

# NARMS

National Antimicrobial Resistance Monitoring System

Established in 1996, NARMS is a collaboration among the U.S. Food and Drug Administration, Centers for Disease Control and Prevention, and the U.S. Department of Agriculture, and state and local health departments to monitor antibiotic resistance in bacteria that are found in retail meats, humans, and food-producing animals.



## 88 YEARS

Antimicrobial drugs have been widely used in human and veterinary medicine, with tremendous benefits.



## THE PROBLEM

Antimicrobial drug use in humans and animals has led to increased resistance. Illnesses that were once easily treatable with antibiotics are becoming more difficult to cure and more expensive to treat.



## HOPE FOR THE FUTURE

NARMS tracks resistance in intestinal bacteria from retail meats, people, and food-producing animals. This information is used to combat antibiotic resistance through regulations, policies and public health interventions promoting antibiotic stewardship.

## What does NARMS do?

NARMS is a national public health surveillance program that monitors antibiotic resistance in drugs critically important to human medicine.

To accomplish its mission, NARMS conducts the following activities:



Monitors trends in antimicrobial resistance within foodborne bacteria from humans, retail meats, and food producing animals.

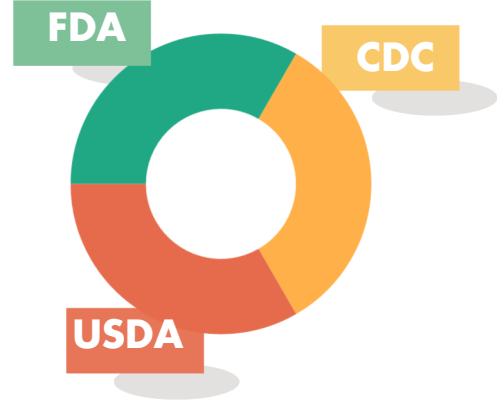


Disseminates timely information on antimicrobial resistance to promote interventions that reduce resistance among foodborne bacteria.



Conducts research to better understand the emergence, persistence, and spread of antimicrobial resistance.

## THE 3 ARMS OF NARMS



- Retail Meats - The retail meat component of NARMS laboratories in 18 states purchases retail meats and culture them for the target bacteria.

Isolates are sent to FDA's Center for Veterinary Medicine for species and serotype confirmation, antimicrobial susceptibility testing, and genetic analysis.

- Humans - CDC conducts nationwide surveillance of foodborne bacteria from human isolates.

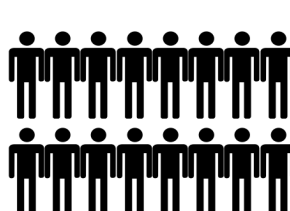
Antimicrobial susceptibility testing is conducted at the National Center for Emerging and Zoonotic Infectious Diseases.

- Animals - USDA collects samples from food-producing animals at slaughter in a way that is representative of national production. USDA also tests Hazard Analysis and Critical Control Points (HACCP) isolates of Salmonella collected by USDA in its oversight role to ensure hygienic practices in processing plants.

## DATA FOR MAKING DECISIONS

2,000,000

People in the United States become infected with bacteria that are resistant to antibiotics, according to CDC's 2013 Threat Report.



Antimicrobial resistance data from humans and food-producing animals are important for the development of public health recommendations for the use of drugs in humans and food animals, with the goal of preserving the effectiveness of these important drugs for the future.

## COMBATING RESISTANCE WITH SURVEILLANCE

### BASELINE DATA



Documents resistance levels in different sources

### SPREAD



Describes the spread of resistant bacterial strains and resistance genes

### ATTRIBUTION



Generates hypotheses about sources of resistant bacteria

### EDUCATION



Data provides insight on current and emerging hazards

### POLICY



Guides sound scientifically-based policies and guidelines to make the best use of antimicrobials in hospitals, communities, agriculture, aquaculture, and veterinary medicine

## THE RESULTS....



### ANNUAL SUMMARY REPORTS

NARMS produces annual summary reports on antimicrobial resistance among bacteria isolated from humans, retail meats, and food animals.



### INTEGRATED SURVEILLANCE REPORTS

NARMS also publishes integrated survey reports that consolidate data from all sources into an interactive format.



Since 2009, these reports have also included a summary describing the most important data points; and they also include interactive graphs of antimicrobial resistance among Salmonella and Campylobacter.



### TIP

NARMS NOW is an interactive tool that allows anyone to download and analyze isolate-level data for over 155,000 isolates in different formats.

## FROM DATA TO ACTION

- NARMS is positioned to help measure the impact of FDA policy stopping the use of antibiotics for growth promotion.
- Incorporated whole genome sequencing into surveillance, making it possible to more rapidly and accurately detect the presence of antimicrobial resistant bacteria.
- Contributed to the scientific understanding of foodborne disease through research based on NARMS findings.

Learn more at:

