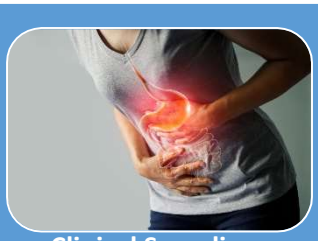
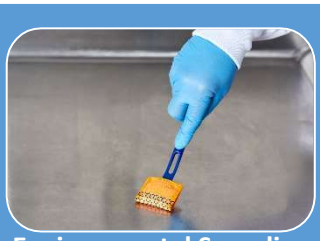
TEXAS RAPID RESPONSE TEAM
NEWSLETTER
VOL. 6, NO. 1– JUNE 13, 2025

SAMPLING DURING A FOODBORNE ILLNESS INVESTIGATION

There are different types of sampling that may take place during a foodborne illness outbreak investigation, including clinical sampling, food/specimen sampling, and environmental sampling. Sampling helps detect an outbreak, determine what food caused the outbreak, and how that food became contaminated.


Clinical Sampling


Environmental Sampling


Food Sampling

Clinical sampling – Have you been tested?

Clinical sampling is a very important type of sampling during a foodborne illness outbreak investigation. Clinical sampling is what confirms the organism in an outbreak. This type of sampling takes place when a sick person goes to a medical facility and provides a stool sample for diagnostic examination. The sample is sent to the Texas DSHS Laboratory and analyzed using **whole genome sequencing** (WGS) to find out if it contains **pathogens** that cause foodborne illness. If several people have the same genetically related pathogen, then a foodborne illness outbreak is declared.

Did you know, the Texas Rapid Response Team (TRRT) can't investigate foodborne illness outbreaks unless there is a positive clinical sample that determines what pathogen caused the illness? A positive clinical sample would identify the disease-causing pathogen and is the missing link the TRRT needs to be able to identify the cause of the outbreak.

Complaint investigations based on complaints provided by consumers may provide clues to what caused or facilitated a contamination event, but clinical samples are necessary to successfully investigate outbreaks that are large in scope. Without a clinical sample and WGS, the TRRT team can't confirm the source of an outbreak. Also, the source can't be removed and could cause future outbreaks. If you suspect food poisoning, always ask your doctor about testing your stool to confirm the organism that has caused your illness.

Environmental Sampling –Is the Environment Contaminated?

Environmental sampling may also be conducted, which means collecting samples from the environment where the food was made or stored, including tables, cutting boards, floors and floor drains, walls, deli slicers, and other equipment. This type of sampling can determine if contaminated food contact surfaces, production areas, and storage areas caused food items to become contaminated before being consumed by the public.

Food (Product) Sampling – Is the Food Contaminated?

Food/product testing is when a finished food product is collected and tested to determine if it contains the disease-causing pathogen in an outbreak. This type of testing may determine

the food item that caused an outbreak. A food sample that is collected properly, processed at a laboratory, and is positive for the same strain of illness as the outbreak cases (cases that provided clinical samples) will be identified as the **suspect food item**. However, there are several challenges to food testing including laboratory capability, suspect food being available, and false negatives.

Things to consider before collecting environmental and food samples:

- **Are there positive clinical samples?**
  - The Texas Department of State Services (DSHS) Laboratory will not process food samples without a positive WGS clinical sample related to the investigation. The lab must know the organism causing the disease to prepare to receive the food and environmental sample(s) and conduct testing.

- **Is there epidemiological or regulatory evidence?**
  - Evidence such as case interviews, studies, inspection reports, and ingredient analysis should be considered before collecting samples. Does the evidence suggest a certain food(s) that may have caused the outbreak? Or, is there reason to believe that pathogens in the environment may have been transferred to food?

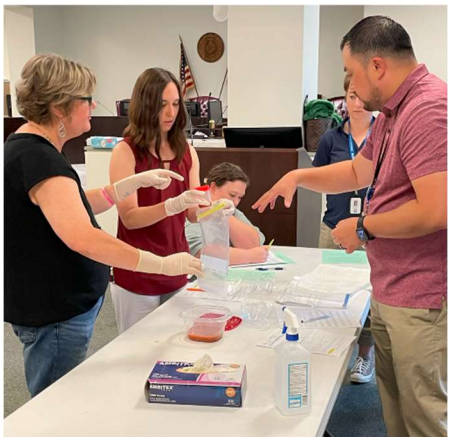
- **Is there a laboratory available to receive the samples?**
  - Communication and coordination with the receiving laboratory prior to collecting and receiving samples is very important. Laboratories may not have the capacity or the capability to perform certain food testing. The TRRT can assist with locating a laboratory that can process the samples to be collected.

