

# Demonstration of Knowledge Guidelines

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*A Manager's Food Safety Handbook:  
Based on the Minnesota Food Code*

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# Introduction

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## Who is a Certified Food Manager (CFM)?

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The Certified Food Manager (CFM) in any food establishment will often be the person who has the overall responsibility for running that location. Because there is time and expense involved in putting a person through an approved course and registering them with the state of Minnesota, the person chosen to be the CFM will usually be the one who has the most immediate authority over day-to-day operations, and who has the most job stability or expected job longevity. The CFM is often responsible for coordinating training of other staff or the PIC. This will generally be the Kitchen Manager, the head manager or it could be a department head in operations where they have a number of different operations under one roof, such as a bakery or deli inside a grocery store.

Depending on the size of the company and the structure of the organization, the scope of this person's authority can vary greatly. In an owner-operator situation, they may have complete authority over all aspects of the operation. In larger corporations, they may have significant authority over the day-to-day operations, such as staffing or training, but little or no say in areas such as menu, recipes, suppliers, equipment, facilities and policies. However, they would be the person responsible to ensure compliance with the proper use of all these items.

## Who is the Person in Charge (PIC)

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The Person in Charge in any food establishment is the person to whom the oversight of a given work shift, or department, has been delegated. The PIC will likely be the licensee or designated person, such as a shift leader, kitchen manager or similar individual. They are usually responsible only for the proper functioning of the foodservice operation for a limited time (the work shift).

The amount of authority a PIC has will vary with each company. The PIC is accountable to their employer for making sure they and the employees on their shift are following established policies and procedures for food safety. Unless the PIC happens to be the general manager, the PIC may have limited discretion and influence over issues such as staffing, discipline, scheduled training or other decisions that fall outside the concerns of a given work shift. However, the PIC is responsible for ensuring that the food is stored, prepared and served in safe and sanitary manner.

## Who is Responsible for Food Safety?

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**Food safety is the responsibility of the PIC in charge** at any given time, whether that person is the owner or designated person such as the general manager or shift leader. Ultimately, the responsibility for food safety in the operation is shared between the PIC and the CFM. However, the licensee is responsible for making changes to systems and facilities.

## What Must They Know?

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While the Food Code provides some general guidelines, those responsible for food safety within an operation must know whatever is necessary to ensure food safety as it applies to their operation and responsibilities. PICs need to have the knowledge to spot potential problems and to make good decisions on their shift. CFMs must have the knowledge to ensure safe day-to-day operations, whether they are present or not. The people responsible for facility design or menu design must know enough to make good decisions in these areas.

## What is the Best Way to Evaluate Food Safety in an Operation?

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Whether it's a CFM, the PIC or a regulatory official, the best way to evaluate food safety is by observing what is actually being practiced or demonstrated. This is the intent of the "Demonstration of Knowledge" concept. It is very possible to know what one should do to ensure food safety, but it's what is actually being done that helps ensure food safety. It is a good idea for an observer to look at food processes that are designed to produce large quantities, require significant preparation or handling or are done far in advance of product consumption.

Since an observer can only see a snapshot of what's being done at any given time, it is often helpful to augment observations with open-ended questions (questions that can't simply be answered yes or no) and to listen closely to their answers to assess their knowledge.

To ask good, pertinent questions, one needs to have an understanding of the operation and the menu. Therefore, regulatory officials should take the time to develop this understanding to allow for insight into the structure of the company and the actual authority of the PIC.

# Acknowledgements

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# Minnesota Food Regulations for **CERTIFIED FOOD MANAGERS**

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## Certified Food Manager (CFM) Defined

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Minnesota Rules, Section 4626.2010, require each food establishment to have one full-time certified food manager (CFM), except in a few limited food operations. The CFM is often the Person in Charge as well. However, the PIC does not necessarily have to be a CFM if an adequate food safety system has been implemented to show control of risk factors and provides the PIC with information required by the Food Code.

*The CFM must have managerial authority in the area of food safety. To be a certified food manager in Minnesota, a person must:*

1. Complete a food safety training course.
2. Pass an approved written examination.
3. Submit a completed application, along with the appropriate fee and proof of examination, to the Minnesota Department of Health.

In the event that a newly licensed food establishment opens or an existing food establishment loses its certified food manager, the establishment owner must either hire a new certified food manager or enroll an employee in a training course within 45 days. An application must be submitted to the Minnesota Department of Health for certification of a new manager within 90 days after loss of a previous certified manager.

## Duties of a Certified Food Manager

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*To meet the duty requirements of the Rules, a CFM will:*

- Identify any hazards in the daily operation of their establishment.
- Develop and implement policies and procedures to prevent foodborne illness.
- Coordinate training of employees so at least one PIC is present at all times who can demonstrate the food safety knowledge required in the Food Code.
- Direct food protection activities and take corrective action as needed.
- Conduct periodic self-inspections of the daily operations to ensure that food safety policies and procedures are being followed.

# Minnesota Food Regulations for the **PERSON IN CHARGE**

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## Person in Charge (PIC) Defined

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### ***What are the food safety responsibilities of the PIC?***

- Become knowledgeable about foodborne disease prevention principles
- Monitor daily employee activities to ensure compliance with certain food safety regulations.

In a large establishment that has separate or multiple departments, such as a grocery store or institution, there may be more than one PIC who knows food safety as it applies directly to their specific operation (e.g. bakery, meat, deli, etc.).

### **When is a PIC required?**

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The Food Code states that the licensee or designated PIC must be present at all hours of operation; which means, a PIC is present on all shifts. One way to ensure that all shifts are covered is for the food establishment to maintain a current list of employees who are designated as a PIC.

### **What are the responsibilities of the PIC concerning ill employees?**

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The PIC is responsible for excluding and restricting the duties of those employees who are vomiting, have diarrhea or have been diagnosed with a food related illness. For example, instead of handling food, they could be limited to grounds cleanup until their illness passes. Employees are required, and it is their responsibility, to report food related illnesses and symptoms, such as diarrhea and vomiting, to the PIC (see 4626.0040, 0045, and 0060 of the MN Food Code).

### **What are the reporting and recording requirements for illnesses?**

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The PIC is required to keep a log of certain types of employee illness reports, and to contact the regulatory authority if specific types are reported by employees or customers (see 4626.0060).

## Demonstration of Knowledge by the Person in Charge

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***According to the Food Code, the PIC must be able to demonstrate knowledge of food safety factors as they relate to their specific operations and responsibilities, such as:***

- The relationship between foodborne illness prevention and personal hygiene.
- Methods to prevent the transmission of foodborne disease by a food employee who has a disease or infectious medical condition.
- The usual symptoms, typical incubation and modes of transmission for the most common foods associated with foodborne illness.
- The hazards involved in consuming raw or undercooked meat, poultry, eggs and fish.
- The required temperatures and times for safe cold holding, hot holding, cooling, cooking, reheating, and transportation of potentially hazardous foods.
- The relationship between food safety and the proper use of necessary equipment.
- The procedure for cleaning and sanitizing utensils and other food contact surfaces.
- Identifying toxic materials and ensuring safe storage, handling and disposal.

# Minnesota Food Regulations for the **PERSON IN CHARGE**

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- Measures taken to ensure water remains protected from backflow and cross-connections that could cause contamination.
- If a HACCP plan is required, the PIC must be able to identify critical control points, keep them under control and explain the HACCP plan.
- The circumstances for exclusion and restriction of ill employees and recording and reporting illnesses (see Appendix A for specific details).

