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Ã¢â?¬Å?Urgent action is needed worldwide to reduce AMR and protect our existing antibiotics"

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The Australian Antimicrobial Resistance Network (AAMRNet) is Australia's leading multi stakeholder expert group formed to address the impact of antimicrobial resistance (AMR) on human health. Andrew Bowskill is the Co-Chair of the Network and shares his insights on Asia's efforts in tackling the silent pandemic of AMR, the challenges and the way forward.



What is being done to tackle AMR in the APAC region?

AMR is a global problem and it requires a global response. The World Health Organisation (WHO) has developed a One Health Global Action Plan on AMR and has encouraged countries all around the world to develop their own Action Plans. The WHO Plan outlines five objectives. To improve awareness and understanding of AMR, to strengthen the knowledge and evidence base, to reduce rates of infection, to optimise the use of antimicrobials, and to help support investment in new medicines, diagnostics and vaccines. The results have been mixed, and the G7 has called for its members to step up efforts to implement their plans and take extra steps to improve access, and stimulate research and development into new antimicrobials.

Many countries in the APAC region have developed AMR Action Plans, and now it is important to make sure that they are implemented. The Australian government has a National Strategy on AMR, and is undertaking a range of activities to help deliver change.

In your opinion, which APAC countries have shown significant progress in addressing AMR? What specific measures or interventions have contributed to their success?

The WHO lists 32 countries across South-East Asia and the Western Pacific as having AMR national action plans.

In Australia, AAMRNet itself is driving action on AMR, including through raising awareness,

engagement and contributing to the policy debate. We have identified priority areas for action, including the need to establish an Australian AMR-focused research and development accelerator, and to establish a pilot reimbursement fund to improve access to new antimicrobials for Australians, and to extend this support to South Pacific countries. Some of these ideas are outlined in a recently published position paper.

Australia's national science agency, Commonwealth Scientific and Industrial Research Organisation (CSIRO), is leading a Minimising AMR Mission, and has recently released a report focused on new and emerging technology-based solutions that could prevent the evolution and spread of AMR. AAMRNet and CSIRO work closely together and have published another report looking at how to better measure the burden of AMR.

Australia is also a strong supporter of global health initiatives, including; the Coalition for Epidemic Preparedness Innovations (CEPI); GAVi, the Vaccine Alliance, and; the Global Fund. While these organisations do not work directly on AMR, vaccines can help prevent infection so reduce the use of antimicrobials, and drug resistance is a significant concern in tuberculosis. Australia has also contributed funding to the Global Antimicrobial Resistance Development Partnership (GARDP), and directly supports AMR-focused projects in the region through the Indo-Pacific Centre for Health Security's COMBAT-AMR project.

Australia can play an even greater role by further supporting quality international initiatives,particularly those that support equitable access and the research and development of new therapies, such as GARDP and Combating Antibiotic Resistant Bacteria Biopharmaceutical Accelerator (CARB-X).

India, in addition to having its own AMR Action Plan, supports the Centre for Cellular and Molecular Platforms or C-CAMP. C-CAMP is part of the prestigious CARB-X Global Accelerator Network which helps companies and researchers develop innovative products against drug resistant bacteria.

Japan supports GARDP, and it recently committed to funding a programme to secure new targeted antibiotics. It also announced a plan to ensure stable domestic supplies of priority antibiotics. Several Japanese pharmaceutical manufacturers, including Shionogi, Takeda and Eisai have invested in the AMR Action Fund, the world's largest public-private partnership investing in new antimicrobial therapeutics.

These are a few examples, but the urgent and serious nature of the threat of AMR requires every country to do more.

How can APAC nations collaborate to overcome challenges faced in combating AMR?

Asia suffers from a disproportionately high burden of AMR. It has been forecast that almost half of worldwide AMR-related deaths will occur there. Particular challenges in the region include high rates of resistance, a lack of healthcare infrastructure and appropriately trained workforce, and financial constraints, particularly in the region's lower income countries.

As mentioned earlier, AMR is a global problem that requires a global response, and collaboration is crucial. Supporting world leading initiatives like GARDP and CARB-X are an effective way to collaborate on AMR. At a regional level, collaborating on initiatives around awareness raising on AMR, improving surveillance, and reducing industrial emissions of antibiotics could be possible. There is a programme being run in Africa, called Students against Superbugs, which is generating interest and awareness of AMR in young people. Initiatives like this one could be replicated in and potentially impactful in APAC.

How has COVID-19 affected efforts to combat AMR in the APAC region? Have you observed any specific changes in funding or prioritisation of AMR-related initiatives?

COVID-19 has had a significant impact on AMR around the world. Antimicrobial Stewardship, which helps ensure antibiotics are used efficiently, is important to help prolong their effectiveness, has been severely compromised during the pandemic. There has been a surge in the use of antibiotics. This is concerning as it can result in the spread of AMR. And COVID-19,

even though it is a virus, increases the risk of secondary bacterial infection, which has been found to be a significant driver of mortality. And for good reason, significant funding has been directed towards overcoming the COVID-19 pandemic.

What the COVID-19 pandemic has also done is highlight the critical importance of being prepared for significant health threats. As we begin to move on from COVID-19, it is now more important than ever that significant funding is directed towards addressing the urgent threat of AMR.

What should governments and healthcare systems in the APAC region do to effectively prevent the spread of drug-resistant infections and promote the appropriate use of antibiotics?

Strategies and policies can be guided by the WHO Global Action Plan and local AMR Action Plans.

Finding solutions to AMR requires a collaborative 'One Health' approach that includes the human health, animal heath, food and environment sectors. All these sectors and many stakeholders need to act, including government, industry and consumers. The WHO outlines activities to reduce AMR, including improving awareness, education, and reducing the spread of infection through effective sanitation and infection prevention and control. Antibiotic manufacturers, many of which are in the APAC region, can limit antimicrobial contamination in the environment by ensuring they have best possible manufacturing standards. The food and animal sectors can optimise their use of antibiotics. In human health, clinicians and patients can help by only prescribing and taking antibiotics when absolutely necessary. Better and faster diagnostic tests, especially at the point of care are badly needed to help with this.

All this is helpful, but we will still need to make sure we have equitable access to new and effective antimicrobials to protect us not only from life-threatening infections, but also to help support our healthcare systems. Governments, particularly those with strong economies, can play an important role by ensuring they have the right settings in place to support antimicrobial R&D, and equitable access.

Would you like to add any 'word of caution' so to speak?

AMR is one of the most critical threats to global public health. It affects our health, and our

economies. AMR is a continuous, evolving process and there are not enough new antimicrobials in development to keep pace with rising rates of drug resistance. Antimicrobials underpin all of modern medicine, they enable life-saving medical procedures such as surgeries and cancer treatments, and they protect our most vulnerable populations. But they have been taken for granted, overused, and we are heading toward an era where even common infections, which can usually be treated very easily, become life-threatening again. Urgent action is needed across the world to reduce AMR and protect our existing antibiotics. And new funding models need to be urgently implemented to ensure equitable access to new effective antimicrobials, and stimulate the R&D needed to support a strong pipeline of new therapies to fight superbugs. We cannot afford to wait.

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