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Haileyesus Getahun, MD, PhD, MPH Coordinator and Head United Nations Interagency Coordination Group on Antimicrobial Resistance Secretariat Avenue Appia 20 1211 Geneva 27 Switzerland

Dear Dr. Getahun:

The Infectious Diseases Society of America (IDSA) deeply appreciates the important work of the Interagency Coordination Group (IACG) on Antimicrobial Resistance (AMR) and welcomes the opportunity to provide feedback on the IACG draft recommendations. IDSA represents over 11,000 infectious diseases clinicians, researchers and public health practitioners. Our members care for patients with infections caused by multidrug-resistant pathogens, lead antimicrobial stewardship and infection prevention and control programs, conduct research on AMR and the development of new tools, and inform public health interventions to address AMR. About 10% of our members are based outside of the US, and many US-based IDSA members are engaged in multinational collaborations. Since 2004 IDSA has advocated for stronger government investment in and coordination of efforts to combat antimicrobial resistance and spur the research and development of new antimicrobial drugs.

IDSA is pleased to support the IACG draft recommendations. Below we offer perspectives to help emphasize the importance of specific recommendations and ideas to strengthen further and operationalize these recommendations. We are committed to continuing to work closely with all stakeholders to drive measurable progress toward global AMR goals.

A. Accelerate Progress in Countries

A1: The IACG calls on all Member States to ensure equitable and affordable access to existing and new quality-assured antimicrobials and their prudent use by competent, licensed professionals across human, animal and plant health.

IDSA strongly supports increased investment in infection prevention through clean water, sanitation, hygiene, vaccines and additional infection prevention and control measures. In addition to the ideas specified by the IACG, IDSA suggests that vaccine hesitancy must be effectively addressed to successfully increase vaccine uptake for individual and population benefits.

IDSA appreciates the inclusion of appropriate antibiotic use in this section. An abundance of evidence clearly demonstrates that overuse and misuse of antibiotics are driving the development of resistance, and antimicrobial stewardship must, therefore, be a central component of sustained efforts to address resistance. Currently, in low- and

middle-income countries (LMICs) -- where antibiotic resistance is most common and potentially most dangerous given limited diagnostics and second-line treatment options --, there are very few antibiotic stewardship activities. IDSA encourages the IACG to emphasize that antimicrobial stewardship programs in all health care facilities are important to guide appropriate use. Such programs can be tailored to meet the needs and resources of individual countries and facilities, and telemedicine platforms and other technologies should be utilized to increase the reach of experts and prescribers to underserved areas. Stewardship programs in LMIC settings need to walk a careful line between reducing overuse while avoiding underuse in patients with a higher prevalence and severity of bacterial disease, but we think this is possible with expert support. IDSA and other professional societies can collaborate with WHO and other multilateral bodies on antimicrobial stewardship implementation efforts.

IDSA also supports the inclusion of recommendations to address antimicrobial drug shortages and ensure a reliable supply of antimicrobials. In the US, antibiotic shortages persist, worsening patient outcomes and increasing the use of broader spectrum antibiotics, thereby driving resistance. A 2016 survey conducted by IDSA's Emerging Infection's Network found that 70% of respondents needed to modify an antimicrobial agent of choice within the past two years because of a drug shortage. In these cases, 73% believed that these changes adversely affected patient care or outcomes. Among these examples, the most commonly cited concerns included the use of more broad-spectrum drugs than required, more costly agents, less effective therapies or second-line drugs, and more toxic antimicrobials. As the threat of antimicrobial resistance grows, the revelation that almost four of five physicians surveyed had to use a broader spectrum drug due to drug shortages is particularly disturbing. While this particular survey focused on the US, this problem is certainly impacting countries around the world, and solutions to ensure a reliable supply of antimicrobials are essential.