## Duties of the Person in Charge

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*The Person in Charge has the duty and responsibility to ensure that he or she has managerial control systems in place for food practices applicable to the specific job, namely:*

- exclusion of ill employees;
- proper handwashing;
- adequate cooking;
- proper cooling;
- proper cleaning and sanitizing of equipment and utensils;
- use of clean tableware at salad bars, buffets and other self-service areas;
- receiving safe food; and
- restricting access of non-food handling personnel.

# Appendix A

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## INTRODUCTION

*Appendix A is a two-part guide intended to provide general information relating to demonstration of knowledge and duties of the Person in Charge (PIC).*

**Part I** provides information to help the PIC learn food safety principles, apply them to daily operations and demonstrate knowledge of relative principles to the regulatory authority.

The objective is to ensure that food managers know what issues are important to food safety in their establishment and know how to prevent and correct hazardous conditions.

**Part II** should help the PIC interpret requirements of the Food Code as they relate to his or her responsibilities for overseeing and monitoring safe food handling by employees on their shifts.

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## APPENDIX A: PART 1

### Demonstration of Knowledge Requirements

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#### *4626.0025 2-102.11 ASSIGNMENT\**

The licensee shall be the PIC or shall designate a PERSON IN CHARGE and shall ensure that a PIC is present at the food establishment during all hours of operation. Usually the PIC is the supervisor or manager and may be the CFM.

#### *4626.0030 2-102.112 DEMONSTRATION\**

Improper behaviors demonstrated by food industry employees can present an opportunity for food-related illnesses to be spread to customers. Based on the risks of foodborne illness inherent to the food operation being reviewed, the PIC shall demonstrate to the regulatory authority knowledge of foodborne disease prevention, application of the hazard analysis critical control point (HACCP) principles if required, and the following requirements of the Code. The areas of knowledge are:

**A. What is the relationship between personal hygiene of a food employee and the prevention of foodborne disease?**

Good hygienic practices reduce the risk of food contamination. Such practices include: 1) proper handwashing for at least 20 seconds; 2) avoiding bare hand contact with ready-to-eat foods, when practical; and 3) not touching ready-to-eat foods after touching raw foods.

Clean hands are critical in preventing the spread of diseases. If food handlers fail to properly wash their hands after using the toilet, sneezing and blowing their nose, touching various body parts such as the mouth and nose areas, or after handling raw animal foods like meat, fish or chicken, they have the potential to spread harmful bacteria or viruses to the food. Hand washing is equally important after scratching a pimple, handling garbage, touching hair or before handling food. Improper or lack of handwashing can result in foodborne illness.

**B. How do you prevent the transmission of foodborne disease by a food employee who has a disease or medical condition that may cause foodborne disease?**

The employee shall report to the PIC, symptoms of diarrhea, vomiting or other acute gastroenteritis, or if diagnosed with a foodborne illness disease. Therefore, it is important for the PIC to:

- let the employees know what symptoms and illnesses must be reported;
- identify and exclude or restrict sick employees through observations, such as noticing frequent visits to the restroom;
- exclude any person from the work place who has diarrhea or vomiting;
- restrict a food employee from working with food



## Disease causing bacteria grow best in temperatures between 41°F and 140°F

or clean equipment and utensils if that employee has a bacterial pathogen capable of being transmitted by food, such as the hepatitis A virus or any of the Norwalk and Norwalk-like viruses. Examples of pathogenic bacteria include: *Salmonella*, *Shigella* and *E. coli* 0157:H7.

- properly cover cuts, wounds, or open sores on the hands and arms with a waterproof bandage and through the use of a single-use glove or finger cots over the bandage.

### C.. Identify the usual symptoms of, mode of transmission, typical incubation periods, and the most common foods associated with foodborne disease.

It is recommended that the PIC has access to a list of foodborne diseases for references, including: Control of Communicable Diseases in Man, The Bad Bug Book (FDA publication), Procedures to Investigate Foodborne Illness or the Centers for Disease Control website - [www.cdc.gov](http://www.cdc.gov).

Reports of foodborne illness typically have one, or a combination of a number of symptoms. These symptoms and the modes of transmission are outlined in *Figure 1* and *Figure 2*, located on page 10.

### D. Explain the significance of the relationship between maintaining the time and temperature of potentially hazardous food and the prevention of foodborne illness.

Disease-causing bacteria grow best in the “temperature danger zone” between 41° and 140° Fahrenheit. The goal of all time and temperature controls is to either keep foods entirely out of this “danger zone” or to pass foods through it as quickly as possible. When foods quickly pass through the danger zone, any bacteria present are not allowed an adequate time period in which to grow. Always remember to keep hot foods hot (140°F or higher) and cold foods cold (41°F or lower).

### E. Explain the hazards involved in the consumption of raw or undercooked meat, poultry, eggs and fish.

Raw animal foods are particularly hazardous and place you at risk of getting sick because they may contain different types of harmful bacteria, viruses or parasites. To avoid having foods be the cause of consumer illnesses, it is important to cook these foods to safe temperatures for specific amounts of time to kill these organisms. Also, unless adequately frozen for a specified period of time, parasites are a concern with the consumption of raw or undercooked fish.

### F. State the required food temperatures and times for safe cooking of potentially hazardous food, including meat, poultry, eggs and fish.

Cooking foods to proper temperatures is important. A PIC should be familiar with the proper cooking temperatures of the foods listed in *Figure 3* on page 12.

### G. State the required temperatures and time for the safe refrigerated storage, hot holding, cooling, reheating, and transportation of potentially hazardous food.

- Hold cold foods at 41°F or below.
- Hold hot foods at 140°F or above.
- Cool properly cooked foods from 140°F to 70°F within 2 hours, and from 70°F to 41°F within an additional 4 hours.
- Cool foods to 41°F within 4 hours if prepared from ingredients at room temperature (such as reconstituted foods and canned tuna).
- Reheat foods for hot holding to 165°F for at least 15 seconds.
- Reheat commercially processed food (from a processing plant) to 140°F for hot holding.
- Cook or reheat food in a microwave oven to 165°F covered, and rotate or stir during the cooking process. After cooking, let the covered product stand for 2 minutes prior to serving.
- Store frozen foods in a frozen condition.

Additional requirements are specified in the Food Code, such as receiving temperatures for certain foods and the storage of shell eggs. Refer to Section 3-202.11 and sections 4626.0350 (3-401.11) through 4626.0395 (3-501.16) for more detailed temperature requirements.

