Foodborne Illness

- Est. 48 million foodborne illnesses in US each year¹
- 3,000 deaths¹
- Consumption of contaminated food
- Major cause of diarrhea
- Generally from unsafe food handling in the HOME-
  What other environments?
Most Susceptible to Foodborne Illness

- Infants and children
- Older adults
- Those with liver disease, diabetes, HIV/AIDS, cancer
- People taking immunosuppressant agents/drugs
- Pregnant women
Talk the Talk

- **Clean** – removal of the soils
  - Visible
- **Sanitize** – reduce micro. to safe levels
- **Sterilize** – complete destruction of all organisms
- **Disinfectant** - Kills 100% of vegetative cells, may not kill bacterial spores, hospitals
- **Soils** – Unwanted matter on the surface to be removed prior to sanitizing
Common Causes of Foodborne Illness

- Mishandling of foods
- Preference for meat cooked “rare”
- Improper food handling/preparation
- Poor hygiene
- Increased shelf-life of products
- Centralized food production
- Ready-to-eat foods
Why Are Microbes So Harmful?

- **Infection:**
  - Bacteria invade intestinal wall via toxin contained in organism

- **Intoxication:**
  - Bacteria produce toxin that is secreted into food
The major players – **PATHOGENS**

- **E. Coli 0157:H7 and spp.** - Raw and undercooked meat, produce—lettuce, spinach, sprouts, unpasturized juice and milk
- **Salmonella spp.** - Raw and undercooked meats, poultry, eggs and (sprouts, peanut butter unpasturized milk)
- **Campylobacter jejunum*** - Raw and uncooked meat and poultry, unpasturized milk and water
- **Staph. aureus** – Ham, poultry, egg salads, cream filled pastries, custards and whipped cream
  - Temperature abuse
The major players – PATHOGENS

- **Listeria monocytogenes** - Unpasteurized milk and soft cheeses, raw meats, uncooked vegetables, RTE foods
- **Clostridium perfringens** – meat, poultry, gravy
- **Clostridium botulinum** - canned and vacuum packed foods (low acid)
- **Shigella** – fecal/oral transmission, produce, water supplies, poor hygiene.
- **Vibrio** - uncooked or raw seafood, sushi
Follow the four USDA recommendations for home food safety

- Clean
- Separate
- Cook
- Chill
Sanitation

- The first step to food safety (Foundation)
- Clean and sanitary:
  - Hygiene
  - Work space
  - Equipment
  - Utensils
1. Wet your hands with clean running water and apply soap

2. Rub your hands together to make a lather and scrub them well; be sure to scrub the backs of your hands, between your fingers, and under your nails.

3. Continue rubbing your hands for at least 20 seconds. "Happy Birthday" twice.

4. Rinse your hands well under running water.

5. Dry your hands using a clean towel or hot air dryer.
Wash Food Contact Surfaces

- Wash food contact surfaces with:
  - Disposable antimicrobial wipes
  - Antimicrobial cleaners/sanitizers
  - 1 tablespoon bleach to 1 gallon water (100-200 ppm)
  - Clean and sanitary cloths, sponge, paper towel
  - Clean, remove soil, then sanitize

Shopping

- Select cold foods last
- Make sure meat packaging is intact
  - Place in plastic
- Select fruits and Vegetables that are not bruised *(skin intact)*
  - Cut fruits should be refrigerated
Shopping Cont.

- **Read the label**
  - Sell by, Use by, Best if used by

- **Buy Clean Eggs**
  - Free from crack and feces/dirt

- **Get perishables into refrigeration**
  - 2 hrs
  - Above 90°F, 1 hr
Microbe’s Favorite Environment

- **Temperature**
  - Above 140°F – slows growth of microbes or kills them
  - **40°F – 140°F “DANGER ZONE”**
    - Two hour window
    - One hour warm day
  - Refrigeration (Below ≈ 40°F)
    - Slows microbe growth
  - Freezing (Below ≈ 32°F)
    - Virtually Stops microbe growth
Thawing

- Three types
  - Refrigeration (Safest)
    - Takes the longest
  - Cold water
    - Requires frequent water changes (water below 40°F)
  - Microwave
    - Can cause partial cooking, cook immediately after defrosting

Notice how counter and sink are not mentioned
Cook it right

- Cook meat, poultry and fish to appropriate temperatures
- Use a thermometer

SAFE MINIMUM INTERNAL TEMPERATURES

- Whole poultry: 165 °F
- Poultry breasts: 165 °F
- Ground poultry: 165 °F
- Ground meats: 160 °F
- Beef, pork, lamb, and veal (steaks, roasts and chops): 145 °F

http://www.fsis.usda.gov/Factsheets/Keep_Food_Safe_Food_Safety_Basics/index.asp
Thermometer use

- Place thermometer into thickest part of food
  - Avoid contact with fat, gristle or bone
  - Poultry place innermost part of thigh and wing and the thickest part of the breast
  - Combination dishes check in several locations
  - Types of thermometers vary
    - Depth and time
  - Clean with soap and water
Separate

- Cross contamination
- Have designated cutting boards for meat/poultry, fish and fruits/vegetables
- Separate foods in the grocery cart
- Do not wash your meat, poultry and seafood

http://www.fsis.usda.gov/images/JPEG/Separate_1.jpg
How to Wash Vegetables and Fruit

- Water or Fruit/Veggie washes
- Soak in water for 1-2 minutes
  - Fragile items use colander and spray with water
- Tough skinned items use vegetable brush
- Clean countertop, cutting board and utensils after peeling before cutting
Do I wash eggs?

- **NO**

- When a hen lays an egg, a protective coating is put on the surface of shell.
  - At the egg processing plant the eggs are carefully washed and sanitized using a special detergent that will maintain this coating.

- If they come from a farm carefully inspect them for feces/dirt

- Clean all surfaces eggs come in contact
References and Information

- Kitchen Companion
- To your health, Food Safety for Seniors
- Coming Soon: CE General Food Safety Factsheet
- CDC.gov
- USDA.gov
- FDA.gov

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