Source : www.thehindu.com Date : 2021-04-29

ANTIMICROBIAL RESISTANCE: THE SILENT THREAT

Relevant for: Developmental Issues | Topic: Health & Sanitation and related issues

Since January 2020, there have been over three million deaths globally on account of COVID-19, starkly exposing the vulnerabilities of health systems to infectious diseases, even in the richest countries. The speed of COVID-19's spread across international borders has underscored the need for cross-national cooperation around surveillance, monitoring and disease notification — the key activities that underpin our ability to minimise the impact of acute public health events and maintain global health security. As serious as the current health and economic crisis is, COVID-19 may just be the harbinger of future crises. Antimicrobial resistance (AMR), the phenomenon by which bacteria and fungi evolve and become resistant to presently available medical treatment, is one of the greatest challenges of the 21st century. World Health Organization Director-General Tedros Adhanom Ghebreyesus said in July 2020, "AMR is a slow tsunami that threatens to undo a century of medical progress". AMR is already responsible for up to 7,00,000 deaths a year. Unless urgent measures are taken to address this threat, we could soon face an unprecedented health and economic crisis of 10 million annual deaths and costs of up to $100 trillion by 2050.

AMR represents an existential threat to modern medicine. Without functional antimicrobials to treat bacterial and fungal infections, even the most common surgical procedures, as well as cancer chemotherapy, will become fraught with risk from untreatable infections. Neonatal and maternal mortality will increase. All these effects will be felt globally, but the scenario in the low- and middle-income countries (LMICs) of Asia and Africa is even more serious. LMICs have significantly driven down mortality using cheap and easily available antimicrobials. In the absence of new therapies, health systems in these countries are at severe risk of being overrun by untreatable infectious diseases.

Antimicrobial resistance is also a pandemic of epic proportions: CSE

The challenges are complex. Drug resistance in microbes emerges for several reasons. These include the misuse of antimicrobials in medicine, inappropriate use in agriculture, and contamination around pharmaceutical manufacturing sites where untreated waste releases large amounts of active antimicrobials into the environment. All of these drive the evolution of resistance in microbes. This is compounded by the serious challenge that no new classes of antibiotics have made it to the market in the last three decades, largely on account of inadequate incentives for their development and production. A recent report from the non-profit PEW Trusts found that over 95% of antibiotics in development today are from small companies, 75% of which have no products currently in the market. Major pharmaceutical companies have largely abandoned innovation in this space.

Tackling these diverse challenges requires action in a range of areas – in addition to developing new antimicrobials, infection-control measures can reduce antibiotic use. A mix of incentives and sanctions would encourage appropriate clinical use. At the same time, it is critical to ensure that all those who need an antimicrobial have access to it; 5.7 million people worldwide die annually because they cannot access drugs for infections that are treatable. Further, to track the spread of resistance in microbes, surveillance measures to identify these organisms need to expand beyond hospitals and encompass livestock, wastewater and farm run-offs. Finally, since microbes will inevitably continue to evolve and become resistant even to new antimicrobials, we need sustained investments and global coordination to detect and combat new resistant strains on an ongoing basis.

There is room, however, for cautious optimism. A multi-sectoral $1 billion AMR Action Fund was launched in 2020 to support the development of new antibiotics, and the U.K. is trialling a subscription-based model for paying for new antimicrobials towards ensuring their commercial viability. This means that the government will pay upfront for these new antimicrobials, thereby delinking the life-saving value of the drugs from the volume of sales and providing an incentive for their production in market conditions that do not do so. Other initiatives focused on the appropriate use of antibiotics include Peru's efforts on patient education to reduce unnecessary antibiotic prescriptions, Australian regulatory reforms to influence prescriber behaviour, and initiatives to increase the use of point-of-care diagnostics, such as the EU-supported VALUE-Dx programme. Beyond human use, Denmark's reforms to prevent the use of antibiotics in livestock have not only led to a significant reduction in the prevalence of resistant microbes in animals, but also improved the efficiency of farming. Finally, given the critical role of manufacturing and environmental contamination in spreading AMR through pharmaceutical waste, there is a need to look into laws such as those recently proposed by India, one of the largest manufacturers of pharmaceuticals, to curb the amount of active antibiotics released in pharmaceutical waste.

Also read | Weaker germs, stronger cures

While the range of initiatives that seek to control the emergence and spread of AMR is welcome, there is a need to recognise the limitations of a siloed approach. Current initiatives largely target individual issues related to AMR (such as the absence of new antibiotics, inappropriate prescription and environmental contamination) and consequently, narrowly defined groups of stakeholders (providers, patients and pharmaceutical companies). Regulating clinician prescription of antimicrobials alone would do little in settings where patient demand is high and antimicrobials are freely available over-the-counter in practice, as is the case in many LMICs. Efforts to control prescription through provider incentives should be accompanied by efforts to educate consumers to reduce inappropriate demand, issue standard treatment guidelines that would empower providers to stand up to such demands, as well as provide point-of-care diagnostics to aid clinical decision-making.

Policy alignment is also needed much beyond the health system. Solutions in clinical medicine must be integrated with improved surveillance of AMR in agriculture, animal health and the environment. This means that AMR must no longer be the remit solely of the health sector, but needs engagement from a wide range of stakeholders, representing agriculture, trade and the environment with solutions that balance their often-competing interests. Finally, successful policies in individual countries are no guarantee of global success. International alignment and coordination are paramount in both policymaking and its implementation. Indeed, recent papers have proposed using the Paris Agreement as a blueprint for developing a similar global approach to tackling AMR.

Also read | Widespread use of sanitisers, soaps can worsen antimicrobial resistance: Experts

With viral diseases such as COVID-19, outbreaks and pandemics may be harder to predict; however, given what we know about the "silent pandemic" that is AMR, there is no excuse for delaying action.

Jehangir Cama is an industry research fellow at the Wellcome Trust-funded Translational Research Exchange@Exeter Centre, based in the Living Systems Institute, University of Exeter, U.K., and Zubin Cyrus Shroff is a health systems specialist whose work informs health policymaking in LMICs

To reassure Indian Muslims, the PM needs to state that the govt. will not conduct an exercise like NRC

END