Basic Food Handlers Safety

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Presented by:
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Requirements for Basic Food Handlers

- **Food Employee**—An individual working with unpackaged food, food equipment or utensils, or food-contact surfaces.
  - IAW Tri-Service Food Code/TB MED 530, individuals preparing, cooking and/or serving unpackaged foods are considered food employees.
  - Organizational cookouts, bake sales, chapel suppers, & other similar events are **NOT** considered temporary food establishments and therefore are not subject to onsite “facility” inspection.

- **Training Requirements**—
  - All food employees will be trained to perform prescribed duties in a safe manner and in accordance with prescribed sanitation and food safety requirements.
  - All individuals preparing or serving food for consumption within the FSGA/HAAF AOR must receive basic food handling training and hold a valid food handlers certificate. Certification is valid for one year from date of training completion.
Purpose and Objective

- **Purpose** – This training is designed to familiarize food handlers operating concessions of basic principles of food safety that must be applied when conducting food operations on military installations.

- **Objective** – Apply established food safety principles to prevent the occurrence of foodborne illness.

- **Scope of Training** –
  - Understand factors that contribute to foodborne illness.
  - Understand controls that will minimize the risk of foodborne illness.
Training Outline

- Foodborne Illness
- Food Safety Hazards
- Biological Hazards and the Nature of Bacteria
- Key Terms
- Foodborne Illness Risk Factors
- Layers of Protection
- Other controls
Just because you don’t hear about it often, doesn’t mean it doesn’t happen… *Only a small percentage of actual foodborne illness cases ever get reported*—

- 128,000 hospitalizations each year
- 3,000 deaths

Personnel who prepare and handle food play a key role in the prevention of foodborne illnesses by—
- Adhering to prescribed food safety measures; and
- Maintaining sanitary controls within food operations.

**Food employee implicated as *Salmonella* carrier—causes outbreak involving 110 Soldiers**
Food Safety Hazards

- Harmful substances that present a food safety hazard can be **Chemical**, **Physical**, or **Biological** in nature and may result in injury or illness when ingested. *Examples include*—

  - **Chemical**: detergents, sanitizing agents, pesticides, fuel, etc…
    - Contamination of food or food contact surfaces (equipment/utensils) occurs through direct contact with chemicals or chemical residues following improper use or storage.

  - **Physical**: bone fragments, glass, toothpicks, etc…
    - When physical hazards such as insects and hair come into contact with food, biological contaminants contained on their surfaces are transferred to the food.

  - **Biological**: bacteria, viruses, parasites, yeast, & molds
    - Biological hazards contribute to almost two-thirds of all foodborne illness outbreaks.
    - Biological agents that make you sick are called “pathogens”. 
Bacteria are microscopic and cannot be seen by the naked eye.
- Hundreds or thousands of bacteria may already exist on raw foods when purchased.

The right temperature, moisture, and food are needed for bacteria to survive and multiply.
- Double in numbers every 15-30 minutes under ideal conditions.
Some bacteria produce toxins and/or spores.

**Toxins—**
- Poison or waste products produced by living bacteria.
- The longer bacteria are allowed to grow/multiply in food, the greater the amount of toxins deposited.
- Are NOT neutralized (destroyed) during cooking.

**Spores—**
- Dormant bacteria cells that become “alive” when environmental conditions are ideal.
- Can survive boiling temperatures for long periods of time; not destroyed during cooking or freezing.
Bacteria in food can cause:

- **Infection** - illness caused by ingesting a sufficient amount of live bacteria.
  - Salmonella
  - Campylobacter
  - Shigella

- **Intoxication** – illness caused by ingesting the toxic residues deposited in food when the bacteria was alive.
  - Staphylococcus aureus
  - Escherichia coli 0157:h7 (E. coli)
  - Clostridium perfringens *(produces spores)*
  - Clostridium botulinum *(produces spores)*
  - Bacillus cereus *(produces spores)*
A foodborne illness outbreak is defined as 2 or more cases of a similar illness resulting from the ingestion of a common food.