- **Is there communication with applicable agencies and jurisdictions?**
  - Effective communication is also important to consider when collecting food specimen and environmental samples. This communication is needed to ensure:
    - Ideal foods and environments are being sampled
    - Samples will be collected and submitted properly
    - A qualified individual collects the food sample(s) to take samples is present. *Note: DSHS lab requires a licensed Registered Sanitarian to collect and submit samples*.
    - If sample collection training is needed
    - A laboratory is available to receive and process the samples
    - Questions about the food facility and processes are answered
    - Follow-up sampling and assessments are conducted if needed

Environmental Assessment and Food Sampling Training

The Texas Food Protection Task Force and TRRT, along with Texas Department of State Health Services DSHS Retail Food Safety Operations, has developed the *Foodborne Illness Outbreak Response: Environmental Assessment and Food Sampling Training*.

The Training is a one-day, face-to-face training where participants will review the roles of **epidemiology**, environmental health, and the laboratory during an outbreak investigation and **environmental assessment**. Participants will engage in an interactive environmental assessment tabletop exercise and gain hands-on experience collecting food samples using aseptic techniques. This training is available to local and regional public health staff and contact hours are offered for Registered Sanitarians. For more information on this training, contact tammy.fikac@dshs.texas.gov.



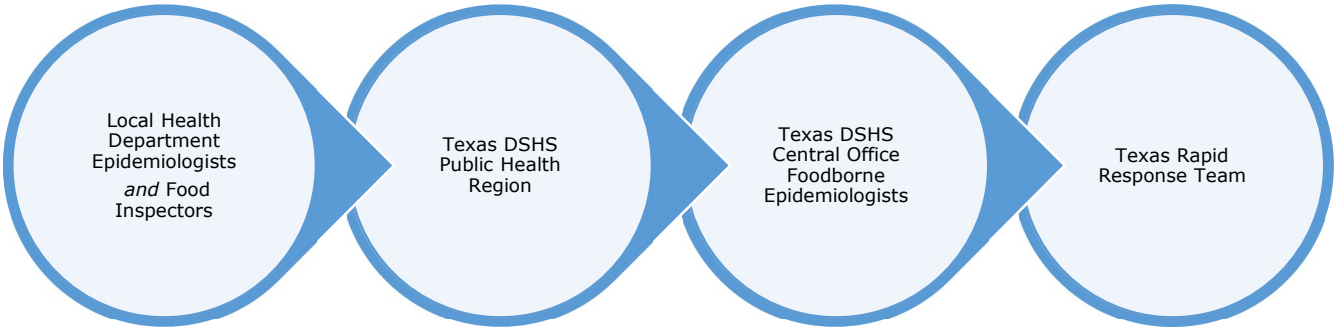
Retail Training, Standardization, and Quality Assurance Officer Jason Guzman demonstrates how to collect samples of salsa, and properly document the sample collection.

TRRT Sampling Supply Kits

Are you from a Texas Local Health Department, or Texas DSHS Public Health Region that would like to collect food or environmental samples during a foodborne illness outbreak investigation? The TRRT has sample supply boxes that can be shipped quickly to any local health jurisdiction in Texas. The sample supply kits:

- Are available for Public Health Regions and Local Health Departments in Texas.
- Are housed at a central location until a local health department in Texas requests the resources to collect samples in response to an outbreak.
- Contain necessary materials and a guidance document for collecting food and environmental samples.

If a Local Health Department or Public Health Region does not have sampling supplies readily available in the event of a foodborne illness outbreak, a sample kit may be requested by following the Texas Food Sample Collection Communication Pathway below.



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

Meet Christian Burris!

Christian Burris completed a practicum for his Master of Public Health (MPH) studies with the TRRT. He contributed greatly by assisting with food safety projects, and developing a document titled "*Food Poisoning at a Glance*", which provides consumers guidance on what to do if they suspect they are sick with a foodborne illness.

