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Infectious Diseases Society of America

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### IDSAs Headquarters

1300 Wilson Boulevard  
Suite 300  
Arlington, VA 22209  
TEL: (703) 299-0200  
FAX: (703) 299-0204  
EMAIL ADDRESS:  
info@idsociety.org  
WEBSITE:  
www.idsociety.org

July 7, 2016

His Excellency Juan José Gómez Camacho  
The Ambassador of Mexico  
Two United Nations Plaza  
28<sup>th</sup> Floor  
New York, NY 10017

Dear Ambassador Camacho:

Thank you for allowing the Infectious Diseases Society of America (IDSAs) to present to you and your colleagues on the issue of antimicrobial resistance (AMR) on June 29, 2016. IDSAs represents over 10,000 infectious diseases physicians and scientists. AMR and the lack of new antimicrobial drugs are serious threats to the world's health, economy and security. We are encouraged that many individual countries have begun taking steps to address this growing problem, and hope that a coordinated global response can have an even greater impact. We are pleased to offer our expertise as you and your colleagues prepare for a United Nations (UN) High Level Meeting on Antimicrobial Resistance in September.

IDSAs has been sounding the alarm about the public health crisis of antimicrobial resistance, with our [2004 Bad Bugs, No Drugs report](#) and our [2011 Combating Antimicrobial Resistance: Policy Recommendations to Save Lives report](#). While antimicrobial drugs are considered one of the greatest achievements in modern medicine and have saved millions of lives worldwide, this progress is seriously threatened by increasing antimicrobial resistance. Antimicrobial resistance refers to the natural ability of microbes (bacteria, fungi and viruses) to evolve genetically to counter the action of antimicrobial drugs. Use of antimicrobial drugs places selective pressure on these microbes, allowing the resistant microbes to flourish. Microbes are also able to share the genes that confer resistance with other microbes, further spreading resistance. When these resistant microbes infect people, the infections are much harder and sometimes impossible to treat as compared with infections caused by microbes that are not resistant. A 2016 report by the United Kingdom AMR Review found that currently over 700,000 people worldwide die as a result of infections caused by multidrug resistant (MDR) pathogens each year. In 2013, the World Health Organization (WHO) reported 480,000 new cases of MDR tuberculosis across the globe. There are high proportions of antibiotic resistance in bacteria that cause common infections (e.g. urinary tract infections, pneumonia, bloodstream infections) in all regions of the world.

Antimicrobial drug research and development (R&D) has failed to keep pace with patient needs. Without robust, sustained global action, this crisis will deepen. Given the complexity and severity of the problem, a substantial, multi-pronged solution is necessary. While approaches must be tailored to the unique needs and resources of individual nations, we must all be part of the solution. The U.S. has taken important steps forward with its National Action Plan for Combating Antibiotic Resistant Bacteria (CARB) and the National Action Plan for Combating MDR TB.

**IDSAs recommends that the outcomes document from the UN High Level Meeting on AMR focus on the following key areas: surveillance and data collection; antimicrobial stewardship; antimicrobial drug and diagnostic R&D; vaccination and infection prevention; and investment in an infectious diseases (ID) physician workforce. Further, IDSAs recommends that the UN provide mechanisms for global coordination and for reporting and accountability to help ensure that all nations are working together to make meaningful progress in efforts to combat AMR.**

## **Surveillance and Data Collection**

Global data on antimicrobial use and resistance patterns is critical to help us fully understand the problem of AMR and evaluate the impact of various interventions. These data can also help determine the pathogens that pose the greatest threats to patients and public health, which can inform global antimicrobial R&D priorities. There is significant variation in how different countries monitor antibiotic use. The European Surveillance of Antimicrobial Consumption (ESAC) system collects and makes publically available robust antibiotic use data from 34 countries in the European Union (EU). Unfortunately, many other nations, particularly those with fewer resources and insufficient infrastructure, are not collecting and reporting data in a regular and meaningful way. Ideally, surveillance should include standardized monitoring of antibiotic use at institutional, regional, and country levels to allow comparative benchmarking. Such data should be updated preferably in real-time and at least every 12 months. This will require adequate laboratory capacity using standardized methods.

It will be instructive to look at how different countries are currently approaching surveillance and data collection. In 2012, medical societies in India held their first major joint meeting on the issue of tackling antibiotic resistance. Leaders of this meeting published the Chennai Declaration in 2013 to guide the formulation of a national policy on resistance, including collecting data on antibiotic use. In 2014, the Indian medical societies' leaders who launched the Chennai Declaration published a [5 year road map](#), which includes the introduction of online modules to track antibiotic use as a key strategy, with a goal of all doctors participating within 5 years.

## **Antimicrobial Stewardship**

In healthcare facilities across the world, antibiotics are often administered needlessly (e.g., when no infection exists or where antibiotics would be of no benefit, such as in viral upper respiratory infections), continued when they are no longer necessary, or prescribed at the wrong dose. Inappropriate use of antimicrobial drugs is a key driver of the development of AMR. Antimicrobial stewardship refers to systematic efforts to optimize the use of antimicrobial drugs to maximize their benefits to patients, while minimizing both the rise of antibiotic resistance as well as adverse effects to patients from unnecessary antibiotic therapy. Antibiotic stewardship programs (ASP) have been shown clearly to reduce inappropriate antibiotic use, the percentage of antibiotic-resistant organisms within a facility, and the occurrence of *Clostridium difficile* infections, and pharmacy costs, while improving patient outcomes. The U.S. is proposing to require all hospitals and long term care facilities to establish ASPs. IDSA strongly supports this policy and asserts that these programs should be led by ID physicians who possess the necessary clinical expertise in antimicrobial drug and diagnostic use and interpretation as well as the ability to alter the prescribing behavior of other clinicians.