# How to Recognize Foodborne Illness

Figure 1

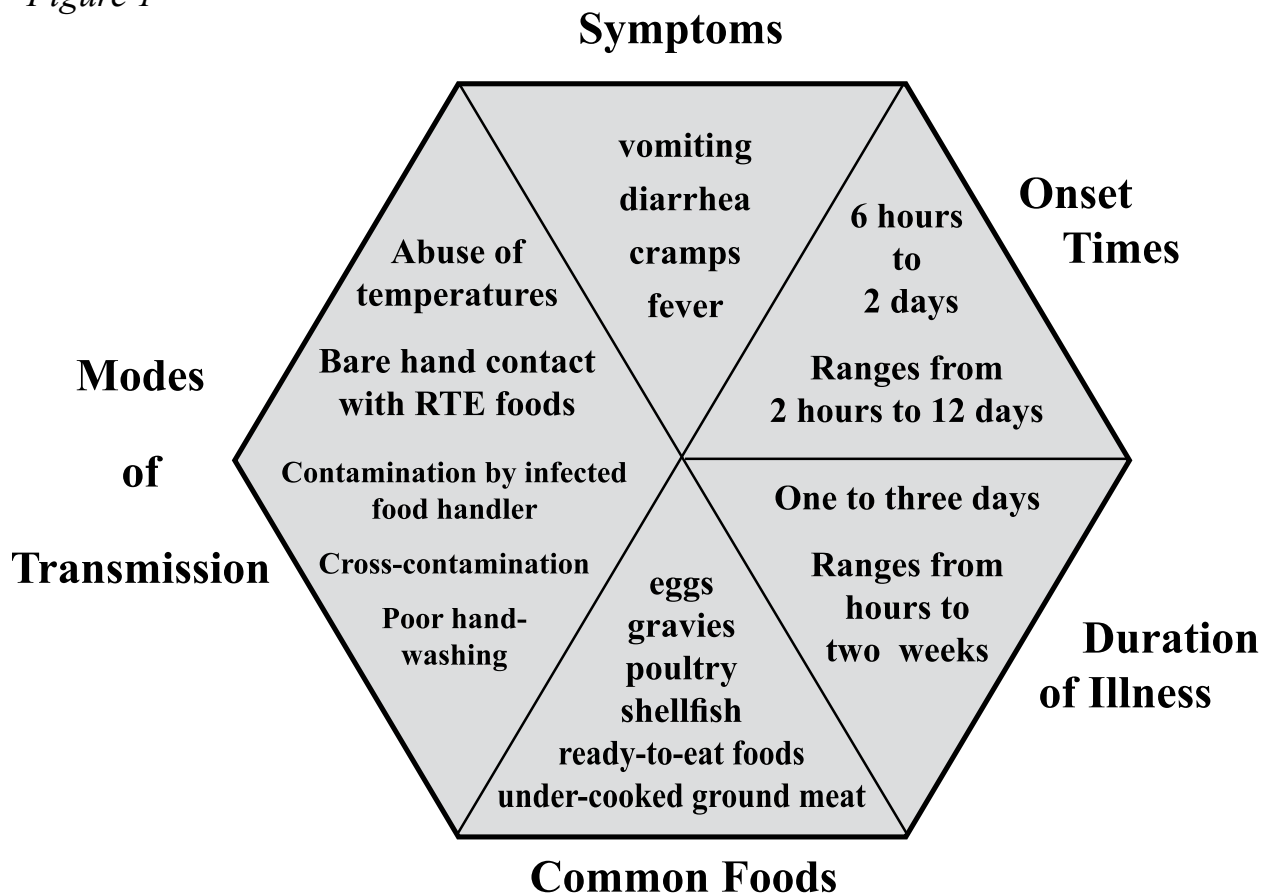
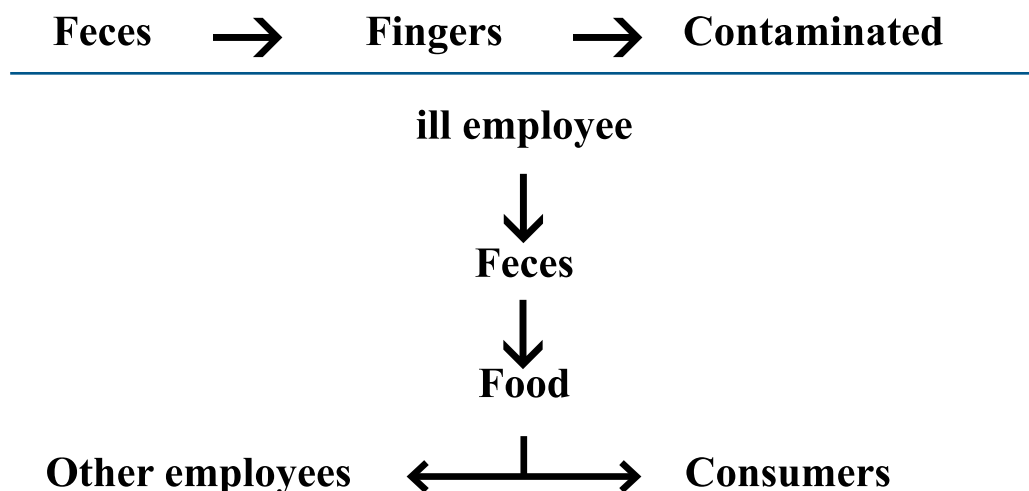


Figure 2

## How Foodborne Illness is Commonly Spread by Sick Employees

(MODE OF TRANSMISSION)



H. What is the relationship between the prevention of foodborne illness and the management and control of:

- Cross-contamination;
- Hand contact with ready-to-eat foods;
- Handwashing;
- Maintenance of the food establishment in a clean condition and in good repair.

Management must have an effective sanitation program and monitor their employees’ practices, including personal hygiene, in order to reduce or eliminate the risks for foodborne illness.

**Cross-contamination**

Harmful substances or microorganisms may be introduced into foods by cross-contamination.

*Examples of cross-contamination are:*

- contaminating cooked food with drippings from raw foods;
- ready-to-eat food touching improperly cleaned and sanitized cutting boards, utensils or plates, thermometers or other non-sanitary food-contact surfaces; and
- failure to wash hands before touching ready-to-eat foods, after handling raw foods, soiled clothing or other contaminated items.

Foodborne illness causing organisms need several hours to adapt to new conditions before rapidly reproducing themselves in the new environment.

Therefore, it is extremely important to properly clean and sanitize room temperature food preparation surfaces and utensils at least every 4 hours, or after use, to prevent contamination of equipment from bacterial growth. Equipment must also be cleaned and sanitized between working with raw food and ready-to-eat foods. In addition, raw foods must be physically separated from cooked or ready-to-eat foods when in storage or during periods of preparation.

**Hand contact with ready-to-eat foods**

Employees must be very careful not to transfer harmful organisms to ready-to-eat foods because they will not be cooked again. Hands and fingernails may contaminate the food being prepared. Employees may contaminate food by touching food with their hands or gloves after touching their nose or other body parts.

Whenever possible, use gloves, tongs or tissues to handle ready-to-eat foods to provide an additional margin of safety when working with ready-to-eat foods. Hands must still be thoroughly washed before wearing gloves.

**Handwashing**

Handwashing plays an important role in controlling foodborne pathogens. Even seemingly healthy employees can carry harmful germs that contaminate food. *Good personal hygiene, including proper and frequent hand washing, is one of the most effective ways to prevent foodborne illness.* Persons with persistent sneezing, coughing, runny nose, diarrhea, vomiting, open cuts, wounds, or sores greatly

Figure 3

**Internal Cooking Temperatures of Common Food Products**

| 145°F for 15 seconds   | 155°F for 15 seconds  | 165°F for 15 seconds   |
|--|---|--|
| <ul style="list-style-type: none"> <li>• Raw shell eggs cooked for immediate service</li> <li>• Fish, except as listed to the right</li> <li>• Meat, except as listed to the right</li> <li>• Commercially raised game animals, rabbits</li> </ul> | <ul style="list-style-type: none"> <li>• Pork</li> <li>• Ratites</li> <li>• Injected meats</li> <li>• Chopped or ground meat, fish, or commercially raised game animals</li> <li>• Raw shell eggs cooked for hot holding</li> </ul> | <ul style="list-style-type: none"> <li>• Wild game animals</li> <li>• Poultry</li> <li>• Stuffed fish, meat, pork, pasta, ratites and poultry</li> <li>• Stuffing containing fish, meat and poultry</li> </ul> |
| Some alternative temperatures may be specified in the Food Code 4626.0340 (3-401.11).  |   |  |

increase the risk of pathogens being transmitted to food. Any activity that may contaminate the hands, such as using the toilet, handling raw foods, touching contaminated surfaces, utensils or equipment, or non-food handling activities such as bussing tables or sweeping the floor, must be followed by thorough handwashing.

