

# Basic Food Handlers Course

Preventive Medicine-  
Environmental Health

# How to obtain credit for this course:

- Review and study all of the slides (Total Approximate Time 4 hrs)
- Come to Bldg. #4077 (in front of the hospital) at 12:00 on Thursday's for your proctored test
- Pass the test with a 70% or better
- Receive your Food Handler Card the same day!

# What does environmental health do?

- Our mission entails inspecting facilities to ensure health and sanitation is being held to regulated standards.

# What does Environmental Health do?

- Inspects facilities ranging from food facilities, bake sales, gyms, pools, barber shops, beauty shops, child development centers, family child care homes, field sites, detention cells, and more.
- We also conduct entomology missions and water surveillance.

# Food Safety Responsibilities

- Anyone serving food on post must:
  - Obtain appropriate approving memorandum from Garrison Commander
  - Obtain an approved food permit from Environmental Health
  - Have a valid food handlers card, which is valid for one year from issue.
  - Obtain appropriate equipment and training necessary to perform food sale functions.

# Food Safety Responsibilities

- Preventive Medicine – Bassett Army Community Hospital (PM – BACH)
  - Provide training to adequately prepare food handlers for a safe food environment.
  - Randomly inspect food events to ensure food safety considerations are being maintained.

# Importance of Food Safety

- CDC estimates 76 million illnesses annually
  - result in approximately 325,000 hospitalizations and 5,000 deaths
  - estimated 14 million illnesses and 1,800 deaths are caused by known pathogens:
    - *Salmonella*
    - *Listeria*
    - *Toxoplasma*
  - Unknown agents account for the remaining 62 million illnesses

# Food borne Illness: What's the Problem?

- Most people do not think about the safety of their food until they or someone they know becomes ill from a food-related infection. While the food supply in the United States is one of the safest in the world, CDC estimates that 76 million people get sick, more than 300,000 are hospitalized, and 5,000 die each year from illnesses caused by contaminated foods or beverages.



# Food borne Illness: What's the Problem?

- As the spectrum of food borne diseases constantly changes, there are many opportunities for food to become contaminated as it is produced and prepared. More than 250 different food borne diseases have been described: most are infections caused by various bacteria, viruses, and parasites. Poisoning may also result from harmful toxins or chemicals that have contaminated food.

# People At High Risk For Food borne Illness

- Infants and preschool-age children
- Pregnant women
- Elderly people
- People taking certain medications
- People with weakened immune systems

Protect the health of soldiers and their families - Good personal hygiene is a critical measure against foodborne illness



# Why do you have to take this course??

- **TB MED 530**

**Temporary** food employees, assigned for 30 days or less (or bartenders, waiters, and waitresses that do not prepare food) only require 4 hours of initial training.

Training Records will be maintained at the applicable food establishment where food employees work and will be readily available for review by Preventive Medicine.

This means food handlers cards must be in your possession during the food event.

# When am I required to have a permit?

- Any event where food will be:
- Sold
- Auctioned
- Given by donation (This includes giving the food away) \*\*\*Situational Based\*\*\*
- THIS IS NOT THE SAME APPROVAL AS THE POST COMMANDER'S. YOU HAVE TO GET BOTH.
- This should be posted at your event somewhere.

# Before we begin...Food Terms you should know...

- **Clean** - free of visible soil
- **Sanitize** - reduce the number of microorganisms to a safe level using heat or chemicals
- **Sterilize** - to make free of microorganisms
  - In food service we do not sterilize food contact surfaces.
- **Contamination** - the presence of harmful substance in food

# Before we begin...Food Terms you should know...

- **Spoilage.** Damage to the edible quality of a food. Meat that is unsafe to eat will not always smell or taste spoiled.
- **Potentially Hazardous Foods (PHF's).** Foods that allow the rapid growth of bacteria. There are several physical and environmental characteristics that will make a food potentially hazardous. We will discuss these characteristics later in this lesson.

# Before we begin...Food Terms you should know...

- **Temperature Danger Zone. (TDZ)** Temperature range where bacteria can grow and reproduce rapidly (between 40 and 140 degrees F, or between 5 and 60 degrees C.) Potentially hazardous foods should be kept at temperatures below 40 °F or above 140 °F.

