A roadmap for sustainably governing the global antimicrobial commons
Commentary

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We all depend on antimicrobials to treat deadly infections, enable lifesaving medical procedures, and manage disease in food production. But antimicrobials come with a trade-off: their use accelerates antimicrobial resistance (AMR), which diminishes these medicines' future effectiveness. This makes "antimicrobial effectiveness" a precious global common-pool resource that must be collectively protected[1]. Yet we have inappropriately used antimicrobials for decades. In too many circumstances, antimicrobials are deployed to compensate for inadequate infection prevention and control (IPC) in both human health and food production , instead of implementing much-needed water, sanitation, and hygiene (WASH) and IPC measures[2]. In the process, we have jeopardized this precious resource, and, inadvertently, jeopardized our own future[3].

Cross-border trade and travel connect our fates, with resistance spreading rapidly around the world[5,6]. This means all countries must work together to safeguard the continued effectiveness of antimicrobials. But to achieve this outcome, the world needs to reach an enduring agreement to strengthen collaboration, pursue a collective vision, and deliver sustainable governance for the global antimicrobial commons[7].

The vision is simple: a future with *sustainable access to effective antimicrobials for all.* Delivering that vision is less simple. Minimizing morbidity and mortality from amenable infections depends on simultaneously 1) scaling-up *access* to high quality lifesaving antimicrobials for the millions of people without them, 2) *conserving* their effectiveness by eliminating their inappropriate use, 3) investing in *innovation* for new antimicrobials and diagnostics, and, most importantly, 4) *preventing* the need for antimicrobial treatment in the first place through vaccination, WASH, IPC and social interventions. These actions must be taken in lockstep with intersectoral action covering the human, animal, agriculture and environment sectors[8].

At the same time, it is clear that there is no one-size-fits-all solution to AMR. The 117 National Action Plans[9] developed in the wake of the 2015 Global Action Plan on AMR[10] show that every country faces different circumstances and can contribute differently to addressing AMR. Coordinating these efforts and delivering on sustainability requires a clear roadmap to blaze the trail. As Antimicrobial Awareness Week approaches (November 18-24, 2019) we want to highlight three concrete actions that should be taken over the coming year (Box 1).

First, AMR needs leaders and leadership. The President of the UN General Assembly (UNGA) should initiate a 'One Health' high-level dialogue on AMR as early as Spring 2020 to follow-up on the IACG recommendations[4]. During this high-level dialogue, the UNGA should endorse key principles for governing the global antimicrobial commons and mandate a new high-level leaders' group to build political momentum for AMR, commit to a common vision and clear goals, ensure accountability through an agreed M&E framework, and propose a rank-ordered political agenda for future intergovernmental negotiations.

Second, AMR needs ongoing discussions among national governments, civil society, academia, and the private sector. A new policy forum on AMR should be created and organized as regular

joint sessions of member states of the World Health Organization (WHO), Food & Agriculture Organization (FAO), World Organization for Animal Health (OIE), and UN Environment Program (UNEP) ("Tripartite+"). Led by national governments, this forum would be designed to facilitate multi-sectoral and multi-stakeholder discussions with civil society and the private sector. Looking to the UN's Committee on World Food Security as a model, this body could coordinate collective actions across relevant multilateral organizations, assess the sum of global AMR efforts, and provide an accountability framework for global action.

Third, AMR needs a recurring scientific stock-take by independent researchers and policymakers to ensure that ongoing policy discussions and decisions are informed by the best-available biomedical and social scientific evidence. As recommended by the IACG[4], this recurring stock-take would additionally support the essential work being done by the Tripartite+ to assist countries in developing and implementing national action plans, improving surveillance infrastructure, and operationalizing the newly established monitoring and evaluation framework.[11]

In many respects, AMR is the defining contemporary test for whether countries are able to sustainably govern an important global common-pool resource. To effectively address AMR we need a step-change in how we think and respond to AMR. We need to stop restating the problem and start implementing solutions, breaking down our usual silos to increase collaboration. The international community must act now to ensure sustainable access to effective antimicrobials, both for the millions of people who already rely on them each day and for the millions more who have yet to benefit from their lifesaving potential both today and in the future.

Box 1. Roadmap for global collective action on AMR over the coming year

1. The UN General Assembly should convene a 'One Health' high-level dialogue on AMR to follow up on IACG recommendations, endorse key governance principles, and mandate a new high-level leaders' group for AMR.

2. Create a new policy forum on AMR to facilitate multi-sectoral and multi-stakeholder discussions, coordinate collective actions, assess efforts, and provide accountability.

3. Commission an independent scientific stock-take to inform policy decisions on AMR and support the important efforts of WHO, FAO, OIE, UNEP and other multilateral institutions.

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