Proper handwashing includes the use of a handsoap and lathering hands and exposed portions of arms for at least 20 seconds, followed by rinsing with clean water.\* A nailbrush must also be used for cleaning the fingertips and underneath fingernails. *In addition, after using the toilet, workers must wash their hands in the toilet room, and then again, when entering the food preparation/utensil washing area.* Fingernails must be trimmed, filed and free of nailpolish.

#### **Maintaining the facility in a clean condition and in good repair**

Soiled or damaged food contact surfaces provide places for bacteria to hide and conditions for their growth. Good sanitation is necessary to prevent cross contamination from occurring as a result of soiled food equipment. Improperly maintained building areas may provide food and harborage areas for insects and rodents. These conditions can be minimized through proper sanitation and maintenance.

- I. Explain the relationship between food safety and providing equipment that is:
  1. Sufficient in number and capacity; and
  2. Properly designed, constructed, located, installed, operated, maintained and cleaned.

Adequate numbers or sizing of coolers and freezers must be provided to prevent improper temperatures due to overloading of these units. The equipment must also be operating properly, maintained, cleaned and in a sanitary condition.

- J. Explain the correct procedures for cleaning and sanitizing utensils and food contact surfaces of equipment.

Proper cleaning and sanitizing of equipment is extremely important for preventing cross-contamination. Whether hot water or a chemical is used, these must be used and maintained at the proper temperature or concentration.

### **Most viral foodborne illness outbreaks are preventable by proper handwashing.**

A test kit (typically test strips) and thermometers must be available and used to check for proper temperatures and concentration.

Finally, wiping cloths are usually used for sanitizing tables, slicers and other contact surfaces. Between uses, these cloths must be stored in a clean, chemical sanitizing solution.

For details about the procedure for manual cleaning and sanitizing in a three-compartment sink with drain boards see Figure 4 on page 13. For specific sanitizer concentrations and temperature requirements, see the second page of the Food Code Spec Sheet in Appendix B.

- K. Identify the source of water used and measures taken to ensure that the water remains protected from contamination including providing protection from backflow and preventing the creation of cross-connections.

If an establishment has its own well, it must be adequately protected from contamination and the water must be potable (fit for drinking). The Food Code references specific regulations for well construction and water standards.

Cross-connections between potable water and wastewater sources, such as a hose ending in a floor drain or utility sink, can result in back siphonage of unsafe water into the potable water system. This may cause work surfaces, hands and food products to become contaminated. Similarly, vacuums can be created in well water systems.

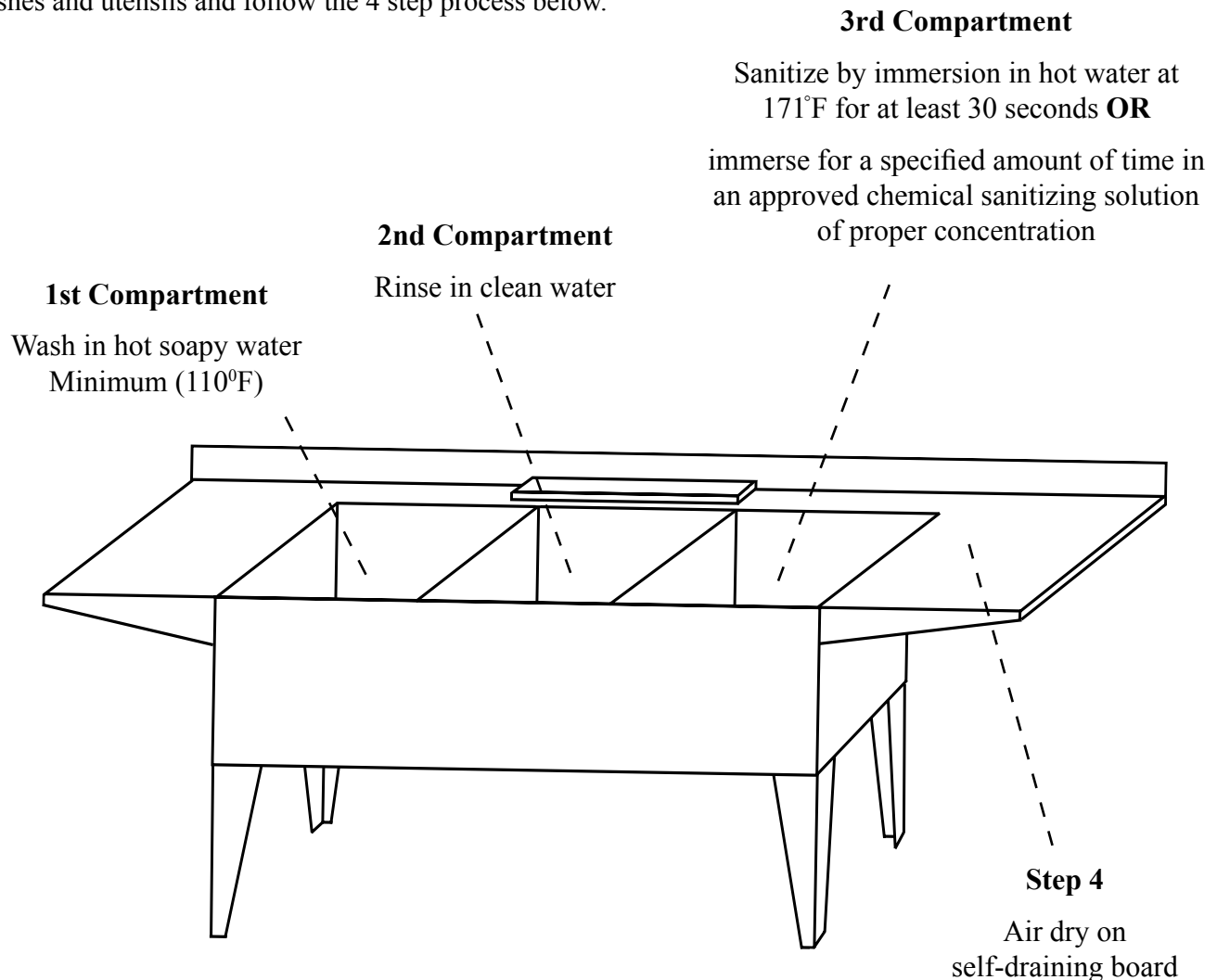
Requirements for preventing contamination of the water supply include:

- “appropriate backflow-prevention” devices installed wherever a water hose is connected to a faucet,
- pre-rinse spray hoses that do not fall below the top of the flood rim level of the sink or disposal, and
- a water softening unit’s discharge lines that are separated by an air gap from the drainage system.

# Cleaning & Sanitizing in a 3-compartment Sink

Figure 4

For manual cleaning and sanitizing in a three-compartment sink with drain boards. Pre-soak or scrape debris from all dishes and utensils and follow the 4 step process below.



