

# New study identifies emergence of multidrug-resistant strain of salmonella

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A new study has identified the recent emergence of a multidrug-resistant strain of Salmonella that has a high level resistance to ciprofloxacin, a common treatment for severe Salmonella infections. The study, led by François-Xavier Weill, MD, and Simon Le Hello, PharmD, at the Pasteur Institute in France, is published in *The Journal of Infectious Diseases* and is now available online.

Salmonella infection represents a major public health problem worldwide. An estimated 1.7 million such infections occur in North America each year. More than 1.6 million cases were reported between 1999 and 2008 in 27 European countries. Although most [Salmonella infections](#) produce only mild gastroenteritis, elderly and immunocompromised patients are especially at risk for life-threatening infections. These cases are typically treated with antimicrobials called fluoroquinolones, such as [ciprofloxacin](#).

Dr. Weill and colleagues studied information from national surveillance systems in France, England and Wales, Denmark, and the United States. The data showed that a multidrug-resistant strain of [Salmonella](#), known as S. Kentucky, infected 489 patients in France, England and Wales, and Denmark between 2000 and 2008. In addition, researchers reported that the first infections were acquired mainly in Egypt between 2002 and 2005, while since 2006 the infections have also been acquired in various parts of Africa and the Middle East. The absence of reported international travel in approximately 10 percent of the patients suggests that infections may have also occurred in Europe through consumption

of contaminated imported foods or through secondary contaminations.

In this study, multidrug-resistant *S. Kentucky* was isolated from chickens and turkeys from Ethiopia, Morocco, and Nigeria, suggesting that poultry is an important agent for infection. The common use of fluoroquinolones in chicken and turkey production in Nigeria and Morocco may have contributed to this rapid spread.

This study highlights the importance of public health surveillance in a global food system. According to Dr. Le Hello, "We hope that this publication might stir awareness among national and international health, food, and agricultural authorities so that they take the necessary measures to control and stop the dissemination of this strain before it spreads globally, as did another multidrug-resistant strain of *Salmonella*, Typhimurium DT104, starting in the 1990s." The investigators from the Pasteur Institute and its international network, the Centers for Disease Control and Prevention in the U.S., the Health Protection Agency in the United Kingdom, and the Statens Serum Institute and Technical University of Denmark reported that they will continue to monitor this multidrug-resistant strain as well as help strengthen the capacities of national and regional laboratories in the surveillance of *Salmonella* and other major foodborne pathogens through the World Health Organization Global Foodborne Infections Network.

Craig Hedberg, PhD, from the University of Minnesota School of Public Health, noted in an accompanying editorial that the ability to integrate public health surveillance is limited by differences in national surveillance systems. The study by Dr. Le Hello and colleagues reported that the percentage of *Salmonella* isolates submitted from clinical laboratories to national health reference laboratories ranged from 65 percent in France to 99 percent in Denmark. "Given the medical costs and public health impact associated with the spread of multidrug-resistant organisms," Dr. Hedberg noted, "the potential benefits of such a

system should far outweigh its costs."

Provided by Infectious Diseases Society of America

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