- Ice and beverages are included as a “food”

Contaminated – The presence of harmful substances (physical, chemical, or biological) in or on food.

Clean – Clean to sight and touch means there is no visible debris, encrusted food, or greasy feeling.

Sanitize – Sanitizing is a process of reducing the total number of micro-organisms (“germs”) on a surface to safe levels.

- This is NOT the same as “sterilization,” which is a process used in hospitals to kill (remove) all micro-organisms that are on a surface.
Key Terms (Continued)

**Cross-contamination** – The transfer of a harmful substance to food through direct or indirect contact—

- Spilled chemicals or detergents on food packages or surfaces where food comes into direct contact, such as plates, silverware, and food prep tables.
- Using unsanitized equipment or utensils to prepare, store, or serve food.
- Bare-hand contact with foods that are ready-to-eat (RTE) such as fresh fruits, sandwiches, salad vegetables, and deli meats & cheese.
- Bacteria from raw foods transferred to foods that are RTE.
Key Terms (continued)

- Potentially Hazardous Food (Time/Temperature Control for Safety)
  - A food that requires time or temperature control to limit the growth of harmful micro-organisms or the formation of toxins.
    - 6 conditions needed for bacteria to grow: F-A-T-T-O-M

  - **F** – food (high in protein or carbohydrates)
  - **A** – acidity (neutral pH, 4.6 – 9.0)
  - **T** – time (> 4 hours outside of safe holding temperatures)
  - **T** – temperature (between 41 and 135°F)
  - **O** – oxygen (requirements differ)
  - **M** – moisture (water activity ≥ 0.85)
Examples of PHF (TCS) Foods—

- **Raw or heat-treated (cooked) animal food** –
  - *Meat*
  - *Poultry*
  - *Seafood / Fish*
  - *Dairy products (milk, eggs)*

- **Heat-treated plant food** –
  - *Rice*
  - *Pasta*
  - *Baked potato*
  - *Fried onions*
  - *Cooked apples*

- **Cut plant foods (raw)** –
  - *Cut tomatoes*
  - *Cut leafy greens (spinach/salad)*
  - *Cut melons*
  - *Chopped garlic in oil*

- **Raw seed sprouts**
- **Cream pies**
- **Gravies**

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There are 5 major risk factors (or conditions) related to food handler behaviors and food preparation practices that contribute to foodborne illness:

- **Food from unsafe sources**—
  - Food must be obtained from sanitary sources that conform to local, state, and federal statutes and regulations.
  - Foods prepared in private homes are **NOT** authorized for sale or service at temporary food establishments.

- **Inadequate cooking** — food must be cooked to prescribed temperatures in order to kill any residual bacteria, viruses, or parasites that might be in or on the food.

- **Improper holding temperatures** — potentially hazardous foods must be held at proper cold or hot holding temperatures to prevent the growth of bacteria.

- **Contaminated equipment** — food contact surfaces must be cleaned and sanitized to prevent cross-contamination of food.

- **Poor personal hygiene** — food employees must adhere to standards of hygiene to prevent contamination of food contact surfaces and food.
Applying multiple levels of control called the *Layers of Protection* is the underlying principle for reducing the risk of foodborne illness from biological hazards.

- **Good Personal Hygiene and Habits** represent the first layer of protection to prevent transferring biological contaminants to food and surfaces that generally come into contact with food.
- **Proper Cleaning and Sanitizing** is the second layer of control that prevents cross-contamination of food by removing harmful agents from surfaces.
- The third layer, **Time and Temperature Controls**, are employed to prevent the growth of harmful micro-organisms that may already exist in food.
Hand-washing “...the single most important means of preventing the spread of infection.” –Centers for Disease Control and Prevention

- People are natural carriers of bacteria—
  - Staph bacteria is found on skin and hair, regardless of how often you bathe.
  - Hands can become contaminated with *E.-coli* bacteria when you use the toilet; bacteria is transferred to everything you touch.

