Other methods that satisfactorily demonstrate that all food employees and conditional employees are informed of their responsibility to report to the PIC information about their health and activities as it relates to diseases that are transmissible through food, as specified under ¶2-201.11 (A)

In various places throughout the Code, it is specified that either written operating procedures or operational plans be developed. The link between management responsibility for developing and implementing the procedures or plans is now established as a new duty for the Person in Charge (PIC). This new provision does not establish new requirements in the development of plans or procedures; rather it emphasizes the importance of the role the PIC plays in ensuring active managerial control of the food establishment with the development and implementation of plans and/or procedures as specified in this Code. Examples of Code provisions that call for the development of plans or procedures can be found in: §§2-501.11, ¶¶3-301.11(D) and 3-401.14 (F), §§ 3-501.19, and 5-205.14. Ultimately, responsibility for food safety at the retail level lies with retail and food service operators and their ability to develop and maintain effective food safety management systems. There are many tools that industry can use to develop an effective system to achieve active managerial control of foodborne illness risk factors. An important tool in controlling risk factors inherent in a food establishment is the development and implementation of written procedures or plans.

(Also refer to Annex 4 – Management of Food Safety Practices (1) (D) for further information).

2-2 Employee Health

Overall goals

The purpose of this section of the Food Code is to reduce the likelihood that certain viral and bacterial agents will be transmitted from infected food employees into food. The agents of concern are known to be readily transmissible via food that has been contaminated by ill food employees, and so for that reason, are the primary focus of the Employee Health section of the Food Code. However, there are different levels of risk associated with different levels of clinical illness. The structure of the restrictions and exclusions has, therefore, been designed in a tiered fashion depending on the clinical situation to offer the maximum protection to public health with the minimal disruption to employees and employers.
Four levels of illness or potential illness have been identified with the first level being the highest potential risk to public health and the fourth level being the lowest. The first level relates to employees who have specific symptoms (e.g., vomiting, diarrhea, jaundice) while in the workplace. These symptoms are known to be associated commonly with the agents most likely to be transmitted from infected food employees through contamination of food. The first level also relates to employees who have been diagnosed with typhoid fever or an infection with hepatitis A virus (within 14 days of symptoms). The second level relates to employees who have been diagnosed with the specific agents that are of concern, but who are not exhibiting symptoms of disease because their symptoms have resolved. The third level relates to employees who are diagnosed with the specific agents, but never develop any gastrointestinal symptoms. The fourth level relates to those individuals who are clinically well but who may have been exposed to a listed pathogen and are within the normal incubation period of disease.

The most significant degree of restriction and exclusion applies to the first level of food employee illness. Infected food employees in the first level are likely to be excreting high levels of their infectious pathogen, increasing the chance of transmission to food products, and thus on to those consuming the food. The first level includes food employees who are:

- Experiencing active symptoms of diarrhea or vomiting – with no diagnosis,
- Experiencing jaundice within the last 7 days-- with no diagnosis,
- Diagnosed with typhoid fever,
- Diagnosed with hepatitis A within 7 days of jaundice or 14 days of any symptoms, or
- Experiencing active symptoms of diarrhea or vomiting, and diagnosed with Norovirus, \textit{E. coli} O157:H7 or other Shiga toxin-producing \textit{Escherichia coli} (STEC), \textit{Shigella} spp. infection, or nontyphoidal \textit{Salmonella}.

Diagnosis with typhoid fever or hepatitis A virus is included in level 1 because employees diagnosed with these pathogens are likely to be shedding high levels of the pathogen in their stool without exhibiting gastrointestinal symptoms. Peak levels of hepatitis A viral shedding in the feces typically occurs before symptoms appear. Diarrhea and vomiting are reliable indicators of infection with Norovirus, \textit{E. coli} O157:H7 or other STEC, and \textit{Shigella} spp., but are not typical symptoms of typhoid fever or hepatitis A. For example, employees diagnosed with typhoid fever are more likely to experience constipation, rather than diarrhea. Jaundice is also not always reliable as an indicator of a hepatitis A infection because employees can be infected with hepatitis A virus without experiencing jaundice (anicteric employees). Dark urine and light colored stool may be an indicator of a hepatitis A infection but may go unreported.

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Maximum protection to public health requires excluding food employees suffering from typhoid fever, hepatitis A virus, or specific gastrointestinal symptoms associated with diseases identified as likely to be transmitted through contamination of food (See section 2-201.12, Tables 2-201.12 #1a and #1b in this Annex). This situation describes the highest level of risk in transmitting pathogens to food, or what we would find in the first level.

Food employees who have been diagnosed with one of the agents of concern, but are not symptomatic because their symptoms have resolved, are still likely to be carrying the infected agent in their intestinal tract. This makes such employees less likely to spread the agent into food than others who are actually symptomatic, but employees diagnosed with one of the agents of concern still pose an elevated threat to public health. For this reason, there are a series of exclusions (if the employees work in facilities serving highly susceptible populations (HSP)) and restrictions (for non-HSP facilities) depending on the agent involved (See section 2-201.12, Table #2). This situation describes the second level of risk in transmitting pathogens to food.

Diagnosed, asymptomatic food employees who never develop symptoms are typically identified during a foodborne illness outbreak investigation through microbiological testing. If infected and asymptomatic employees are not microbiologically tested, they will remain undetected and could therefore extend the duration of a foodborne illness outbreak through continued contamination of food. The Food Code provides restriction or exclusion guidelines for employees that are identified through microbiological testing with an infection from a listed foodborne pathogen, but are otherwise asymptomatic and clinically well (See section 2-201.12, Table #3). The exclusion or restriction guidelines are applied until the identified food employees no longer present a risk for foodborne pathogen transmission. This situation describes the third level of risk in transmitting pathogens to food.

Some food employees or conditional employees may report a possible exposure to an agent. For example, a food employee may have attended a function at which the food employee ate food that was associated with an outbreak of shigellosis, but the employee remains well. Such individuals fall into the category of having had a potential exposure and present a lower risk to public health than someone who is either symptomatic or who has a definitive diagnosis. They present a level of risk to public health that is greater than if they had not had the exposure. The approach taken in the Food Code to food employees who have had a potential exposure is based on the incubation times (time between exposure and the onset of symptoms) of the various agents. The times chosen for restriction are the upper end of the average incubation periods for the specific agents. The Food Code provides restriction guidelines for food employees working in facilities serving a HSP. The reasoning is that this will restrict food employees only up to the time when it is unlikely they will develop symptoms. As a further protection to public health, it is recommended that such exposed food employees working in facilities not serving a HSP pay particular attention to personal hygiene and report the onset of any symptoms (See section 2-201.12, Table #4). This situation describes the fourth level of risk in transmitting pathogens to food.
This structured approach has linked the degree of exclusion and restriction to the degree of risk that an infected food employee will transmit an agent of concern into food. The approach strikes a balance between protecting public health and the needs of the food employee and employer.

The Food Code provisions related to employee health are aimed at removing highly infectious food employees from the work place. They were developed with recognition of the characteristics of the six important pathogens, and of the risk of disease transmission associated with symptomatic and asymptomatic shedders. The provisions also account for the increased risk associated with serving food to HSP’s and the need to provide extra protection to those populations.

The Employee Health section was developed and revised with assistance and input from the Centers for Disease Control and Prevention (CDC) and the U.S. Equal Employment Opportunity Commission (EEOC). The exclusion and restriction criteria are based on communicable disease information, as required by the Americans with Disabilities Act of 1990, in the list of Pathogens Transmitted by Food Contaminated by Infected Persons Who Handle Food, and Modes of Transmission of Such Pathogens posted on CDC’s website, and from the Control of Communicable Diseases Manual, 19th Ed., David L. Heymann, MD, Editor, by the American Public Health Association, Washington D.C., 2008.

**2-201 Infected Food Employees and Conditional Employees Practical Applications of Using Subpart 2-201**

The information provided in Subpart 2-201 is designed to assist food establishment managers and regulatory officials in removing infected food employees when they are at greatest risk of transmitting foodborne pathogens to food. Practical applications of the information in Subpart 2-201 by a food establishment manager may involve using Subpart 2-201 as a basis for obtaining information on the health status of food employees and can also be used as a basis in developing and implementing an effective Employee Health Policy. Regulatory officials can benefit by using the information provided below as a basis for determining compliance with Subpart 2-201 during a facility food safety inspection.

The development and effective implementation of an employee health policy based on the provisions in Subpart 2-201 may help to prevent foodborne illness associated with contamination of food by ill or infected food employees. The person in charge and food employees should be familiar with and able to provide the following information through direct dialogue or other means when interviewed by facility managers or regulatory officials. Compliance must be based, however, on first hand observations or information and cannot be based solely on responses from the person in charge to questions regarding hypothetical situations or knowledge of the Food Code. Also, when designing and implementing an employee health policy, the following information should be considered and addressed:
1. Does the establishment have an Employee Health Policy? If so, are the food employees aware of the employee health policy, and is it available in written format and readily available for food employees? (Note: A written Employee Health Policy is not a Food Code requirement unless the facility is operating under a pre-approved alternative procedure specified under ¶3-301.11(E)).

2. Does the establishment require conditional employees and food employees to report certain illnesses, conditions, symptoms, and exposures?

3. Are the reporting requirements explained to all employees?

4. What are the reporting requirements for conditional employees, food employees, and the food establishment manager?

5. Are conditional employees asked if they are experiencing certain symptoms or illnesses upon offer of employment? If so, which symptoms or illnesses?

6. If a food employee reports a diagnosis with one of the 6 listed pathogens in the Food Code, what questions are asked of the food employee? (The first question every food manager should ask a food employee who reports diagnosis with a listed pathogen is if the employee is currently having any symptoms.)

