

**Conference for Food Protection
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Delegate Action:	Accepted _____	Rejected _____	

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Title:

Addressing Nontyphoidal Salmonella in the FDA Food Code

Issue you would like the Conference to consider:

Amend the 2009 FDA Food Code to add nontyphoidal *Salmonella* as one of the reportable illnesses for action by the Person in Charge, add Code language to address employee health controls for the exclusion and restriction of nontyphoidal *Salmonella*, and remove exclusion and restriction language in all applicable Code Sections.

Public Health Significance:

Nontyphoidal *Salmonella* (NTS) *enterica* serotypes are among the most common and important foodborne pathogens. NTS are estimated to cause more than one million domestically acquired foodborne illnesses in the United States each year (Scallan et al. 2011), and are the leading cause of hospitalizations and deaths due to foodborne illness in the United States (Barton-Behravesh et al. 2011, CDC 2011). Whereas reductions in incidence have been achieved for many other foodborne pathogens in recent years, no significant change in incidence of NTS infections has occurred since the start of FoodNet surveillance during 1996-1998 (CDC 2011). Therefore, further interventions are needed to reduce the incidence of NTS infections.

Commercial food establishments are an important setting for the transmission of NTS, both in the form of recognized foodborne disease outbreaks as well as sporadic infections. During 1998 to 2002, the 585 *Salmonella enterica* outbreaks reported to the Centers for Disease Control and Prevention accounted for 49% of all bacterial outbreaks (Lynch et al. 2006). Fifty-three percent of *Salmonella* outbreaks occurred in commercial food establishments, the most common setting for *Salmonella* outbreaks (Lynch et al. 2006). Outbreaks of salmonellosis at commercial food establishments frequently involve direct transmission to patrons from fresh produce or undercooked foods of animal origin, or cross contamination from these foods. However, numerous NTS outbreak investigations have implicated food workers as the source of the outbreak or strongly suggested transmission from food workers (Ethelberg et al. 2004; Greig et al. 2007; Hedberg et al. 1991; Hedican et al. 2009; Hundy and Cameron 2002; Khuri-Bulos et al. 1994; Maguire et al. 2000; Medus et al. 2006; Todd et al 2007a, 2007b).

In a study of restaurant-associated salmonellosis outbreaks in Minnesota published by Medus et al. (2006), the importance of infected food workers as a source of contamination

in the outbreaks was supported by several observations. First, a specific food vehicle was statistically implicated or suspected in a low proportion of the restaurant outbreaks (39%), which suggests that the specific food items or food handling errors were not the primary causes for these outbreaks. Second, food workers infected with NTS were identified in the majority (83%) of the outbreak investigations. Overall, 12% of the food workers tested positive for NTS. Infected food workers who reported a history of illness shed NTS in the stool for a median of 1 month. The authors concluded that regardless of the original source of a *Salmonella* outbreak in a restaurant (e.g., raw meat or eggs), the initial source of a salmonellosis outbreak, food workers frequently serve as reservoirs for NTS and contribute to transmission to patrons. Thus, assessment of food worker history, i.e. symptoms and exposures, stool samples and exclusion or restriction of infected food workers from the food establishment are essential for controlling restaurant-associated outbreaks of salmonellosis.

In a study of food workers with salmonellosis who were detected through routine surveillance (Medus et al. 2010), 2.2% of identified culture-confirmed *Salmonella* cases were food workers, and identification of these cases were critical to the identification of numerous outbreaks. The authors concluded that the rapid identification and follow-up of food workers among reported cases of salmonellosis is important to the early detection and control of outbreaks in restaurant settings. Importantly, even hostesses, servers, bartenders, and others who theoretically have limited food preparation duties can serve as sentinels of transmission within the restaurant. The authors also stated that food workers should be considered an important source of *Salmonella* transmission, and those identified through surveillance should raise a high index of suspicion of a possible outbreak at their place of work. Food service managers need to be alert to *Salmonella*-like illnesses among food workers to facilitate prevention and control efforts, including exclusion of infected food workers or restriction of their duties.

The Food and Drug Administration's Food Code does not currently exclude or restrict food workers with a NTS infection (US FDA 2009). Restriction of food workers infected with NTS after resolution of symptoms is not a national standard. However, because of the prolonged duration of shedding of NTS, evidence that food workers have been the source of foodborne outbreaks, evidence that food workers work while ill (Green et al. 2005), and evidence of inadequate hand hygiene practices (Green et al. 2006; US FDA 2004), exclusion or restriction of infected food worker duties is a reasonable public health measure. At a minimum, potential for transmission and how to prevent it should be discussed with the food worker and their manager.

The biology of NTS and the epidemiology of salmonellosis are complex; food workers may be an underappreciated part of that complexity. In order to decrease the incidence of NTS infections in the United States, commercial food establishments should also be targets for more focused prevention measures, and prevention and control efforts should consider food workers as an important source of NTS transmission.

Recommended Solution: The Conference recommends...:

that a letter be sent to the FDA requesting the 2009 Food Code (as modified by the Supplement issued in 2011) be amended as follows:

1. Include illness due to nontyphoidal *Salmonella* (NTS) as an illness that upon diagnosis by a health practitioner:

- Requires food employees to report the diagnosis and any symptoms associated with NTS to the Person in Charge;
- Prompts the Person in Charge to exclude a food employee with symptoms and a diagnosis of NTS until asymptomatic for at least 24 hours; and
- Prompts the Person in Charge to restrict a NTS-diagnosed food employee whose symptoms have resolved for at least 30 days from the date of onset of those symptoms;

2. Develop language in the appropriate sections of Food Code, Chapter 2 that addresses the conditions for exclusion and restriction and reinstatement following exclusion and restriction as stated above.

3. Add language to the public health reasons in Annex 3 contained in Attachment A titled, "Addressing Nontyphoidal Salmonella in the FDA Food Code (new language has been underlined), including associated changes in the Part 2-2 Employee Health Tables (not shown).

Submitter Information:

Name: Carol A. Selman, MPH
 Organization: CDC / Environmental Health Specialists Network
 Address: 4770 Buford Highway, MS-F60
 City/State/Zip: Atlanta, GA 30341
 Telephone: 770-488-4352 Fax: 770-488-7310
 E-mail: zxcg4@cdc.gov

Attachments:

- "Attachment A: Proposed changes to Food Code Annex 3, Public Health Reason"
- "Attachment B: Addressing NT Salmonella.Article1"
- "Attachment C: Addressing NT Salmonella.Article2.Abstract"
- "Attachment D: Addressing NT Salmonella - References"

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