



FAQ'S on Establishment of Institute for Antimicrobial Resistance (AMR) Research and Education

How big of a problem is antimicrobial resistance?

Antibiotic-resistant bacteria, according to the CDC, cause at least 2 million illnesses and 23,000 deaths in the United States every year. Infections caused by these pathogens cost an estimated \$20 billion a year in direct health care costs and up to \$35 billion in lost productivity as a result of hospitalizations and sick days. The growing public health threat has prompted action on a number of fronts.

Why was this institute created?

In 2015, the Task Force on Antibiotic Resistance in Production Agriculture established by the Association of American Veterinary Medical Colleges (AAVMC) and the Association of Public and Land-grant Universities released a report that offered an array of research and education recommendations to address the AMR problem. The report called for the creation of an Institute for Antimicrobial Resistance Research and Education to coordinate the implementation of the report's recommendations at universities and veterinary medical colleges across the country. Using a One Health approach, the institute will foster and coordinate research and education activities aimed at mitigating the role that the misuse of antibiotics is playing in the antimicrobial resistance problem.

What is a One Health approach?

One Health is an emerging approach in healthcare that involves veterinarians, physicians and other scientific experts working closely together to attain optimal health for people, animals and the environment.

What is the vision for the new institute?

The institute and its members will embrace multidisciplinary approaches that advance fundamental, translational, and applied research; implement and evaluate educational and training programs, and identify effective interventions to reduce or prevent antimicrobial resistance among people, animals, and the environment. The institute will operate as a leading national consortium that includes key experts and leaders from universities, government, commodity organizations and the private sector. Because answers to complex scientific problems often emerge from the intersections of academic disciplines, the institute will operate within a highly collaborative and integrative environment. The institute will be committed to the development of a national strategy yet open to collaboration with other global organizations working to combat the AMR problem.

What are the challenges the institute will address?

Since their discovery, antibiotics have been an important ingredient in the treatment of human and animal disease. However, as the use of antibiotics has proliferated so too has the emergence of drug-resistant bacteria which has narrowed the potential effective uses of some antibiotics for either

disease prevention or treatment in both humans and animals. Antimicrobial resistance is a complex issue and its causes are multi-factorial. Solving the problem is going to require concerted effort, collaboration among many scientific disciplines, national and international organizations, and resources.

Many challenges must be addressed, including the development of better management practices in production systems that will reduce the need for antimicrobial agents; the improvement of antibiotic resistance surveillance systems; research for new vaccines, antimicrobials, and alternatives; and, the education of both health practitioners and the general public. This work is more than any one governmental agency, university, commodity group, or industry partner can undertake. Hence, the institute will serve as a focal point in the effort to contain the problem over an extended period of time.

Who will be leading the new institute?

Although much of the work of the institute will be virtual and led by a modest staff, the institute itself will be physically located at Iowa State University. Under the direction of Dr. Paul Plummer, who will serve as executive director, Iowa State will work with its partners: the University of Nebraska-Lincoln, a co-funder of the project, University of Nebraska Medical Center, the University of Iowa, and the Mayo Medical Clinic. The institute will also partner with two major USDA Agricultural Research Service (ARS) facilities, as well as a collection of agricultural stakeholders representing over one-fourth of the U.S. swine and beef industry.

The institute will unite traditional and non-traditional agricultural industry partners, agricultural producers, university scientists and educators, medical and veterinary medical practitioners, other health scientists, government agencies (federal, state, regional, and intergovernmental), pharmaceutical industries, philanthropic organizations/foundations, and commodity organizations on the initiative. Multi-institutional partnerships will be encouraged.

How was Iowa State University selected to lead the institute?

A review committee selected Iowa State University from among nine qualified proposals submitted by major universities throughout the nation. Iowa State was chosen to lead the new institute because of the range, depth and capacity of its existing activities, partnerships and resources devoted to addressing the AMR problem.

What is the funding structure to support the institute?

The institute will begin operations with approximately \$1.6 million in start-up funding from Iowa State University and University of Nebraska-Lincoln. Moving forward, the Institute will pursue additional funding through federal, state and non-profit foundations, and international channels, as well as membership from stakeholders, including the consortium universities and their component parts; food and pharmaceutical companies; commodity, industry, and professional organizations; agriculture and public health organizations; foundations; government organizations and agencies; and, independent research organizations.

What is the governance structure?

The institute will work with its partners and the APLU and AAVMC to stand up a formal governance structure. The work of the institute is expected to be governed by an independent Board of Directors

with representation from member institutions (research vice presidents, deans, etc.), industry and non-profit stakeholders, along with APLU and AAVMC.

The board will help establish and oversee the strategic direction of the institute and provide oversight for the annual work plan and budget, and serve as the ultimate decision-making authority for the institute. The board also will establish processes for funding available to consortium members to implement research grants, projects, and programs.

For more information, please visit www.aplu.org/amr and www.aavmc.org/amr