7. Who does the establishment notify when a food employee reports a diagnosis with one of the listed pathogens?

8. What gastrointestinal symptoms would require exclusion of a food employee from the food establishment?

9. What history of exposure is a conditional employee or food employee required to report?

10. If a food employee reports a gastrointestinal symptom, what criteria are used to allow the employee to return to work?

Responsibilities and Reporting

Proper management of a food establishment operation begins with employing healthy people and instituting a system of identifying employees who present a risk of transmitting foodborne pathogens to food or to other employees. The person in charge is responsible for ensuring all food employees and conditional employees are knowledgeable and understand their responsibility to report listed symptoms, diagnosis with an illness from a listed pathogen, or exposure to a listed pathogen to the person in charge. The person in charge is also responsible for reporting to the regulatory official if a food employee reports a diagnosis with a listed pathogen.
This reporting requirement is an important component of any food safety program. A food employee who suffers from any of the illnesses or medical symptoms or has a history of exposure to a listed pathogen in this Code may transmit disease through the food being prepared. The person in charge must first be aware that a food employee or conditional employee is suffering from a disease or symptom listed in the Code before steps can be taken to reduce the chance of foodborne illness.

The person in charge may observe some of the symptoms that must be reported. However, food employees and conditional employees share a responsibility for preventing foodborne illness and are obligated to inform the person in charge if they are suffering from any of the listed symptoms, have a history of exposure to one of the listed pathogens, or have been diagnosed with an illness caused by a listed pathogen. Food employees must comply with restrictions or exclusions imposed upon them.

A conditional employee is a potential food employee to whom a job offer has been made, conditional on responses to subsequent medical questions or examinations. The questions or examinations are designed to identify potential food employees who may be suffering from a disease that can be transmitted through food and done in compliance with Title 1 of the Americans with Disabilities Act of 1990. A conditional employee becomes a food employee as soon as the employee begins working, even if only on a restricted basis. When a conditional employee reports a listed diagnosis or symptom, the person in charge is responsible for ensuring that the conditional employee is prohibited from becoming a food employee until the criteria for reinstatement of an exclusion are met (as specified under section 2-201.13 of the Food Code). When a symptomatic or diagnosed conditional employee has met the same criteria for reinstatement that apply to an excluded symptomatic or diagnosed food employee (as specified under section 2-201.13 of the Food Code), the conditional employee may then begin working as a food employee.

**Reporting Symptoms:**

In order to protect the health of consumers and employees, information concerning the health status of conditional employees and food employees must be disclosed to the person in charge. The symptoms listed in the Code cover the common symptoms experienced by persons suffering from the pathogens identified by CDC as transmissible through food by infected food employees. A food employee suffering from any of the symptoms listed presents an increased risk of transmitting foodborne illness.

The symptoms of vomiting, diarrhea, or jaundice serve as an indication that an individual may be infected with a fecal-oral route pathogen, and is likely to be excreting high levels of the infectious agent. When a food employee is shedding extremely high numbers of a pathogen through the stool or vomitus, there is greater chance of transmitting the pathogen to food products.
Sore throat with fever serves as an indication that the individual may be infected with *Streptococcus pyogenes*. *Streptococcus pyogenes* causes a common infection otherwise known as “streptococcal sore throat” or “strep throat.” Streptococcal sore throat can spread from contaminated hands to food, which has been the source of explosive streptococcal sore throat outbreaks. Previous foodborne episodes with streptococcus sore throat have occurred in contaminated milk and egg products. Food products can be contaminated by infected food employees hands or from nasal discharges. Untreated individuals in uncomplicated cases can be communicable for 10-21 days, and untreated individuals with purulent discharges may be communicable for weeks or months.

Lesions containing pus that may occur on a food employee’s hands, as opposed to such wounds on other parts of the body, represent a direct threat for introducing *Staphylococcus aureus* into food. Consequently, a double barrier is required to cover hand and wrist lesions. Pustular lesions on the arms are less of a concern when usual food preparation practices are employed and, therefore, a single barrier is allowed. However, if the food preparation practices entail contact of the exposed portion of the arm with food, a barrier equivalent to that required for the hands and wrists would be necessitated. Lesions on other parts of the body need to be covered; but an impermeable bandage is not considered necessary for food safety purposes. Food employees should be aware that hands and fingers that contact pustular lesions on other parts of the body or with the mucous membrane of the nose also pose a direct threat for introducing *Staphylococcus aureus* into food.

If a food employee has an infected cut and bandages it and puts on a glove, the employee does not have to report the infected cut to the person in charge. However, if the employee does not bandage it, reporting is required.

**Title I of the Americans with Disabilities Act of 1990 (ADA)**

Title I of the Americans with Disabilities Act of 1990 (ADA) prohibits medical examinations and inquiries as to the existence, nature, or severity of a disability before extending a conditional offer of employment. In order for the permit holder and the person in charge to be in compliance with this particular aspect of the Code and the ADA, a conditional job offer must be made before making inquiries about the applicant’s health status.
The ADA also requires that employers provide reasonable accommodation to qualified applicants and employees with disabilities. A reasonable accommodation is a change in the application process, in the way a job is done, or to other parts of the job that enables a person with a disability to have equal employment opportunities. ADA disabilities are serious, long-term conditions. Most people with diseases resulting from the pathogens listed in the Food Code do not have ADA disabilities because these diseases are usually short-term in duration. In addition, the gastrointestinal symptoms listed in the Food Code usually are not long-term and severe enough, in themselves, to be ADA disabilities. Of course, these symptoms may be linked to other conditions that may be serious enough to be ADA disabilities, like Crohn’s disease or cancer.

A food employer may exclude any employee under the Food Code upon initially learning that the employee has *Salmonella* Typhi, or has a gastrointestinal symptom listed in the Food Code. The excluded employee may then ask for an ADA reasonable accommodation instead of the exclusion. In response, the employer’s first step should be to ask the employee to establish that the employee is disabled by the disease or symptom (or that the symptom is caused by another ADA disability). If the employee successfully proves that the employee has an ADA disability, then the employer may continue to exclude the employee under the Food Code if:

- there is no reasonable accommodation at work that would eliminate the risk of transmitting the disease while also allowing the employee to work in a food handling position, or
- all reasonable accommodations would pose an undue hardship on the employer’s business; and
- there is no vacant position not involving food handling for which the employee is qualified and to which the employee can be reassigned.

**Example 1:** A food employee working in the café of a department store informs the employer that the employee has been diagnosed with a disease caused by *Salmonella* Typhi. The employer immediately excludes the employee under the requirements of the Food Code. The employee then establishes that the disease is an ADA disability because it is severe and long-term and the employee requests reasonable accommodation instead of an exclusion. The employer determines that no reasonable accommodation would eliminate the risk of transmitting *Salmonella* Typhi through food and refuses to remove the exclusion. However, there is a vacant clerical position in another part of the store for which the employee is qualified. Unless the employer can establish that reassigning the employee to this position would be an undue hardship, the employer’s failure to make the reassignment instead of continuing the exclusion would be a violation of the ADA.¹

¹ Whether or not the employee in question is an individual with an ADA disability, in those jurisdictions where the Code is adopted, Food Code exclusions or restrictions must be removed when requirements for removal under § 2-201.13 of the Code are met.
Example 2: A food employee has diarrhea and is excluded. The employee establishes that the diarrhea is caused by Crohn’s disease. This employee also establishes a serious longstanding history of Crohn’s disease and is an individual with an ADA disability. Crohn’s disease is not a communicable disease and cannot be transmitted through food. No reasonable accommodation is needed to eliminate the risk of transmitting the disease through the food supply, so the Food Code exclusion should be removed. Of course, the Food Code’s provisions on personal cleanliness for hands and arms apply as usual, requiring employees to clean hands and exposed portions of arms after using the toilet room and in other specified circumstances (Subpart 2-301).

Somewhat different rules apply to conditional employees. If a conditional employee reports a disease or symptom listed in the Food Code and shows that the disease or symptom makes the conditional employee an individual with an ADA disability, the employer may withdraw the job offer only if:

- The job involves food handling; and
- The employer determines that either there is no reasonable accommodation that would eliminate the risk of transmitting the disease through food, or any such accommodation would be an undue hardship to the business.
- There is no need to offer the conditional employee a vacant position not involving food handling as a reasonable accommodation.

It should be noted that the information provided here about the ADA is intended to alert employers to the existence of ADA and related CFR requirements. For a comprehensive understanding of the ADA and its implications, consult the references listed in Annex 2 that relate to this section of the Code or contact the U. S. Equal Employment Opportunity Commission. See the Equal Employment Opportunity Commission’s *How to Comply with the Americans with Disabilities Act: A Guide for Restaurants and Other Food Service Employers*, found at [http://www.eeoc.gov/facts/restaurant_guide.html](http://www.eeoc.gov/facts/restaurant_guide.html) or [http://www.eeoc.gov/facts/restaurant_guide_summary.html](http://www.eeoc.gov/facts/restaurant_guide_summary.html) for detailed information about the interaction between the FDA Food Code and the ADA.

The information required from applicants and food employees is designed to identify employees who may be suffering from a disease that can be transmitted through food. It is the responsibility of the permit holder to convey to applicants and employees the importance of notifying the person in charge of changes in their health status. Once notified, the person in charge can take action to prevent the likelihood of the transmission of foodborne illness. Applicants, to whom a conditional offer of employment is extended, and food employees are required to report their specific history of exposure, medical symptoms, and previous illnesses.
The symptoms listed may be indicative of a disease that is transmitted through the food supply by infected food employees.