Christian was born and raised in Houston, Texas, and currently works in the Texas DSHS Consumer Protection Division, Drugs and Medical Devices Branch as an inspector. He is currently a student at The University of Texas Health Science Center at Houston working on an MPH with an emphasis in epidemiology. His study and research interests in the field of public health include infectious diseases, occupational health, and foodborne illness outbreak investigations. In his free time, he enjoys spending time outdoors fishing, or inside reading research articles.

TEXAS Health and Human Services | Texas Department of State Health Services

Food Poisoning At A Glance

Foodborne illness, commonly referred to as "food poisoning," occurs when a person becomes sick after consuming contaminated food or beverages. Contamination can be physical, chemical, or biological. Biological contamination is caused by "germs" such as harmful bacteria, viruses, and even parasites. A foodborne illness outbreak occurs when two or more people become ill after consuming the same food or beverage.

The signs and symptoms of food poisoning

Symptoms can vary from mild to serious, which can last for a few hours to several days. Some common symptoms of food poisoning include:

- Diarrhea
- Vomiting
- Stomach cramps
- Nausea
- Fever

Risk factors for food poisoning

Everyone is at risk of getting food poisoning. However, there are some people who are at a higher risk of becoming sick:

- Children younger than 5
- Adults 65 and older
- Pregnant women
- Those with a weakened immune system

Did You Know?

- *Listeria monocytogenes (Lm)* is a life-threatening bacterium that may result in a disease called listeriosis. *Lm* is commonly found in foods such as unpasteurized milk, milk products, and deli meats.
- Listeriosis is especially dangerous for pregnant women and can cause serious complications such as premature delivery, stillbirth, and miscarriage.
- In newborns, listeriosis can cause blood infections and meningitis.

Common Food Poisoning Myths

MYTH	FACT
Food poisoning is always caused by the last meal consumed.	After consuming food contaminated with bacteria or other disease-causing pathogens, the onset of symptoms can range from 6 to 48 hours. There are even some bacteria that take up to two weeks to show symptoms.
You can tell if food is safe by how it looks or smells.	Food may smell fresh and appear safe and still contain harmful bacteria or other disease-causing pathogens.
Food prepared at home is always safer than food prepared at a restaurant.	Food poisoning can result from food consumed anywhere, not just from restaurants. We often think we use safe food-handling practices at home, but that may not be the case. A best practice is to educate yourself on food safety to ensure you are knowledgeable on safe food-handling practices.

What should you do if you think you have food poisoning?

- Visit your health care provider.
- Talk with your doctor about getting tested* to confirm food poisoning.

*Testing for food poisoning requires a stool sample for laboratory testing. These tests can determine which disease-causing agent is responsible for your illness.

What will the Texas Department of State Health Services (DSHS) do?

- DSHS tracks and reports cases of foodborne illness to determine if there is an outbreak.
- By getting tested for food poisoning, you provide the information our state epidemiologists need to conduct a traceback investigation. These investigations help find the source of the contamination and may prevent others from getting sick.

What can you do to help?

Once you begin to feel ill, remember and write down everything you ate in the week prior to getting sick.

- include restaurants, events, and parties you attended;
- collect grocery receipts you may have kept as this provides a list of foods you purchased and may have consumed;
- report your foodborne illness to your local health department, especially if you know of others who became ill; and
- visit your health care provider and get tested!

Visit these links for more information

- dshs.texas.gov/laboratoryservices/programs-laboratories/microbiology-unit/consumer-microbiology/what-causes-food-borne
- dshs.texas.gov/foodborneillness
- cdc.gov/food-safety/signssymptoms/index.html

If you believe you are experiencing a medical emergency, please call 911!

TEXAS Health and Human Services | Texas Department of State Health Services — dshs.texas.gov

Scroll to the end of this newsletter to see the "Food Poisoning at a Glance" document.

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

Cyclospora Health Advisory

Texas Department of State Health Services (DSHS), the Centers for Disease Control and Prevention, and the Food and Drug Administration are currently preparing for the annual *Cyclospora* outbreak season that typically runs from May to August.

In 2024, Texas had more than 400 reported cases of cyclosporiasis. DSHS is advising healthcare providers to test patients for the parasite *Cyclospora* if they have a diarrheal illness lasting more than a few days or diarrhea accompanied by severe loss of appetite or fatigue and to report cases to their local health department. Please click here for more information on this advisory.

Cyclosporiasis is a foodborne illness caused by the *Cyclospora cayetanensis* parasite. It is associated with consuming contaminated raw produce. Illness can last from a few days to a month or more and may be reoccurring if not treated.

