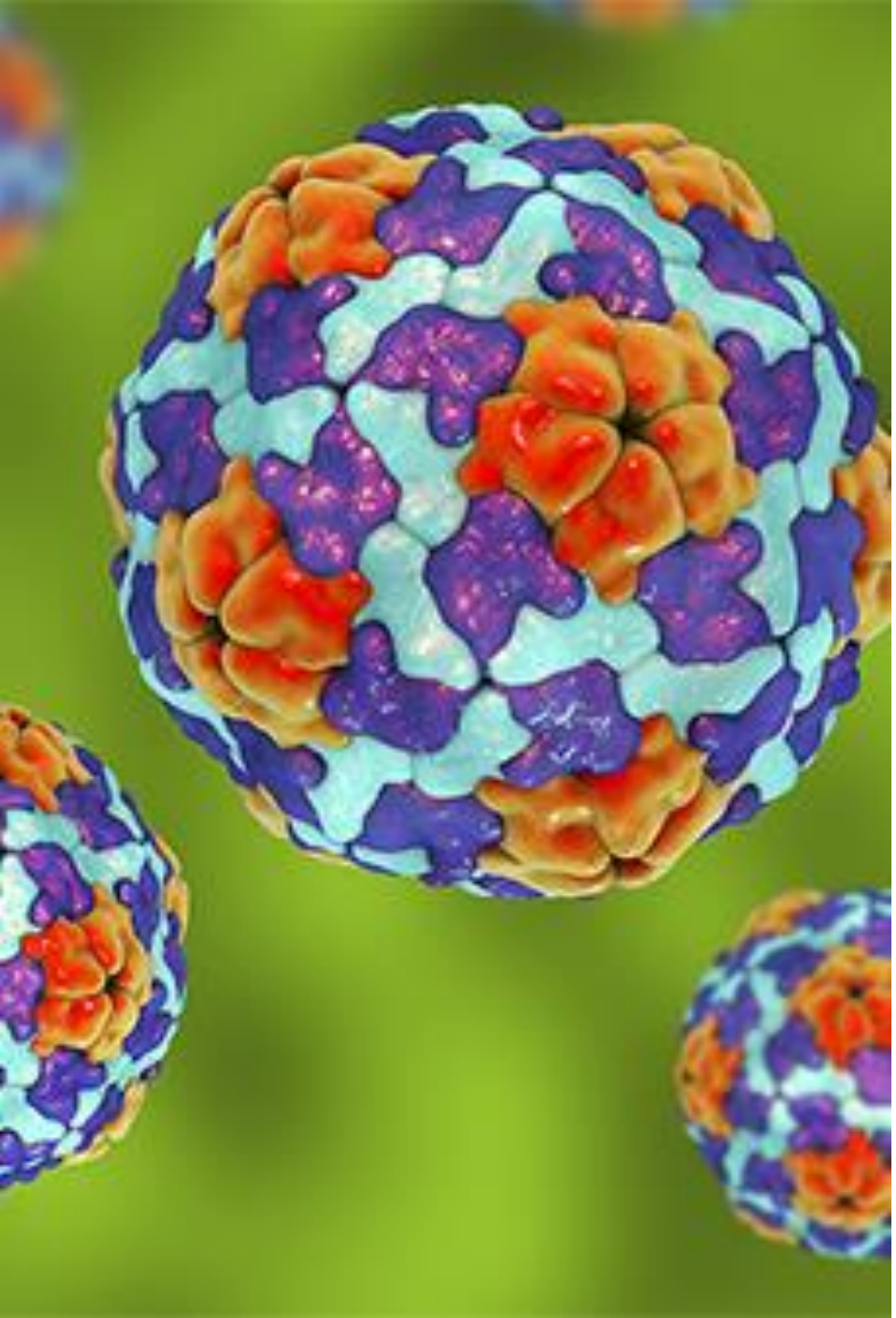
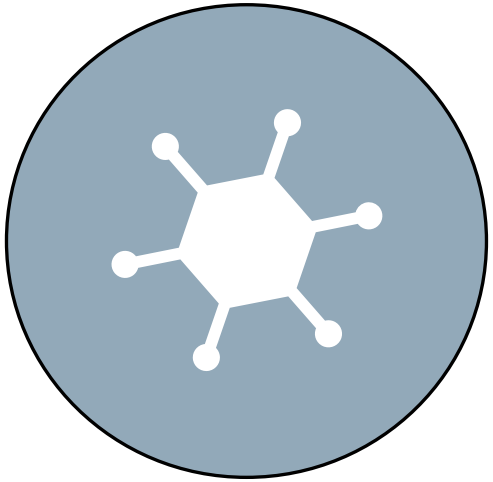
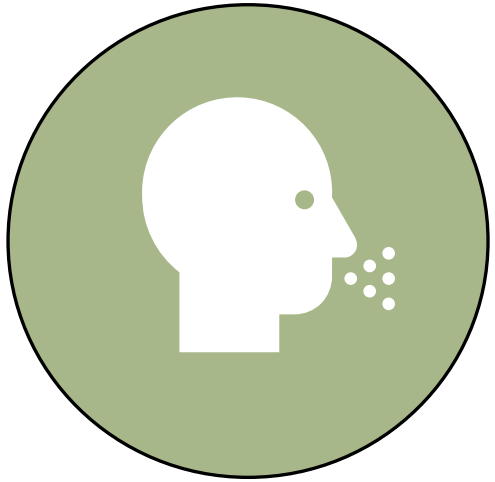


