

Food and water-borne diseases



Objectives

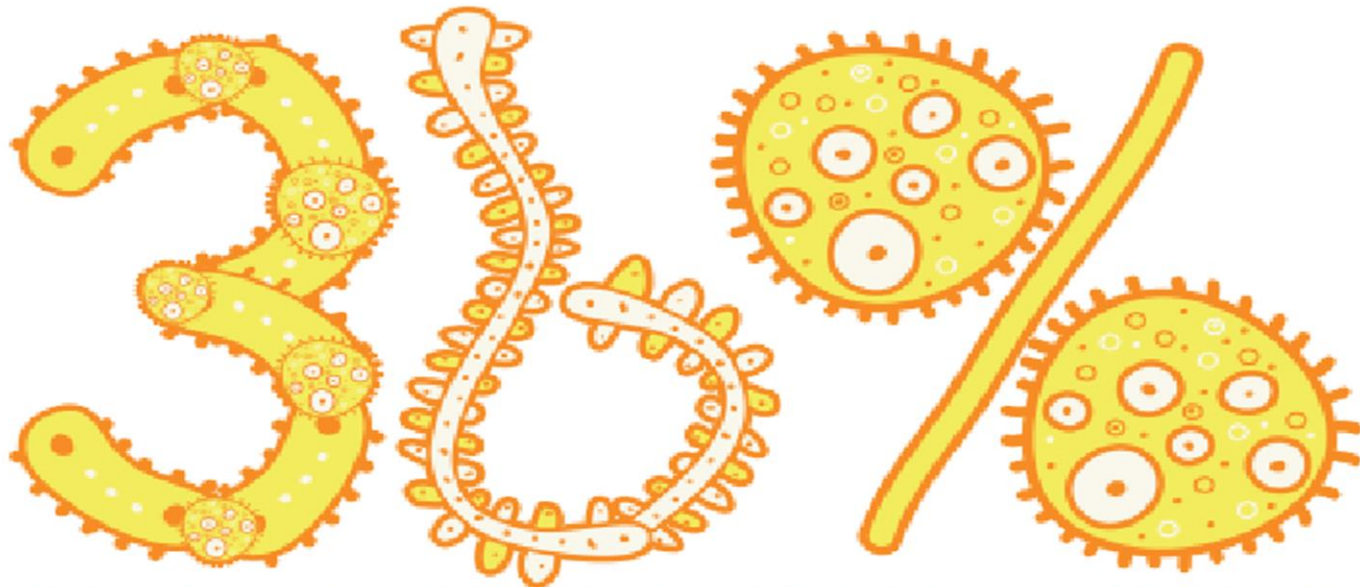
- **Define food and water-borne diseases**
- **Transmission mode**
- **Who is at risk**
- **Possible causes**
- **Symptoms**
- **Prevention modes**

Food-borne Diseases

- **Foodborne disease is caused by consuming contaminated foods. Pathogenic Microbes, poisonous chemicals, or other harmful substances can cause foodborne diseases if they are present in food**

Factors involved in a food safety

ITS ESTIMATED THAT UP TO



OF FOODBORNE ILLNESS

CAN BE TRACED TO POOR PERSONAL HYGIENE*

Epidemiology of FBD

- **WHO** estimates that one in three people worldwide suffer from a food-borne disease every year,
- **1.8 million** die from severe food and waterborne diarrhea ,related illness
- **Campylobacter** and **Salmonella** species account for over **90%** of all reported cases of bacteria related to **food poisoning worldwide.**

Water-borne Diseases

- Diseases caused by ingestion of water contaminated by human or animal excrement, which contain pathogenic microorganisms
 - Include cholera, typhoid, amoebic and bacillary dysentery and other diarrheal diseases
 - Schistosomiasis
 - dengue, filariasis, malaria, onchocerciasis, trypanosomiasis and yellow fever

Water-borne Diseases

- In addition, water-borne disease can be caused by the pollution of water with chemicals that have an adverse effect on health

