

**EXECUTIVE SUMMARY**  
**Quantitative Risk Assessment**  
**Food Safety Improvements of Proposed Poultry Slaughter Rule**

In June 2011, FSIS completed a quantitative risk assessment to determine how performing a greater number of sanitation, sampling, and other offline inspection procedures in young chicken and turkey slaughter establishments might affect the number of human illnesses from *Salmonella* and *Campylobacter*. These offline inspection procedures primarily involve activities that FSIS inspection personnel perform to verify the effectiveness of establishment sanitary operations and other health and safety-related activities.

FSIS developed the risk assessment to help the Agency determine how it could help reduce risks to public health associated with processed poultry by improving its approach to inspection. The results of the risk assessment show that redeploying Agency resources from on-line inspection activities to unscheduled off-line activities to verify compliance with Sanitation SOPs, HACCP requirements, and other requirements that are important to food safety, results in a lower prevalence of carcasses contaminated with *Salmonella* and *Campylobacter* and is likely to result in a reduction in the number of human illnesses of 4286 and 986 respectively.

To give the Agency the information it needed, the risk assessment focused on four risk management questions and concluded the following answers:

**(1) Can FSIS redeploy its inspection activities within official establishments without causing an increased prevalence of microbial pathogens in the establishments?**

The risk assessment showed that establishments with more unscheduled offline inspection activities have lower *Salmonella* and *Campylobacter* prevalence than establishments with fewer unscheduled offline activities. The assessment also suggested that illnesses attributable to both *Salmonella* and *Campylobacter*, would likely decline when additional unscheduled offline inspection procedures are performed.

**(2) Will redeploying inspectors to offline duties have an effect on the prevalence of microbial pathogens, and hence on human illness?**

The lower prevalence of *Salmonella* and *Campylobacter* on poultry at establishments where additional unscheduled offline procedures were performed would lead to as many as 4286 fewer *Salmonella*-related illnesses and 986 fewer *Campylobacter*-related illnesses per year. These numbers are based on the estimated 174,686 expected annual *Salmonella* illnesses attributable to both young chicken and turkey consumption, and an estimated 169,005 expected annual *Campylobacter* illnesses attributable to young chicken or turkey consumption.<sup>1</sup> Thus, a reduction of 4286 expected *Salmonella* illnesses annually, reflects a 2.5% reduction in attributable illnesses. A reduction of 986 expected *Campylobacter* illnesses annually reflects a 0.6% reduction in attributable illnesses.

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<sup>1</sup> 12. Scallan, E. Hoekstra, R.M., Angulo, F.J., Tauxe, R.V., Widdowson, M-A, Roy, S.L., Jones, J.L. Griffin, P.M. (2011) Foodborne Illness Acquired in the United States—Major Pathogens. *Emerging Infectious Disease*.17 no. 1, 7-15, January 2011, DOI: 10.3201/eid1701.P11101

**(3) Where in a poultry establishment will redeployed inspection activities have the greatest effect in reducing the prevalence of microbial pathogens and thus, in reducing human illness?**

The risk assessment showed that the greatest effect on *Salmonella* and *Campylobacter* prevalence and related illness would occur when inspection activities were concentrated on increased unscheduled off-line procedures. These could include additional unscheduled sanitation procedures, additional unscheduled sampling procedures, or additional unscheduled HACCP procedures.

**(4) What is the quantitative uncertainty of the pathogen prevalence and illness reductions?**

FSIS analysts reflected the uncertainty of illness estimates by reporting not only expected values but also the upper and lower bounds of an 80-percent confidence band around the estimates. Thus, for example, they calculated the annual averted *Salmonella* illnesses to be as few as 1360 and as many as 7904, and the averted *Campylobacter* illnesses as few as 12 and as many as 2977. Table 7 presents total estimated reductions in human illnesses relating to increased offline inspection procedures.