# Before we begin...Food Terms you should know...

- **Foodborne Illness.** Illness transmitted to humans due to the ingestion of food that contains harmful pathogens or their byproducts (toxins).
- **Foodborne Illness Outbreaks (FBIOs).** Generally, we think of a foodborne illness outbreak as involving 20, 50, or even hundreds of individuals. In reality, an outbreak is defined as the laboratory confirmed incidence of clinical illness involving a minimum of **two** or more people that ate a common food



# Before we begin...Food Terms you should know...

- **Cross-contamination** - the transfer of a harmful substance from one food to another by direct or indirect contact.
- DIRECT vs. INDIRECT =====>

# Examples:

- **Direct** cross-contamination involves the transfer of a harmful agent from raw foods to cooked or ready-to-eat foods
  - example of direct contact: blood from thawing ground beef dripping onto fresh produce stored on a shelf below
- **Indirect** cross-contamination involves the transfer of a harmful agent to foods by hands, utensils, or equipment.
  - example of indirect contact: raw chicken prepared with a knife and cutting board and knife and cutting board are not cleaned and sanitized after use

# Section I:

## Personnel & Personal Hygiene



# Personal Hygiene

*Personal hygiene is the degree of pride people take in themselves.*



- Wash your hands
- Take care of Yourself: You can't protect anyone else if you are not taking care of yourself.
- Hair Restraints, limited jewelry

# Personal Hygiene:

Good

vs.

Bad



# Hand Washing



Wash your hands after:

- Touching bare skin
- Blowing your nose
- Handling unclean equipment, utensils, etc.
- When changing tasks
- Handling raw food
- Smoking
- Bussing dishes
- Handling garbage

- **Most common source of contamination leading to illness is the fecal-oral-route**

# Hand Washing



**Wet your hands with warm, running water**



**Apply soap**



**Rub hands vigorously for 20 sec; Clean under fingernails and between**



**Thoroughly rinse hands under running water**



**Dry hands (with a SINGLE USE paper towel ONLY)**

**Ensure you have adequate hot & cold water, Adequate hand soap, Adequate paper towels (a multi-use dish towel is NOT allowed), Covered garbage can, Handwashing sign.**

# HAND SANITIZERS



Hand Sanitizers can be used as long as they are applied to hands after hand washing has been completed.

IT CAN NOT BE SUBSTITUTED FOR HAND WASHING.

Hands need to be dry before handling food, equipment, or utensils.

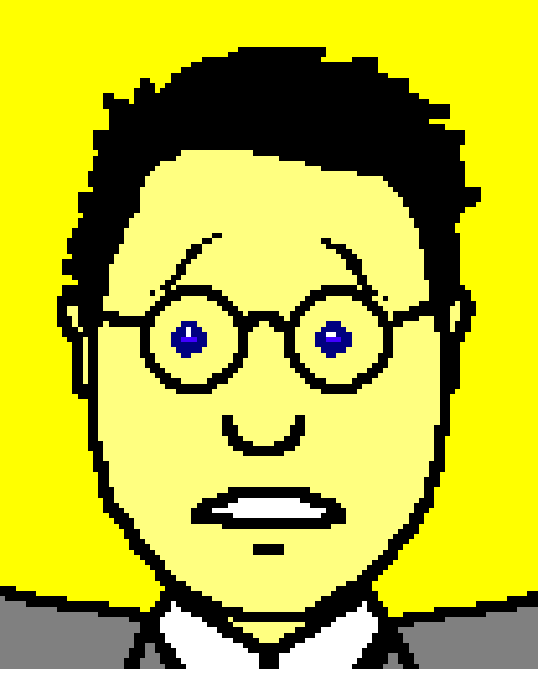


# DID YOU KNOW???

Also, hand sanitizers normally have a concentration of 62% ethyl alcohol. A 2 oz. bottle is equal to 4 shots of vodka. Keep in mind that these bottles do not need to be near children or accessible to prevent alcohol poisoning. For a infant or toddler, the amount could be fatal.