Such as:

- Arsenic
- Flouride
- Nitrates from fertilizers
- Carcinogenic pesticides (DDT)
- Lead (from pipes)
- Heavy Metals

Common causes

- The most commonly recognized food and water-borne infections:
 - **Campylobacter**
 - **Salmonella**
 - ***E. coli* O157:H7**
 - **Calicivirus, also known as the Norwalk and Norwalk-like viruses**
 - **Hepatitis A**
 - **Rotavirus**
 - ***Cryptosporidium***
 - **Roundworms such as *Trichinella spp.***
 - **Tapeworms such as *Taenia spp***

Common causes

Waterborne Diseases

Disease	Pathogen	Symptoms	Causes	Incubation
Adenovirus Infection	Adenoviridae virus	Vary depending on which part of the body is infected	Drinking contaminated water	5-8 days
Amebiasis	<i>Entamoeba histolytica</i> parasite	Diarrhea, stomach pain, and stomach cramping	Fecal matter of an infected person (usually ingested from a pool or an infected water supply)	2 to 4 weeks
Campylobacteriosis	<i>Campylobacter jejuni</i> bacteria		Chicken, unpasteurized milk, water	2 to 10 days
Cryptosporidiosis	<i>Cryptosporidium</i> parasite	Stomach cramps, dehydration, nausea, vomiting, fever, weight loss	Fecal matter of an infected person (can survive for days in chlorinated pools)	2 to 10 days
Cholera	<i>Vibrio cholerae</i> bacteria	Watery diarrhea, vomiting, and leg cramps	Contaminated drinking water, rivers and coastal waters	Two hours to 5 days
<i>E. Coli</i> 0157:H7	<i>Escherichia coli</i> bacteria	Diarrhea (may be bloody), abdominal pain, nausea, vomiting, fever, HUS	Undercooked ground beef, imported cheeses, unpasteurized milk or juice, cider, alfalfa sprouts	1 to 8 days
Giardiasis	<i>Giardia lamblia</i> parasite	Diarrhea, excess gas, stomach or abdominal cramps, and upset stomach or nausea	Swallowing recreational water contaminated with <i>Giardia</i>	1 to 2 weeks
Hepatitis A	Hepatitis A virus	Fever, fatigue, stomach pain, nausea, dark urine, jaundice	Ready-to-eat foods, fruit and juice, milk products, shellfish, salads, vegetables, sandwiches, water	28 days
Legionellosis	<i>Legionella pneumophila</i> bacteria	Fever, chills, pneumonia, anorexia, muscle aches, diarrhea and vomiting	Contaminated water	2-10 days
Salmonellosis	<i>Salmonella</i> bacteria	Abdominal pain, headache, fever, nausea, diarrhea, chills, cramps	Poultry, eggs, meat, meat products, milk, smoked fish, protein foods, juice	1-3 days
Vibrio Infection	<i>Vibrio parahaemolyticus</i> , <i>Vibrio vulnificus</i> bacteria	Nausea, vomiting, headache (a quarter of patients experience dysentery-like symptoms)	Raw shellfish, oysters	1 to 7+ days
Viral Gastroenteritis	Calicivirus virus	Diarrhea, vomiting, nausea, cramps, headache, muscle aches, tiredness, slight fever	Water, ready-to-eat foods (salad, sandwiches, bread) shellfish	24 to 48 hours

Common symptoms of Food and water-borne diseases

- **The most commonly symptoms:**

(depending on the particular organism and burden of infection)

- **Diarrhea**
- **Abdominal pain**
- **Fever**
- **Some parasitic infection cause: muscle pain, cough, skin lesions, malnutrition, weight loss, neurological and many other symptoms**

