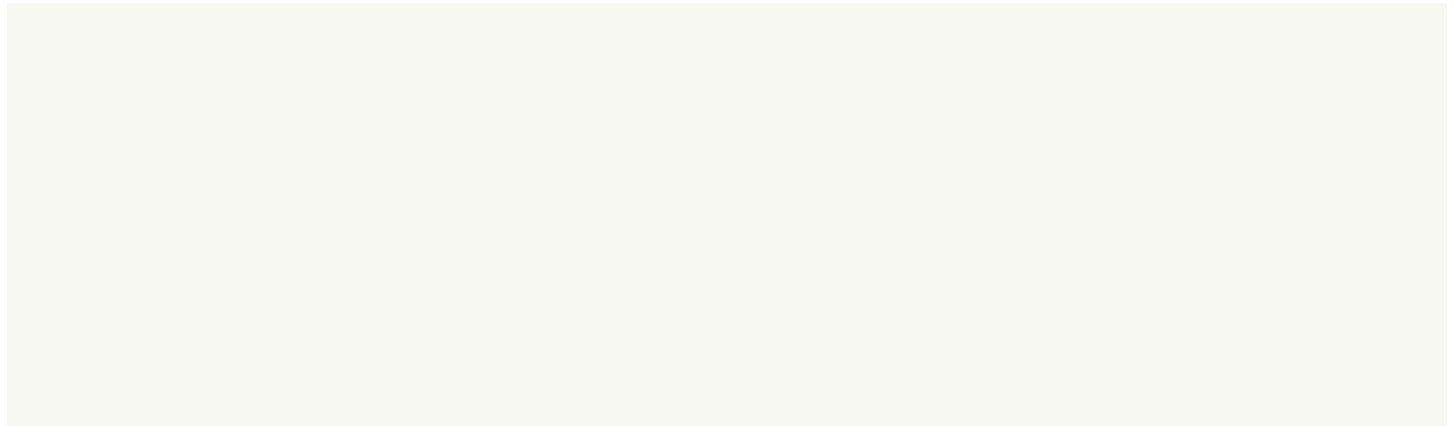


# Antimicrobial Resistance (AMR)

A



## Background

Antimicrobial resistance (AMR) is a major public health threat. It occurs when microorganisms, such as bacteria, viruses, fungi, and parasites, develop the ability to resist the effects of antimicrobial drugs. This resistance can be passed on to other organisms, making infections harder to treat and increasing the risk of death. The World Health Organization (WHO) estimates that AMR causes approximately 700,000 deaths globally each year. In the United States, AMR is responsible for about 35,000 deaths annually. The Centers for Disease Control and Prevention (CDC) reports that AMR costs the U.S. economy over \$68 billion each year in additional medical care and lost productivity. The National Academies of Sciences, Engineering, and Medicine (NASEM) released a report in 2019 titled 'Antimicrobial Resistance: A Threat to Our Health and the Environment'. The report highlights the need for a coordinated, multi-sector approach to address AMR, involving government, industry, academia, and the public. Key recommendations include: 1) Strengthening surveillance and monitoring systems to track the emergence and spread of AMR. 2) Promoting the prudent use of antimicrobials in humans, animals, and agriculture. 3) Investing in research and development to discover new antimicrobials and diagnostic tools. 4) Enhancing infection prevention and control measures in healthcare settings. 5) Improving antibiotic stewardship programs to ensure that antibiotics are used only when necessary and in the right way. 6) Supporting the development of vaccines and other preventive measures to reduce the need for antimicrobials. 7) Encouraging the use of alternative therapies, such as phage therapy and immunomodulators. 8) Promoting public awareness and education about AMR. 9) Strengthening international cooperation to address the global nature of AMR. 10) Supporting the development of a global AMR action plan. The report also emphasizes the importance of a One Health approach, which recognizes the interconnectedness of human, animal, and environmental health. By addressing AMR through a multi-sector, One Health approach, we can reduce the burden of AMR and protect public health for generations to come.

