



Fact Sheet

Animal Agriculture: Is MRSA a New Threat?

Bacterial infections on the rise outside of hospitals

The Issue



A study published in 2007 in *Emerging Infectious Diseases* reported an estimated 270,000 cases of hospital-treated resistant MRSA (methicillin-resistant *staphylococcus aureus*) infections in the United States in 2005, more than double the number of infections since 1999.

MRSA is a type of bacteria that lives on the skin and in the nose of people. While it is often carried without causing disease, it also causes a variety of very serious human illnesses, including skin infections, pneumonia, and bloodstream infections.

Until recently, MRSA was believed to be an opportunistic infection occurring mainly in hospitals. However, a study published in the *Journal of the American Medical Association* also in 2007 found that even healthy people are developing MRSA infections outside of the hospital setting.

The new community-acquired strains of MRSA are genetically different from those found in hospitals and are associated with serious human illnesses.

The routine use of antibiotics as feed additives in livestock and poultry

production has been linked to the presence of antibiotic resistance in farm workers, the occurrence of resistant pathogens on consumer meat products, and in the environment surrounding animal feeding operations.

Now, researchers at the University of Iowa have found a high prevalence of MRSA in swine (49%) and swine workers (45%) on a commercial confinement operation with farms located in Iowa and Illinois. The strain of MRSA found on the farms, ST 398, has been shown in Europe to come from farm animals.

Research in Europe shows MRSA can be transmitted from pigs to farmers, their families, veterinarians, and hospital staff treating farm-infected patients.

A study testing hospital patients in the Netherlands found that more than 30% of patients exposed to pigs and calves carried MRSA – a carriage risk approximately 1,000 times greater than that of the general population.

Dutch pig farms that routinely use antibiotics were more likely to have MRSA than farms with limited antibiotic use.

Are Livestock Farms in Ohio a Source for MRSA?

While a privately-funded study is ongoing, we don't know the extent to which confined animal feeding operations (CAFOs) in Ohio may be sources of MRSA.

Neither U.S. nor Ohio's public health officials are systematically testing livestock, livestock workers, or potential environmental pathways around animal feeding operations for its presence.

What we do know is that the approximately 225,000 pounds of penicillins, tetracyclines, aminoglycosides

(streptomycin), and many other antibiotics used in livestock production in Ohio are the same drug classes used in human medicine.

We also know that the routine use of antibiotics in industrialized livestock and poultry production can speed the proliferation of resistant bacteria such as MRSA.

We need comprehensive data on MRSA in food animals in Ohio and on the use of antibiotics in livestock production.

Recommendations

- The Department of Agriculture should begin to conduct comprehensive surveys of livestock for the MRSA strain 398.
 - The Ohio Department of Public health should survey farm workers and rural hospitals to determine the current impact of livestock-associated MRSA on human health.
 - The Ohio Department of Agriculture should solicit data from the U.S. Food and Drug Administration or collect data on a state level as required by the Animal Drug User Fee Act (ADUFA) on the amount of each antimicrobial active ingredient in a drug sold or distributed in the State of Ohio for use in food-producing animals, including information on any distributor-labeled product. This will assist public health officials in linking antibiotic use to emerging strains of antibiotic-resistance bacteria, assessing risks to human health, and developing and evaluating strategies to mitigate antibiotic resistance.
 - The Ohio Department of Agriculture should solicit all available data from the Agricultural Resource Management Survey (ARMS) related to the use of antibiotics and other health management technologies and practices in animal feeding operations in Ohio.
-

For More Information

Ellen Mee
Director of Environmental Health Policy
Ohio Environmental Council
(614) 487-7506
Ellen@theOEC.org

For more information contact:

Ohio Environmental Council
1207 Grandview Ave, Suite 201
Columbus, Ohio 43212

tel (614) 487-7507
fax (614) 487-7510
e-mail OEC@theOEC.org
web www.theOEC.org