Section 103 (d) of the Americans with Disabilities Act of 1990, Public Law 101–336, requires the Secretary to publish a list of infectious and communicable diseases that are transmitted through handling the food supply and to review and update the list annually. The CDC published on its website in November 2012 a list of Pathogens Transmitted by Food Contaminated by Infected Persons Who Handle Food, and Modes of Transmission of Such Pathogens. See the list at [http://www.cdc.gov/foodsafety/food-safety-office.html#food](http://www.cdc.gov/foodsafety/food-safety-office.html#food)

The final list has been reviewed in light of new information and has been revised as set forth below.

**Pathogens Transmitted by Food Contaminated by Infected Persons Who Handle Food, and Modes of Transmission of Such Pathogens**

Some pathogens are frequently transmitted by food contaminated by infected persons. The presence of any one of the following signs or symptoms in persons who handle food may indicate infection by a pathogen that could be transmitted to others through handling the food supply: diarrhea, vomiting, open skin sores, boils, fever, dark urine or jaundice. The failure of food-handlers to wash hands in certain situations (such as after using the toilet, handling raw meat, cleaning spills, or carrying garbage), wear clean gloves, or use clean utensils is responsible for the foodborne transmission of these pathogens. Non-foodborne routes of transmission, such as from one person to another, are also major contributors in the spread of these pathogens.

Some pathogens usually cause disease when food is intrinsically contaminated or cross-contaminated during production, processing or transportation, but may also be contaminated when prepared by infected persons. Bacterial pathogens in this category often cause disease after bacteria have multiplied in food after it has been kept at improper temperatures permitting their multiplication to an infectious dose. Preventing food contact by persons who have an acute diarrheal illness will decrease the risk of transmitting these pathogens.

The following represent both types of pathogens that may be transmitted by an infected food handler:

**Astroviruses**
**Bacillus cereus**
**Campylobacter jejuni**
**Clostridium perfringens**
**Cryptosporidium species**
**Entamoeba histolytica**
**Enterohemorrhagic E. coli**
**Enterotoxigenic E. coli**
Giardia intestinalis
Hepatitis A virus
Nontyphoidal Salmonella
Noroviruses
Rotaviruses
Salmonella Typhi*
Sapoviruses
Shigella species
Staphylococcus aureus
Streptococcus pyogenes
Taenia solium - cysticercosis
Vibrio cholera

Yersinia enterocolitica

* 1. Kauffmann-White scheme for designation of Salmonella serotypes

The 6 Listed Pathogens:

The CDC has designated the 6 organisms listed in the Food Code as having high infectivity via contamination of food by infected food employees. This designation is based on the number of confirmed cases reported that involved food employees infected with one of these organisms and/ or the severity of the medical consequences to those who become ill.

The following is taken from information provided in the 19th Edition of Control of Communicable Diseases Manual, the CDC website, and the FDA Bad Bug Book, 2nd Edition, and is provided as background information on pathogen virulence, infectivity, and common symptoms exhibited with infection of each of the 6 listed pathogens.

NOROVIRUS

Noroviruses (genus Norovirus, family Caliciviridae) are small (27-40 nm), round structured, single-stranded RNA, nonenveloped viruses. They are a genetically diverse group classified into at least five genogroups, designated GI-GV, which are further subdivided into at least 35 genotypes. Noroviruses are recognized as the most common cause of epidemic and sporadic gastroenteritis across all age groups worldwide.

Transmission of norovirus occurs primarily through the fecal-oral route, including direct person-to-person contact and indirect transmission through contaminated food, water, or environmental surfaces. Vomitus-oral transmission can also occur through aerosolization followed by direct ingestion or environmental contamination.
Noroviruses are the leading cause of foodborne illness in the United States. Food handler contact with raw or other ready-to-eat foods is the most common scenario resulting in foodborne norovirus outbreaks. Norovirus contamination of produce and shellfish can also occur during production. Secondary household transmission is common.

Noroviruses are environmentally stable, able to survive both freezing and heating (although not thorough cooking), are resistant to many common chemical disinfectants, and can persist on surfaces for up to 2 weeks. Proper hand hygiene and exclusion of food employees exhibiting symptoms of norovirus disease (i.e., diarrhea or vomiting) are critical for norovirus control.

**Incubation Period:** In volunteer studies, the range is 10-50 hours. In foodborne norovirus outbreaks, the median incubation period is 33 hours.

**Symptoms and Complications:** Acute-onset of vomiting, watery non-bloody diarrhea, abdominal cramps, and nausea, or a combination of these symptoms. Low grade fever and body aches may also be associated. Symptoms typically last 24 to 72 hours. Norovirus disease is usually self-limited without any serious long-term sequelae. Among the young and the elderly, dehydration is a common complication. Volunteer studies have found that as many as 30% of individuals infected with norovirus are asymptomatic. There is no specific treatment for norovirus disease. Supportive therapy consists of oral or intravenous rehydration solutions to replace fluid loss and electrolytes. Previous exposure does not provide long-term immunity; thus, individuals may be repeatedly infected throughout their lifetimes.

**Infectivity:** Noroviruses are highly contagious, and it is thought that an inoculum of as few as 18 viral particles may be sufficient to infect an individual. Although pre-symptomatic shedding may occur, shedding usually begins with onset of symptoms, peaks 4 days after exposure, and may persist for 3 weeks after recovery. However the degree of infectivity of prolonged shedding has not been determined and peak contagiousness is during the acute stage of disease. Peak viral loads in both symptomatic and asymptomatic infections (may be as high as 100 billion viral particles/g feces).

**NONTYPHOIDAL SALMONELLA**

Caused by serotypes other than S. Typhi and S. Paratyphi A.

Unlike previous editions of the FDA Food Code, the 2013 edition requires food employees to report a diagnosis of nontyphoidal *Salmonella* (NTS), prompts the person in charge to exclude food employees with diagnosis of NTS, and provides conditions for reinstatement of a food employee who provides to the person in charge written medical documentation from a health practitioner that states the food employee is free from NTS, and where appropriate, approval from the regulatory authority.
Nontyphoidal *Salmonella* (NTS) *enterica* serotypes are among the most common bacterial cause of foodborne illness. 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). Forty-six percent of *Salmonella* outbreaks occurred in restaurant/deli establishments, the most common setting for *Salmonella* outbreaks (Lynch et al. 2006). For the period of 2009-2010, the 243 *Salmonella* outbreaks reported to the CDC accounted for 51% of bacterial foodborne disease outbreaks. 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. 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, testing of stool samples and exclusion or restriction of infected food workers from the food establishment are essential for controlling restaurant-associated outbreaks of salmonellosis.

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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 was 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 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.

**General Description:**
Nontyphoidal Salmonella (NTS) enterica are bacteria that cause a diarrheal illness called salmonellosis. NTS are among the most common and important causes of enteric disease. An estimated 1.2 million cases occur annually in the United States; of these, approximately 42,000 are culture-confirmed cases reported to the Centers for Disease Control and Prevention.

Salmonella lives in the intestines of animals or humans. It can be found in water, food, soil, or surfaces that have been contaminated with the feces of infected animals or humans. People can become infected with Salmonella by:

- Eating foods contaminated with the bacteria. Contaminated foods are often of animal origin, such as beef, poultry, unpasteurized milk, or eggs. Fruits and vegetables may also be contaminated. Any food can be contaminated by an infected food handler.
- Contacting farm animals or pets (including reptiles, amphibians, chicks, and ducklings), animal feces, or animal environments.
- Touching contaminated surfaces or objects and then touching ones mouth or putting a contaminated object into ones mouth.
- Drinking contaminated water.

Most infections are thought to be acquired through consumption of contaminated food.

**Incubation Period:**
Symptoms often begin 12 to 72 hours after being exposed to the bacteria, although it can take up to a week or more for symptoms to develop in some people.
Symptoms and Complications:
Symptoms of salmonellosis include diarrhea, abdominal cramps, and fever. The illness usually lasts 4 to 7 days. Persons with NTS infections usually recover without treatment. However, in approximately 20% of persons, the illness is so severe that hospitalization is required. In these patients the NTS infection may spread from the intestine to the blood stream, and then to other body sites and can cause death unless the person is treated promptly with antibiotics. An estimated 400 fatal cases of salmonellosis occur each year. A small number of persons experience long-term consequences from NTS infections, such as arthritis that can last for months or years.

Antibiotic treatment for salmonellosis is generally not indicated for typical intestinal illness. Antibiotics typically do not shorten the duration of illness or eliminate the carrier state. However, antibiotic treatment is recommended for persons who develop invasive (extraintestinal) infections, infants under 2 months of age, the elderly, or those who have certain underlying medical conditions that predispose them to invasive infection.

Infectivity:
The minimum infectious dose of NTS for humans is generally described as 100 to 1,000 organisms. However, doses of fewer than 10 organisms have caused illness in multiple outbreaks. Persistence of NTS in the stool after the acute phase of illness is a well described consequence of NTS infections. This persistence is often referred to as a temporary carrier state, and the term "shedding" is used to describe the excretion of Salmonella in the stool.

Studies have consistently shown that the median duration of shedding in the stool to be 4 to 5 weeks after onset of acute gastroenteritis. Persons who have been exposed to NTS but who never develop symptoms can also be temporary carriers of NTS; these persons shed NTS for a shorter period of time than persons who experienced illness. Carriers of NTS are known to shed the bacteria in the stool intermittently. Treatment with antimicrobials does not eradicate NTS from stool and may actually prolong the duration of shedding.