# Handwashing Standards

- designated sink near food site
  - May not be similar sink used to wash equipment/utensils.
  - Hot water must have a minimum temperature of 110 ° F
  - Liquid soap is preferred
  - trash receptacle must be present
  - only disposable paper towels or air dryer are authorized for drying hands
  - Gloves are not mandatory but a good addition to prevent contamination. However, bare hand contact with ready-to-eat food is **not** allowed.



## Feeling Sick??

Food employees should not work around food if they have symptoms caused by illness, infection, or other sources that are associated with an acute gastrointestinal illness, such as:

1. Diarrhea
2. Fever
3. Vomiting
4. Jaundice
5. Sore Throat with Fever
6. A lesion containing pus on the hands or wrist, exposed portions of the arms, or on other parts of the body, unless the lesion is covered by an impermeable cover.

### OR THE FOOD EMPLOYEE IS:

1. Is suspected of causing, or being exposed to a confirmed disease outbreak
2. Lives in the same household as a person who attends or works in a setting where there is a confirmed disease outbreak

# Personal Hygiene and Identifying Unhealthy Personnel

- Supervisors or the Person-in-Charge
  - must identify unsanitary and unhealthy personnel
  - Observations are the only effective means of identifying health risks
  - look for cuts/burns on fingers, hands, and arms; oozing sores, pimples, or boils; and significant coughing or sneezing
  - Workers obligated to disclose conditions if they are experiencing fever, vomiting, or diarrhea

# Hygiene Standards

- **Fingernails**

- must not extend beyond the fleshy tip of the finger and
- must be neatly trimmed and smooth.
- False fingernails, fingernail adornments, and fingernail polish are not authorized

- **Simple Jewelry**

- With the exception of a plain ring, such as a wedding band, or a medical bracelet, food employees will not wear jewelry, which may be touched, while preparing or serving food.

# Hygiene standards

- Hair
  - Food employees will wear authorized hair restraints to effectively keep their hair from contacting exposed food; clean equipment, utensils, and linens; and unwrapped single-service and single-use articles.
  - Some examples of authorized hair restraints are: hair net, baseball cap, visor with bulk of hair restrained.
  - Some examples of unauthorized hair restraints are: hair band, pony tail holder.



# HYGIENE STANDARDS

- **Clothing**

Food employees will wear clean outer clothing to prevent contamination.

Clothing not allowed would include sleeveless clothes, midriffs, and swimwear (bikinis/ trunks alone).

- **Eating and drinking is prohibited in all food preparation areas.**

- only exception to this policy is during routine recipe sampling as long as an appropriate method is used
- workers may drink water as long as it is in a completely enclosed container

Section II:

Different  
Threats





# Physical

- Hair
- Transportation
- Fingernails
- Broken Utensil pieces



# Physical threats

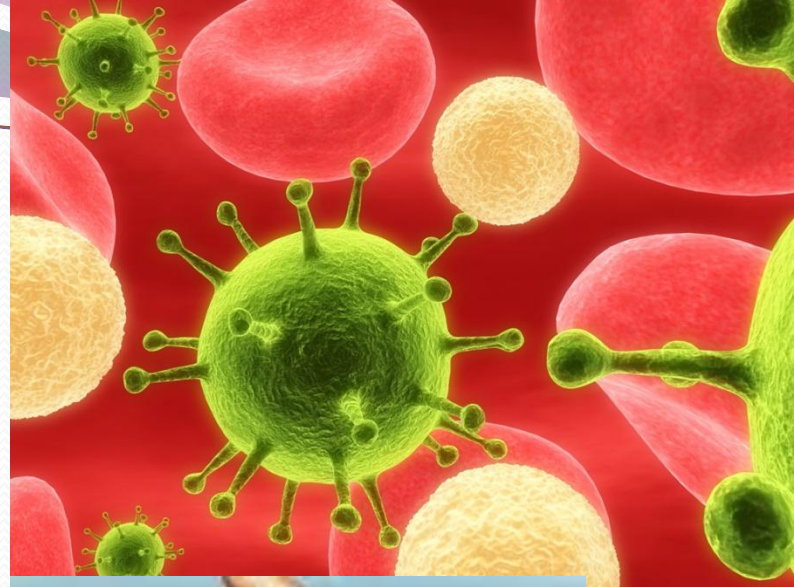
- involve injuries caused by chewing or ingesting foreign objects in food
- not as significant as biological hazards because threat impacts fewer people
- Examples: metal shavings packing staples, tacks, and pins, glass, hair, fingernails, wood, stones, toothpicks
- Unlike bacteria, the threat of a physical hazard impacts fewer people because it does not multiply or spread on its own.