IDSA agrees that surveillance must be strengthened as well. Timely global AMR surveillance data are essential for informed actions by the international community with timely access to data. Without these data, we cannot effectively target interventions or evaluate the impact of interventions. Increased investments in infrastructure and training for public health practitioners and other implementers at the country level are needed to support high-quality national surveillance data that span the human, animal and environmental sectors.

A2: The IACG calls on all Member States to accelerate the development and implementation of One Health National Antimicrobial Resistance Action Plans.

IDSA supports this recommendation and emphasizes the importance of funding to support the meaningful implementation of National Action Plans. IDSA continues to advocate for increased US funding to support the implementation of the US National Action Plan. We are also advocating for increased funding to allow the US Centers for Disease Control and Prevention to provide support to other countries' AMR efforts, including establishing and scaling up laboratory diagnostic networks, surveillance systems, and implementing stewardship and infection prevention and control programs. We encourage the IACG to recommend opportunities for countries to share lessons learned and other resources where feasible regarding the development, funding and implementation of national action plans.

A3: The IACG calls on all Member States to phase out the use of antimicrobials for growth promotion, consistent with guidance from the Tripartite agencies (FAO, OIE and WHO), starting with an immediate end to the use of the Highest Priority Critically Important Antibiotic Agents (i.e. quinolones, third- and higher- generation cephalosporins, macrolides and ketolides, glycopeptides and polymyxins).

A successful approach to AMR must encompass human health, animal health, agriculture and the environment. The US already phased out the use of medically important antimicrobials for growth

promotion in animal agriculture, and IDSA agrees that this policy should be adopted worldwide. However, concern remains that antimicrobials may still be used in a non-judicious fashion for infection prevention in animal agriculture, and we encourage the IACG to recommend the phasing out of this usage as well. Further, the US Food and Drug Administration calls for all antimicrobial use in animal agriculture to fall under the supervision of a licensed veterinarian. Where feasible, we encourage the IACG to recommend adoption of this policy in other countries.

B. Innovate to Secure the Future

B1: The IACG calls upon public, private and philanthropic donors and other funders to increase investment and innovation in new antimicrobials - particularly antibiotics, diagnostics, vaccines, waste management tools, and safe and effective alternatives to antimicrobials - for human, terrestrial and aquatic animal and plant health.

IDSA strongly supports the IACG recommendations regarding incentives for the research and development (R&D) of antibiotics and other products to combat AMR. We encourage the IACG to emphasize the urgency for action on this issue. While some new antibiotics have been approved over the last few years-demonstrating the important positive impact of recent efforts and investments-the small pharmaceutical companies largely responsible for recent antibiotic innovation are in grave danger. Over the last 18 months, stock prices for all late-stage antibiotics companies have fallen significantly. Two companies—Achaogen and Melinta—announced massive layoffs in the second half of 2018 due to significant financial difficulties despite recently launching new antibiotics. With virtually no opportunity for these companies to be acquired by large pharmaceutical companies (as these companies see no financial gain to such an investment), small companies are faced with very high infrastructure costs to bring new products to market. Securing investment to fund commercial infrastructure is extremely difficult given minimal opportunities for return on investment. If these companies fail, not only will they be unable to continue antibiotic R&D, but such failures could send even worse signals to investors and other companies, further weakening the antibiotic pipeline. Immediate action is needed to prevent this potentially catastrophic downturn. IDSA is advocating that the US government move rapidly to enact policies to stabilize the antibiotic R&D market and provide the incentives needed to foster a robust and renewable antibiotic pipeline and we strongly encourage other countries with sufficient means to collaborate and support incentives as well.

IDSA also strongly supports funding for basic, translational and clinical research on AMR, including on mechanisms of transmission of drug-resistant infections, implementation of effective approaches, behavior change communication, infection prevention, and prudent use of antimicrobials. IDSA strongly advocates for US funding to support this research both in the US and internationally.

B2: The IACG recommends that existing and future global access initiatives should promote and support equitable and affordable access to existing and new antimicrobials, diagnostics, vacciness, waste management tools and safe and effective alternatives to antibiotics for human, terrestrial and aquatic animal and plant health.

