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HIGH PREVALENCE OF ANTIBIOTIC-RESISTANCE IN INDIAN POULTRY FARMS RAISES GLOBAL CONCERNS ABOUT FARMING PRACTICES

As use of growth-promoting antibiotics in animal farming increases worldwide, new CDDEP study warns of potentially disastrous consequences to human health

Washington, DC – A new study from India raises questions about the dangers to human health of farming chicken with growth-promoting antibiotics—including some of the same drugs used in raising millions of chickens in the United States and worldwide.

The study, led by researchers from the Center for Disease Dynamics, Economics & Policy (CDDEP) and published today in *Environmental Health Perspectives*, found high levels of antibiotic-resistant pathogens in chickens raised for both meat and eggs on farms in India's Punjab state.

Many countries, including the U.S., permit antibiotics to be used in food animal production, despite the risk to human health of spreading antibiotic resistance. The U.S. Food and Drug Administration's voluntary ban on use of antibiotic growth-promoting agents in animals took effect in January, but its effectiveness is not yet known. Advocates of reducing non-therapeutic antibiotic use in animals have expressed skepticism about how well the voluntary ban will work.

"This study has serious implications, not only for India but globally," said study author and CDDEP Director Ramanan Laxminarayan. "Overuse of antibiotics in animal farms endangers all of us. We must remove antibiotics from the human food chain, except to treat sick animals, or face the increasingly real prospect of a post-antibiotic world."

For the CDDEP study, the largest of its kind ever to be conducted in India, researchers collected samples from 530 birds on 18 poultry farms and tested them for resistance to a range of antibiotic medications critical to human medicine. Two-thirds of the farms reported using antibiotic factors for growth promotion; samples from those farms were three times more likely to be multidrug-resistant than samples from farms that did not use antibiotics to promote growth.

Although the researchers found reservoirs of resistance across both types of farms, meat farms had twice the rates of antimicrobial resistance that egg-producing farms had, as well as higher rates of multidrug resistance.

Across the board, the CDDEP researchers found high levels of multidrug resistance, ranging from 39 percent for ciprofloxacin, used to treat endocarditis, gastroenteritis, cellulitis and respiratory tract infections, and other infections, to 86 percent for nalidixic acid, a common treatment for urinary tract infections.

Additional testing revealed the presence of certain enzymes that confer drug resistance to medications used, for example, to treat *E. coli*, bacterial pneumonia, and other infections. Almost 60 percent of *E. coli* isolates analyzed contained these enzymes.

Use of antibiotics for growth promotion in farm animals has increased worldwide in response to rising demand for food animal products. Previous CDDEP studies have projected that antibiotic consumption in food animal production will rise globally by 67 percent by 2030, including more than a tripling of use in India.

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About the Center for Disease Dynamics, Economics & Policy

The [Center for Disease Dynamics, Economics & Policy \(CDDEP\)](http://www.cddep.org) produces independent, multidisciplinary research to advance the health and wellbeing of human populations around the world. CDDEP projects are global in scope, spanning Africa, Asia, and North America and include scientific studies and policy engagement. The CDDEP team is experienced in addressing country-specific and regional issues, as well as the local and global aspects of global challenges, such as antibiotic resistance and pandemic influenza. CDDEP research is notable for innovative approaches to design and analysis, which are shared widely through publications, presentations and web-based programs. CDDEP has offices in Washington, D.C. and New Delhi and relies on a distinguished team of scientists, public health experts and economists.