Shiga toxin-producing *Escherichia coli* - STEC

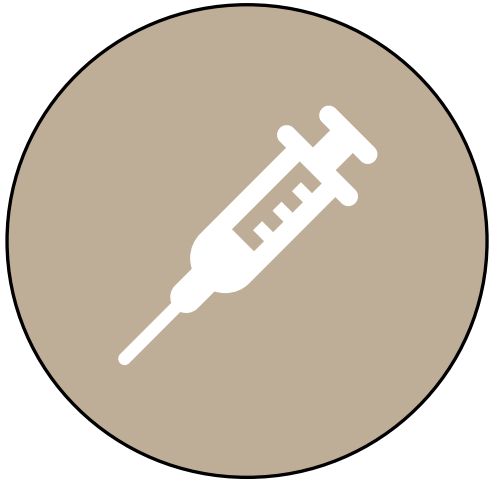
STEC



CAUSES



SYMPTOMS



TREATMENT

Shiga toxin-producing *Escherichia coli* (STEC)

Causes more than 265,000 illnesses each year in the United States.

Illness ranges from mild diarrhea to life-threatening hemolytic uremic syndrome (HUS).

STEC are categorized into serogroups by their somatic O antigen

There are over 50 serogroups that can cause illness, with E. coli O157 being the most common

