

Module 06 Lecture 02

**Factors contributing to
foodborne illness**

Summary of factors contributing to foodborne illness

Contamination

Cross-contamination
Unclean equipment
Unsound / unwholesome food
Chemical contamination
Insects / rodents
Infected handlers

Survival

Inadequate cooking / reheating

Growth

Insufficient cooling / hot holding

Factors contributing to FBD outbreaks in England and Wales

| | <i>% Outbreaks</i> |
|--|--------------------|
| * Preparation too far in advance | 60.6 |
| * Storage at ambient temperature | 39.6 |
| * Inadequate cooling | 31.9 |
| * Inadequate reheating | 28.7 |
| Contaminated processed food (excluding canned) | 19.1 |
| * Undercooking | 15.4 |
| * Inadequate thawing | 6.1 |
| Cross-contamination | 5.9 |
| Infected food handlers | 5.2 |
| Raw food consumed | 4.4 |
| Contaminated canned food | 4.4 |

* Time-temperature abuse

Places where food in outbreaks was mishandled

| | <i>% Outbreaks</i> | |
|------------------------|--------------------|---------------|
| | <i>USA</i> | <i>Canada</i> |
| Food service | 34.0 | 32.6 |
| Homes | 14.7 | 14.6 |
| Food processing | 2.8 | 5.5 |
| Retail food | - | 4.1 |
| Farms | - | 0.2 |
| Other | - | 1.2 |
| Unknown | 48.5 | 41.8 |

Food handling faults in the home connected to FBD outbreaks in the USA

% Outbreaks

| | |
|------------------------------------|-----------|
| Inadequate cooling | 36 |
| Inadequate cooking | 29 |
| Prepared too far in advance | 14 |
| Contaminated raw food | 13 |
| Faulty fermentation | 11 |
| Inadequate reheating | 7 |
| Infected person | 6 |
| Cross-contamination | 4 |

Food handling faults in food service establishments in the USA

% Outbreaks

| | |
|------------------------------------|-----------|
| Inadequate cooling | 64 |
| Prepared too far in advance | 39 |
| Infected persons | 34 |
| Inadequate reheating | 24 |
| Inadequate hot storage | 21 |
| Inadequate cleaning | 10 |
| Cross-contamination | 10 |

Factors contributing to FBD

Key messages

- The factors contributing to FBD are similar in all countries studied
- They are related to
 - Contamination
 - Growth (improper hot / cold holding)
 - Survival (insufficient heating)
- These factors must be considered when planning interventions

Food handlers - the importance of personal hygiene

Objectives

- ◆ Identify the diseases for which food handlers can be sources of infection
- ◆ Outline how the spread of infection can be prevented
- ◆ Emphasise the importance of education and training at all points of the food chain

