

## Staying "Food Safe" in Emergency Situations: An Introduction

Maui County Health Volunteers  
March 10, 2011  
Quarterly Meeting

Thanks to Cliff Spencer and Patti Kitkowski!

Which of these people has infectious  
Norovirus?



Which of these people has Hepatitis A?



Which of these people has HIV?



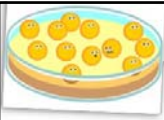
Safe food handling  
practices can prevent a  
lot of **Food Borne Illness**

The principles of **FBI** prevention during  
a disaster are essentially the same as  
everyday food safety precautions, but  
may be more challenging when  
resources are limited (water, electricity).



Microorganisms (germs)  
cause **FBI**

- Bacteria – shigella, salmonella, etc.
- Viruses – norovirus, Hep A, etc.
- Some FBI is brought on by toxins produced by microorganisms in the food – botulism, "staph"
- Some FBI is from toxins produced by microorganisms in your body – E. coli



### Bacteria grow fast in certain conditions

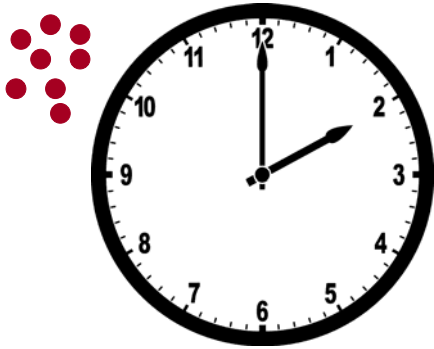


- Bacteria need nutrients and water
- Bacteria thrive in certain temperatures
- Some bacteria need oxygen, so airtight packaging inhibits their growth
- Toxins produced by microorganisms
- Time in the Danger Zone must be minimized

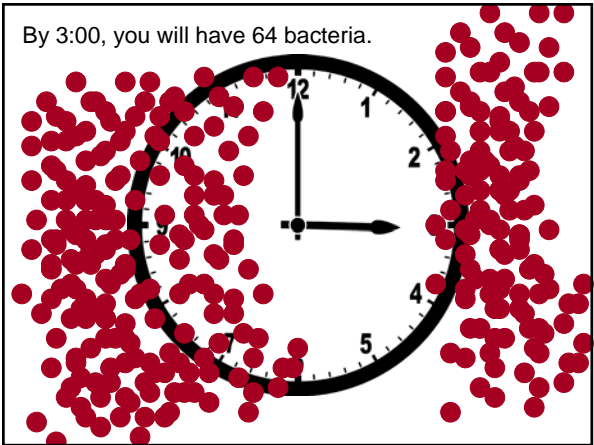
If you have one bacterial cell in your dish at 1:00 in optimum conditions (divides every 20 minutes)...



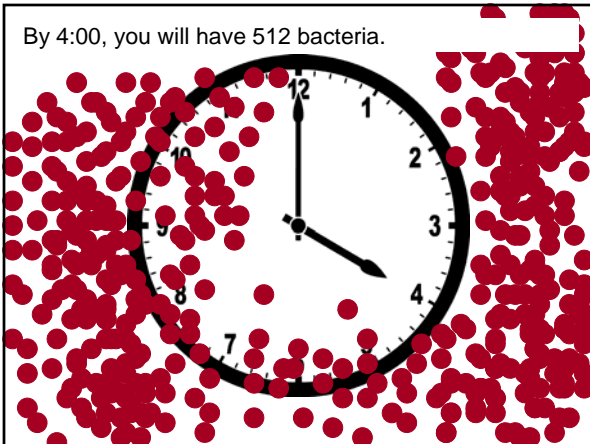
By 2:00, you will have 8 bacteria.



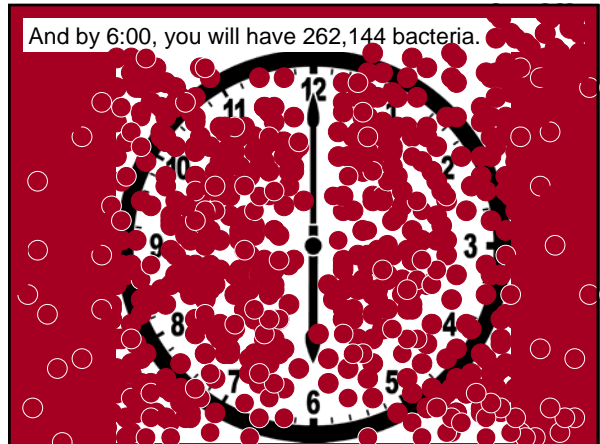
By 3:00, you will have 64 bacteria.



