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**NEW STUDY LINKS ANIMAL AGRICULTURE TO MORE THAN
20% OF MRSA INFECTIONS IN THE NETHERLANDS**

***U.S. Still Has No System to Monitor MRSA in Animal Production;
Congress Needs to Compel Government Action***

Washington, DC – A new study published in the U.S. Centers for Disease Control and Prevention's *Emerging Infectious Diseases* links a new strain of methicillin-resistant *Staphylococcus aureus* (MRSA), once found only in pigs, to more than 20 percent of all human MRSA infections in the Netherlands (the study can be found at <http://www.cdc.gov/eid/content/13/12/1834.htm>).

The new strain of MRSA, NT-MRSA, emerged in the Netherlands in 2003 and increased steadily until by 2006 it accounted for more than one out of every five human MRSA infections, many of them in either pig farmers or cattle farmers. The NT-MRSA cases clustered in regions of the country with high densities of pig and cattle farms. The new strain has high rates of hospitalization, suggesting that it causes severe disease.

Research published this fall in *Veterinary Microbiology* found MRSA was also prevalent in Canadian pigs and pig farmers, pointing again to animal agriculture as a source of the deadly bacteria.

Despite these studies and others from Europe dating back to 2005, the United States does not systematically test pigs, cattle, and other food animals for MRSA. As a result, the US public health establishment does not know whether the use of antibiotics in food animals in the United States is contributing to the reported surge of MRSA cases in the United States.

A study published earlier in the *Journal of the American Medical Association* (JAMA) estimated almost 100,000 MRSA infections in the United States in 2005, nearly 19,000 of them fatal. In comparison, HIV/AIDS killed 17,000 people that year.

Members of the Keep Antibiotics Working coalition (KAW), including medical, agriculture, and environmental experts, are repeating their call for Congress to compel the U.S. Food and Drug Administration to determine whether swine, cattle and poultry harbor MRSA in the US and could be reservoirs from which infections are making their way into the community.

“Antibiotic resistance is exploding in our hospitals and communities. Medical experts point to the profligate use of antibiotics in animal feed as a significant cause, but those in charge of safeguarding our food system are mostly just whistling in the dark,” said Rebecca Goldberg, Senior Scientist at Environmental Defense.

The heavy use of antibiotics in industrialized livestock operations can select for resistant bacteria, such as MRSA. The Union of Concerned Scientists estimates that 70% of all the antibiotics and related drugs used in the United States are used as feed additives for chicken, hogs, and beef cattle. Antibiotics use in pig farms in the Netherlands is believed to be facilitating the spread of MRSA there.

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Proposed federal legislation would phase out the use of antibiotics that are important in human medicine as animal feed additives within two years. The Preservation of Antibiotics for Medical Treatment Act is sponsored by Senate Health Committee Chairman Edward Kennedy (D-MA) and Senators Olympia Snowe (R-ME), Susan Collins (R-ME), Sherrod Brown (D-OH) and Jack Reed (D-RI) in the Senate (S. 549) and Rep. Louise Slaughter (D-NY), the only microbiologist in Congress, and 34 other House members in the U.S. House of Representatives (H.R. 962).

The American Medical Association, the Infectious Diseases Society of America, and the American Academy of Pediatrics are among the more than 350 health, agriculture, and other groups nationwide that have endorsed this bill.

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Annotated bibliography:

van Loo I, et al., 2007. Emergence of methicillin-resistant *Staphylococcus aureus* of animal origin in humans. *Emerging Infectious Diseases*, 2007 Dec. MRSA from an animal reservoir is now responsible for more than 20 percent of all human MRSA infections in the Netherlands.

Khanna et al. 2007. Methicillin-resistant *Staphylococcus aureus* colonization in pigs and pig farmers. *Veterinary Microbiology* doi:10.1016/j.vetmic.2007.10.006. The prevalence of MRSA colonization in farms in Ontario, Canada, was 45%.

Klevens et al. 2007. Invasive methicillin-resistant *Staphylococcus aureus* infections in the United States. *JAMA* 298:1763-1771. In 2005, there were an estimated 100,000 MRSA infections, and nearly 19,000 deaths.

de Neeling et al. 2007. High prevalence of methicillin-resistant *Staphylococcus aureus* in pigs. *Veterinary Microbiology* 122:366-372. Eighty-one percent of Dutch pig farms had pigs carrying MRSA and 39% of pigs at slaughter carried MRSA. All MRSA were tetracycline resistant and many of the bacteria were resistant to other antibiotics.

Ekkelenkamp et al. 2006. Endocarditis due to methicillin-resistant *Staphylococcus aureus* originating from pigs [Article in Dutch]. *Nederlands tijdschrift voor geneeskunde* 150:2442-2447. A 63-year-old transplant patient was admitted with endocarditis due to pig strain MLST type 398.

Hanselman et al. 2006. Methicillin-resistant *Staphylococcus aureus* colonization in veterinary personnel. *Emerging Infectious Diseases* 12(12):1933-1938. Available from <http://www.cdc.gov/ncidod/EID/vol12no12/06-0231.htm>. Vets averaged 7% MRSA colonization, with large animal vets 16% and small animal vets 4% colonization. No MRSA was detected in non-vets.

Huijsdens et al. 2006. Community-acquired MRSA and pig farming. *Annals of Clinical Microbiology and Antimicrobials* 5: 26-29. Mother developed MRSA mastitis and 3 family members, 3 co-workers, and 8 of 10 pigs tested positive.

van Duijkeren et al. 2007. Transmission of methicillin-resistant *Staphylococcus aureus* strains between different kinds of pig farms. *Veterinary Microbiology* [in press]. Eleven percent of pigs from 31 farms were positive for MRSA with antimicrobial medication of pigs a risk factor.

Voss et al. 2005. Methicillin-resistant *Staphylococcus aureus* in pig farming. *Emerging Infectious Diseases* 11:1965-1966. Pig farmers had 760 times as much MRSA as patients admitted to hospital. Transmission was demonstrated between animal and human, family members, and nurse and patient in hospital.

Witte et al. 2007. Methicillin-resistant *Staphylococcus aureus* ST398 in humans and animals, Central Europe. *Emerging Infectious Diseases* 13(2):255-258. Described human infections, skin, wound, and 3 nosocomial pneumonia infections with MRSA strain ST398.