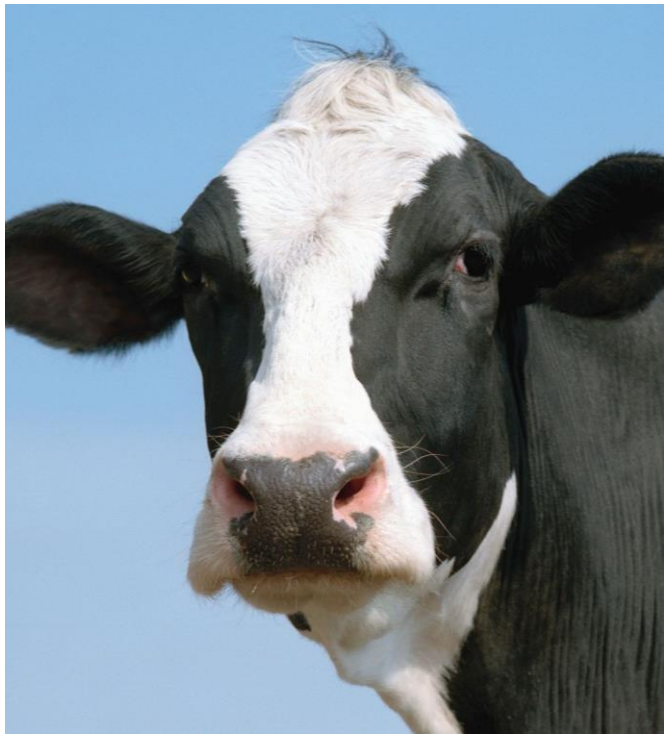
Causes

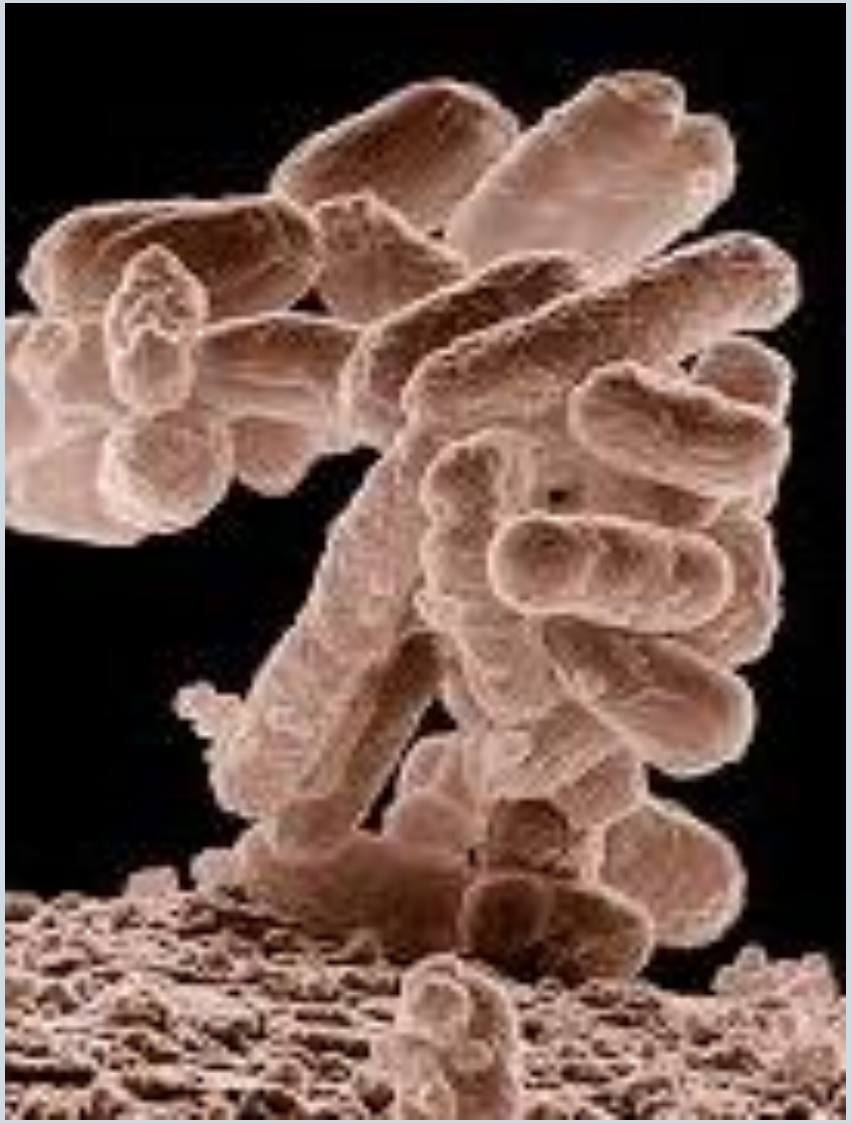
Cattle are the most important reservoir of STEC O157 and may harbor many non-O157 STEC. Other ruminants (sheep, goats, and deer) may also carry STEC. Humans may serve as a reservoir for person-to-person transmission.

Transmission is mainly through ingestion of food contaminated with ruminant feces and direct contact with animals or their environment.

Outbreaks have occurred from:

- Beef (usually inadequately cooked hamburgers)
- Produce (lettuce, apple cider, raw spinach, coleslaw, sprouts, and melons)
- Unpasteurized cows' milk
- Petting zoos
- Contaminated drinking water and recreational waters