Examples of sanitizer concentration levels are: for chlorine, typically at least 50 ppm for 10 seconds; and for quaternary ammonia, according to the label (usually 200-400 ppm). Iodine requires a concentration between 12.5 and 25 ppm. For more detailed information about temperature and pH requirements, refer to 4626.0805. For approved mechanical dishwashers, follow the manufacturer's instructions for use with hot water or chemical sanitizing dishwashers. In addition, provide and use an appropriate test kit for measuring the proper chemical sanitizer strength or use heat sensitive tape or a maximum registration thermometer for hot water sanitizing dishwashers.

## HACCP = Hazard Analysis Critical Control Points

- L. Identify poisonous or toxic materials in the food establishment, and the procedures necessary to ensure pesticides are safely stored, dispensed, used, and disposed according to Minnesota Statutes, Chapter 18B.

Chemicals must be stored away from foods. Do not store chemicals or toxic products above or immediately adjacent to food, equipment/utensils, or single-use articles. Chemicals must be approved for their intended use (specified on the labeled container) and used only according to label directions. For example, all sanitizers must be labeled with an EPA registration number and contain directions for use on food or food equipment. The manufacturer's label instructions must state that its use is allowed in a food establishment. Pesticides must be approved for use in a food establishment and be applied by a state licensed applicator.

Employees can make pesticide applications without meeting state licensing requirements if the pesticide used is not a restricted use product. Chemicals must be stored in their original container. Working solutions of chemicals must be properly labeled.

Note: Items M and N only apply to operations that are required to have a HACCP plan.

- M. Identify critical points in the operation from purchasing through sale or service that may contribute to foodborne illness and explain steps taken to ensure that the points are controlled when a HACCP plan is required by part 4626.1730 of the Minnesota Statutes.

The HACCP system is an effective means of assuring food safety and the general concepts can be incorporated into any retail food operation.

A formalized written HACCP plan is only required in a few instances, such as reduced oxygen packaging or the curing and smoking of foods. Additionally, if the operator requests a variance from certain requirements in the Food Code, they may be required to have a HACCP plan.

In identifying critical control points:

1. Review the menu or recipes and identify food processes that involve complex preparation or extensive handling. After this has been

accomplished, write down on paper a flow diagram, which describes these processes, beginning from delivery to customer service. These steps may include: receiving, storing, preparing, cooking, holding, serving, cooling, reheating and service.

2. At this point, the PIC must be able to identify biological, chemical and physical hazards that can affect the safety of the food and whether or not a HACCP plan would be required. The purpose of conducting a hazard analysis is to develop a list of hazards that are of such significance that they are reasonably likely to cause injury or illness if not effectively controlled.
3. The PIC must be able to identify the critical control points where these hazards may result in an unsafe food if not controlled. Critical control points are steps, practices, preparation steps or procedures where the identified hazards can be either prevented, eliminated, or reduced to acceptable levels.

A simplified example of a critical control point is the "cooking" step for raw animal foods, such as in poultry, meat or fish. These types of raw foods may contain bacterial pathogens (biological hazard). Cooking to a proper temperature for a specific time will eliminate this hazard. In this example, controlling this critical control point of cooking can be accomplished by:

- a. Establishing the critical limit (i.e. cooking to 165°F for 15 sec. for poultry);
  - b. Routinely monitoring (taking internal temperatures of food);
  - c. Taking corrective action if the critical limit is not met (extend cooking time); and
  - d. Management verification that employees are controlling critical control points (review daily, weekly charts, etc).
4. One method used to assist the PIC in verifying control of a critical control point is setting up a recordkeeping system which documents "what, how, frequency, and who" is monitoring these temperatures. Also equally important is documentation of the corrective action taken when the critical limit is not met. Establishing a recordkeeping system can be made simple and easy to use.

- N. When a HACCP plan is required, can you explain, in detail, how the PIC and other food employees comply with the plan.

The PIC must verify the HACCP system is operating according to the plan. They will verify that employees are monitoring critical control points, using proper documentation and recordkeeping, as well as taking corrective actions as required by the plan. Verification should include on-site observations and record reviews. In addition, verification must also include calibration of equipment (thermometers, smokehouses, etc.).

- O. Explain the responsibilities, rights, and authorities assigned by the Code to the following:

1. Food employees,
  2. PIC, and
  3. Regulatory authority
1. **Food employees** must conduct food processing and related activities within the food establishment in accordance with the Minnesota Food Code and other applicable regulations. They must report to the PIC any medical condition or illness that can cause foodborne illness.\*
  2. **The PIC** must oversee the food operation and ensure proper food handling practices and regulations listed in the Food Code are being followed including all the requirements noted in 4626.0035 (see Part II of this document).
  3. **The Regulatory authority** shall apply the Code to promote the safeguarding of the public health and ensuring that food is not adulterated, misbranded or falsely advertised.

**\*Concerning ill employees, the PERSON IN CHARGE must:**

- A. Notify the regulatory authority of a food employee that is infected with Salmonella, Shigella, E. coli 0157:H7 or other enteric bacterial pathogen capable of being transmitted by foods; or Hepatitis A virus;
- B. Record all reports of diarrhea or vomiting made by food employees and have these reports made available at the request of the regulatory authority; and
- C. Notify the regulatory authority of any complaint from a customer having or suspected of having A or B above.

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## APPENDIX A: PART 2

### MANAGERIAL CONTROL BY THE PIC: DUTIES AND RESPONSIBILITIES

Although the Person in Charge (PIC) is required to demonstrate knowledge as it relates to safe food handling, it is more important that this knowledge be implemented in the day-to-day operations. Therefore, the PIC has the duty and responsibility to ensure that employees follow important food handling practices as they apply to a specific job or task. This can only be accomplished if there is a system in place for guiding employee food handling practices.

#### Summary of Requirements

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##### A. How does the PIC take measures to exclude ill employees from food preparation and handling?

###### Employee reporting

There are a number of foodborne diseases and infections that can be passed to the consumer by ill employees. For this reason, it is extremely important that the PIC requires all employees to report diarrhea, vomiting, jaundice, a diagnosed foodborne disease or if they have boils or other open skin lesions.

In order to comply with proper employee reporting, employees must first be aware of the symptoms and illnesses they are responsible for reporting to the PIC. This usually involves employee training and some type of ill employee policy initiated by the establishment.

The PIC must take appropriate action when an employee calls in ill due to any of the above symptoms or is infected with a foodborne disease, more specifically, the PIC should:

- exclude ill employees having diarrhea or vomiting;
- restrict employees from working with exposed food or food equipment ;
- notify the proper regulatory authority of any known ill employees infected with a foodborne disease;
- record reports of ill employees with vomiting or diarrhea; and
- properly cover open sores or cuts on employees with a cot or bandage. Single-use, disposable gloves should then be worn.

***The PIC should be prepared to answer questions from an inspector, at any time, regarding employee illness reporting policies.***

##### B. How does the PIC routinely monitor employee handwashing to ensure employees effectively clean their hands?

The PIC can accomplish this by training employees on the importance of handwashing and on the proper procedure for when and how to wash hands. Employees can be asked why handwashing is important to food safety and when and how they should properly wash their hands. Handwashing reminder signs can also be posted in food preparation and toilet room areas.

Supervisory personnel should visually monitor the frequency and procedure being followed by employees on handwashing.

The best way to monitor handwashing is to pay attention and casually observe employees when they are working to see if they wash their hands properly and when they should. Other ways of monitoring include checking the fingernail brush and handsinks for signs of use and checking the waste basket for used paper towels.