National Rapid Response Team Meeting 2025

The annual national Rapid Response Team (RRT) Meeting will take place on September 15th-17th, 2025 virtually. The RRT Annual Meeting provides RRTs with a forum to share accomplishments, identify future directions and priorities, and commit to objectives for future RRT program work. There is a variety of topics and speakers scheduled for the meeting that will provide great value and insight to the program. Registration information will be available soon. Please contact tishara@coleman@dshs.texas.gov for more information.

Glossary

Environmental Assessment – An investigation that determines how and why disease-causing pathogens got into a food facility.

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

Pathogen – a microorganism that can cause disease.

Suspect Food Item – a contaminated food that may have caused an outbreak.

Whole Genome Sequencing - a technology that identifies the unique sequence of bases in an organism, also known as its DNA.

Resources

- FDA - Sampling to Protect the Food Supply
- You Can Help CDC Solve Foodborne Outbreaks
- CDC - About Cyclosporiasis
- Sampling 101: How to Find Pathogens in Food Facilities
- TRRT Online Foodborne illness Investigation Course

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

Food Poisoning At A Glance

Foodborne illness, commonly referred to as "food poisoning," occurs when a person becomes sick after consuming contaminated food or beverages. Contamination can be physical, chemical, or biological. Biological contamination is caused by "germs" such as harmful bacteria, viruses, and even parasites. A foodborne illness outbreak occurs when two or more people become ill after consuming the same food or beverage.

The signs and symptoms of food poisoning

Symptoms can vary from mild to serious, which can last for a few hours to several days. Some common symptoms of food poisoning include:

- Diarrhea
- Vomiting
- Stomach cramps
- Nausea
- Fever

Risk factors for food poisoning

Everyone is at risk of getting food poisoning. However, there are some people who are at a higher risk of becoming sick:

- Children younger than 5
- Adults 65 and older
- Pregnant women
- Those with a weakened immune system

Did You Know?

- *Listeria monocytogenes (Lm)* is a life-threatening bacterium that may result in a disease called listeriosis. *Lm* is commonly found in foods such as unpasteurized milk, milk products, and deli meats.
- Listeriosis is especially dangerous for pregnant women and can cause serious complications such as premature delivery, stillbirth, and miscarriage.
- In newborns, listeriosis can cause blood infections and meningitis.

Common Food Poisoning Myths	
MYTH Food poisoning is always caused by the last meal consumed.	**FACT** After consuming food contaminated with bacteria or other disease-causing pathogens, the onset of symptoms can range from 6 to 48 hours. There are even some bacteria that take up to two weeks to show symptoms.
MYTH You can tell if food is safe by how it looks or smells.	**FACT** Food may smell fresh and appear safe and still contain harmful bacteria or other disease-causing pathogens.
MYTH Food prepared at home is always safer than food prepared at a restaurant.	**FACT** Food poisoning can result from food consumed anywhere, not just from restaurants. We often think we use safe food-handling practices at home, but that may not be the case. A best practice is to educate yourself on food safety to ensure you are knowledgeable on safe food-handling practices.

What should you do if you think you have food poisoning?

- Visit your health care provider.
- Talk with your doctor about getting tested* to confirm food poisoning.

*Testing for food poisoning requires a stool sample for laboratory testing. These tests can determine which disease-causing agent is responsible for your illness.

What will the Texas Department of State Health Services (DSHS) do?

- DSHS tracks and reports cases of foodborne illness to determine if there is an outbreak.
- By getting tested for food poisoning, you provide the information our state epidemiologists need to conduct a traceback investigation. These investigations help find the source of the contamination and may prevent others from getting sick.

What can you do to help?

Once you begin to feel ill, remember and write down everything you ate in the week prior to getting sick.

- include restaurants, events, and parties you attended;
- collect grocery receipts you may have kept as this provides a list of foods you purchased and may have consumed;
- report your foodborne illness to your local health department, especially if you know of others who became ill; and
- visit your health care provider and get tested!

Visit these links for more information

- dshs.texas.gov/laboratoryservices/programs-laboratories/microbiology-unit/consumer-microbiology/what-causes-food-borne
- dshs.texas.gov/foodborneillness
- cdc.gov/food-safety/signssymptoms/index.html

If you believe you are experiencing a medical emergency, please call 911!