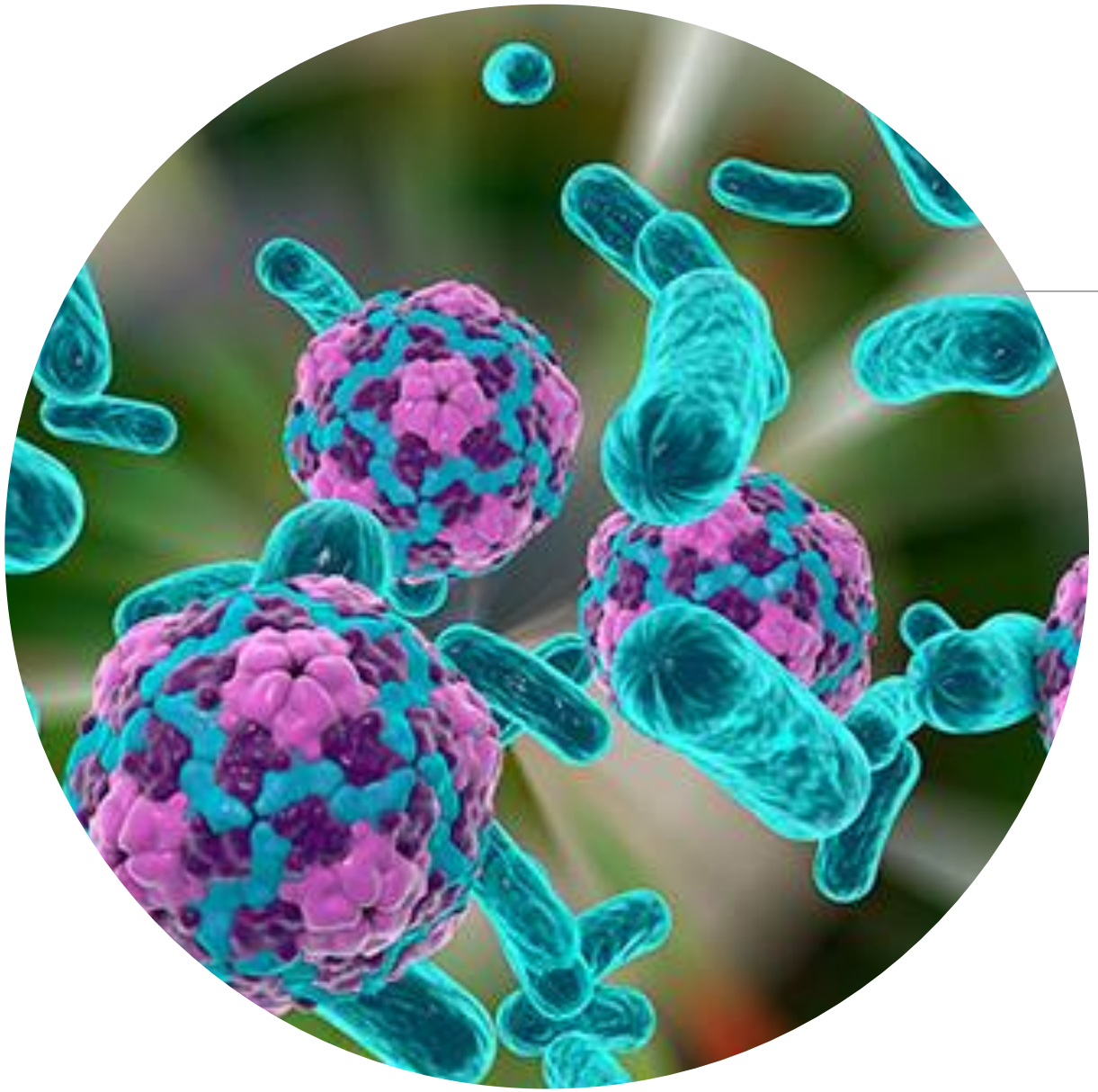




Transmission

The infective dose of E. coli O157:H7 is estimated to be 10—100 cells.

Excretion of STEC is < 1 week in adults, but up to 3 weeks in children. Prolonged carriage is uncommon.



Pathogenesis

Mainly transmitted through ingestion of food contaminated with ruminant feces.

Bacterial excretion may continue for up to 3 weeks after onset of symptoms.

Clinical Features

Incubation Period 2-10 days (median 3-4 days for most serotypes)

Symptoms

- Diarrhea ranging from mild and non-bloody to stools that are virtually all blood.
- Abdominal cramps (may be severe)
- Hemolytic uremic syndrome (HUS) is possible

Clinical illness usually resolves in five to 10 days.

Risk Factors/Groups

Very young children and the elderly

Anyone eating under cooked ground beef

Anyone drinking raw milk, unpasteurized dairy products, and unpasteurized juices.

Complications

Hemolytic Uremic Syndrome (HUS)

- Most severe rare complication
- Develops about 7 days after symptoms first appear, when diarrhea is improving.
- Signs include: decreased frequency of urination, feeling very tired, and losing pink color in cheeks and inside the lower eyelids.

Treatment/Prevention

Treatment

- Doctors usually recommend rest, adequate nutrition, and fluids.
- Hospitalization can occur for more severe cases. Persons with HUS should be hospitalized because their kidneys may stop working.

Prevention

- Education on proper sanitation, hand hygiene, and fecal disposal.
- Wash fruits and vegetables well under running water.
- Cook meats thoroughly.
- Don’t cause cross-contamination.

School Exclusion

Reporting

- IMMEDIATELY notify LHD, encourage good hand hygiene

Exclusion

- Medical clearance required
- Children with loose or watery stools should stay home until they have 2 days without loose stools.

Source: MDHHS - Managing Communicable Diseases in Schools

Sources

CDC – E. coli (*Escherichia coli*)

Control of Communicable Diseases Manual – 20th Edition- pages 163-168

MDHHS - Managing Communicable Diseases in Schools