##### C. How does the PIC monitor cooking temperatures to ensure that employees are properly cooking potentially hazardous food?

It is the responsibility of the PIC to make sure food is safe for consumers. Therefore, a system must be in place (e.g., written record system) for routine monitoring of cooked temperatures of potentially hazardous foods.

Key points for the PIC in this regard include:

1. Set up a monitoring system that determines:
  - Who will check internal temperatures of foods.
  - When (frequency) to check temperatures.
  - What food to check and at what stage of production.



- How to check temperatures (what thermometer{s} to use).
  - How and when to calibrate thermometers for accuracy.
  - How and when to clean and sanitize the probe of the thermometer.
  - What equipment to use and how to make proper temperature adjustments.
2. Train employees responsible for cooking to be sure they are knowledgeable of proper temperatures and critical limits for various food products and how to correctly check temperatures (see Appendix B).
  3. Take corrective actions if proper temperatures are not met, such as cook product longer, discard food, retrain personnel and other necessary steps.
  4. Monitor employee practices periodically to ensure that the system is working.

**D. How does the PIC have oversight of the employees' routine monitoring of food temperatures during cooling to ensure that proper methods are used to rapidly cool potentially hazardous foods?**

If food is cooled too slowly, bacterial spores can grow and form poisons that contaminate the food. To prevent this problem, the PIC must:

1. Train employees to monitor temperatures if the PIC is not responsible for taking the actual cooling temperature.
2. The PIC must periodically verify that the system is working properly and that assigned employees are monitoring actual temperatures (e.g., looking at records, asking questions, making observations). The ideal times to verify proper temperatures of foods are before opening and at the end of the cook's shift.
3. Take corrective action whenever cooling takes too long to reach the target temperatures. Hot foods must cool from 140° to 70°F in two hours, from 70° to 41° F in an additional four hours. Examples of typical foods that must be rapidly cooled include: sauces, soups, chili, stew, poultry, ground meats and other food mixtures. Foods, such as salads containing tuna, chicken or potatoes, made at room temperature must be cooled to 41°F in four hours.

Methods used in cooling include:

- Pre-chilling tuna, mayonnaise and other ingredients before making the tuna salad;
- Transferring hot food to shallow cooling pans at a depth no greater than two inches, then placing it in the coldest part of the cooler (i.e. in front of the blower);
- Chilling the container of food in an ice bath and stirring it periodically, and/or using pre-frozen stirring paddles\*;
- The use of blast chillers;
- The use of containers, such as stainless steel, that facilitate heat transfer;
- Adding ice as an ingredient to remove heat and dilute a concentrated liquid; and
- Loosely covering or having uncovered food if protected from overhead contamination during the cooling period to facilitate heat transfer.

*Additionally, take temperatures in the warmest part of the product, which is often in the middle.*

**E. How does the PIC routinely monitor the proper cleaning and sanitization of multi-use equipment and utensils before they are reused by employees?**

Unsanitary equipment and utensils have the potential for contaminating food. It is important that these items be cleaned and sanitized.

There are a number of things the PIC should do in this regard. The most important is to verify that cleaning and sanitization are actually occurring. This can be accomplished by direct observation of employees while they are cleaning and through visual inspections for equipment and utensil cleanliness.

Below are some examples of what the PIC can do to be sure proper cleaning and sanitizing is being carried out:

1. Train employees on proper procedures for preparing sanitizing solutions, operating the 3 compartment sink or dishmachine, and cleaning-in-place. Once a sanitizing system is adopted, employees should be trained to use test strips or test kits that indicate the required ppm concentration.
2. Allow time in employees' schedules for cleaning tasks.

**\*Helpful hint:**

*Always place hot foods in the cooling pan first, and then add ice. As the ice melts, the cold water settles to the bottom, keeping it cold.*

3. Provide cleaning checklists for each piece of equipment.
4. Conduct self inspections to visually observe the cleanliness of utensils and equipment.
5. Designate the frequency of cleaning (based on the type of food, process, time, raw and ready-to-eat foods).

- F. How does the PIC let consumers know to use clean tableware when going for second helpings at salad bars, buffets or other self-service areas?

One of the easiest ways for the PIC to comply with this requirement is to post a written statement at the salad bar or buffet instructing consumers to please use “clean tableware” when returning to the salad bar or buffet. Another means of notification may include verbal communication with consumers.

- G. How does the PIC have a system in place for routinely monitoring employees to ensure they visibly observe foods as they are received to determine that they are safe?

Since food from unapproved sources is one of the leading contributing factors to foodborne illness, it is important that all food products are obtained from credible sources, such as licensed commercial processing plants.

The PIC has limited control for ensuring that only safe and unadulterated food is received into the food establishment; therefore, it is the responsibility of the PIC to ensure employees take effective measures at receiving, such as monitoring temperatures, inspecting condition and integrity of food products and packaging.

Additionally, the food establishment may want to consider requesting “letters of guarantees,” copies of inspection reports, and HACCP approvals from distributors/manufacturers as a means of providing

additional documentation that the food received at the establishment was produced and transported safely and under sanitary conditions.

- H. How does the PIC take necessary precautions to restrict access to the food establishment, preparation, warewashing and storage areas?

The PIC needs to keep the food establishment operation relatively secure to protect food and clean equipment from contamination by visitors, such as off duty employees, delivery personnel, pesticide applicators and repair technicians. In addition, the PIC must take appropriate action if unsafe or unsanitary activities are noted as a result of the above.

*The U.S. Centers for Disease Control and Prevention says that handwashing is the single most important means of preventing the spread of infections, such as foodborne diseases, which result in up to 75 million illnesses and approximately 5,000 deaths in the United States each year.*

## APPENDIX B: MINNESOTA FOOD CODE SPECIFICATIONS

| Minimum cooking temperatures and holding times  |   |                                    |                                    |
|---|---|------------------------------------|------------------------------------|
| 165°F (68°C) for 15 seconds   | Poultry, wild game animals (live caught or field dressed); stuffing containing fish, meat or poultry; and stuffed foods (fish, meat, poultry, pasta, etc.) 7D kill or 7 log reduction in microorganisms.                    |                                    |                                    |
| 155°F (68°C) for 15 seconds or<br>150°F (66°C) for 1 minute<br>145°F (63°C) for 3 minutes   | Pork, exotic game animals, comminuted fish & meat (ground or chopped), injected meat, and eggs not prepared for immediate service (combined or held hot), (also commercially raised animals subject to trichinae). 5D kill. |                                    |                                    |
| 145°F (63°C) for 15 seconds   | Shell eggs prepared for immediate service, commercially raised game, and other fish & meat not specified otherwise in this table. 3D kill.  |                                    |                                    |
| 165°F (74°C) in all parts of the food   | Microwave cooking: For raw animal foods: covered, rotated or stirred throughout or at least midway in the cooking process; heated; held; and covered for 2 minutes  |                                    |                                    |
| 145°F (63°C) for 3 minutes<br>144°F (62°C) for 5 minutes<br>142°F (61°C) for 8 minutes<br>140°F (60°C) for 12 minutes<br>138°F (59°C) for 19 minutes<br>136°F (58°C) for 32 minutes<br>134°F (57°C) for 47 minutes<br>132°F (56°C) for 77 minutes<br>130°F (54°C) for 121 minutes (7D kill) | Roasts of beef and corned beef: Note – holding time may include postoven heat rise.   |                                    |                                    |
|   | Oven type   | Roast weight ? 10 lbs.<br>(4.5 kg) | Roast weight > 10 lbs.<br>(4.5 kg) |
|   | Still dry   | 350°F (177°C)                      | 250°F (121°C)                      |
|   | Convection  | 325°F (163°C)                      | 325°F (163°C)                      |
|   | High humidity <sup>1</sup>  | <250°F (121°C)                     | <250°F (121°C)                     |
|   |   |                                    |                                    |
| 140°F (60°C)  | Plant food cooked for hot holding:, i.e. fruits and vegetables  |                                    |                                    |

<sup>1</sup>. Relative humidity > 90% for at least one hour in a moisture-impermeable bag that provides 100% humidity.

