

Post-Approval Monitoring Programs

Data Show Layers of Protection Are Working to Protect Public Health

Several public and private monitoring and surveillance systems have been established to watch for the emergence of antibiotic resistance. These systems allow for early detection and the implementation of management and control measures, when appropriate.

The National Antimicrobial Resistance Monitoring System (NARMS) is a multi-agency program consisting of three federal agencies:

1. The Food and Drug Administration (FDA) coordinates the programs and monitors for resistant bacteria in retail meats (http://www.fda.gov/cvm/narms_pg.html)
2. The Centers for Disease Control and Prevention (CDC) collects isolates, or samples, from public health laboratories to monitor for the emergence of antibiotic resistant food-borne pathogens in humans. (www.cdc.gov/narms)
3. The USDA Agricultural Research Service (ARS) collects samples from slaughter and processing facilities to monitor for antibiotic resistance trends in farm animals. www.ars.usda.gov/main/site_main.htm?modecode=66120508

So far, the program has produced seven years of data representing over 50,000 animals and 11,000 human *Salmonella* isolates. Most bacterial species isolated from humans and tested for resistance against drug classes potentially related to animal usage have shown stable or declining resistance patterns through 2004. Most of the multiple-drug resistance types, such as *Salmonella Typhimurium* DT104 show stable or declining prevalence in both food animals and humans since 1996.

The Collaboration on Animal Health and Food Safety Epidemiology (CAHFSE) is a program within the USDA's Animal and Plant Health Inspection Service that provides more real-time, active surveillance data (www.aphis.usda.gov/cahfse). The program collects comprehensive, specific information on a variety of farm practices, including antibiotic use, and tracks the animal through processing to provide specific, management information to the producer.

The SENTRY Antimicrobial Surveillance Program, initiated in 1997, is the most comprehensive human surveillance program in the world (www.jmilabs.com). Data from SENTRY documents the resistant organisms of greatest risk for poor therapy outcomes in patients have little link to the usage of animal antibiotics. This data is reflected in a separate measurement of human medical community opinion that the contribution of animal use to resistant infections is less than 5 percent (Bywater R. and Casewell M., *Journal of Antimicrobial Chemotherapy* 2000; 6:643-645).

Animal health companies support these surveillance and monitoring programs, which are important and necessary for monitoring the health and well being of animals and humans.

The data is also important for use in risk assessments to measure the public health impact of the use of particular antimicrobials.