SALMONELLA TYPHI

Salmonella enterica subspecies enterica serovar Typhi (commonly S. Typhi) causes a systemic bacterial disease, with humans as the only host. This disease is relatively rare in the United States, with fewer than 500 sporadic cases occurring annually in the U.S. Worldwide, the annual estimated incidence of typhoid fever is about 17 million cases with approximately 600,000 deaths. Currently, most cases of S. Typhi in industrialized nations are imported into the country from developing countries. Antibiotic-resistant strains have become prevalent in several areas of the world.

Incubation period: Generally 1 to 3 weeks, but may be as long as 2 months after exposure.
Symptoms and Complications: High fever, from 103° to 104°F; lethargy; gastrointestinal symptoms, including abdominal pains and diarrhea or constipation; headache; achiness; loss of appetite. A rash of flat, rose-colored spots sometimes occurs. Septicemia, with colonization of other tissues and organs; e.g., may lead to endocarditis. Septic arthritis may occur, in which the infection directly affects the joints and may be difficult to treat. Chronic infection of the gallbladder may occur, which may cause the infected person to become a carrier.

Infectivity: The minimal infectious dose is estimated to be less than 1000 bacterial cells. An individual infected with S. Typhi is infectious as long as the bacilli appear in the excreta, usually from the first week throughout the convalescence; variable thereafter. About 10% of untreated typhoid fever patients will discharge bacilli for 3 months after onset of symptoms, and 2%-5% become permanent carriers.

SHIGA TOXIN-PRODUCING ESCHERICHIA COLI

E. coli O157:H7 is the most commonly identified serotype of Shiga toxin-producing Escherichia coli (STEC) as a cause of foodborne illness in the United States. E. coli O157:H7 is a zoonotic disease derived from cattle and other ruminants. However, E. coli O157:H7 also readily transmits from person-to-person, so contaminated raw ingredients and ill food employees both can be sources of foodborne disease. Other STEC serotypes have been identified as a source of foodborne illness in the United States, however not as frequently as E. coli O157:H7. The other serogroups most commonly implicated as a cause of foodborne illness in the United States are O26, O111, O103, O45, and O121.

The Food Code definition of STEC covers all E. coli identified in clinical laboratories that produce Shiga toxins. Nearly 200 O:H combinations of E. coli have been shown to produce Shiga toxins. The Food Code definition includes all STEC, including those that have not been specifically implicated in human disease such as hemorrhagic colitis (i.e., bloody diarrhea) or hemolytic uremic syndrome (HUS). Infections with STEC may be asymptomatic but are classically associated with bloody diarrhea (hemorrhagic colitis) and hemolytic uremic syndrome (HUS) or thrombotic thrombocytopenic purpura (TTP). [Note: “enterohemorrhagic” (EHEC) is a subset of STEC that has the capacity to both produce Shiga toxin and cause “attaching and effacing” lesions in the intestine.]

Incubation period: Symptoms usually begin 3 to 4 days after exposure, but the time may range from 1 to 9 days.
Symptoms and Complications: Hemorrhagic colitis is characterized by severe cramping (abdominal pain), nausea or vomiting, and diarrhea that initially is watery, but becomes grossly bloody. In some cases, the diarrhea may be extreme, appearing to consist entirely of blood and occurring every 15 to 30 minutes. Fever typically is low-grade or absent. Infections from EHEC may range from asymptomatic to mild diarrhea to severe, life threatening complications (e.g., hemorrhagic colitis, hemolytic uremic syndrome). About 3% to 7% STEC infections progress to HUS.

Infectivity: The infective dose of E. coli O157:H7 is estimated to be very low, in the range of 10 to 100 cells. Children under 5 years old are most frequently diagnosed with infection and are at greatest risk of developing HUS. The elderly also experience a greater risk of complications. The duration of excretion of STEC in the stool is typically 1 week or less in adults, but can be up to 3 weeks or longer in one-third of infected children.

SHIGELLA SPP.

Causes an acute bacterial disease, known as shigellosis, and primarily occurs in humans, but also occurs in other primates such as monkeys and chimpanzees. An estimated 300,000 cases of shigellosis occur annually in the U.S. *Shigella* spp. consist of 4 species or serogroups, including *S. flexneri*, *S. boydii*, *S. sonnei*, and *S. dysenteriae*; which all differ in geographical distribution and pathogenicity. *Shigella* spp. are highly infectious and highly virulent. Outbreaks occur in overcrowding conditions, where personal hygiene is poor, including in institutions, such as prisons, mental hospitals, day care centers, and refugee camps, and also among men who have sex with men. Water and RTE foods contaminated by feces, frequently from food employees’ hands, are common causes of disease transmission. Multidrug-resistant *Shigella* (including *S. dysenteriae type 1*) have appeared worldwide. Concern over increasing antimicrobial resistance has led to reduced use of antimicrobial therapy in treating shigellosis.

Incubation period: Eight to 50 hours.

Symptoms and Complications: Abdominal pain, diarrhea, fever, nausea, and sometimes vomiting, tenesmus, toxaemia, and cramps. The stools typically contain blood, pus, or mucus resulting from mucosal ulcerations. The illness is usually self-limited, with an average duration of 5-7 days. Infections are also associated with rectal bleeding, drastic dehydration, and convulsions in young children. The fatality rate for *Shigella dysenteriae* 1 may be as high as 20% among hospitalized cases. Other complications can also occur, such as reactive arthritis, intestinal perforation, and hemolytic uremic syndrome.
Infectivity: The infectious dose for humans is low, with as few as 10 bacterial cells depending on age and condition of the host. Infectivity occurs during acute infection and until the infectious agent is no longer present in feces, usually within 4 weeks after illness. Asymptomatic carriers may transmit infection; rarely, the carrier state may persist for months or longer.

HEPATITIS A VIRUS

Hepatitis A virus (HAV) is a 27-nanometer picornavirus (positive strand RNA, non-enveloped virus). The hepatitis A virus has been classified as a member of the family *Picornaviridae*. The exact pathogenesis of HAV infection is not understood, but the virus appears to invade from the intestinal tract and is subsequently transported to the liver. The hepatocytes are the site of viral replication and the virus is thought to be shed via the bile.

HAV is most commonly spread by the fecal-oral route through person-to-person contact. Risk factors for reported cases of hepatitis A include personal or sexual contact with another case, illegal drug use, homosexual male sex contact, and travel to an endemic country. Common source outbreaks also can occur through ingestion of water or food that has fecal contamination. However, the source of infection is not identified for approximately 50% of reported cases.

HAV infection is endemic in developing countries, and less common in industrialized countries with good environmental sanitation and hygienic practices. In the developing world, nearly all HAV infections occur in childhood and are asymptomatic or cause a mild illness. As a result, hepatitis A (symptomatic infection with jaundice) is rarely seen in the developing world. More than 90% of adults born in many developing countries are seropositive.

Children play an important role in the transmission of HAV and serve as a source of infection for others, because most children have asymptomatic infections or mild, unrecognized HAV infections. In the United States, the disease is most common among school-aged children and young adults. After correction for under-reporting and undiagnosed infections, an estimated 61,000 HAV infections (includes cases of hepatitis A as well as asymptomatic infections) occurred in 2003.

HAV Immunization: Immune globulin (IG) can be used to provide passive pre-exposure immunoprophylaxis against hepatitis A. Protection is immediately conferred to an exposed individual following administration of IG, and immunity is provided for 3-5 months following inoculation. IG is effective in preventing HAV infection when given as post-exposure immunoprophylaxis, if given within 14 days of exposure. When a food employee with hepatitis A is identified, IG is often given to co-workers. Active immunoprophylaxis using hepatitis A vaccine (a formalin-inactivated, attenuated strain of HAV) has been shown to provide immunity in > 95% of those immunized, with minimal adverse reactions.
Hepatitis A vaccination of food employee has been advocated, but has not been shown to be cost-effective and generally is not recommended in the United States, although it may be appropriate in some communities.

**Incubation period:** Average 28-30 days (range 15-50 days).

**Symptoms and Complications:** Illness usually begins with symptoms such as nausea/vomiting, diarrhea, abdominal pain, fever, headache, and/or fatigue. Jaundice, dark urine or light colored stools might be present at onset, or follow illness symptoms within a few days. HAV infection of older children and adults is more likely to cause clinical illness with jaundice (i.e., hepatitis A); onset of illness is usually abrupt. In young adults, 76-97% have symptoms and 40-70% are jaundiced. Jaundice generally occurs 5-7 days after the onset of gastrointestinal symptoms. For asymptomatic infections, evidence of hepatitis may be detectable only through laboratory tests of liver infections such as alanine aminotransferase (ALT) tests. The disease varies in severity from a mild illness to a fulminant hepatitis, ranging from 1-2 weeks to several months in duration. In up to 10-15% of the reported cases, prolonged, relapsing hepatitis for up to 6 months occurs. The degree of severity often increases with age; however, most cases result in complete recovery, without sequelae or recurrence. The reported case fatality rate is 0.1% - 0.3% and can reach 1.8% for adults over 50 years old.

**Diagnosis:** Diagnosis of HAV infection requires specific serological testing for IgM anti-HAV. IgM anti-HAV becomes undetectable within 6 months of illness onset for most persons; however, some persons can remain IgM anti-HAV positive for years after acute infection. Total anti-HAV (the only other licensed serologic test) can be detected during acute infection but remains positive after recovery and for the remainder of the person’s life.

