TEXAS RAPID RESPONSE TEAM
NEWSLETTER
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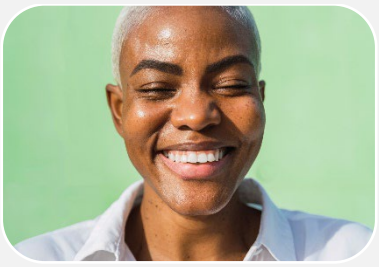
FOODBORNE ILLNESS INVESTIGATION MICROBIOLOGY

Foodborne illness is caused by consuming food contaminated by bacteria, parasites, viruses, chemicals, or other agents. Microbiology is the study of microorganisms, including those that cause foodborne illness. These **pathogens** have unique characteristics that help guide investigations when determining what the adulterated food is or how the food became contaminated. Characteristics include what food item is contaminated, the length of **onset** after infection, symptoms, food production processes, and historical outbreaks.

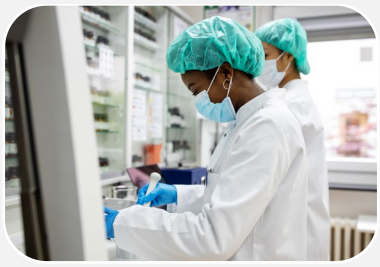
Did you know? Solving Foodborne Illness Outbreaks is a Team Effort

It takes several different groups of people to investigate a foodborne illness outbreak. Each group contributes a significant role in determining what caused the food contamination, how it was contaminated, and where it came from.



Consumer
Requests medical testing when they think they have a foodborne illness

Medical Provider
Performs foodborne illness testing on sick patients



Laboratory
Performs genetic testing on medical samples to determine the disease

Epidemiology
Analyzes data to find out what food item was contaminated and got people sick

Regulatory
Investigates where the contaminated food came from

Industry
Conducts recalls and safety measures to prevent future outbreaks

For more information about the Texas Rapid Response Team contact tishara.coleman@dshs.texas.gov

Types of Foodborne Illness Pathogens

Bacteria are simple single celled organisms. Bacterial illnesses occur when food that is contaminated with bacteria, is eaten and the bacteria continues to grow in the intestines or produces toxins. Bacterial contaminations may be caused by improper hot holding, inadequate refrigeration, not cooking to proper temperatures, and cross contamination.

Viruses are protein-wrapped genetic material, the smallest and simplest lifeform known. They can only reproduce inside cells and reproduce rapidly once they have infected the host cell. Ill workers, poor hygiene, and contaminated water typically cause virus contaminations.

Parasites are organisms that derive nourishment and protection from other living organisms known as hosts. Parasites can be transmitted by water, soil, or person-to-person contact.

Toxins in foods originate from microorganisms that produce them. Toxins cannot be removed by high temperatures (cooking), freezing, or other kill steps. They are often associated with certain types of shellfish and reef fish.

Chemical contaminants may come from a variety of sources. They may occur naturally in foods or result from contamination by industrial contaminants, such as cleaning agents or pesticides. Allergens in food are a type of chemical contamination.

Common Foodborne Pathogens

Bacteria	Viruses	Parasites	Toxins	Chemical
• ***Staphylococcus aureus*** • *C. botulinum* • ***Salmonella*** • ***Campylobacter*** • *E. coli* • *Listeria monocytogenes* • ***Clostridium perfringens***	• **Norovirus** • Hepatitis A	• *Cryptosporidium spp.* • *Giardia intestinalis* • *Cyclospora cayetanensis*	• Ciguatera toxin • Paralytic or neurotoxic shellfish poison • Mycotoxins	• Allergens • Cleaning agents • Pesticides • Other contaminants

*__Bold__ indicates a top five pathogen that causes illness from food eaten in the U.S.

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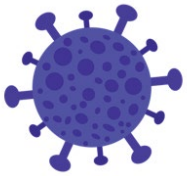
Do you want to learn more about foodborne microbiology?



Take the Texas Rapid Response Team (TRRT) microbiology quiz and tell us how you did! Also, click the link below to take the TRRT Online Foodborne Illness Investigation course.

TRRT Foodborne Illness Investigation Online Course

This training will provide an overview of investigating and managing foodborne illness outbreaks. Sanitarian continuation education hours are provided. Topics covered include:

- Different types of pathogens that cause foodborne illness outbreaks
- Steps of a foodborne illness outbreak investigation
- Foodborne illness outbreak detection
- Environmental assessments
- Traceback investigations
- Local, regional, state, and federal health departments collaboration

What is a 20.88 or Information Sharing agreement?

Chapter 21 of the Code of Federal Regulations (CFR) 20.88 allows FDA to share certain non-public information with state and local government officials. A type of Information Sharing Agreement (ISA), known as a Long-Term Limited Scope Food, Feed, and Cosmetics 20.88 Agreement, will allow your agency to receive non-public information from the Texas Department of State Health Services (DSHS) and the Food & Drug Administration (FDA) if your agency can certify to protect this information from further disclosure.

Since the TRRT often relies on **Texas Local Health Departments** to begin foodborne illness investigations, entering into a 20.88 agreement is encouraged.

A long-term ISA covers your agency from date of signature to June 30, 2029. This agreement covers the signatory and anyone below them in their chain of command. Therefore, it should be signed by the highest position of the agency/division. Please contact tobi.erskine@fda.hhs.gov for more information.

Related links:

- FDA Information Sharing
- 20.88 Single-Signature Agreements Database
- Information Sharing Factsheet

Announcements

2025 Rapid Response Team National Meeting

Registration for the 2025 Rapid Response Team (RRT) Annual Meeting is now open! The meeting will be held virtually from February 26 to 28, 2025, from 10:30 to 3:30 PM Central Time daily. Please join RRT states and FDA for a great meeting and opportunity to collaborate.

The RRT Annual Meeting provides a forum to share accomplishments, identify future directions and priorities, and commit to future RRT program work objectives. There will be presentations by TRRT partners. The meeting will be adjacent to the Manufactured Food Regulatory Program Alliance (MFRPA) Meeting, with a common meeting day on Wednesday, February 26th.

Click here to register.

Texas Food Protection Task Force Meeting

Please join us for the Texas Food Protection Task Force meeting on January 16, 2025! This is a hybrid meeting. You may attend virtually or in person in Austin, Texas. Registration is not required for virtual attendees but may be helpful if you wish to receive a certificate for contact hours. Contact tammy.fikac@dshs.texas.gov for more information.

Click here to register.

Glossary

Epidemiology- a branch of medical science that deals with the incidence, distribution, and control of disease in a population

Onset – the first appearance of symptoms in an ill person.

Pathogen – a microorganism that can cause disease

Resources

- FDA Foodborne Pathogens
- USDA Foodborne Illness and Disease
- FoodSafety.gov Bacteria and Viruses
- American Society for Microbiology – Foodborne Pathogens
- Environmental Assessment Training Series (EATS)