

The importance of addressing antimicrobial resistance for better cancer care outcomes



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Antimicrobial resistance (AMR) is a rapidly growing global threat to health and wellbeing, and taking steps to address it in a collaborative, multisectoral way must be a priority action for governments. The World Health Organization has stated that AMR is one of the top 10 global public health emergencies we are currently facing (1). By 2050, AMR could be the direct cause of death for an estimated 10 million people per year (2). The economic loss caused by AMR will also be catastrophic, with over US\$ 100 trillion in damage due to higher health-care costs affecting the global economy and world trade, as well as exerting a devastating impact on families and communities (3). In addition to tackling AMR through policy and legislation, ways to tackle it effectively must happen every day in hospitals, in pharmacies and in our medicine cabinets (4).

AMR occurs when microbes (such as bacteria, fungi, viruses and parasites) develop the capacity to continue to grow, even when exposed to medicines that are intended to destroy them or limit their growth (such as antibiotics, antifungals, antivirals, antimalarials and anthelmintics). The medicines then stop working effectively, and drug-resistant infections persist in the body, with the increased risk of these infections being spread to others (5).

The misuse and overuse of antimicrobial medicines are key factors that have contributed to the increase in drug-resistant pathogens. In many places, antibiotics are overused and misused in people, livestock and agriculture and are often given without proper professional supervision. Examples of misuse include when people who have viral infections like a cold or flu take antibiotics, and when they are used as growth promoters for food-producing animals or used to prevent infections in healthy animals (6).

An individual can pick up an infection from a health-care facility (these infections are called health-care-associated infections [HAIs] or from the community [community-acquired infections]). Health-care-associated infections can occur during surgery or from medical devices inserted into the body (7). These infections can easily happen due to a contaminated surgical instrument or a catheter, which can facilitate pathogens

to enter the bloodstream and cause an infection. On the other hand, community-acquired infections, which are infections acquired outside of a health-care facility, are also a cause for concern. This is because of unregulated access to medicines, bad prescribing practices and lack of knowledge on infection prevention and hygiene.

Increasingly, these infections are becoming more and more drug resistant. Antimicrobial resistance has an adverse effect on health outcomes, including longer stays in hospital, and increased mortality. The cancer community is particularly affected by this “silent pandemic”. It is a silent pandemic because, unlike COVID-19, only a few understand the threat, but the impact of AMR is enormous. Antimicrobial resistance has a huge negative impact on treatment outcomes for people undergoing treatment for cancer. People with cancer are more susceptible to infections due to the underlying disease and a compromised immune system as a result of treatments for cancer like bone marrow transplants, radiotherapy and chemotherapy. In particular, a common side effect of treatment is neutropenia, which is the depletion of neutrophils (a type of white blood cell), which severely affects the ability of people living with cancer to fight bacterial and fungal infections (8). As mentioned above, catheters and other medical devices used in treatment are additional factors that contribute to the increase in the risk of infection (9). If these devices are contaminated, people living with cancer are at increased risk of developing bloodstream infections as they have to deal with repeated use of these devices.

Antimicrobials (especially antibiotics and antifungals) are a vital and indispensable part of cancer treatment. Drug-resistant infections can undermine all the progress made in cancer treatment. A 2019 survey of oncologists showed that more than four out of 10 oncologists were worried that chemotherapy would soon stop being viable (10). Collective action must be taken immediately to address this threat for better cancer treatment outcomes.

In 2019, the Union for International Cancer Control (UICC) acknowledged the importance of addressing AMR for better

cancer care outcomes and made it a priority topic. The following year, UICC set up a task force of experts – from the infectious disease community and the cancer community. This UICC-led task force was established to guide UICC in highlighting current evidence on AMR, identify research gaps in knowledge of cancer and AMR, share best practices and engage the cancer community to collaborate and mobilize policy change, which includes addressing the threat of AMR for better cancer care outcomes. Since then, UICC, with guidance from the task force, has written extensively on the subject and held various events, including several virtual dialogues and an online purpose-built course on AMR to spread awareness and get the cancer community involved in solutions to the AMR crisis.

To sustain focus on the issue, promote greater dialogue and mobilize action on addressing AMR, the task force has collaborated with Global Health Dynamics, publisher of *AMR Control*, to create a special supplement emphasizing the impact of AMR on cancer care outcomes. Our aim is that this supplement will serve as a key reference for the cancer community and a resource to support advocacy efforts for policy change. This supplement is the first *AMR Control* supplement to focus on AMR and cancer in more depth and consider what this really means for the cancer community as a whole – administrators, health-care professionals, researchers, patients and communities. It also addresses how AMR is directly affecting cancer care and cancer patients, now and in the future.

The objective of the publication is to target policy-makers and other relevant stakeholders to come together and see AMR as an issue that concerns every country and all humanity, and to stress the need for collective and urgent action. As seen during the global COVID-19 pandemic, disease-causing pathogens are not confined to national borders.

Along with the key objective of raising awareness and sharing knowledge, the supplement also highlights what is currently being achieved and what practical solutions can be put in place. The articles, written by more than 50 experts, cover a wide range of topics which provide information on the negative impact that AMR has on cancer care outcomes and provide guidance on how the cancer community can counter the challenge of AMR.

We must continue to ensure that AMR is a priority on the

global health agenda. It is encouraging that the first High-Level Meeting (HLM) on AMR took place in September 2016 at the General Assembly of the United Nations. Here, for the first time, governments committed to a coordinated approach to address the threat of AMR (11). The next HLM on AMR, which is to be held in 2024 is an important opportunity for the cancer community to work side by side with other health communities to ensure that countries have national action plans on AMR in place with adequate funding, and that we continue to raise awareness and advocate for access to appropriate treatments and the implementation of infection prevention and control around the world. ■

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UICC, the task force, *AMR Control* and contributing authors hope the cancer community finds this supplement a useful resource and welcome feedback (please send comments to Shalini Jayasekar Zürn at Jayasekar-zurn@uicc.org).

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