Council of State and Territorial Epidemiologists

Leaders in Applied Public Health Epidemiology

nasphv.org

national association of state public health veterinarians

CSTE POSITION STATEMENT 1999-ID 7

COMMITTEE: Infectious Diseases

TITLE: Discontinuation of antimicrobials used to promote growth of food animals if they are used in or select for cross resistance to antimicrobials used in human therapy

ISSUE: Compelling scientific evidence indicates that use of antimicrobials in food animals results in antimicrobial resistance which can be transmitted to humans through the food supply and lead to adverse health consequences. An area of particular public health concern has been the feeding of antimicrobials in subtherapeutic doses to animals to promote growth. The World Health Organization recommends that antimicrobials not be used as growth promotants if they are used for or select for cross-resistance to antimicrobials used in human medicine. Discontinuing the subtherapeutic uses of these antimicrobials in food animals is needed in the United States as part of a comprehensive plan to reduce antimicrobial usage and ultimately protect the public health.

POSITION TO BE ADOPTED:

CSTE and NASPHV recommends the discontinuation of antimicrobials used to promote the growth of food animals if they are also used in human medicine. These uses may increase antimicrobial resistance and no longer meet the food safety criteria of reasonable certainty of no harm.

BACKGROUND AND JUSTIFICATION:

Antimicrobials are used for the treatment of sick animals, the prevention of selected animal production diseases. Subtherapeutic use of antimicrobials provide an economic advantage to the producer by decreasing the amount of feed needed. However, these antimicrobials are not essential for food production animals to reach their full genetic potential. The World Health Organization (WHO) recommends that antimicrobials not be used as growth promotants if they are used in or select for cross-resistance to antimicrobials used in human medicine. Consistent with the WHO recommendations, the European Union prohibited the use of the four such antimicrobials used in humans which were still used as growth promotants in Europe (virginiamycin, bacitracin, tylosin, and spiramycin).

For example, there is evidence that use of avoparcin, a glyocopeptide, to promote growth of food animals in Europe resulted in a large reservoir of vancomycin-resistant enterococci (VRE) in food animals, which were transferred to humans through meat and poultry, resulting in carriage in humans. The public health concern is that these colonized humans could introduce VRE to hospitals. Because of documented community carriage of vancomycin resistant enterococci in humans and the importance of vancomycin as a therapeutic agent to treat hospital acquired enterococci infections, the European Union banned avoparcin use in food animals. Following

the ban on avoparcin use, there was a decline in prevalence of VRE in food animals, meat and poultry, and humans in Europe.

In the United States, seven of 17 FDA licensed antimicrobials currently used subtherapeutically in food animals to promote growth or enhance feed efficiency are also used in or select for cross-resistance to antimicrobials in human therapy. These are bacitracin, lincomycin (selects for cross-resistance to clindamycin), oxytetracycline, penicillin, tetracycline, tylosin (selects for cross-resistance to erythromycin), and virginiamycin (selects for cross-resistance to quinupristin/dalfopristin). The subtherapeutic use of virginiamycin to promote growth in food animals in the United States threatens the effectiveness of quinopristin/dalfopristin (Synercid), which will soon be approved in the United States for the treatment of multidrug-resistant VRE; such isolates are often resistant to all other available antimicrobials. Virginiamycin, which is only used at subtherapeutic levels, has resulted in a reservoir of Synercid-resistant *E. faecium* in food animals. A preliminary survey of retail chicken products by CDC and four state health departments has found Synercid-resistant *E. faecium* in over half of the culture-positive chickens. Furthermore, preliminary data indicates that between 1-2% of persons in the general community may be carrying Synercid-resistant *E. faecium*. It appears likely that the use of virginiamycin to promote growth in food animals has resulted in Synercid-resistant *E. faecium* which is of concern because Synercid will likely be the drug of choice to treat multi-drug resistant VRE in infected patients.

The US Food and Drug Administration is responsible for ensuring the food safety criteria of a "reasonable certainty of no harm" with all approved antimicrobial uses in food animals. There is sufficient scientific evidence that subtherapeutic use of antimicrobials in food animals can select for antimicrobial resistance and do not meet this food safety criteria. In December 1998, US Food and Drug Administration proposed a new framework for evaluation of antimicrobials used in food animals. Although the proposed framework may be used to evaluate the existing approvals for subtherapeutic uses of antimicrobials in food animals, the details of how the proposal would be implemented remain to be determined, making it unlikely that the subtherapeutic use of these antimicrobials would be addressed for several years. More timely action is necessary to protect the public health. Antimicrobials which are used in human medicine, or which select for resistance to antimicrobials which are used in human medicine, should not be used to promote the growth of food animals.

COORDINATION WITH OTHER ORGANIZATIONS:

Agencies for Response:
USDA Department of Health and Human Services

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