Faecal examinations

➤ *Uses*

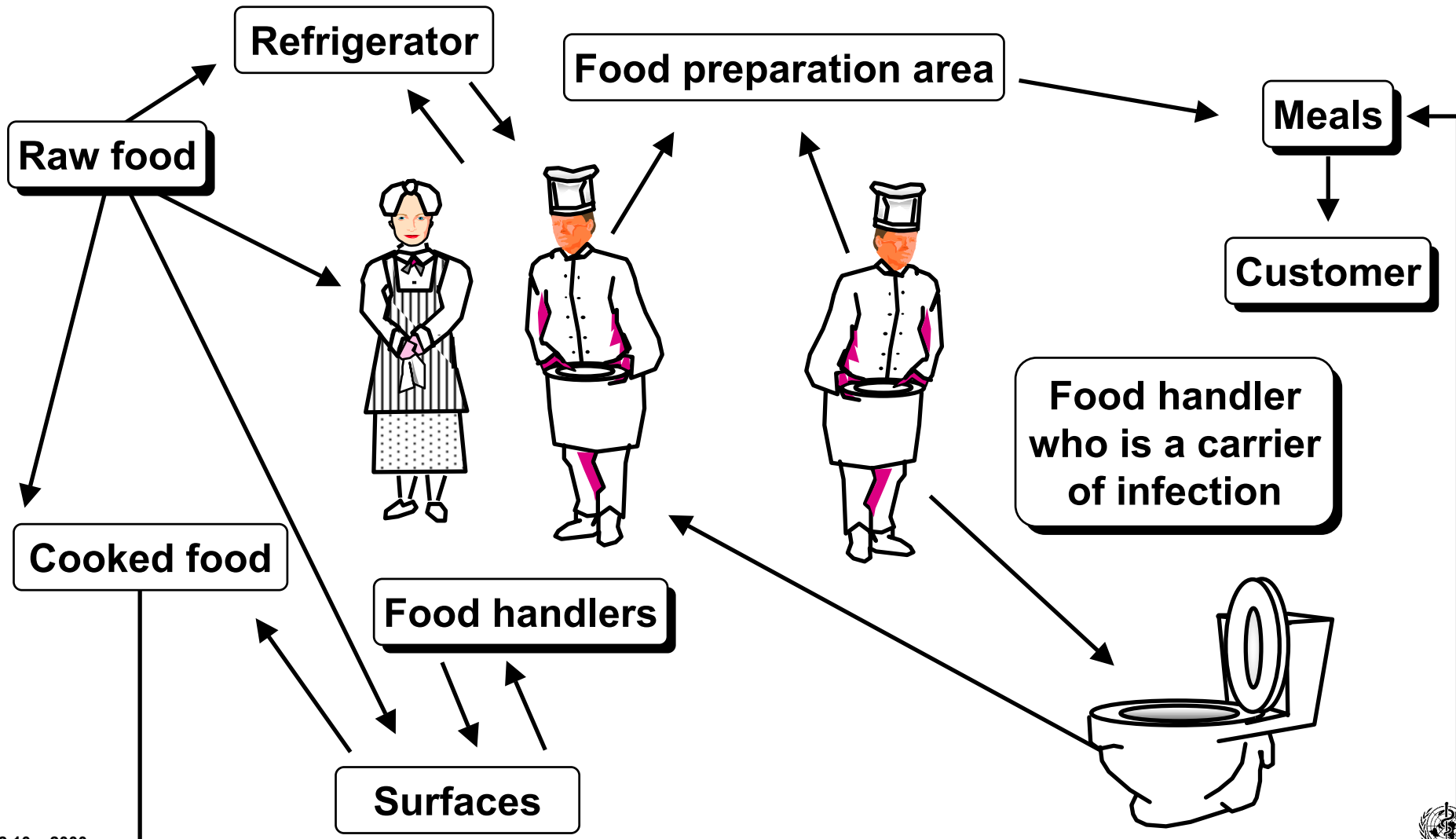
- ◆ Detection of cases / carriers

➤ *Limitations*

- ◆ Small sample tested
- ◆ Likely to be positive if the person has diarrhoea
- ◆ Could be negative if the person is on antibiotics
- ◆ Single specimens valid on day of testing only

Not a substitute for personal hygiene!

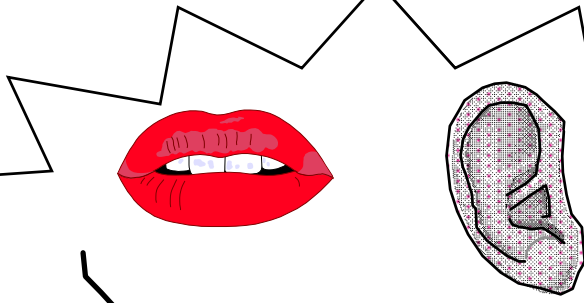
Common routes of cross - contamination



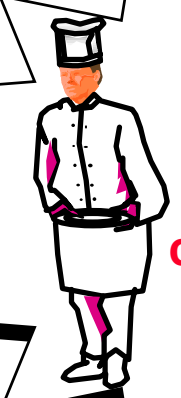
A teaching chart



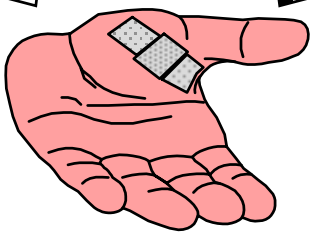
**Clean hands,
nails and hair**



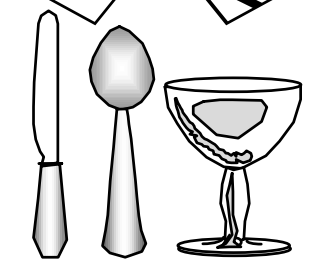
**Avoid touching
ears, nose, lips
and hair**