# Physical Threats Continued..

- Some examples of physical hazards include metal shavings that can get into food by using a worn can-opener. Other metal objects, such as magnets, packing staples, tacks, and pins, can accidentally fall into food.
- Glass can get into ice if we use a glass as an ice scoop.
- Unprotected light bulbs can also present a problem if the bulb is shattered.
- The accidental swallowing of un-frilled and frilled toothpicks have occurred when eating meatballs or sandwiches.

# Biological

- Bacteria
- Viruses
- Parasites



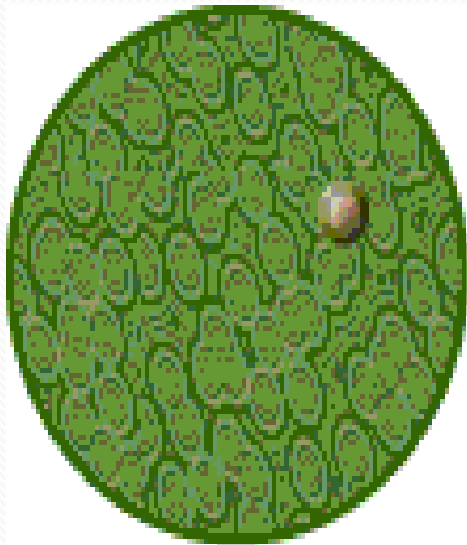
# Biological

- Of the three categories, biological hazards present the most significant threat, accounting for at least two thirds of foodborne illnesses.



# BACTERIAL GROWTH

- Under the right conditions, bacteria can double every **10 to 30 minutes**.



\*\*\*If you touch a potentially hazardous food during preparation, you may transfer several thousand bacteria from it's surface\*\*\*

# Chemical

- intoxication due to chemical contamination of food
- residues on food or food contact surfaces
  - pesticides and metal residues
  - cleaning compounds, camouflage paint





- Residues from detergents, cleaning solutions, or concentrated sanitizers

- Metal residues

- can produce toxic effect in minute quantities
- galvanized containers w/ acidic foods causes zinc to leach out
- Lead-based flatware and crystal can present similar problems



# Chemical continued. . .

- Misuse of pesticides either on farms or in facility
- bug spray in food preparation areas
- Food service workers are prohibited by TB MED 530 to apply pesticides in food storage, preparation, or service areas

# Section III: food



# Eight leading causes of Food borne Illness identified by CDC were:

- 1) Cross-contamination between raw and cooked and/or ready-to-eat foods.
- 2) Inadequate re-heating of potentially hazardous foods.
- 3) Foods left in the temperature danger zone (TDZ) too long. Time in the TDZ is cumulative.
- 4) Raw, contaminated ingredients used without further cooking.

# Eight leading causes of Foodborne Illness identified by CDC were:

- 5) Foods prepared too far in advance. This is generally coupled with holding food in the TDZ too long
- 6) Infected food handlers and poor work habits.
- 7) Failure to properly heat or cook food

Eight leading causes of Food borne Illness identified by CDC were:

- **8) Failure to properly cool food is the number one cause of FBIOs in the United States.**

# Allergens

- FDA classifies food additives as allergens cause some people to become ill
- MSG, nitrates, and sulfating agents, are used as flavor enhancers or food preservatives
- Peanuts- By law, it is required to post a sign stating your items may contain peanut products.
- Make sure everyone participating in your event can identify ingredients found in items in case asked.

Make sure to visually inspect your food prior to purchasing, cooking, and serving



# Approved source compliance

- All food served will be from approved sources per TB MED 530.
- Ice is not allowed to be used from one's personal home, ice will need to be bought from an approved vendor.