- People can also carry harmful viruses that are readily transmitted through food or contact with surfaces that are touched by others.
  - Norovirus can live on surfaces such as door handles, dishes, chairs, etc., for several days. (*Cause of 2 outbreaks that occurred at Army facilities in 2012.*)
  - Infection occurs when contaminated food is ingested or contaminated hands come into contact with mucous membranes (eyes, nose, mouth).

- Proper and frequent hand washing and proper use of disposable gloves can reduce the risk of transmission.
When Should You Wash Your Hands?

- Before beginning work.
- After using toilet facilities.
- After smoking, eating, applying lip balm, or taking a break.
- Before putting on disposable gloves and between glove changes.
  - Change gloves between food tasks and non-food tasks – handling/preparing food and handling money, or restocking supplies and food/condiments.
- Before handling cleaned and sanitized equipment & utensils.
- After every chance of contamination—
  - Performing custodial tasks - handling soiled equipment & utensils, or trash;
  - Touching/adjusting hair, earrings, or other jewelry.
- Before conducting any task involving food handling.
Hand Wash Sink

- A dedicated hand wash sink must be provided at the food concession for food employee use only.
  - Sinks used for washing food equipment/utensils may **NOT** be used for handwashing.

- Hand wash sinks located near the latrines may **NOT** be substituted as the designated *food employee* hand wash sink.

- Use of sanitizing hand gels is **NOT** authorized as a substitute for proper handwashing!
Handwashing Standards

- Use hot water when available.

- Hand wash sinks must be supplied with soap and disposable paper towels at all times.
  - Hands must be dried completely after washing.

- A trash receptacle must be supplied at every hand wash sink.

- **Requirements**
  - Lather all exposed skin up to mid-forearm;
  - Lather/scrub for a minimum of 20 seconds;
  - Rinse & dry *(do not wipe hands on uniform or apron to dry)*.

- Use of disposable gloves does **NOT** exempt food employees from washing their hands.
Health Restrictions

- Individuals should NOT be preparing or serving food for consumption if they have:
  - Been diagnosed with a reportable disease (but does not serve a HSP)
  - Frequent coughing or sneezing
  - Sore throat with fever
  - An infected wound (regardless where located on the body)

- Infected wounds and unhealed cuts or blistered burns must be covered to prevent pathogens from contaminating food and food-contact surfaces.

- Hand or wrist – use impermeable cover (bandage or gauze covered by a finger cot) and then cover with a single-use glove.

- Arm – use impermeable bandage.

- Body – cover with dry, tight-fitting bandage.
Clothing Standards

- Outer clothing must be clean.
  - Free of visible soil, stains, debris/particulates.
  - Wearing an apron is recommended & can readily be exchanged when it becomes soiled.

- Adequate hair restraints worn by all personnel who handle food.
  - Beard-net and arm-net/sleeve required if hair exceeds ¼-inch on face or exposed arms.
  - Individuals with long hair must pin or tie loose hair not contained by a hat/cap.
  - All males must wear a hat even if head is clean shaven – hats prevent perspiration from dripping onto surfaces/food.

- Personnel preparing food may not wear jewelry on hands or wrist (except)—
  - Single, plain/smooth ring (e.g., wedding band).
  - Medical alert bracelet or necklace.
Hygiene Standards

Fingernails
- Neatly trimmed (< ¼-inch) & smooth;
- No false nails, polish, or nail jewelry/ornaments – disposable gloves must be worn if present; nails may NOT exceed ¼-inch beyond finger tip

No eating or drinking in food preparation or serving areas.
- Exception: Water in a closed container with straw.
- Use only designated break areas away from food or utensil cleaning.

When worn, change disposable gloves often and—
- Between handling soiled and cleaned/sanitized equipment & utensils;
- After handling trash;
- After wiping tables;
- Before refilling condiment, napkin, and eating utensil dispensers;
- Before handling money;
- When gloves become torn.

Wash your hands between each glove change!
One of the critical factors in controlling bacteria in food is controlling temperature. *Examples of temperature effect on growth*—

- **Ambient Temperatures:**
  - At 90°F the number of bacteria on food will double every ½-hour;
  - PHFs that are held outside of safe temperatures can result in over 4 billion bacterial cells in only 4 hours.
  - Illness can occur after ingesting anywhere between a couple hundred to a couple thousand bacterial cells.