IDSA agrees that appropriate access for new and existing technologies, including vaccines with improved efficacy, administration and duration of effect(e.g. universal influenza vaccine which will target a non changing component of the virus neglecting the need for annual administration and covering 'all' relevant strains), novel diagnostics aimed at point of care results and antimicrobials, is an essential component of the broader strategy to combat AMR. To ensure that antimicrobials and all other tools are used appropriately, we recommend that this goal also include access to trained health care professionals.

C. Collaborate for More Effective Action

C1: The IACG calls for the systematic and meaningful engagement of civil society groups and organizations as key stakeholders in the One Health response to antimicrobial resistance at global, regional, national and local levels.

IDSA agrees that all sectors of society have a role to play in combating AMR, and that non-profit organizations such as medical societies can be part of the efforts to effectively mobilize citizens for advocacy to drive government progress. IDSA continues to work to educate policymakers about AMR and to convene a diverse array of stakeholders to build consensus for policy action. We greatly appreciate that the IACG has recognized the important role of civil society, and we look forward to increased partnerships.

D. Invest for a Sustainable Response

D2. The IACG emphasizes the need for increased investment in the global response to antimicrobial resistance. It urges existing and future financing mechanisms in human, animal and plant health, as well as food production and the environment to give antimicrobial resistance greater priority in their resource allocations. It further calls upon public, private and philanthropic donors in human, animal and plant health, as well as food production and the environment, to increase funding to contribute to addressing antimicrobial resistance, including to support implementation of National Antimicrobial Resistance Action Plans.

IDSA firmly agrees that substantial resources are necessary to implement meaningful policies to combat AMR, including investments in research, product development, laboratory infrastructure, stewardship, surveillance, infection prevention and workforce capacity. IDSA strongly advocates that the US provide robust funding for AMR activities within the US and globally. It will be important to maintain international accountability to ensure that all countries with the means to do so contribute to global AMR efforts.

E. Strengthen Accountability and Global Governance

E2: The IACG requests the Secretary-General, in close collaboration with the Tripartite agencies (FAO, OIE and WHO), UNEP and other international organizations, to convene an Independent Panel on Evidence for Action against Antimicrobial Resistance in a One Health context to monitor and provide Member States with regular reports on the science and evidence related to antimicrobial resistance, its impacts and future risks, and recommend options for adaptation and mitigation.

IDSA wholeheartedly agrees with the IACG that formal mechanisms are needed to establish targets and monitor progress on global efforts to combat AMR. Targets should be specific, measurable and achievable, as well as evidence-based to ensure that they will meaningfully impact AMR. Examples could include measuring the implementation and uptake of infection prevention mechanisms, the reduction of inappropriate antibiotic use across all settings, and the number of new antimicrobials in the development pipeline to address high priority threats identified by the WHO. Regular public reporting of progress and remaining gaps will be essential to allow civil society to hold governments accountable and advocate for the policies and investments needed to reach targets.

E3: The IACG requests the Tripartite agencies (FAO, OIE and WHO) together with UNEP and other UN agencies, in the context of UN reform, to further strengthen joint One Health action, based on country priorities and needs, by enhancing their organizational capacity and providing adequate and sustainable core funding for antimicrobial resistance-related activities.

IDSA supports this recommendation from the IACG and strongly encourages the Tripartite agencies to provide the resources necessary, particularly for low- and middle-income countries, to implement AMR activities. We also encourage the Tripartite agencies, where appropriate, to draw upon civil society expertise to support these efforts. IDSA welcomes opportunities to share relevant expertise, particularly on antimicrobial stewardship and mobilizing stakeholders for advocacy on AMR.

Once again, IDSA expresses our gratitude to the IACG for its important work, and we are pleased to support its recommendations. We also reaffirm our commitment to working with international partners to continue driving progress on AMR.

Sincerely,

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Cynthia Sears, MD, FIDSA President, IDSA