### Reheating for hot holding:

To be completed in 2 hours or less. Leftovers shall be reheated to at least 165°F (74°C) for 15 seconds, except unsliced portions of beef roasts, which may be reheated with the same initial cooking parameters as stated in the above cooking chart. Packaged ready-to-eat food from a processing plant shall be reheated to at least 140°F (60°C).

### Reheating for immediate service:

Serve at any temperature.

### Hot and cold holding:

Hold hot foods at or above 140°F (60°C), except beef roasts cooked as stated in above cooking chart, may be held at 130°F (54°C). Hold cold foods at or above 41°F (5°C).

### Cooling PHF's:

Cool hot foods from 140°F to 70°F (60°C to 21°C) within 2 hours, and from 70°F to 41°F (21°C to 5°C) within 4 hours. Ambient temperature ingredients, i.e. canned tuna in tuna salad, cooled to 41°F (5°C) within 4 hours.

### Frozen food:

The temperature necessary to maintain the product frozen “solid” (varies with product).

Slacking: moderating the temperature under refrigeration at or below 41°F (5°C), OR at any temperature if the food remains frozen. Freezing fish for parasite destruction (*except certain species of tuna*):

- 1) -4°F (-20°C) or colder for 168 hours or 7 days; OR
- 2) -31°F (-31°C) or colder for 15 hours in a blast freezer. Include written agreement if frozen by supplier; or if frozen by the PIC, then records must be retained at the facility for 90 days.

### Thawing:

Acceptable methods include:

- 1) in the refrigerator at or below 41°F (5°C);
- 2) as part of an uninterrupted cooking process;
- 3) any procedure for thawing a RTE food for immediate service;
- 4) submerged under running water at or below 70°F (21°C), and no portion of the RTE food rises above

41°F, or for any raw animal foods that will be properly cooked and do not rise above 41°F for more than 4 hours (includes time exposed to running water, preparation and cooling to 41°F). Running water shall have sufficient velocity and flow to float off loose particles in an overflow.

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**Time in lieu of temperature controls:**

The operation must submit prior written notification of its intent to use “time as a public health control.” Written procedures are required on site and must be available to the inspector. The PHF is marked/identified with the maximum 4 hour time period in which the product will be cooked or served. After 4 hours OR if the product is unmarked per time, the food shall be discarded.

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**Date marking foods:**

Refrigerated RTE, PHF’s prepared in the establishment and held over 24 hours shall be marked with the “Preparation Date” and 7-day “Consume by Date.” Similar foods received from a processing plant are to be marked with the same 7-day “Consume by Date” once the original package is opened. Foods with expired “Consume by Dates” shall be discarded. EXCEPTIONS to date marking:

- 1) Individual portions repackaged from bulk containers to fill a consumer’s request, or
- 2) Whole portions of a cured and processed product with the original casing intact on the uncut portion, i.e. bologna, salami.

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**Vacuum packaging**

Or reduced oxygen packaging occurring in a food establishment shall be marked with a 14-day “Consume by Date” from the day of packaging or the original manufacturer’s “sell by” or “use by” date, whichever occurs first.

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**Mechanical warewashing:**

In accordance with dish machine “data plate” and manufacturer’s instructions. For hot water sanitization, the water flow pressure entering the sanitization rinse control valve shall be between 15 psi and 25 psi (100 to 170 kilopascals). Hot water entering the manifold for sanitizing may not be more than 194°F (90°C). Utensil surface temperatures must reach at least 160°F (71°C) as measured by an irreversible registering temperature indicator, such as heat sensitive tape or a maximum registering thermometer.

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**Food-contact surface materials:****Pewter:**

May not be used as a food-contact surface.

**Cast Iron:**

Only permitted for cooking surfaces or for serving utensils provided it is used as part of an uninterrupted process from cooking through service.

**Copper and Copper Alloys (Brass):**

May not be used for foods with pH < 6.0, such as vinegar, fruit juice, wine, etc., or on a water supply line between the soda carbonator and backflow preventor.

**Galvanized Metal:**

May not be used for moist or acidic foods and beverages.

**Solder and Flux:**

May not exceed 0.2% lead.

**Wood:**

Hard maple or equivalent close-grained, hard wood only permitted for cutting boards and blocks, baker’s table, and utensils such as rolling pins, doughnut dowels, salad bowls, chopsticks, and wooden paddles in confectionery operations with products reaching at least 230oF (110oC). Whole, uncut raw fruit and vegetables, and unshelled nuts may be kept in the original wooden shipping container until sold or used.

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**Cleaning equipment and utensils:**

Equipment food-contact surfaces and utensils shall be cleaned to sight and touch.

Non-food contact surfaces of equipment shall be free of accumulation of dust, dirt, food residue and other debris.

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**Cleaning frequency:**

Each time there is a change from raw foods and RTE foods.

At least once every 4 hours throughout the day if used with potentially hazardous foods.

At least once every 24 hours if used in a refrigerated room, or containers in salad bars, if held ≤ 41°F.

### Manual Sanitization: Sanitizer concentration, pH, temperature, hardness and contact time

| Sanitization <sup>1</sup>                               | Minimum Temperature                                  | Contact Time |
|---|--|--------------|
| Chlorine 50 ppm   | 100°F (38°C) if pH ≤ 10.0 or 75°F (24°C) if pH ≤ 8.0 | ≥ 10 seconds |
| Iodine > 12.5 to 25 ppm                                 | ≥ 75°F (24°C) if pH is ≤ 5.0 per label               | ≥ 30 seconds |
| Quaternary Ammonium/per label instructions              | ≥ 75°F (24°C) if water hardness is ≤ 500 ppm & mg/L  | ≥ 30 seconds |
| Hot water, 3 compartment sink w/integral heating device | ≥ 171°F (77°C) immersed in rack or basket            | ≥ 30 seconds |

<sup>1</sup>Other sanitizers may be used if they are EPA-approved and are applied according to the manufacturer's directions on the label of the product's container.

### Warewashing: Mechanical and Manual

|  |   | Minimum Wash Temperature | Minimum Sanitizing Temperature  |
|--|---|--------------------------|---|
| Spray type mechanical warewashers; single tank, hot water sanitizing | single tank, stationary rack, single temperature              | 165°F (74°C)             | 165°F (74°C)  |
|  | single tank, stationary rack, dual temperature                | 150°F (66°C)             | 180°F (82°C)  |
|  | single tank, conveyor, multi-temperature                      | 165°F (71°C)             | 180°F (82°C)  |
| Multitank, hot water sanitizing                                      | multitank, conveyor, multi-temperature                        | 150°F (66°C)             | 180°F (82°C)  |
| Chemical sanitizing  | any warewashing machine                                       | 120°F (49°C)             | sanitization levels as stated in the above table or per labeled manufacturer's instructions on the container. |
| 3 compartment sink chemical sanitizing                               | cleaning agent labeling may permit lower washing temperatures | 110°F (43°C)             |   |

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## APPENDIX C: FOOD SAFETY RESOURCES

Below is a list of websites that contain further information about the food code and a variety of other food safety topics.