Global efforts to promote appropriate antimicrobial drug use must recognize that antimicrobial drugs remain available over the counter (without a prescription) in many parts of the world. Particularly for individuals in low income countries in which there are few physicians or other health care providers, over the counter access may be the only current access to antimicrobial drugs for many individuals. Over the counter access to antimicrobial drugs has been associated with overuse and misuse of antimicrobial drugs. The UN should work toward the goal of prescriber oversight for all antimicrobial drug use, recognizing that an investment in the health care workforce will be needed to ensure appropriate access to antimicrobial drugs in all countries.

It is also important to promote antimicrobial stewardship in animal health. A large and compelling body of scientific evidence demonstrates that antibiotic use in agriculture contributes to the emergence of resistant bacteria and their spread to humans. IDSA is working to eliminate inappropriate uses of antibiotics in food-producing animals and other aspects of agriculture and aquaculture. This includes ending the use of antibiotics for growth promotion and routine disease prevention in food animals, and requiring prescriptions and veterinary oversight of all antibiotics given to animals.

## **Antimicrobial Drug & Diagnostics R&D**

Rapid diagnostic tests are crucial for antibiotic stewardship because they can provide timely information on an infecting pathogen and its susceptibility to different antibiotics (i.e. the ability of the drug to inhibit growth or kill the infecting microorganism). Such tests can help guide the appropriate use of antimicrobial drugs and avert unnecessary use. Incentives are needed to stimulate the development of needed diagnostics. Additional policies (including physician education, appropriate reimbursement and access strategies particularly for lower resource areas) are also needed to ensure that existing diagnostics are optimally utilized.

Even with ideal measures to control AMR, we cannot stop the process. We need a robust pipeline of new antimicrobial drugs to treat patients today and to meet the emerging threats of tomorrow. Unfortunately, the developmental pipeline remains extremely fragile. In 1990, there were nearly 20 pharmaceutical companies with large antibiotic R&D programs. Today, there are only 2 or 3 large companies with strong and active programs and a few small companies with more limited programs. The market has failed to sufficiently stimulate the research and development (R&D) of antibiotics for a variety of reasons. Antibiotics are difficult and costly to develop. Antibiotics are typically priced low compared to other new drugs, used for a short duration, and held in reserve to protect their utility, making them far less economically viable investments for companies than other types of drugs. Robust incentives are needed to spur the R&D of new antimicrobial drugs to treat serious or life-threatening infections.

### **Vaccination and Infection Prevention**

Preventing infections is an important strategy to prevent antibiotic use, and vaccinations are highly successful tools for prevention strategies. Unfortunately, vaccination rates must be improved, even in highly developed, high income countries. While significant immunization campaigns for children, including required immunizations for attendance in public schools, have resulted in high immunization rates for children in the U.S., recent unfounded fears about vaccine safety are beginning to erode this progress in many countries, and some countries struggle with vaccine access for a variety of reasons. Globally, over 18 million infants still do not receive basic recommended immunizations. Adult immunization rates present an even greater challenge. For example, in the U.S. in 2014, seasonal influenza vaccination coverage among adults was 43.2%, and pneumococcal vaccination coverage among high-risk persons aged 19–64 years was 20% and among adults over 65 was 61.3%. Global pneumococcal vaccine coverage is estimated to be about 31%.

Additional efforts to strengthen infection prevention and control are needed as well. For example, sewage and sanitation infrastructure has yielded tremendous benefits in many countries, but others—particularly lower and some middle income countries—have not yet been able to make these important investments. Specific attention should also be paid to reducing health care associated infections, which remain a problem for all countries. The problems can be greatest in low and middle income countries where some facilities face extreme constraints, such as access to clean water for handwashing. Even in higher resource areas, greater priority should be placed on infection prevention and control, including supporting research to determine the best practices.

### **Investing in the ID Physician Workforce**

Ensuring a robust ID physician workforce is a critical component of any effort to combat resistance. ID physicians play a central role, caring for patients with or at risk of an infection caused by antibiotic resistant bacteria, leading antibiotic stewardship programs, conducting research and development of new antibiotics and diagnostics, and providing expertise to other health care and public health personnel in efforts to monitor and measure antibiotic use and resistance in all countries. The UK Review on Antimicrobial Resistance, chaired by Lord Jim O'Neill, explicitly recommended an investment in the ID workforce, including appropriate payment for ID physicians, to help ensure the existence of a workforce that will be necessary to implement all facets of a plan to tackle antimicrobial resistance.

Once again, IDSA thanks you for your attention to the critically important issue of antimicrobial resistance and stands ready to serve as a resource and partner to you and your colleagues.

Sincerely,



Johan S. Bakken, MD, PhD, FIDSA  
President, IDSA