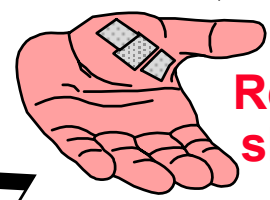
**Wear
protective
clothing and head
cover**



Cover cuts



**Pick up cutlery
and glasses by
handles or stems**

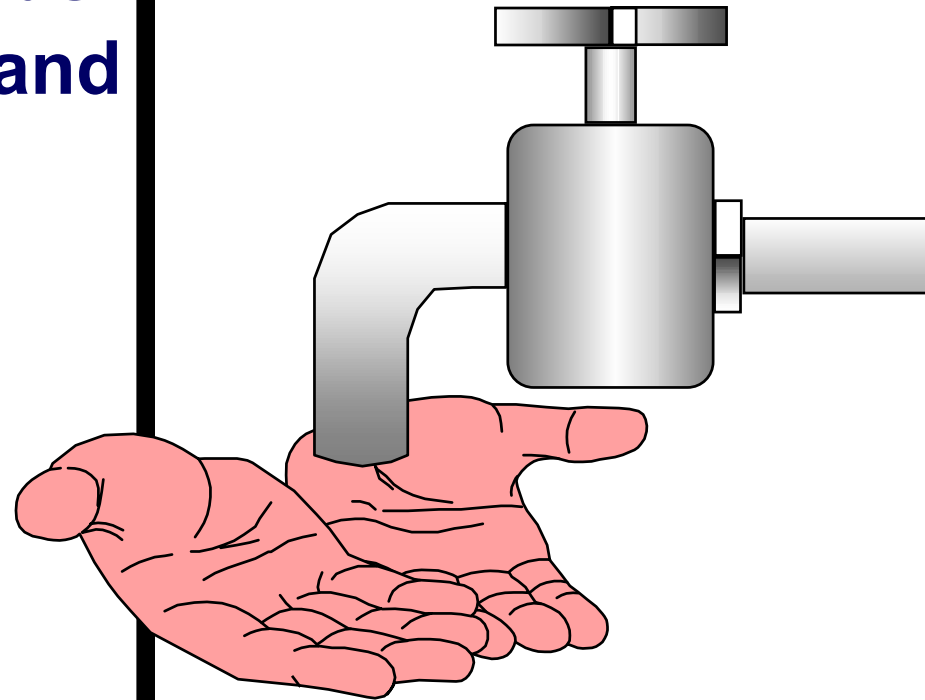


**Report illness or
skin complaints**

Poster

**Always wash your hands
before handling food and
after handling raw**

- Fish
- Poultry
- Meat
- Vegetables
- Fruit
- Eggs



After - Using the WC, blowing your nose,
handling pets or refuse

Practices that prevent or reduce risk of FBD in children

Feeding children

- ◆ **Breast feeding**
- ◆ **Delayed onset of weaning until 4-6 months**
- ◆ **Feeding properly prepared, safe supplements with clean utensils**
- ◆ **Thorough cooking of weaning foods**
- ◆ **Minimum delay between preparation and feeding**

The WHO golden rules for safe food preparation

- 1. Choose foods processed for safety**
- 2. Cook food thoroughly**
- 3. Eat cooked foods immediately**
- 4. Store cooked foods carefully**
- 5. Reheat cooked foods thoroughly**

The WHO golden rules for safe food preparation

- 6. Avoid contact between raw foods and cooked foods**
- 7. Wash hands repeatedly**
- 8. Keep all kitchen surfaces meticulously clean**
- 9. Protect foods from insects, rodents, and other animals**
- 10. Use safe water**

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Importance of food hygiene and personal hygiene - Key messages

- Infected food handlers may transmit foodborne disease**
- The risk that a food handler will transmit a disease depends on his work**
- Persons with diarrhoea, vomiting, fever, sore throat, infected skin lesions should not work with food**
- Food handlers must report all illnesses**
- Medical examinations are valid only at the time they are carried out**

Importance of food hygiene and personal hygiene - Key Messages

- **Faecal examinations are of limited value**
- **Good personal hygiene, especially hand washing, is vital**
- **Good food hygiene is vital: 10 Golden Rules**
- **Education, training and commitment are essential**