

# LOCAL HEALTH DEPARTMENT DISEASE INVESTIGATION STEPS

NC REPORTABLE DISEASE/CONDITION	NC DISEASE CODE	INFECTIOUS AGENT (S)
<b>E. COLI INFECTION, SHIGA TOXIN PRODUCING</b>	<b>53</b>	<b><i>Escherichia coli O157:H7, Other shiga toxin producing e.coli isolates (O26,O45,O103, O111,O121)</i></b>
<b>PREPARING FOR INVESTIGATION</b>		
<b>KNOW THE DISEASE/CONDITION</b>	<ul style="list-style-type: none"> <li>• Read about E. coli Infection, Shiga Toxin Producing in the CD Manual.</li> <li>• See the case definition for E. coli Infection, Shiga Toxin Producing in the CD Manual.</li> <li>• Study APHA <i>Control of Communicable Diseases Manual</i>, 19<sup>th</sup> ed., pp 181 - 186.</li> <li>• Refer to CDC MMWR: Outbreaks of Escherichia coli O157:H7 Associated with Petting Zoos - North Carolina, Florida and Arizona, 2004 and 2005. December 23, 2005; 54(50); pp 1277 - 1280. Available from: <a href="http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5450a1.htm">http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5450a1.htm</a></li> <li>• Print and review reporting forms: <ul style="list-style-type: none"> <li><i>Part 1: Confidential Disease Report (DHHS 2124)</i></li> <li><i>Part 2: E. Coli Infection, Shiga Toxin Producing (DHHS/EPI #53)</i></li> </ul> </li> </ul>	
<b>BIOTERRORISM POTENTIAL CATEGORY B</b>	<b><i>Escherichia coli O157:H7 is a potential bioterrorism agent. Investigate first as a naturally occurring event; if bioterrorism is suspected, notify local law enforcement and state and public health officials.</i></b>	
<b>CONDUCTING INVESTIGATION</b>		
<b>COLLECT CLINICAL INFORMATION</b>	<ul style="list-style-type: none"> <li>• If patient hospitalized for this disease, obtain medical record (admission note, progress note, lab report(s), and discharge summary).</li> <li>• Obtain healthcare provider clinical notes from date(s) of service for this disease/condition.</li> <li>• Look for evidence in the medical record that supports clinical findings described in the case definition.</li> </ul>	

REVIEW LABORATORY INFORMATION	<ul style="list-style-type: none"> <li>• Review laboratory report(s) specific to this disease.</li> <li>• Evaluate laboratory results to determine if the requirements of the case definition are satisfied.</li> <li>• Contact healthcare provider if further testing of the patient is indicated.</li> <li>• Remind healthcare providers seeing suspect cases to specifically request <i>e.coli</i> testing on lab requisitions because many labs do not test for <i>shiga toxin producing e.coli</i> as part of routine enteric cultures.</li> </ul>
APPLY THE CASE DEFINITION	<ul style="list-style-type: none"> <li>• Use the case definition to determine if the clinical and laboratory findings meet the case definition criteria.</li> </ul>
<b>IMPLEMENTING CONTROL MEASURES</b>	
ATTEMPT TO IDENTIFY SOURCE OF EXPOSURE	<ul style="list-style-type: none"> <li>• Interview the patient (use the Part 2 Form).</li> <li>• If potential environmental or occupational source of exposure is not evident in clinical information, obtain additional information including travel, exposure to livestock and other animals, consumption of raw/undercooked meat.</li> <li>• If source of exposure is suspected to be livestock the North Carolina Department of Agriculture (NCDA) must be notified. The county agricultural extension agent may be an additional resource to consider. The state public health veterinarian can assist with contacting these agencies (919) 733-3419.</li> </ul>
IMPLEMENT CONTROL MEASURES TO PREVENT DISEASE AND ADDITIONAL EXPOSURES	<ul style="list-style-type: none"> <li>• <b>Food handlers, healthcare workers and child care workers</b> – Due to the small infective dose, exclude from work until asymptomatic and 2 consecutive negative stool cultures collected 24 hours apart and not sooner than 48 hours after completion of antibiotic.</li> <li>• <b>Childcare centers</b> (single case) – Exclude until asymptomatic and 2 consecutive negative stool cultures collected 24 hours apart and not sooner than 48 hours after completion of antibiotic. <b>Outbreak</b> (two or more cases in the same facility) - Ill children should be excluded until asymptomatic and 2 negative stool cultures at least 24 hours apart and not sooner than 48 hours after completion of antibiotic. Strict hand hygiene should be followed. The child care center should be closed to new admissions during the outbreak. Also, prevent transfer of exposed children to other centers. Environmental health specialist should perform assessment of practices associated with diapering, hand washing and food handling.</li> <li>• <b>Childcare attendees or workers identified with <i>E.coli</i> O157 infection require immediate attention due to the potential life-threatening consequences of HUS in young children.</b></li> <li>• If the source of exposure is suspected to be</li> </ul>