By 4:00, you will have 512 bacteria.



And by 6:00, you will have 262,144 bacteria.



## Principle #1



## Principle #1

### Use excellent personal hygiene and hand hygiene at all times

- Wash hands thoroughly every time. Scrub at least 20 seconds.
- Before starting work
- After sneezing, coughing, eating, using rest room, taking out trash, washing dishes, using cleaning products, touching raw eggs, meat, fish, fresh produce, money, phone, door handles, soiled linens.
- Cover cuts or burns with waterproof bandages, or reassign worker to task that does not involve food.
- Do not cook or serve food while ill
- Hair should be restrained

## Principle #1

### Challenges in a disaster

- Water may be limited
- Bathroom facilities over-used, difficult to keep clean
- What if toilet paper or paper towels run out?
- If no electricity, backup generators may not be readily available for refrigeration
- Alcohol gel only works against some germs

### Possible solutions

- Mobile or emergency kitchen operators should have dedicated backup generators
- Should be prepared with gloves, utensils, single-use waxed-paper or plastic squares for serving, waterproof bandaids, etc.
- Pre-arrange for delivery of handwashing stations and cleaning supplies to shelters

## Principle #2



## Principle #2

### Minimize bare-hand contact with ready-to-eat foods

- Use utensils, tongs, serving spoons, single-use plastic or wax paper squares, or gloves.

Note: Hawaii law does not require use of gloves but does require hygienic practices.

- Do not let gloves give you a false sense of security. If gloves are used, must be combined with thorough handwashing and proper donning and doffing techniques.

## Principle #5



### Principle #3

#### Avoid contamination + "cross - contamination"

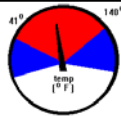
- Avoid touching mouth, face, hair and then touching food
- Do not share utensils from one food to another without washing utensil first
- Do not store washed foods together with unwashed foods
- Do not contaminate cooked foods with raw foods, vegetables with raw meat, etc.
- Store meat, fish below lettuce, etc.
- DO clean + sanitize cutting boards, can openers, countertops

### Principle #4



### Principle #4

#### Control time and temperature



- Keep hot foods hot and cold foods cold
- Minimize time food is in temperature Danger Zone (between 40 degrees and 140 degrees F) – use a food thermometer
- Cook food thoroughly
- Heat and cool food quickly using established practices
- Dispose of food that has experienced time-temperature abuse

### Principle #4

#### Challenges in a disaster

- Electricity may be limited or unavailable
- Few trained food workers available
- Difficult to dispose of food when people are hungry and waiting to eat

#### Possible Solutions

- Mobile or emergency kitchen operators should have dedicated backup generators or gas stoves for cooking
- Provide foods that do not need refrigeration or cooking (fruit, canned foods, crackers)

### Principle #5



### Principle #5

#### Transport and store food in a safe and sanitary manner

- Do not accept damaged or expired foods
- Label food with date and time
- Monitor temperature of food and do not allow time-temperature abuse to occur
- Use appropriate containers
- Keep food covered

Question A: The main cause of cross-contamination (spreading of dangerous microorganisms from one place to another) is:

1. Insects
2. Air or wind movement
3. Equipment failure
4. Human actions

Question B: In disasters and emergencies, some contributors to possible food borne illnesses might include:

1. Lack of adequate sanitation facilities (toilets, sinks, running water) particularly in the early days following the disaster
2. Large numbers of people in crowded areas
3. People from different locations gathering together to help survivors
4. All of the above

Question C: The ultimate responsibility for personal hygiene of those working in food service falls to:

1. The people affected by the disaster
2. The food service manager
3. The food and beverage handler
4. Everyone involved

Question D: Disaster kitchens should not accept food donations if:

1. The containers are defective (dented cans, leaking, discolored, etc.)
2. It was prepared by a person in their home
3. The temperature of the food is 70 degrees F.
4. The expiration date has passed.
5. All of the above.