# Examples of Unapproved Sources

- Food markets with products sold by individuals

Items sold from the back of vehicles or on the side of the road



# When purchasing food for event:

- Ensure canned goods are not dented
- Check expiration or use by dates
- Make sure items are properly sealed and do not seem tampered with



# Temperature requirements

- Refrigerated PHF will be at a temperature of 40 F. or below.
- Hot holding foods will be maintained at a temperature of 140 F or above after being cooked to the proper temperature required for the specific food.
- Frozen food will be maintained at 0 F or below.

# **4 Acceptable Ways to Thaw Food**



- Refrigerator
- Cold Running Water
- Microwave Oven
- As Part of the Cooking Process



# • Refrigerator

This method requires advance planning. Larger products, such as a turkey, can take several days to thaw completely in a refrigerator.



## •Running Water

Food must be submerged under running potable water at a temperature of 70 F or lower. Water flow must be strong enough to wash loose food particles into the overflow drain. Make sure the thawed product does not drip water onto other products or food-contact surfaces. Clean and sanitize the sink and work area before and after thawing food this way.



- Microwave Oven

Microwave thawing can actually start cooking the product, so do not use this method unless you intend to continue cooking the food immediately.



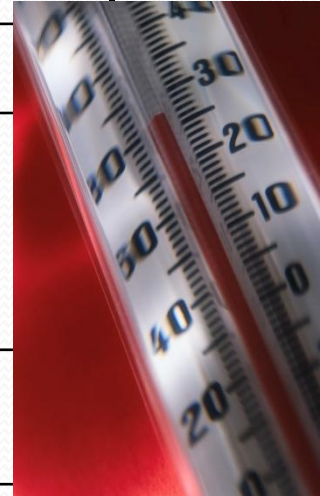
- As Part of the Cooking Process

Frozen hamburger patties, for example, can go straight from the freezer onto a grill without being thawed first. Frozen chicken can go straight into a deep fryer. These products cook quickly enough from the frozen state to pass through the TDZ without harm. However, always make sure you verify the final internal cooking temperature with a thermometer.



# Safe Cooking Temperatures

<b><u>FOOD</u></b>	<b><u>TEMPERATURE (°F)</u></b>
<i>Commercially processed, ready-to-eat food (hot-held)</i>	<i>140</i>
<i>Shell eggs for immediate service</i>	<i>145 for 15 seconds</i>
<i>Seafood (including fish, shellfish, and crustaceans)</i>	<i>145 for 15 seconds</i>
<i>Pork, Beef, Veal, Lamb</i>	<i>145</i>
<i>Steaks/Chops</i>	<i>145 for 15 seconds</i>
<i>Roasts</i>	<i>145 for 4 minutes</i>
<i>Injected Meat (including brined ham and flavor-injected roasts)</i>	<i>155 for 15 seconds</i>
<i>Ground Meat (i.e., ground beef, ground pork)</i>	<i>155 for 15 seconds</i>
<i>PHF food cooked in a microwave</i>	<i>165</i>
<i>Stuffing and stuffed meat, fish, poultry, and pasta</i>	<i>165 for 15 seconds</i>
<i>Poultry (whole or ground duck, chicken, or turkey)</i>	<i>165 for 15 seconds</i>



# Holding Food in the Temperature Danger Zone

You should limit the time that Potentially Hazardous Food (PHF) remains in the temperature danger zone (40°F-140°F).

The more that PHF remains in this zone the more at risk it will be.

PHF may only be held in the temperature danger zone for a maximum of 4 hours.

However, cooling food is the one exception...

# Cooling Food

- Hot items must be cooled from temperatures that are above 140 °F to 70 °F in 2 hours,
- Then from 70 °F to 40 °F or below within 4 hours
- This allows for a total of 6 hours



# Holding & serving

- spot check the internal temperature of PHFs of both hot and cold holding with thermometers periodically
- Verify equipment temperature settings and ensure your thermometer is calibrated.
- Hot holding or serving line items that fall below 140 °F should be re-heated to 165 °F or discarded if 4 hours in the TDZ has occurred
- No serving leftovers!

# Maintain a log of temperatures:



The person-in-charge will monitor and verify proper food cooking, cooling, cold- or hot-holding temperatures of PHFs at a minimum of every 2 hours. In addition, food temperatures at the time of receipt or arrival will be monitored and verified.

