Appendix A: Additional Flowcharts and Tables

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NORMALLY STERILE SITES

**Normally sterile site**: Invasive diseases typically cause significant morbidity and mortality. Sterile sites include:

- Blood (excluding cord blood)
- Bone or bone marrow
- Cerebrospinal fluid (CSF)
- Pericardial fluid
- Peritoneal fluid
- Pleural fluid

The following are also considered sterile sites when certain other criteria are met:

- Internal body sites (brain, heart, liver, spleen, vitreous fluid, kidney, pancreas, lymph node or ovary) when the specimen is collected aseptically during a surgical procedure
- Joint fluid when the joint surface is intact (no abscess or significant break in the skin)

Although placentas and amniotic fluid from an intact amnion are not considered sterile sites, isolation of Group B streptococci or *Listeria* from these sites may qualify as invasive disease. Consult the Sterile Site and Invasive Disease Determination flowchart on the next page for more information.

**Normally sterile sites do not include**:

- Anatomical areas of the body that normally harbor either resident or transient flora (bacteria) including mucous membranes (e.g., throat, vagina), sputum, and skin; abscesses; or localized soft tissue infections
Appendix A: Additional Flowcharts and Tables

Sterile Site and Invasive Disease Determination

Was the specimen:
- Blood (excluding cord blood),
- Cerebrospinal fluid (CSF),
- Pericardial fluid,
- Peritoneal fluid,
- Pleural fluid, or
- Bone or bone marrow?
- Joint fluid (intact joint surface, no skin break/abscess)?

**Yes**
- These are sterile sites and the infection is considered to be invasive.

**No**
- Is Toxic Shock Syndrome (TSS), necrotizing fasciitis (NF), or clinical purpura fulminans present?

**Yes**
- TSS, NF, and clinical purpura fulminans meet the criteria for invasive disease even if the specimen is from a non-sterile site.

**No**
- Is the collection site associated with an external abscess or open wound (e.g. joint fluid when there is an external wound present on the same joint)? Note: A shunt/stent/catheter is equivalent to an open wound.

**Yes**
- Infections associated with open wounds are not considered to be invasive infections.

**No**
- These sites normally harbor bacteria and are not considered sterile sites. This type of specimen does not provide evidence of invasive disease.

Is the collection site skin or a mucus membrane (e.g. mouth, throat, nose/nasal passage, respiratory tract e.g., bronchial specimens, sputum), sinus cavity, appendix, gallbladder, vagina, urethra, rectum, ear, external portions of the eye, etc.?)

**Yes**
- Internal specimens (tissue and/or fluid) obtained aseptically through a surgical procedure such as fine needle aspiration are considered sterile sites and the infections are considered invasive. Bronchial washings and similar specimens from the respiratory tract are not considered to be from sterile sites regardless of the procedure used. Specimens collected after surgical procedures inserting shunts/stents/catheters are not considered sterile.

Examples of internal sites are: brain, heart, liver, spleen, vitreous fluid, kidney, pancreas, lymph node, ovary, etc.

Indicate in NBS that an aseptic specimen was collected and which surgical procedure was used in the comments section.

**No**
- Placentas are not normally considered to be sterile sites. However, placentas are not routinely tested unless there is concern about the should meet the criteria of a sterile site, contact health of the mother or baby. This will qualify for invasive Group B the DSHS Emerging and Acute Infectious Disease Strep or for listeriosis. Amniotic fluid from an intact amnion would also qualify for both. Fetal tissue will also qualify for listeriosis.

Is the collection site a placenta or amniotic fluid AND is the pathogen Group B Strep or Listeria?

**Yes**
- It is not likely to be a sterile site. If you think it is it is likely to be a sterile site. If you think it

**No**
- Was the specimen obtained through a surgical procedure and obtained aseptically?

**Yes**
- These sites normally harbor bacteria and are not considered sterile sites. This type of specimen does not provide evidence of invasive disease.

**No**
- These sites are not considered sterile sites. This type of specimen does not provide evidence of invasive disease.

Flow chart for use with Streptococcus pneumoniae, Group A Strep (S. pyogenes), Group B Strep (S. agalactiae), Neisseria meningitidis, Listeria monocytogenes and Haemophilus influenzae. See “Normally Sterile Sites” definition on previous page.

Last updated Jan 2016

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### Responding to Positive IgM results for Mumps, Measles, and Rubella

When More Confirmatory Testing is Not Yet Available or Known

Not for use in evaluating IgM results when testing was requested by public health for contact or outbreak investigations or when more confirmatory testing has been done.

Ask the following question about all IgM+ cases:
- Was the patient symptomatic (why tested)?
  - What symptoms?
  - What is the onset date?
- Is the patient vaccinated for the disease?
  - Dates of all MMR doses?
- Did the patient travel internationally?
  - Where?