- **Refrigeration Temperatures:**
  - At 26°F the number of bacteria double every 60 hours.

**Bottom Line** – Keep potentially hazardous foods at safe temperatures—

- Chilled at 41°F or below, or
- If cooked, hold hot at 135°F or above.
Temperature Controlled Processes

- **Thawing**—
  - Do NOT thaw at room temperature!
  - Thaw in a refrigerator or ice chest that maintains foods cold at 41°F or below; or
  - Thaw as part of cooking process *(e.g., frozen hamburgers on a grill)*.

- **Cold holding** potentially hazardous foods during storage, transport, & service.

- **Hot holding** potentially hazardous foods after cooking and during transport & service.

- **Cooking**—
  - Destroys living bacterial cells.
  - Does NOT destroy bacterial toxins or spores.

- **Cooling** leftover hot foods.
  - Leftovers are prohibited in temporary food operations!
  - Discard all unconsumed hot & cold food prepared for service each day.
Prescribed standards are based on targeted bacteria commonly found on specific foods.

- Thermometer must be used to verify proper cooking temperature was achieved.
  - Measure at thickest part of food.

<table>
<thead>
<tr>
<th>Food Type</th>
<th>Temp</th>
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<tbody>
<tr>
<td>- Poultry &amp; poultry products</td>
<td>165°F (15 sec)</td>
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<tr>
<td>- Stuffed meats &amp; vegetables containing meat</td>
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<tr>
<td>- Sausage &amp; Ground meats</td>
<td>155°F (15 sec)</td>
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<tr>
<td>- Fish / Seafood</td>
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<tr>
<td>- Cured, injected, or mechanically tenderized meats</td>
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<tr>
<td>- Whole meat roasts (lamb, beef, veal, pork)</td>
<td>145°F (4 min)</td>
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<td>- Whole muscle meats – steaks, chops, strips</td>
<td>145°F (15 sec)</td>
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<tr>
<td>- Cooked plant food that do not contain meat, poultry, fish, or eggs</td>
<td>135°F (15 sec)</td>
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Food Protected During Storage

- **Do NOT** store boxes or containers of food directly on the floor or ground.
  - Food should be at least 6 inches off of floor to prevent contamination or pest access.

- **Protect from contamination when stored in refrigerators/freezers & ice chests**—
  - All food must be wrapped or held in a covered container.
  - Food packaging/containers should be closed/covered so that there is no exposed food.
  - Food containers or packaging must be impermeable to protect from melting ice when stored in ice chests.
  - Storage units must be kept clean; free of residual food debris.
  - Ice used to keep foods cold may **NOT** be used for consumption!

- **Cover food (and containers of food) when held in hot or cold holding during serving periods.**

- **Always examine food & food containers for signs of contamination or spoilage before use.**
Maintaining Area Sanitation

- Pests are readily controlled by maintaining the food operation area in a sanitary status.
  - Immediately clean up spilled food/liquids around food prep & serving area and around the trash cans.
  - Wipe serving counters & customer tables to prevent food debris from accumulating.

- Manage trash generated from the operation—
  - Use plastic liners in all waste receptacles and do NOT reuse liners;
  - Cover garbage containers when not in use;
  - Empty garbage containers when 2/3 full and immediately take to the dumpster;
  - Trash bags must be tightly sealed (tied) before placement in dumpster;
  - Close dumpster doors;
  - Clean trash receptacles (and lids) with soapy water at the end of each day.

- Food concessions operating in an enclosed structure—
  - Must have screens on all windows to prevent entry of flying insects;
  - Must keep doors closed when not in use.

- Application of pesticides (e.g., Raid or insect foggers) is NOT authorized.
Summary of Food Illness Prevention Measures

- Good personal hygiene & habits
- Proper cleaning & sanitizing
- Time & temperature control of potentially hazardous foods
- Protect food during storage
- Maintain area sanitation