## ASM Calls on Congress and the Administration to:



**Fully fund and effectively administer the Agriculture and Food Research Initiative at the Department of Agriculture**

The Department of Agriculture (USDA) should fully fund and effectively administer the Agriculture and Food Research Initiative (AFRI) to support research on antimicrobial resistance in agriculture and food systems. AFRI is a critical program that supports research on the prevention, diagnosis, and treatment of AMR in animals and plants. The report recommends that the USDA increase funding for AFRI and ensure that the funds are used effectively to support high-quality research. Key areas of focus should include: 1) Research on the mechanisms of AMR in agriculture and food systems. 2) Research on the use of antimicrobials in agriculture and food systems. 3) Research on the development of new antimicrobials and diagnostic tools. 4) Research on the development of vaccines and other preventive measures. 5) Research on the development of alternative therapies. 6) Research on the development of infection prevention and control measures. 7) Research on the development of public awareness and education programs. 8) Research on the development of international cooperation programs. 9) Research on the development of a global AMR action plan. 10) Research on the development of a One Health approach. The report also recommends that the USDA support the development of a national AMR monitoring system for agriculture and food systems. This system would track the emergence and spread of AMR in animals and plants, and provide data to inform research and policy. The report also recommends that the USDA support the development of a national antibiotic stewardship program for agriculture and food systems. This program would promote the prudent use of antimicrobials in agriculture and food systems, and reduce the risk of AMR. The report also recommends that the USDA support the development of a national public awareness and education program for agriculture and food systems. This program would educate the public about the risks of AMR and the importance of prudent antimicrobial use. The report also recommends that the USDA support the development of a national international cooperation program for agriculture and food systems. This program would promote collaboration between the United States and other countries to address the global nature of AMR. The report also recommends that the USDA support the development of a national One Health approach for agriculture and food systems. This approach would recognize the interconnectedness of human, animal, and environmental health, and promote a coordinated, multi-sector approach to address AMR. The report also recommends that the USDA support the development of a national AMR action plan. This plan would outline the key actions that need to be taken to address AMR in agriculture and food systems, and provide a roadmap for implementation. The report also recommends that the USDA support the development of a national AMR research agenda. This agenda would identify the key research priorities for AMR in agriculture and food systems, and provide a framework for funding and implementation. The report also recommends that the USDA support the development of a national AMR monitoring system for agriculture and food systems. This system would track the emergence and spread of AMR in animals and plants, and provide data to inform research and policy. The report also recommends that the USDA support the development of a national antibiotic stewardship program for agriculture and food systems. This program would promote the prudent use of antimicrobials in agriculture and food systems, and reduce the risk of AMR. The report also recommends that the USDA support the development of a national public awareness and education program for agriculture and food systems. This program would educate the public about the risks of AMR and the importance of prudent antimicrobial use. The report also recommends that the USDA support the development of a national international cooperation program for agriculture and food systems. This program would promote collaboration between the United States and other countries to address the global nature of AMR. The report also recommends that the USDA support the development of a national One Health approach for agriculture and food systems. This approach would recognize the interconnectedness of human, animal, and environmental health, and promote a coordinated, multi-sector approach to address AMR. The report also recommends that the USDA support the development of a national AMR action plan. This plan would outline the key actions that need to be taken to address AMR in agriculture and food systems, and provide a roadmap for implementation. The report also recommends that the USDA support the development of a national AMR research agenda. This agenda would identify the key research priorities for AMR in agriculture and food systems, and provide a framework for funding and implementation.



**Support the National Antimicrobial Resistance Monitoring System**

The National Antimicrobial Resistance Monitoring System (NARMS) is a critical program that tracks the emergence and spread of AMR in humans, animals, and the environment. The report recommends that the Administration support the NARMS program and ensure that it is fully funded and effectively administered. Key areas of focus should include: 1) Strengthening surveillance and monitoring systems to track the emergence and spread of AMR. 2) Promoting the prudent use of antimicrobials in humans, animals, and the environment. 3) Investing in research and development to discover new antimicrobials and diagnostic tools. 4) Enhancing infection prevention and control measures in healthcare settings. 5) Improving antibiotic stewardship programs to ensure that antibiotics are used only when necessary and in the right way. 6) Supporting the development of vaccines and other preventive measures. 7) Encouraging the use of alternative therapies, such as phage therapy and immunomodulators. 8) Promoting public awareness and education about AMR. 9) Strengthening international cooperation to address the global nature of AMR. 10) Supporting the development of a global AMR action plan. The report also emphasizes the importance of a One Health approach, which recognizes the interconnectedness of human, animal, and environmental health. By addressing AMR through a multi-sector, One Health approach, we can reduce the burden of AMR and protect public health for generations to come.



**Support efforts to make microbiome data findable, accessible, interoperable, and reusable**

The National Microbiome Data Repository (NMDR) is a critical program that provides a central location for the storage and sharing of microbiome data. The report recommends that the Administration support the NMDR program and ensure that it is fully funded and effectively administered. Key areas of focus should include: 1) Promoting the development of standards and best practices for the collection, storage, and sharing of microbiome data. 2) Enhancing the interoperability of microbiome data across different platforms and systems. 3) Promoting the development of tools and software for the analysis and interpretation of microbiome data. 4) Encouraging the use of microbiome data in research and clinical practice. 5) Promoting public awareness and education about the importance of microbiome data. 6) Strengthening international cooperation to address the global nature of microbiome data. 7) Supporting the development of a global microbiome data action plan. The report also emphasizes the importance of a One Health approach, which recognizes the interconnectedness of human, animal, and environmental health. By addressing microbiome data through a multi-sector, One Health approach, we can improve our understanding of the role of the microbiome in health and disease, and develop new strategies for the prevention, diagnosis, and treatment of disease. The report also recommends that the Administration support the development of a national microbiome data action plan. This plan would outline the key actions that need to be taken to address microbiome data, and provide a roadmap for implementation. The report also recommends that the Administration support the development of a national microbiome data research agenda. This agenda would identify the key research priorities for microbiome data, and provide a framework for funding and implementation.

