antimicrobial stewardship is indeed on its way to becoming a 'culture.' The word 'culture' usually directs our minds to the process of growing bacteria in the microbiology lab, but in the present editorial, the connotation is different, as I hope to unfold its layers in the subsequent sections.A culture that is the backbone of any successful antimicrobial stewardship program is that of 'cooperation.' Here, the cooperation is among diverse stakeholders for not just using antimicrobials judiciously but for improving patient outcomes, reducing the cost of treatment, and altering the resistance profile of infecting pathogens. The stakeholders are so variegated by way of their qualifications and the roles they play that it becomes a subject of management science to get all the spokes of the wheel to work together towards a common goal. From those writing prescriptions to those managing hospitals, infection control and prevention teams, microbiologists, pharmacologists, pharmacists, policymakers, and nursing staff, it would need to extend to policymakers and information technologists. Importantly, all of them may not be available in each healthcare system or environment, but it is important to rope in all those who are needed to answer the problem at hand. Since resistant pathogens move across various ecosystems and since 'one health' is the paradigm under which all the strategies to combat AMR operate, cooperation often needs to be extended to all stakeholders outside healthcare systems. These would include, but not limited to, community pharmacists, policymakers, and people taking care of public health measures.

The second culture is that of understanding a problem, devising a contextualized approach for addressing the problem, and implementing and evaluating the outcome. This activity is often referred to as 'Plan-Do-Check-Analysis' (PDCA) and is an important component of quality improvement programs in any healthcare system. Examples of such exercises in AMS can be important learning points.[3]

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In our own experience, we have seen how a simple exercise of tracking culture reports (microbiological culture!) and acting upon them can cut down on unnecessary use of antibiotics, reduce the number of inpatient days, and improve patient outcomes (unpublished data).

Following the above cultures would be the culture of doing root cause analysis. For example, increased use of reserve antibiotics in a neonatal unit can be tracked to an increase in breaches in infection control practices in a labor room, which could be tracked to the rise in the number of deliveries and disproportionately inadequate infrastructure in terms of physical and human resources to address the load. The root cause analysis could lead to the identification of an increased number of referrals, which may be tracked to a need for training the human resource staff at referring units to handle complicated deliveries. Again, examples from similar scenarios could guide on how to carry out the typical 'why-why' analysis.[4] When we undertake such an evaluation, we attempt to treat the disease rather than tackle a symptom.

Close on the heels would be the culture of evidence-based practice and rational prescribing. Although our undergraduate and postgraduate courses teach a lot about drugs, their indications, and contraindications, contextualized teaching is often missed. For instance, the effect on antimicrobial resistance due to unnecessary use of antibiotics or the problem of altering the normal microbial flora of an individual by use of broad-spectrum antibiotics needs to be emphasized more. In some of our KAP (Knowledge, Attitudes, and Practices) studies, we noted a gap between 'Knowledge' and 'Practice.' While responders often fair well on knowledge, the same is not observed in the practice section. Importantly, practicing evidence-based medicine and rational prescription is imbibed in trainees through a culture of the same. In healthcare setups where such a practice is encouraged by the seniors, trainees continue to perpetuate the same.

Finally, there is the culture of 'learning and sharing'.[5] This incidentally was also the theme of one of our workshops conducted as part of our AMS activities. While the need for AMSP was well understood, how to go about it was scarcely known to most health-providing systems. We have previously highlighted how it is important to learn, share, and innovate in small ways in the scenario of the paucity of examples from developing countries. As an example, we understood that categorizing a prescription of an antimicrobial as rational or irrational was often found tricky by those conducting audits and feedback the moment clinical context was thrown in. We devised an algorithm for the same, 'AmRat tool' for rationality assessment.[6] The session on 'experience sharing' at the Society of Antimicrobial Stewardship Practices annual conference is a committed session. The increase in the number of presentations and the diversity of experiences over the last couple of years is very encouraging.

In the first issue of the current journal, Varma SC et al., in their article, "Antimicrobial stewardship program at a tertiary care hospital: A road less traveled," bring out their journey of Antimicrobial Stewardship.[7] All the cultures referred to in the current editorial can be read between the lines. A similar experience sharing was presented a couple of years ago by our team, too. The settings of the two examples are in many ways different but in some ways similar. The authors have highlighted simple nudges and a continuous cycle of contextualized practical innovations to solve a problem. Particularly noticeable are the color-coded charts for antimicrobial prescriptions and the lead pharmacist for AMSP. While one may argue that corporate hospitals find it easier to carry out the planned activities, we must recognize their challenges, too, which are rather unique. Pressures of revenue generation and fear of litigation may often compel the treating team to err on the side of excessive use of antimicrobials. It is important to acknowledge these different realities and work around the same. Suffice it to say that the long process of improvement in practices through small steps is the essence of any AMS program.

In conclusion, if we see Antimicrobial Stewardship as an entity that rests on cultural change, we will appreciate that such changes require a constant and protracted engagement. Should I end by saying that while it is essential to encourage diagnostic cultures, it is also important to work on the aforementioned 'culture of cultures,' which is an amalgamation of several processes undertaken by different role players over years and years.

CONFLICT OF INTERESTS STATEMENT

The author declares no conflict of interest.

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