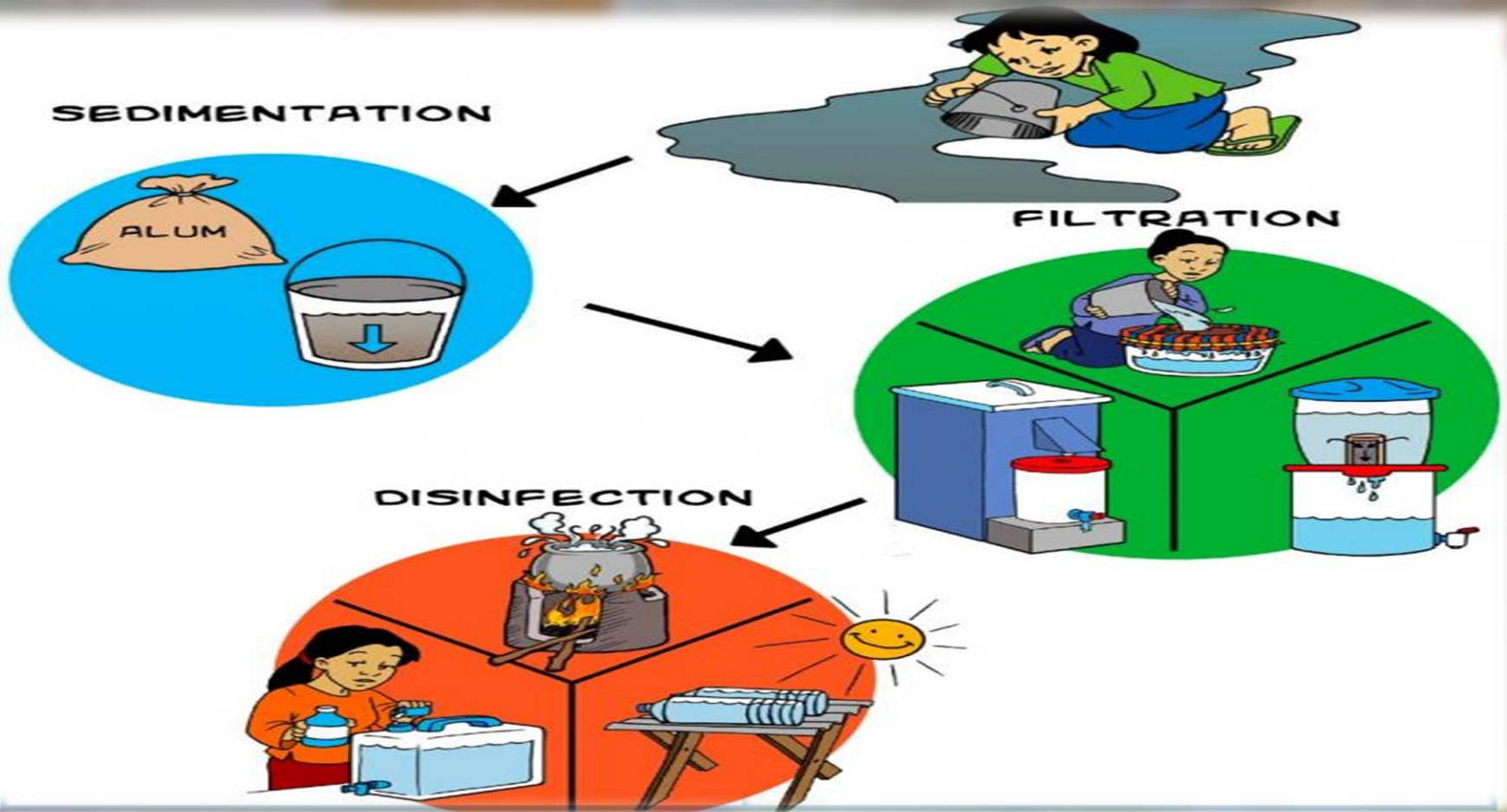
Control & Prevention



General Guidelines

- **Avoid contacting soil that may be contaminated with human feces**
- **Do not defecate outdoors**
- **Dispose of diapers properly**

General Guidelines



General Guidelines

A Simple Rule of Thumb

"Boil it, cook it, peel it, or forget
it"