# Bi-metallic Thermometer




Calibrate according to directions, before use.

How long can food stay out, without time temperature controls?



**Up to 4 hours.**

A close-up photograph of a pair of hands holding a large, ripe red tomato. The hands are positioned at the top and bottom of the frame, with the fingers gently cupping the tomato. The tomato is bright red with a green stem and five lobes. The background is dark and out of focus.

*Food moves from the Farm, to the market. There it goes into transit via a truck to the food kitchen. From there the cook preps the food for consumption.*



# Fruits and vegetables

- Before being cut, combined with other ingredients, cooked, served, or offered for human consumption in ready-to-eat form, raw fruit and vegetables will be -----  
--
- Thoroughly washed in water to remove soil and other contaminants.
- Completely immersed for 30 seconds in a 100-ppm chlorine solution, or equivalent product approved by Preventive Medicine.
- Rinsed in DRINKING WATER.

# Condiments

- If you are serving items such as hot dogs and would like to serve condiments to go with it, condiments need to be in individually wrapped containers or a container in which the patrons never touch the lid.



# Foods-

- Need to be wrapped and labeled either individually or as a whole.
- If peanut products are used in any product sold, sign needs to be displayed notifying the patrons that some products may contain nuts or peanut products.
- If food is made from home, a sign needs to be posted notifying the public.



# Equipment and utensils:

- If utensils are needed for operation, utensils for patrons should either be individually wrapped or displayed where the patrons hands do not touch the mouth portion of the utensil.
- All items should be kept covered for protection and unused plates, bowls, etc. need to be inverted to prevent any contamination from occurring.

# Keep your location CLEAN!

Equipment needs to be kept maintained in a clean state both by sight and touch



- IAW TB MED 530, a chlorine solution made up of 100ppm will be used to wipe up spills from food-contact and nonfood-contact surfaces of equipment.
- One table spoon of house hold bleach per gallon will yield approximately 100 ppm

## Event rules

- Must be under shelter of some sort.
- Food will not be placed on ground at any point, should maintain minimum of 6 inches.

# Event Rules

- Should have a sink for hand washing readily accessible, if not in the facility, event coordinator can possibly find and use a portable hand washing station.
- Trash cans need to be located near set-up to allow trash to be discarded properly. The trash can should not be near the food prep area.

# Equipment:

- During your event, you may have items that require preparation or need to be held in cold or hot containers. These items will need to be listed on the form provided by Environmental Health prior to a permit being issued.



# Equipment:

\*\*\*Examples of items that are needed or may be needed: Trash Cans

Hand washing equipment

Thermometers

Table

Coolers

Warmers/Crockpots

Utensils

Clock or Watch

# Portable or Stationary Hand washing stations



# Temporary hand washing sink alternative

- A temporary hand washing set up comprised of a minimum of two 2-gallon insulated containers (each with a spigot) and a catch basin.
- A single 5-gallon insulated container approved by Preventive Medicine for limited use, provided the wash water temperature can be maintained at 110 F or higher during food preparation, servicing, and cleaning.

# A Temporary Food Establishment Permit is required:

- Anytime food is prepared, served or sold to the public regardless of the location of the event (i.e., parking lots, units, on post housing)
- This **INCLUDES** food that is given away to the public for free or for donation

# What you will need to know for your permit-

- Intended menu and anticipated volume of food to be stored, prepared, sold, or served.
- Proposed layout of temporary food establishment and construction materials(if applicable).
- Equipment listing

# What you will need to know for your permit-

- # of food handling employees, persons-in-charge, and supervisors
- Copy of written agreement with fixed servicing food establishment for off-site preparation and packaging of approved foods.
- All food service equipment will meet NSF standards.

# Any questions??

Please Call an Environmental Health Technician:

SPC Croy: 361-5848

SPC Adams: 361-5837

Carolyn Norton: 361-5405

Or you may reach the Chief, of Environmental Health:

CPT Mark: 361-5503

# REFERENCES

- AR 40-5, Preventive Medicine, 15 October 1990.
- FoodNet Surveillance Report, CDC, 2005.
- TB MED 530, Occupational and Environmental Health Food Sanitation.
- ServSafe Course Book