

**STRATEGIES TO ADDRESS ANTIMICROBIAL RESISTANCE (STAAR) ACT**  
**Options for Improving Access to Antimicrobial Consumption Data in the United States**  
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**Antimicrobial use is a major driver of antimicrobial resistance.**

- As antibiotics are used in humans and animals, the pathogens they target become drug-resistant. However, antibiotic use also selects for resistance in other bacteria besides the target pathogen. Resistant pathogens can spread to humans through the food supply, and there is growing evidence that resistance genes can also be transferred to human bacteria through the food supply.
- To control the antibiotic resistance epidemic, experts in the United States need ongoing access to reliable, standardized “consumption data” regarding the scope of antimicrobial use in humans and animals. “Consumption data” includes ‘use data’ (i.e., prescribing data) as well as distribution/ sales data. Currently, data collection in the U.S. is limited to non-standardized and restricted-access data provided to FDA by manufacturers. According to some federal officials, these data are unusable due to lack of standard reporting periods and lack of comparability.
- The lack of U.S. antibiotic consumption data impedes our understanding of geographic and temporal trends in antimicrobial resistance. Greater understanding of these factors will contribute to more effective and targeted interventions to reduce unnecessary antimicrobial use and resistant infections. These include: 1) targeting appropriate antibiotic use interventions to the geographic areas and drugs of greatest importance, and 2) predicting and responding to new resistance problems based on changes in antimicrobial utilization.
- Section 4 of the Strategies to Address Antimicrobial Resistance (STAAR) Act will help to strengthen collection of antimicrobial consumption data in the United States.

**The United States is far behind other countries in collecting/benefiting from “consumption data”.**

- *The Danish Integrated Antimicrobial Resistance Monitoring and Research Program (DANMAP)* performs continuous monitoring of both consumption and resistance data in humans, animals and food. Human consumption data is collected from the pharmaceutical industry and the Danish Medicines Agency; meanwhile DANMAP’s “VetStat” system collects food animal data by species from pharmacies, feed mills, and veterinary practitioners.
- On a Europe-wide level, *The European Surveillance of Antimicrobial Consumption (ESAC)* system collects human and limited animal consumption data from 34 countries. (A second European system collects resistance data.) The inputs are largely standardized since countries must adhere to World Health Organization standards regarding measurement (“defined daily doses”) and classification of antimicrobials.
- ESAC obtains use data from IMS Health at no cost as a result of a joint publishing arrangement on data analysis. IMS data provide an important second check on the validity of ESAC collected data.

**Better understanding the correlation between antibiotic consumption and resistance development holds benefits for U.S. public health and patient safety efforts.**

- In one instance, Danish scientists determined that the use of avoparcin (a growth promoter) led to a strain of *vancomycin*-resistant enterococci (VRE) in food animals.

Vancomycin and avoparcin are related drugs, and vancomycin is important to combating serious antibiotic-resistant human infections. In Europe, this strain of VRE spread to humans through the food supply, particularly contaminated meat and poultry. Before the European ban on avoparcin use in animals, Europeans commonly carried VRE in their intestinal tract. Following the avoparcin and related bans, DANMAP and other European analyses showed a drop in related resistance patterns in animals, as well as reductions in humans.

- DANMAP data has led the Danes to institute evaluations of food safety, and issue regular reports to healthcare workers to guide their prescribing.
- ESAC data reveal strong correlations between rates of antimicrobial use in different countries and prevalence of resistant pathogens [*S. pneumoniae*, *S. pyogenes*, *E.coli*].

**Moving forward requires acceptance by U.S policymakers and political will.**

- Improved collection of antimicrobial consumption data must be embraced by U.S. policymakers as an important tool for strengthening patient safety and public health, if we are to sufficiently protect Americans from antimicrobial resistant infections.

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