

## CAMPYLOBACTER INFECTION: Notes about the Disease

The public health importance of campylobacteriosis derives not from the severity of individual cases but from the observation, based on active surveillance conducted through the Centers for Disease Control and Prevention (CDC) FoodNet program, that it is the most common form of bacterial gastroenteritis in the United States. Yet, for a number of years in North Carolina, the passively reported incidence of campylobacter infections has been only about half that of salmonellosis.

Most likely, this discrepancy in morbidity rates can be attributed to the much longer history of laboratory-based surveillance for salmonellosis here, coupled with an emphasis on salmonella serotyping. This phenomenon may also account for observed regional variations in reported campylobacteriosis rates.<sup>1</sup>

The great majority of campylobacter infections in NC are sporadic individual cases caused by *C. jejuni*, with *C. coli* and a handful of other species accounting for only a small proportion of cases. Campylobacter is an extremely common contaminant of poultry and is also sometimes found in other meats, raw milk, and unchlorinated water. Live animals, including pets, can be a source as well. As a leading cause of bacterial gastroenteritis, it has one feature in particular in common with salmonella: uncomplicated mild cases of disease are best left untreated with antibiotics for both these diseases, as antimicrobial resistance is becoming increasingly common. The use of antibiotics in agriculture to promote growth of livestock has contributed to this problem.<sup>2</sup> Unlike salmonellosis, campylobacterial gastroenteritis is often manifest as febrile bloody diarrhea. Complications are rare but do occur (e.g., Guillain-Barre syndrome, reactive arthritis).

The infectious dose of campylobacter for humans—fewer than 500 organisms—can be found in one drop of juice from a contaminated chicken carcass, and a surprisingly high proportion of chicken carcasses (98% in one study) yield positive cultures.<sup>3</sup> Thus, control measures for this infection should concentrate on education of the public about proper food handling techniques (with an emphasis on avoidance of cross-contamination of food preparation surfaces), not eating undercooked meat (particularly poultry), proper hand washing, avoiding unchlorinated water, and a variety of techniques for reducing contamination during the slaughter and processing of food-animal carcasses.

1. DJ Wallace, et al., "Variation in *Campylobacter* Incidence and Isolation: Ecology or Testing?" in *Proceedings of the Annual Meeting of the American Society for Microbiology, Los Angeles, California*, (Washington: American Society for Microbiology, 2000).
2. A. Gupta, et al., "Antimicrobial Resistance Among *Campylobacter* Strains, United States, 1997-2001," *Emerg Infect Dis* 10 (2004): 1102-9, [www.cdc.gov/foodnet/pub/publications/2004/a\\_gupta\\_campy\\_strains.pdf](http://www.cdc.gov/foodnet/pub/publications/2004/a_gupta_campy_strains.pdf).
3. SF Altekruze, et al., "*Campylobacter jejuni*—An Emerging Foodborne Pathogen," *Emerg Infect Dis* 5 (1999): 28-35, [www.cdc.gov/ncidod/eid/vol5no1/altekruse.htm](http://www.cdc.gov/ncidod/eid/vol5no1/altekruse.htm).