Did the patient receive an MMR vaccine within the past 45 days?

| Yes | IgM is most likely a response to the vaccine. IgM results from specimens collected within 45 days of MMR vaccination do not count as laboratory confirmation. Other confirmatory laboratory results or epi-linkage would be needed to meet case criteria. Consult with EAIDB if needed. |
| No | If the patient is IgM+ for two or more of the three* then the vaccination status and clinical presentation of illness will be used to determine case status for each. Consult with EAIDB. |

Is the patient symptomatic?

| Yes | This meets the criteria for a confirmed case. Follow up promptly. |
| No | No further follow up is required for most situations. Consult with EAIDB if you have questions about follow up. |

Is the IgM+ result only for Rubella?

| Yes | IgM results in the absence of symptoms do not meet case criteria. No further follow up is required for most situations. Consult with EAIDB if you have questions about follow up. |
| No | Is the IgM+ result only for Mumps? |

Is the IgM+ result only for Mumps?

| Yes | This meets the criteria for a probable case. Additional laboratory testing is needed for it to be confirmed |
| No | Is the IgM+ result only for Measles? |

Is the IgM+ result only for Measles?

| Yes | This meets the criteria for a case. Follow up immediately! |
| No | Is the IgM+ for two or more of the three? |

Is the IgM+ for two or more of the three?

| Yes | IgM results in the absence of symptoms do not meet case criteria. No further follow up is required for most situations. If the case is unvaccinated and exposed or traveled to a high risk country then additional testing may be considered. Alternatively, the person may self-monitor for the development of symptoms. |
| No | Priority follow up is needed unless additional laboratory testing ruling out measles was done. Additional testing needed to determine case status includes: 1) PCR testing 2) Demonstrated 4-fold increase in IgG 3) Re-test at the DSHS lab. |

Note: Interpretation of serology results requires looking at the timing of serology specimen collection, how the results compare with other serology results (IgG vs IgM or acute vs convalescent), how results compare with other laboratory test results, and vaccination status of the patient. This flowchart is not intended to provide interpretation of a single IgM result. Instead it is designed to guide how much follow up should be done based on a single IgM positive result when additional testing is not known to have been done.

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*Rubella IgM may cross react with measles IgM. (i.e. measles cases may have + measles and rubella IgM; the reverse is not true).
GUIDE TO FOOD EMPLOYEE EXCLUSIONS AND RESTRICTIONS

- The following guide (pages 440-443) summarizes food employee exclusions and restrictions of interest and serves as a resource for local and regional health departments and accompanies the Eaidu Investigation Guidelines.

- For the complete Texas Food and Establishment Rules (TFER), go to: https://www.dshs.state.tx.us/foodestablishments/laws-rules.aspx
### Norovirus

<table>
<thead>
<tr>
<th>Health Status of Food Employee</th>
<th>Food Establishment</th>
<th>Exclude or Restrict?</th>
<th>Return-to-Work Criteria for Food Employee</th>
</tr>
</thead>
</table>
| Symptomatic                   | any food establishment | Exclude | Food employee can be reinstated with approval from the Regulatory Authority and if one of the following conditions is met:  
- Medical documentation stating that the food employee is free of infection from Norovirus;  
- More than 48 hours have passed since the food employee became asymptomatic (without the use of diarrhea suppressing medications) or  
- The food employee did not develop symptoms and more than 48 hours have passed since being diagnosed. |
| Asymptomatic                  | serves a highly susceptible population | Exclude |  |
|                               | does NOT serve a highly susceptible population | Restrict |  |