**Infectivity:** The infective dose of HAV is presumed to be low (10 to 100 viral particles), although the exact dose is unknown. The viral particles are excreted in the feces of ill people (symptomatic and asymptomatic) at high densities ($10^6$ to $10^8$/gm) and have been demonstrated to be excreted at these levels for up to 36 days post-infection. Evidence indicates maximum infectivity during the latter half of the incubation period, continuing for a few days after onset of jaundice. Most cases are probably noninfectious after the first week of jaundice. Chronic shedding of HAV in feces has not been reported. HAV is shed at peak levels in the feces, one to two weeks before onset of symptoms, and shedding diminishes rapidly after liver dysfunction or symptoms appear. Liver dysfunction or symptoms occur at the same time circulating antibodies to HAV first appear. Immunity after infection probably lasts for life; immunity after vaccination is estimated to last for at least 20 years.
Reporting History of Exposure:

The reporting requirements for history of exposure are designed to identify employees who may be incubating an infection due to norovirus, *Shigella* spp., *E. coli* O157:H7 or other STEC, typhoid fever, HAV.

Which employees who report exposure are restricted?

- Employees who work in a food establishment serving a highly susceptible population (HSP) facility, except those employees who are exposed to nontyphoidal *Salmonella* (NTS).

Why don’t employees who are exposed to nontyphoidal *Salmonella* (NTS) need to be restricted?

- For those employees who are exposed to nontyphoidal *Salmonella*, exposure alone does not necessitate restriction of the employee based on epidemiologic evidence of no increased risk of employees with only a history of exposure versus employees who were infected and diagnosed.

What constitutes exposure?

- Consuming a food that caused illness in another consumer due to infection with Norovirus, *Shigella* spp., *E. coli* O157:H7 or other STEC, typhoid fever, or HAV.
- Attending an event or working in a setting where there is a known disease outbreak.
- Close contact with a household member who is ill and is diagnosed with a listed pathogen.

Why are other guidelines provided, in addition to restriction for employees serving an HSP who report exposure to hepatitis A virus?

- Employees who have had a hepatitis A illness in the past are most likely protected from infection by life-time immunity to hepatitis A infection.
- Immunity developed through immunization or IgG inoculation prevents hepatitis A infection in exposed employees.
- Our standard definition of HSP doesn’t apply very well to HAV. Children under 6 years old who become infected with HAV are generally asymptomatic, and while a higher proportion of susceptible elderly who become infected have serious illness, most institutionalized elderly are protected from HAV by prior infection.
What is the period of restriction?

- The period of restriction begins with the most recent time of foodborne or household member exposure and lasts for the usual incubation period of the pathogen as defined in the Control of Communicable Diseases Manual. This is the time that the employee is most likely to begin shedding the pathogen.
  - For norovirus, 48 hours after the most recent exposure
  - For *Shigella* spp., 3 days after the most recent exposure
  - For *E. coli* O157:H7 or other STEC, 3 days after the most recent exposure
  - For typhoid fever (*S. Typhi*), 14 days after the most recent exposure
  - For HAV, 30 days after the most recent exposure

What is the period of restriction when exposed to a diagnosed, ill household member?

- While the household member is symptomatic with an infection due to Norovirus, *Shigella* spp., *E coli* O157:H7 or other STEC, typhoid fever (*S. Typhi*) or HAV;
- Plus during the usual incubation period of the pathogen of concern:
  - For norovirus, symptomatic period plus 48 hours
  - For *Shigella* spp., symptomatic period plus 3 days
  - For *E. coli* O157:H7 or other STEC, symptomatic period plus 3 days
  - For typhoid fever (*S. Typhi*), symptomatic period plus 14 days
  - For HAV, onset of jaundice plus 30 days

What is the appropriate response to a report of exposure to other food employees?

- Employees who report a history of exposure but who do not work in a HSP facility should be reminded of the requirements for reporting illness, avoidance of bare hand contact with RTE foods, and proper hand washing and personal hygiene.
2-201.12 Exclusions and Restrictions. 2

Refer to public health reasons for § 2-201.11 for actions to take with conditional employees.

It is necessary to exclude food employees symptomatic with diarrhea, vomiting, or jaundice, or suffering from a disease likely to be transmitted through contamination of food, because of the increased risk that the food being prepared will be contaminated such as with a pathogenic microorganism. However, if the food employee is suffering from vomiting or diarrhea symptoms, and the condition is from a non-infectious condition, Crohn’s disease or an illness during early stages of a pregnancy, the risk of transmitting a pathogenic microorganism is minimal. In this case, the food employee may remain working in a full capacity if they can substantiate that the symptom is from a noninfectious condition. The food employee can substantiate this through providing to the person in charge medical documentation or other documentation proving that the symptom is from a noninfectious condition.

Because of the high infectivity (ability to invade and multiply) and/or virulence (ability to produce severe disease), of typhoid fever (*Salmonella Typhi*) and hepatitis A virus, a food employee diagnosed with an active case of illness caused by either of these two pathogens, whether asymptomatic or symptomatic, must be excluded from food establishments. The exclusion is based on the high infectivity, and/or the severe medical consequences to individuals infected with these organisms. A food employee diagnosed with an active case of illness caused by norovirus, *Shigella* spp., STEC, or nontyphoidal *Salmonella* (NTS), is excluded if exhibiting symptoms of vomiting and diarrhea, and then allowed to work as the level of risk of pathogen transmission decreases (See section 2-201.12, Tables #1b, #2 and #3).

The degree of risk for a food employee or conditional employee who is diagnosed with an infection but asymptomatic with regard to symptoms, to transmit a foodborne pathogen decreases with the resolution of symptoms. This risk decreases even further for those employees that are diagnosed with a listed pathogen, but never developed symptoms. The decrease in risk is taken under consideration when excluding and restricting diagnosed food employees and results in a slight difference in the way food employees diagnosed with Norovirus, but asymptomatic with respect to gastrointestinal symptoms are handled (See section 2-201.12, Table #2).

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2In order to comply with Title I of the Americans with Disabilities Act, an exclusion must also be removed if the employee is entitled to a reasonable accommodation that would eliminate the risk of transmitting the disease. Reasonable accommodation may include reassignment to another position in which the individual would not work around food. The steps an employer must take when an excluded employee requests reasonable accommodation are briefly described in Annex 3, § 2-201.11. However, it is not possible to explain all relevant aspects of the ADA within this Annex. When faced with an apparent conflict between ADA and the Food Code’s exclusion and restriction requirements, employers should contact the U.S. Equal Employment Opportunity Commission.

Annex 3 – Public Health Reasons/Administrative Guidelines
Restriction of food employees infected with NTS after resolution of symptoms has not been 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 employee and their manager.

There is no epidemiological evidence of an increased risk of NTS transmission from food employees in highly susceptible populations over the general population. Current evidence suggests that restriction is sufficient in food establishments that serve either highly susceptible populations or the non-highly susceptible populations to control transmission on NTS. Further, events where an infected food handler is involved in nontyphoidal salmonellosis outbreaks in establishments serving highly susceptible populations are much less frequent than those in establishments not serving highly susceptible populations. For example, from 1998-2011, only 41 nontyphoidal salmonellosis outbreaks were reported to CDC that occurred in nursing home facilities and 16 outbreaks in hospitals, compared with 731 outbreaks in restaurants or delis. There are many highly susceptible persons in the general population who eat in regular, non-institutionalized settings. A more restrictive exclusion criteria for establishments serving highly susceptible populations is not warranted at this time.
2-201.11 / 2-201.12 Decision Tree 1. When to Exclude or Restrict a Food Employee Who Reports a Symptom and When to Exclude a Food Employee Who Reports a Diagnosis with Symptoms Under the Food Code

Key: Decision Tree 1
STEC = Shiga toxin-producing Escherichia coli
HSP = Highly Susceptible Population
NTS = Nontyphoidal Salmonella
2-201.11 / 2-201.12 Decision Tree 2a. When to Exclude or Restrict a Food Employee Who is Asymptomatic and Reports a Listed Diagnosis Under the Food Code

Is the Food Employee reporting listed symptoms?

No

Is the Food Employee reporting a diagnosis with infection?

S. Typhi or Hepatitis A

Yes

Exclude per Table 2 or 3.

Shigella spp., STEC, or Norovirus?

Yes

HSP

General Pop (Non-HSP)

Yes

Restrict per Table 2 or 3.

NTS

Yes

Key: Decision Tree 2a

STEC = Shiga toxin-producing *Escherichia coli*

HSP = Highly Susceptible Population

NTS = Nontyphoidal *Salmonella*
2-201.11 / 2-201.12 Decision Tree 2b. When to Restrict a Food Employee Who Reports a Listed Exposure Under the Food Code

Is the Food Employee reporting listed symptoms?

No

Is the Food Employee reporting a diagnosis with infection?

No

Is the Food Employee reporting exposure to Norovirus, STEC, HAV, Shigella, or Typhoid Fever (S. Typhi)?

Yes

HSP

Restrict per Table 4.

No

Gen. Pop (Non-HSP)

Educate on symptoms; reinforce requirement to report listed symptoms; ensure compliance with good hygienic practices, handwashing, and no bare hand contact with ready-to-eat food.

Key: Decision Tree 2b
STEC = Shiga toxin-producing Escherichia coli
HAV = Hepatitis A virus
HSP = Highly Susceptible Population
### 2-201.12 Table 1a: Summary of Requirements for Symptomatic Food Employees

Food employees and conditional employees shall report symptoms immediately to the person in charge.

The person in charge shall prohibit a conditional employee who reports a listed symptom from becoming a food employee until meeting the criteria listed in section 2-201.13 of the Food Code, for reinstatement of a symptomatic food employee.

