Potential Impact of Food Safety Vaccines on Health Care Costs

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Abstract

Foodborne pathogens continue to cause several outbreaks every year in many parts of the world. Among the bacterial pathogens involved, Shiga toxin–producing Escherichia coli, Campylobacter jejuni, and non-typhoidal Salmonella species cause a significant number of human infections worldwide, resulting in a huge annual economic burden that amounts to millions of dollars in health care costs. Human infections are primarily caused by the consumption of contaminated food. Vaccination of food-producing animals is an attractive, cost-effective strategy to lower the levels of these pathogens that will ultimately result in a safer food supply and fewer human infections. However, producers are often reluctant to routinely vaccinate animals against these pathogens since they do not cause any detectable clinical symptoms. This review highlights recent approaches used to develop effective food safety vaccines and the potential impact these vaccines might have on health care costs.