	<p>restaurant, notify environmental health specialist to assess recent employee absence history, hand washing, food source, storage, preparation and handling practices.</p> <ul style="list-style-type: none"> <li>• If long term care facility is involved, request that environmental health specialist perform assessment of practices associated with diapering, hand washing and food handling.</li> <li>• Work with environmental health specialist to ensure appropriate disinfection of contaminated areas of restaurant, child care center or long term care facility if involved.</li> <li>• Use the CDC website <a href="http://www.cdc.gov">www.cdc.gov</a> to teach at risk people about the disease.</li> </ul>
<b>REPORTING INVESTIGATION</b>	
<b>REPORT TO NC COMMUNICABLE DISEASE BRANCH (CD)</b>	<ul style="list-style-type: none"> <li>• Enter Part 1 and Part 2 Communicable Disease Reports into NC EDSS as a new event, or update the existing event if already entered.</li> <li>• Assign event to State Disease Registrar when case investigation complete.</li> <li>• Do an "Event_Print" in NC EDSS after assigning to the state. Keep for one year along with any additional notes. Maintain as a surveillance file, not a medical record.</li> </ul>
<b>CASE FINDING</b>	<ul style="list-style-type: none"> <li>• During the course of the investigation, look for symptoms of disease in other exposed individuals.</li> <li>• Advise that symptomatic individuals, especially children, see healthcare provider immediately for evaluation.</li> <li>• If two or more cases are epidemiologically linked, report as an outbreak of E. coli Infection, Shiga Toxin Producing.</li> <li>• If indicated, submit outbreak summary report within 30 days from close of outbreak. Refer to Outbreak Investigations section of CD Manual for additional information on Outbreak Summary Report.</li> </ul>
<b>SPECIAL CONSIDERATIONS</b>	
<b>STATE LABORATORY OF PUBLIC HEALTH (SLPH) TESTING</b>	<ul style="list-style-type: none"> <li>• When attempting to obtain 2 negative stool cultures to submit to SLPH, only 2 tests can be submitted per week. <b>There must be more than 24 hours between each specimen.</b> (For example, if the first specimen is collected on Monday, the next specimen should not be collected until Wednesday). Once a negative result is obtained, advise the case to wait at least 24 hours before submitting a follow-up specimen. Depending upon the source of exposure, work with local health director and environmental health specialist to contact other regulatory agencies.</li> <li>• In high profile cases, consider verifying the laboratory test results by sending specimen(s) to the SLPH for reference testing. (Examples of high profile cases: imminent health hazard, closing a</li> </ul>

	<p>business operation, sale of illegal products, etc.)</p> <ul style="list-style-type: none"> <li>• All suspect and epi-linked cases of <i>e.coli</i> shiga toxin producing infection should have laboratory specimen(s) sent to the SLPH for further typing. Be sure to request <i>e.coli</i> and enteric testing. If testing contacts or suspected cases through the SLPH, note “outbreak” on lab requisition of possibly related cases.</li> <li>• If laboratory testing was done in hospital or commercial lab, ensure that isolates are sent to the SLPH within 24 hours.</li> <li>• Remind health care providers to specifically request <i>e.coli</i> testing on lab requisitions because many labs do not test for <i>shiga toxin producing e.coli</i> as part of routine enteric cultures.</li> </ul>
<p><b>PUBLIC HEALTH PREPAREDNESS AND RESPONSE (PHPR)</b></p>	<ul style="list-style-type: none"> <li>• If bioterrorism event likely: <ul style="list-style-type: none"> <li>○ Inform local Preparedness Coordinator.</li> <li>○ Call the PHPR 24/7 pager (877) 236-7477.</li> </ul> </li> </ul>
<p><b>RISK COMMUNICATION</b></p>	<ul style="list-style-type: none"> <li>• Consider using risk communication tools for public and health professionals.</li> <li>• Outbreaks of cases will need NC HAN alerts, EPI-X reports, MD alerts, and probably a press release.</li> <li>• NC DHHS Public Information Office (919) 733-9190 is available to assist local health departments as needed.</li> </ul>