<table>
<thead>
<tr>
<th>Symptom</th>
<th>EXCLUSION OR RESTRICTION (Facilities Serving an HSP)</th>
<th>EXCLUSION OR RESTRICTION (Facilities Not serving an HSP)</th>
<th>Removing Symptomatic Food Employees from Exclusion or Restriction</th>
<th>RA Approval Needed to Return to Work?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vomiting</td>
<td>EXCLUDE 2-201.12(A)(1)</td>
<td>EXCLUDE 2-201.12(A)(1)</td>
<td>When the excluded food employee has been asymptomatic for at least 24 hours or provides medical documentation 2-201.13(A)(1). <strong>Exceptions:</strong> If diagnosed with Norovirus, <em>Shigella</em> spp., STEC, HAV, or typhoid fever (<em>S. Typhi</em>) (see Tables 1b &amp; 2).</td>
<td>No if not diagnosed</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>EXCLUDE 2-201.12(A)(1)</td>
<td>EXCLUDE 2-201.12(A)(1)</td>
<td>When the excluded food employee has been asymptomatic for at least 24 hours or provides medical documentation 2-201.13(A). <strong>Exceptions:</strong> If Diagnosed with Norovirus, STEC, HAV, or <em>S. Typhi</em> (see Tables 1b &amp; 2).</td>
<td>No if not diagnosed</td>
</tr>
</tbody>
</table>
| Jaundice        | EXCLUDE 2-201.12(B)(1) if the onset occurred within the last 7 days | EXCLUDE 2-201.12(B)(1) if the onset occurred within the last 7 days | When approval is obtained from the RA 2-201.13 (B), and:  
  - Food employee has been jaundiced for more than 7 calendar days 2-201.13(B)(1), or  
  - Food employee provides medical documentation 2-201.13(B)(3). | Yes                                  |
| Sore Throat with Fever | EXCLUDE 2-201.12(G)(1)                           | RESTRICT 2-201.12(G)(2)                              | When food employee provides written medical documentation 201.13(G) (1)-(3). | No                                  |
| Infected wound or pustular boil | RESTRICT 2-201.12(I)                              | RESTRICT 2-201.12(I)                                | When the infected wound or boil is properly covered 2-201.13(I)(1)-(3). | No                                  |

**Key:** Table 1a  
RA = Regulatory Authority  
STEC = Shiga toxin-producing *Escherichia coli*  
HAV = Hepatitis A virus  
HSP = Highly Susceptible Population
2-201.12 Table 1b: Summary of Requirements for Diagnosed, Symptomatic Food Employees

Food employees and conditional employees shall report a listed Diagnosis with symptoms immediately to the person in charge

- The person in charge shall notify the RA when a food employee is jaundiced or reports a listed diagnosis

- The person in charge shall prohibit a conditional employee who reports a listed diagnosis with symptoms from becoming a food employee until meeting the criteria listed in section 2-201.13 of the Food Code, for reinstatement of a diagnosed, symptomatic food employee.

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>EXCLUSION (Facilities Serving an HSP or Not Serving an HSP)</th>
<th>Removing Diagnosed, Symptomatic Food Employees from Exclusion</th>
<th>RA Approval Needed to Return to Work?</th>
</tr>
</thead>
</table>
| Hepatitis A virus                  | EXCLUDE if within 14 days of any symptom, or within 7 days of jaundice 2-201.12(B)(2)                                 | When approval is obtained from the RA 2-201.13(B), and:  
  - The food employee has been jaundiced for more than 7 calendar days 2-201.13(B)(1), or  
  - The anicteric food employee has had symptoms for more than 14 days 2-201.13(B)(2), or  
  - The food employee provides medical documentation 2-201.13(B)(3) (also see Table 2). | Yes                                   |
| Typhoid Fever (S. Typhi)           | EXCLUDE 2-201.12(C)                                          | When approval is obtained from the RA 2-201.13(C)(1), and:  
  - Food employee provides medical documentation, that states the food employee is free of a S. Typhi infection 2-201.13(C)(2) (also see Table 2). | Yes                                   |

(continued)
<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>EXCLUSION (Facilities Serving an HSP or Not Serving an HSP)</th>
<th>Removing Diagnosed, Symptomatic Food Employees from Exclusion</th>
<th>RA Approval Needed to Return to Work?</th>
</tr>
</thead>
</table>
| Nontyphoidal Salmonella | EXCLUDE Based on vomiting or diarrhea symptoms, under 2-201.12(A)(2) | When approval is obtained from the RA 2-201.13(G), and:  
- Food employee provides medical documentation, that states the food employee is free of a nontyphoidal *Salmonella* infection 2-201.13(G)(1) or  
- Food employee symptoms of vomiting or diarrhea resolved and >30 days have passed since the food employee became asymptomatic (2-201.13(G)(2)). | Yes |
| STEC                   | EXCLUDE Based on vomiting or diarrhea symptoms, under 2-201.12(A)(2) | 1. Serving a non-HSP facility: 2-201.13(A)(4)(a):  
Shall only work on a restricted basis 24 hours after symptoms resolve and remains restricted until meeting the requirements listed in No. 3.  
Remains excluded until meeting the requirements listed in No. 3.  
3. Restriction or Exclusion remains until:  
   - Approval is obtained from RA 2-201.13(F), and  
   - Medically cleared 2-201.13(F)(1), or  
   - More than 7 calendar days have passed since the food employee became asymptomatic 2-201.13(F)(2) (also see Table 2). | Yes to return to an HSP or to return unrestricted; not required to work on a restricted basis in a non-HSP facility |
| Norovirus               | EXCLUDE Based on vomiting or diarrhea symptoms, under 2-201.12(A)(2) | 1. Serving a non-HSP facility: 2-201.13 (A)(2)(a):  
Shall only work on a restricted basis 24 hours after symptoms resolve and remains restricted until meeting the requirements listed in No. 3.  
Remains excluded until meeting the requirements listed in No. 3.  
3. Restriction or Exclusion remains until:  
   - Approval is obtained from the RA 2-201.13(D), and  
   - Medically cleared 2-201.13(D)(1), or  
   - More than 48 hours have passed since the food employee became asymptomatic 2-201.13(D)(2) (also see Table 2). | Yes to return to an HSP or to return unrestricted; not required to work on a restricted basis in a non-HSP facility |

(continued)
<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>EXCLUSION (Facilities Serving an HSP or Not Serving an HSP)</th>
<th>Removing Diagnosed, Symptomatic Food Employees from Exclusion</th>
<th>RA Approval Needed to Return to Work?</th>
</tr>
</thead>
</table>
| Shigella spp.         | EXCLUDE Based on vomiting or diarrhea symptoms, under 2-201.12(A)(2) | 1. Serving a non-HSP facility: 2-201.13(A)(3)(a): Shall only work on a restricted basis 24 hours after symptoms resolve, and remains restricted until meeting the requirements listed in No. 3.  
2. Serving an HSP facility: 2-201.13(A)(3)(b): Remains excluded until meeting the requirements in No. 3.  
3. Restriction or Exclusion remains until:  
   • Approval is obtained from the RA 2-201.13(E), and  
   • Medically cleared 2-201.13(E)(1), or  
   • More than 7 calendar days have passed since the food employee became asymptomatic 2-201.13(E)(2) (also see Table 2). | Yes to return to an HSP or to return unrestricted; not required to work on a restricted basis in a non-HSP facility |

**Key: Table 1b**
RA = Regulatory Authority  
STEC = Shiga toxin-producing Escherichia coli  
HAV = Hepatitis A virus  
HSP = Highly Susceptible Population  
NTS = Nontyphoidal Salmonella
Table 2: Summary of Requirements for Diagnosed Food Employees with Resolved Symptoms

Food employees and conditional employees shall report a listed diagnosis immediately to the person in charge

- The person in charge shall notify the RA when a food employee reports a listed diagnosis
- The person in charge shall prohibit a conditional employee who reports a listed diagnosis from becoming a food employee until meeting the criteria listed in section 2-201.13 of the Food Code, for reinstatement of a diagnosed food employee.