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### Food Code and Related Information

#### Minnesota Food Code

[www.health.state.mn.us/divs/eh/food/foodcode/food-code.html](http://www.health.state.mn.us/divs/eh/food/foodcode/food-code.html)

#### 1999 FDA Food Code Annexations

- Annex 1 - Compliance and Enforcement:  
<http://vm.cfsan.fda.gov/~dms/fc99-a1.html>
- Annex 2 - References:  
<http://vm.cfsan.fda.gov/~dms/fc99-a2.html>
- Annex 3 - Public Health Reasons/Administrative Guidelines:  
<http://vm.cfsan.fda.gov/~dms/fc99a3.html>
- Annex 4 - Food Establishment Inspection:  
<http://vm.cfsan.fda.gov/~dms/fc99-a3.html>
- Annex 5 - HACCP Guidelines:  
<http://vm.cfsan.fda.gov/~dms/fc99-a5.html>
- Annex 6 - Food Processing:  
<http://vm.cfsan.fda.gov/~dms/fc99-a6.html>
- Annex 7 - Model Forms, Guides and Other Aides:  
<http://vm.cfsan.fda.gov/~dms/fc99-a7.html>

#### Minnesota Food Code Fact Sheets

[www.health.state.mn.us/divs/eh/food/foodcode/cooling.html](http://www.health.state.mn.us/divs/eh/food/foodcode/cooling.html)

#### Manager CemRule and Application Form

<http://www.health.state.mn.us/divs/eh/food/fmc/index.html>

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### HACCP Information

- Annex 5 (see above)  
<http://www.cfsan.fda.gov/~lrd/haccp.html>  
<http://www.fsis.usda.gov/OA/haccp/imphaccp.htm>

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### Food Allergen Information

#### The four fact sheets below are found at:

[www.mda.state.mn.us](http://www.mda.state.mn.us)

- Food ingredients that may cause allergies
- Manufacturers' Guide for Managing Food Allergen Risks
- Allergen Checklist for Food Suppliers and Manufacturers
- Retail Food Establishments' Guide for Managing Food Allergen Risks

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### Other Helpful Resources

#### Minnesota Department of Health "Safe or Sorry" Campaign

[www.health.state.mn.us/divs/eh/food/sos/index.html](http://www.health.state.mn.us/divs/eh/food/sos/index.html)

#### Bad Bug Book

<http://vm.cfsan.fda.gov/~mow/intro.html>

#### Gateway to Government Food Safety Information

[www.foodsafety.gov](http://www.foodsafety.gov)

#### Partnership for Food Safety Education

<http://www.fightbac.org/main.cfm>

#### Food Safety Publications for Consumers

<http://www.fsis.usda.gov/OA/pubs/alphapubs.htm>

#### MMWR Diagnosis & Management of Foodborne Illnesses:

[www.cdc.gov/MMWR/pdf/rr/rr5002.pdf](http://www.cdc.gov/MMWR/pdf/rr/rr5002.pdf)

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### Minnesota Department of Agriculture

[www.mda.state.mn.us](http://www.mda.state.mn.us)

### Minnesota Department of Health

[www.health.state.mn.us](http://www.health.state.mn.us)

## APPENDIX D: FOODBORNE ILLNESS CHART

### ACUTE FOODBORNE ILLNESSES

| AGENT                            | INCUBATION PERIOD*      | SYMPTOMS                               | SOURCES   | KITCHEN PROCESS PROMOTING SPREAD  | CORRECTIVE MEASURES  |
|----------------------------------|-------------------------|--|---|---|--|
| <i>Staphylococcus aureus</i>     | 2-4 hours<br>(1-6)      | N, C, V, D,<br>(F MAY ALSO BE PRESENT) | Contamination of food by infected food handlers without adequate heating or refrigeration e.g. pastries, custards, salad dressings, ham | Improper handwashing<br>Improper heating/cooling  | Good handwashing<br>Proper temperature maintenance<br>Cover infected wounds, wear gloves |
| <i>Bacillus cereus</i><br>Type A | 2-4 hours<br>(1-6)      | N, V, D                                | Foods that are held at room temperature after preparation, e.g. fried rice  | Improper cooling  | Rapid cooling<br>Cold food maintenance   |
| <i>Bacillus cereus</i><br>Type B | 8-16 hours              | C, D                                   | Custards, cereals, puddings, sauces, meatloaf   | Improper cooling  | Rapid cooling<br>Cold food maintenance   |
| <i>Clostridium perfringens</i>   | 12 hours<br>(6-24)      | C, D<br>(N, V, F ARE RARE)             | Meat, poultry, gravies that are inadequately heated or reheated   | Improper cooling<br>Inadequate reheating  | Rapid cooling<br>Cold food maintenance<br>Adequate reheating                             |
| <i>Salmonella</i>                | 12-36 hours<br>(6-72)   | D, C, F, V, H                          | Poultry, eggs, meat, raw milk (cross-contamination important)   | Cross contamination<br>Improper handwashing   | Good handwashing<br>Exclusion of ill food handlers                                       |
| Norwalk virus                    | 16-48 hours             | N, V, D, C                             | Contamination of food by infected food handlers, e.g. salads, cold prepared foods, shellfish  | Improper handwashing<br>Ill food handlers   | Good handwashing<br>Exclusion of ill food handlers                                       |
| <i>E. coli</i><br>O157:H7        | 3-4 days<br>(1-7 days)  | B, C, D, H                             | Inadequately cooked beef (especially ground beef), raw milk; cross contamination  | Cross-contamination<br>Ill food handlers<br>Improper temperatures<br>Improper handwashing | Proper food storage<br>Exclusion of ill food handlers<br>Good handwashing                |
| <i>Campylobacter</i>             | 3-5 days<br>(1-10 days) | C, D, B, F                             | Raw milk, poultry<br>Cross-contamination  | Cross-contamination<br>Ill food handlers<br>Improper handwashing                          | Proper food storage<br>Exclusion of ill food handlers<br>Good handwashing                |
| <i>Hepatitis A</i>               | 2-6 weeks               | N, V, A                                | Ill food handlers; contaminated shellfish-raw or inadequately cooked  | Ill food handlers<br>Improper handwashing<br>Raw/inadequately cooked shellfish            | Exclusion of ill food handlers<br>Good handwashing<br>Adequate cooking                   |

B=bloody stools, C=abdominal cramps, D=diarrhea, F=fever, H=headache, N=nausea, V=vomiting

\* Incubation period = the length of time from eating until symptoms appear

This chart used courtesy of the Hennepin County Epidemiology & Environmental Health Department

For questions or comments about this handbook, or if you would like to receive additional copies,  
PLEASE CONTACT:

The Minnesota Dept. of Agriculture  
Dairy and Food Inspection  
625 Robert St. N.  
St. Paul, MN 55155-2538  
651-201-6027

[www.mda.state.mn.us](http://www.mda.state.mn.us)



The Minnesota Dept. of Health  
Division of Environmental Health  
Section of Environmental Health Services  
625 Robert St. N.  
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