<table>
<thead>
<tr>
<th>Pathogen Diagnosis</th>
<th>EXCLUSION OR RESTRICTION (Facilities Serving an HSP)</th>
<th>EXCLUSION OR RESTRICTION (Facilities Not Serving an HSP)</th>
<th>Removing Diagnosed Food Employees with Resolved Symptoms from Exclusion or Restriction</th>
<th>RA Approval Required to Return to Work?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typhoid fever <em>(S. Typhi)</em> including previous illness with <em>S. Typhi</em> (see 2-201.11 (A)(3))</td>
<td>EXCLUDE 2-201.12(C)</td>
<td>EXCLUDE 2-201.12(C)</td>
<td>When approval is obtained from the RA 2-201.13(C)(1), and: - Food employee provides medical documentation that states the food employee is free of an <em>S. Typhi</em> infection 2-201.13(C)(2) (also see Table 1b).</td>
<td>Yes</td>
</tr>
<tr>
<td>Nontyphoidal <em>Salmonella</em></td>
<td>RESTRICT 2-201.12(G)</td>
<td>RESTRICT 2-201.12(G)</td>
<td>When approval is obtained from the RA 2-201.13(G), and: - Food employee provides medical documentation, that states the food employee is free of a nontyphoidal <em>Salmonella</em> infection 2-201.13(G)(1) or - Food employee symptoms of vomiting or diarrhea resolved and &gt;30 days have passed since the food employee became asymptomatic (2-201.13(G)(2)).</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*(continued)*
<table>
<thead>
<tr>
<th>Pathogen Diagnosis</th>
<th>EXCLUSION OR RESTRICTION (Facilities Serving an HSP)</th>
<th>EXCLUSION OR RESTRICTION (Facilities Not Serving an HSP)</th>
<th>Removing Diagnosed Food Employees with Resolved Symptoms from Exclusion or Restriction</th>
<th>RA Approval Required to Return to Work?</th>
</tr>
</thead>
</table>
| Shigella spp.      | EXCLUDE 2-201.12(E)(1)                               | RESTRICT 2-201.12(E)(2)                              | 1. Serving a non-HSP facility:  
2-201.13(A)(3)(a): Shall only work on a restricted basis 24 hours after symptoms resolve, and remains restricted until meeting the requirements listed in No. 3.  
2. Serving an HSP facility:  
2-201.13(A)(3)(b): Remains excluded until meeting the requirements listed in No. 3.  
3. Restriction or Exclusion remains until:  
- Approval is obtained from the RA 2-201.13(E), and:  
- Medically cleared 2-201.13(E)(1), or  
- More than 7 calendar days have passed since the food employee became asymptomatic 201.13(E)(3)(a) (also see Table 1b). | Yes to return to an HSP or to return unrestricted; not required to work on a restricted basis in a non-HSP facility |
<table>
<thead>
<tr>
<th>Pathogen Diagnosis</th>
<th>EXCLUSION OR RESTRICTION (Facilities Serving an HSP)</th>
<th>EXCLUSION OR RESTRICTION (Facilities Not Serving an HSP)</th>
<th>Removing Diagnosed Food Employees with Resolved Symptoms from Exclusion or Restriction</th>
<th>RA Approval Required to Return to Work?</th>
</tr>
</thead>
</table>
| Norovirus          | EXCLUDE 2-201.12(D)(1)                           | RESTRICT 2-201.12(D)(2)                                | 1. Serving a non-HSP facility: 2-201.13(A)(2)(a): Shall only work on a restricted basis 24 hours after symptoms resolve and remains restricted until meeting the requirements listed in No. 3.  
2. Serving an HSP facility: 2-201.13(A)(2)(b): Remains excluded until meeting the requirements listed in No. 3.  
3. Restriction or Exclusion remains until:  
  - Approval is obtained from the RA 2-201.13(D), and  
  - Medically cleared 2-201.13(D)(1), or  
  - More than 48 hours have passed since the food employee became asymptomatic 2-201.13(D)(2) (also see Table 1b). | Yes to return to an HSP or to return unrestricted; not required to work on a restricted basis in a non-HSP facility |
| STEC               | EXCLUDE 2-201.12(F)(1)                           | RESTRICT 2-201.12(F)(2)                                | 1. Serving a non-HSP facility: 2-201.13(A)(4)(a): Shall only work on a restricted basis 24 hours after symptoms resolve and remains restricted until meeting the requirements listed in No. 3.  
2. Serving an HSP facility: 2-201.13(A)(4)(b): Remains excluded until meeting the requirements listed in No. 3.  
3. Restriction or Exclusion remains until:  
  - Approval is obtained from the RA 2-201.13(F), and  
  - Medically cleared 2-201.13(F)(1), or  
  - More than 7 calendar days have passed since the food employee became asymptomatic 2-201.13(F)(2). | Yes to return to an HSP or to return unrestricted; not required to work on a restricted basis in a non-HSP facility |

(continued)
<table>
<thead>
<tr>
<th>Pathogen Diagnosis</th>
<th>EXCLUSION OR RESTRICTION (Facilities Serving an HSP)</th>
<th>EXCLUSION OR RESTRICTION (Facilities Not Serving an HSP)</th>
<th>Removing Diagnosed Food Employees with Resolved Symptoms from Exclusion or Restriction</th>
<th>RA Approval Required to Return to Work?</th>
</tr>
</thead>
</table>
| *Hepatitis A virus* | EXCLUDE if within 14 days of any symptom, or within 7 days of jaundice 2-201.12(B)(2) | EXCLUDE if within 14 days of any symptom, or within 7 days of jaundice 2-201.12(B)(2) | When approval is obtained from the RA 2-201.13(B), and:  
- The food employee has been jaundiced for more than 7 calendar days 2-201.13(B)(1), or  
- The anicteric food employee has had symptoms for more than 14 days 2-201.13(B)(2), or  
- The food employee provides medical documentation 2-201.13(B)(3) (see also Table 1b). | Yes |

**Key:**  
RA = Regulatory Authority  
STEC = Shiga toxin-producing *Escherichia coli*  
HAV = Hepatitis A virus  
HSP = Highly Susceptible Population  
NTS = Nontyphoidal *Salmonella*
2-201.12 Table 3: Summary of Requirements for Diagnosed Food Employees Who Never Develop Gastrointestinal Symptoms

Food employees and conditional employees shall report a listed diagnosis immediately to the person in charge

- The person in charge shall notify the RA when a food employee reports a listed diagnosis
- The person in charge shall prohibit a conditional employee who reports a listed diagnosis from becoming a food employee until meeting the criteria listed in section 2-201.13 of the Food Code, for reinstatement of a diagnosed food employee

<table>
<thead>
<tr>
<th>Pathogen Diagnosis</th>
<th>EXCLUSION OR RESTRICTION (Facilities Serving an HSP)</th>
<th>EXCLUSION OR RESTRICTION (Facilities Not Serving an HSP)</th>
<th>Removing Diagnosed Food Employees Who Never Develop Gastrointestinal Symptoms from Exclusion or Restriction</th>
<th>RA Approval Required to Return to Work?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typhoid Fever (S. Typhi) including previous illness with S. Typhi (see 2-201.11 (A)(3))</td>
<td>EXCLUDE 2-201.12(C)</td>
<td>EXCLUDE 2-201.12(C)</td>
<td>When approval is obtained from the RA 2-201.13(C)(1), and: Food employee provides medical documentation, specifying that the food employee is free of a S. Typhi infection 2-201.13(C)(2).</td>
<td>Yes</td>
</tr>
<tr>
<td>Shigella spp.</td>
<td>EXCLUDE 2-201.12(E)(1)</td>
<td>RESTRICT 2-201.12(E)(2)</td>
<td>Remains excluded or restricted until approval is obtained from the RA, and: • Medically cleared 2-201.13(E)(1), or • More than 7 calendar days have passed since the food employee was last diagnosed 2-201.13(E)(3).</td>
<td>Yes to return to an HSP or to return unrestricted; not required to work on a restricted basis in a non-HSP facility</td>
</tr>
<tr>
<td>Nontyphoidal Salmonella</td>
<td>RESTRICT 2-201.12(G)</td>
<td>RESTRICT 2-201.12(G)</td>
<td>When approval is obtained from the RA 2-201.13(G), and: • Food employee provides medical documentation, that states the food employee is free of a nontyphoidal Salmonella infection 2-201.13(G)(1) or • Food employee did not develop symptoms and &gt;30 days have passed since the food employee was diagnosed (2-201.13(G)(3)).</td>
<td>(continued)</td>
</tr>
<tr>
<td>Pathogen Diagnosis</td>
<td>EXCLUSION OR RESTRICTION (Facilities Serving an HSP)</td>
<td>EXCLUSION OR RESTRICTION (Facilities Not Serving an HSP)</td>
<td>Removing Diagnosed Food Employees Who Never Develop Gastrointestinal Symptoms from Exclusion or Restriction</td>
<td>RA Approval Required to Return to Work?</td>
</tr>
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</tr>
<tr>
<td>Norovirus</td>
<td><strong>EXCLUDE</strong> 2-201.12(D)(1)</td>
<td><strong>RESTRICT</strong> 2-201.12(D)(2)</td>
<td>Remains excluded or restricted until approval is obtained from the RA 2-201.13(D), and</td>
<td>Yes to return to an HSP or to return unrestricted; Not required to work on a restricted basis in a non-HSP facility</td>
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<td></td>
<td></td>
<td>• Medically cleared 2-201.13(D)(1), or</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>• More than 48 hours have passed since the food employee was diagnosed 2-201.13(D)(3).</td>
<td></td>
</tr>
<tr>
<td>STEC</td>
<td><strong>EXCLUDE</strong> 2-201.12(F)(1)</td>
<td><strong>RESTRICT</strong> 2-201.12(F)(2)</td>
<td>Remains excluded or restricted until approval is obtained from the RA 2-201.13(F), and:</td>
<td>Yes to return to HSP or to return unrestricted; Not required to work on a restricted basis in a non-HSP facility</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>• Medically cleared 2-201.13(F)(1), or</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>• More than 7 calendar days have passed since the food employee was diagnosed 2-201.13(F)(3).</td>
<td></td>
</tr>
<tr>
<td>Hepatitis A virus</td>
<td><strong>EXCLUDE</strong> 2-201.12(B)(3)</td>
<td><strong>EXCLUDE</strong> 2-201.12(B)(3)</td>
<td>When approval is obtained from the RA 2-201.13(B), and</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>• The anicteric food employee has had symptoms for more than 14 days 2-201.13(B)(2), or</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>• The food employee provides medical documentation 2-201.13(B)(3).</td>
<td></td>
</tr>
</tbody>
</table>

**Key: Table 3**
RA = Regulatory Authority
STEC = Shiga toxin-producing *Escherichia coli*
HAV = Hepatitis A virus
HSP = Highly Susceptible Population
NTS = Nontyphoidal *Salmonella*
### 2-201.12 Table 4: History of Exposure, and Absent Symptoms or Diagnosis

Food employees and conditional employees shall report a listed exposure to the person in charge.

- The person in charge shall prohibit a conditional employee who reports a listed exposure from becoming a food employee in a facility serving an HSP until meeting the criteria listed in section 2-201.13 of the Food Code, for reinstatement of an exposed food employee.
- The person in charge shall reinforce and ensure compliance with good hygienic practices, symptom reporting requirements, proper handwashing and no BHC with RTE foods for all food employees that report a listed exposure.

<table>
<thead>
<tr>
<th>Pathogen Diagnosis</th>
<th>EXCLUSION OR RESTRICTION</th>
<th>Facilities Not Serving an HSP</th>
<th>When Can the Restricted Food Employee Return to Work?</th>
<th>RA Approval Needed?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typhoid Fever (S. Typhi)</td>
<td>RESTRICT 2-201.12(I)</td>
<td>Educate food employee on symptoms to watch for and ensure compliance with GHP, handwashing and no BHC with RTE foods.</td>
<td>2-201.13(I)(3) When 14 calendar days have passed since the last exposure, or more than 14 days has passed since the food employee’s household contact became asymptomatic.</td>
<td>No</td>
</tr>
<tr>
<td>Shigella spp.</td>
<td>RESTRICT 2-201.12(I)</td>
<td>Educate food employee on symptoms to watch for and ensure compliance with GHP, handwashing and no BHC with RTE foods.</td>
<td>2-201.13(I)(2) When more than 3 calendar days have passed since the last exposure, or more than 3 days have passed since the food employee’s household contact became asymptomatic.</td>
<td>No</td>
</tr>
<tr>
<td>Norovirus</td>
<td>RESTRICT 2-201.12(I)</td>
<td>Educate food employee on symptoms to watch for and ensure compliance with GHP, handwashing and no BHC with RTE foods.</td>
<td>2-201.13(I)(1) When more than 48 hours have passed since the last exposure, or more than 48 hours has passed since the food employee’s household contact became asymptomatic.</td>
<td>No</td>
</tr>
<tr>
<td>STEC</td>
<td>RESTRICT 2-201.12(I)</td>
<td>Educate food employee on symptoms to watch for and ensure compliance with GHP, handwashing and no BHC with RTE foods.</td>
<td>2-201.13(I)(2) When more than 3 calendar days have passed since the last exposure, or more than 3 calendar days has passed since the food employee’s household contact became asymptomatic.</td>
<td>No</td>
</tr>
<tr>
<td>Pathogen Diagnosis</td>
<td>EXCLUSION OR RESTRICTION</td>
<td>Facilities Not Serving an HSP</td>
<td>When Can the Restricted Food Employee Return to Work?</td>
<td>RA Approval Needed?</td>
</tr>
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</tr>
</tbody>
</table>
| Hepatitis A virus  | RESTRICT 2-201.12(I)      | Educate food employee on symptoms to watch for and ensure compliance with GHP, handwashing and no BHC with RTE foods. | 2-201.13(I)(2) When any of the following conditions is met:  
  - The food employee is immune to HAC infection because of a prior illness from HAV, vaccination against HAV, or IgG administration; or  
  - More than 30 calendar days have passed since the last exposure, or since the food employee’s household contact became jaundiced; or  
  - The food employee does not use an alternative procedure that allows BHC with RTE food until at least 30 days after the potential exposure, and the employee receives additional training. | No |

Key: Table 4
HSP = Highly Susceptible Population
BHC = Bare Hand Contact
RTE = Ready-To-Eat
GHP = Good Manufacturing Practices
STEC = Shiga toxin-producing *Escherichia coli*
Restrictions and exclusions vary according to the population served because highly susceptible populations have increased vulnerability to foodborne illness. For example, foodborne illness in a healthy individual may be manifested by mild flu-like symptoms. The same foodborne illness may have serious medical consequences in immunocompromised individuals. This point is reinforced by statistics pertaining to deaths associated with foodborne illness caused by *Salmonella Enteritidis*. Over 70% of the deaths in outbreaks attributed to this organism occurred among individuals who for one reason or another were immunocompromised. This is why the restrictions and exclusions listed in the Code are especially stringent for food employees serving highly susceptible populations.

Periodic testing of food employees for the presence of diseases transmissible through food is not cost effective or reliable. Therefore, restriction and exclusion provisions are triggered by the active gastrointestinal symptoms, followed by diagnosis and history of exposure.

The history of exposure that must be reported applies to Norovirus, Hepatitis A, *Shigella* spp., STEC and *Salmonella* Typhi. It does not include nontyphoidal *Salmonella*.

Upon being notified of the history of exposure, the person in charge should immediately:

1. Discuss the traditional modes of transmission of fecal-oral route pathogens.
2. Advise the food employee to observe good hygienic practices both at home and at work. This includes a discussion of proper handwashing, as described in the Code, after going to the bathroom, changing diapers, or handling stool-soiled material.
3. Review the symptoms listed in the Code that require immediate exclusion from the food establishment.
4. Remind food employees of their responsibility as specified in the Code to inform the person in charge immediately upon the onset of any of the symptoms listed in the Code.
5. Ensure that the food employee stops work immediately if any of the symptoms described in the Code develop and reports to the person in charge.

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3In order to comply with Title I of the Americans with Disabilities Act, an exclusion must also be removed if the employee is entitled to a reasonable accommodation that would eliminate the risk of transmitting the disease. Reasonable accommodation may include reassignment to another position in which the individual would not work around food. The steps an employer must take when an excluded employee requests reasonable accommodation are briefly described in Annex 3, § 2-201.11. However, it is not possible to explain all relevant aspects of the ADA within this Annex. When faced with an apparent conflict between the ADA and the Food Code’s exclusion and restriction requirements, employers should contact the U.S. Equal Employment Opportunity Commission.
A restricted food employee may work in an area of the food establishment that houses packaged food, wrapped single-service or single-use articles, or soiled food equipment or utensils. Examples of activities that a restricted person might do include working at the cash register, seating patrons, bussing tables, stocking canned or other packaged foods, or working in a non-food cleaning or maintenance capacity consistent with the criteria in the definition of the term “restricted.” A food employee who is restricted from working in one food establishment may not work in an unrestricted capacity in another food establishment, but could work unrestricted in another retail store that is not a food establishment. A restricted food employee may enter a food establishment as a consumer.

An excluded individual may not work as a food employee on the premises of any food establishment.

2-201.13  Removal of Exclusions and Restrictions. 4

Food employees diagnosed with Norovirus, hepatitis A virus, Shigella spp., E. coli O157:H7 or other STEC, nontyphoidal Salmonella and symptomatic with diarrhea, vomiting, or jaundice, are excluded under subparagraph 2-201.12 (A)(2) or 2-201.12(B)(2). However these symptomatic, diagnosed food employees differ from symptomatic, undiagnosed food employees in the requirements that must be met before returning to work in a full capacity after symptoms resolve.

The person in charge may allow undiagnosed food employees who are initially symptomatic and whose symptoms have resolved to return to work in a full capacity 24 hours after symptoms resolve.

However, diagnosis with a listed pathogen invokes additional requirements before the person in charge may allow diagnosed food employees to return to work in full capacity.

Asymptomatic food employees diagnosed with Norovirus, Shigella spp., E. coli O157:H7 or other STEC may not return to work in a full capacity for at least 24 hours after symptoms resolve. The person in charge shall only allow these food employees to work on a restricted basis 24 hours after symptoms resolve and they shall only allow this if not in a food establishment that serves a highly susceptible population. These restricted food employees remain restricted until they are medically cleared or otherwise meet the criteria for removal from restriction as specified under subparagraphs 2-201.13(D) (1)-(2); 2-201.13(E)(1)-(2); or 2-201.13(F)(1)-(2).

4In order to comply with Title I of the Americans with Disabilities Act, an exclusion must also be removed if the employee is entitled to a reasonable accommodation that would eliminate the risk of transmitting the disease. Reasonable accommodation may include reassignment to another position in which the individual would not work around food. The steps an employer must take when an excluded employee requests reasonable accommodation are briefly described in Annex 3, § 2-201.11. However, it is not possible to explain all relevant aspects of the ADA within this Annex. When faced with an apparent conflict between the ADA and the Food Code’s exclusion and restriction requirements, employers should contact the U.S. Equal Employment Opportunity Commission.
In a food establishment that serves a highly susceptible population, food employees who are diagnosed with Norovirus, *Shigella* spp., *E. coli* O157:H7 or other STEC and initially symptomatic with vomiting or diarrhea, shall not work on a restricted basis after being asymptomatic for at least 24 hours. These food employees must remain excluded until they are medically cleared or otherwise meet the criteria for removal from exclusion from a highly susceptible population under subparagraph 2-201.13(D)(1)-(2), 2-201.13(E)(1)-(2), or 2-201.13 (F)(1)-(2).

Food employees diagnosed with **hepatitis A virus** are always excluded if diagnosed within 14 days of exhibiting any illness symptom, until at least 7 days after the onset of jaundice, or until medically cleared as specified under subparagraphs 2-201.13(B)(1)-(3). A food employee with an anicteric infection with the hepatitis A virus has a mild form of hepatitis A without jaundice. Food employees diagnosed with an anicteric infection with the hepatitis A virus are excluded if they are within 14 days of any symptoms. Anicteric, diagnosed food employees shall be removed from exclusion if more than 14 days have passed since they became symptomatic, or if medically cleared. Asymptomatic food employees diagnosed with an active infection with the hepatitis A virus are also excluded until medically cleared.

Food employees diagnosed with typhoid fever (caused by a *Salmonella Typhi* infection) are always excluded, even without expressing gastrointestinal symptoms, since these symptoms are not typically exhibited with typhoid fever. Outbreaks of foodborne illness involving typhoid fever (*Salmonella Typhi*) have been traced to asymptomatic food employees who have transmitted the pathogen to food, causing illness. The high virulence combined with the extremely high infectivity of *S. Typhi* warrant exclusion from the food establishment until the food employee has been cleared by a physician or has completed antibiotic therapy.

Asymptomatic shedders are food employees who do not exhibit the symptoms of foodborne illness but who are identified through diagnosis, or laboratory confirmation of their stools to have Norovirus, or any one of the four bacterial pathogens identified in Chapter 2 in their gastrointestinal system.