### Salmonellosis (non-typhoidal Salmonella sp.)

<table>
<thead>
<tr>
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</tr>
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</table>
| Symptomatic                   | any food establishment | Exclude | Food employee can be reinstated with approval from the Regulatory Authority and if one of the following conditions is met:  
- Medical documentation stating that the food employee is free of infection from non-typhoidal Salmonella based on test results showing two consecutive, negative stool specimen cultures. The stool specimens should be collected at least 24 hours apart and not sooner than 48 hours after the last dose of antibiotics, if antibiotics were given;  
- More than 30 days have passed since the food employee became asymptomatic (without the use of diarrhea suppressing medications) or  
- The food employee did not develop symptoms and more than 30 days have passed since being diagnosed. |
<p>| Asymptomatic                  | any food establishment | Restrict |  |</p>
<table>
<thead>
<tr>
<th>Condition</th>
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</tr>
</thead>
</table>
| **Shigellosis** *(Shigella spp.)* | Symptomatic                   | any food establishment | Exclude            | Food employee can be reinstated with approval from the Regulatory Authority and if one of the following conditions is met:  
- Medical documentation stating that the food employee is free of infection from *Shigella* sp. based on test results showing **two consecutive, negative stool specimen cultures**. The stool specimens should be collected at least 24 hours apart and not sooner than 48 hours after the last dose of antibiotics, if antibiotics were given;  
- More than **7 days** have passed since the food employee became asymptomatic (without the use of diarrhea suppressing medications) or  
- The food employee did not develop symptoms and more than **7 days** have passed since being diagnosed. |
|               | Asymptomatic                   | serves a highly susceptible population | Exclude            |   |
| **STEC** *(Shiga toxin-producing *E. coli*)* | Symptomatic                   | any food establishment | Exclude            | Food employee can be reinstated with approval from the Regulatory Authority and if one of the following conditions is met:  
- Medical documentation stating that the food employee is free of infection from Shiga toxin-producing *E. coli* based on test results showing **two consecutive, negative stool specimen cultures**. The stool specimens should be collected at least 24 hours apart and not sooner than 48 hours after the last dose of antibiotics, if antibiotics were given; |
<p>|               | Asymptomatic                   | serves a highly susceptible population | Exclude            |   |</p>
<table>
<thead>
<tr>
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<th>Food Establishment</th>
<th>Exclude or Restrict?</th>
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</table>
| **Typhoid Fever**<br>(Salmonella Typhi) | Symptomatic or Asymptomatic | any food establishment | Exclude | Food employee can be reinstated with approval from the Regulatory Authority and if one of the following conditions is met:  
- Medical documentation by a health practitioner stating that the food employee is **free of S. Typhi infection**. |
| **Hepatitis A or jaundiced**<br>(the onset of jaundice occurred within the last 7 calendar days) | Symptomatic or Asymptomatic | any food establishment | Exclude | Food employee can be reinstated with approval from the Regulatory Authority and if one of the following conditions is met:  
- The food employee has been jaundiced for more than 7 calendar days;  
- The anicteric food employee has been symptomatic with symptoms other than jaundice for more than 14 calendar days or  
- Medical documentation by a health practitioner stating that the food employee is **free of hepatitis A infection**. |
Below are Criteria for Reportable Symptoms with No Diagnosis

<table>
<thead>
<tr>
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</tr>
</thead>
</table>
| vomiting or diarrhea | any food establishment | Exclude | Food employee can be reinstated if one of the following conditions is met:  
- Is asymptomatic for at least 24 hours (without the use of diarrhea suppressing medications) or  
- Medical documentation that states symptom is from a noninfectious condition |
| sore throat with fever (acute onset) | serves a highly susceptible population | Exclude | Food employee can be reinstated with medical documentation stating one of the following conditions has been met:  
- Antibiotic therapy for *Streptococcus pyogenes* infection for more than 24 hours;  
- at least one negative throat specimen culture for *S. pyogenes* infection or  
- determined free of a *S. pyogenes* infection by a health practitioner. |
| does NOT serve a highly susceptible population | Restrict |  |
| uncovered infected wound or pustular boil | any food establishment | Restrict | Food employee can be reinstated if the wound or boil is properly covered with one of the following:  
- An impermeable cover such as a finger cot or stall and a single-use glove over the impermeable cover if the wound or boil is on the hand, finger, or wrist;  
- An impermeable cover on the arm if the wound or boil is on the arm or  
- A dry, durable, tight-fitting bandage if the wound or boil is on another part of the body |
Definitions of Interest from the Texas Food Establishment Rules (TFER):

**Food employee**--An individual working with unpackaged food, food equipment or utensils, or food-contact surfaces.

**Asymptomatic**--Not showing obvious symptoms, not producing indications of a disease or other medical condition. An individual infected with a pathogen but not exhibiting or producing any signs or symptoms of vomiting, diarrhea, or jaundice. Symptoms are not shown because the symptoms have been resolved or have subsided, or because the symptoms never manifested.

**Exclude**--To prevent a person from working as a food employee or entering a food establishment except for those areas open to the general public.

**Restrict**--To limit the activities of a food employee so that there is no risk of transmitting a disease that is transmissible through food and the food employee does not work with exposed food, clean equipment, utensils, linens; and unwrapped single-service or single-use articles.

**Highly susceptible population**--Persons who are more likely than other people in the general population to experience foodborne disease because they are immunocompromised, preschool aged children, or older adults and are obtaining food at a facility that provides services such as custodial care, health care, or assisted living. Examples of custodial or health care facilities or of assisted living facilities include but are not limited to child or adult day care centers, kidney dialysis centers, hospitals, nursing homes, or senior centers providing nutritional or socialization services.

**Food establishment**--A food establishment means an operation that stores, prepares, packages, serves, vends, or otherwise provides food for human consumption as follows:

- a restaurant, retail food store, satellite or catered feeding location, catering operation if the operation provides food directly to a consumer or to a conveyance used to transport people, market, vending location, (machine), self-service food market, conveyance used to transport people, institution, or food bank;
- an establishment that relinquishes possession of food to a consumer directly, or indirectly through a delivery service such as home delivery of grocery orders or restaurant takeout orders, or delivery service that is provided by common carriers; and
- includes an element of the operation such as a transportation vehicle or a central preparation facility that supplies a vending location or satellite feeding location unless the vending or feeding location is permitted by the regulatory authority and an operation that is conducted in a mobile, stationary, temporary, or permanent facility or location; where consumption is on or off the premises; and regardless of whether there is a charge for the food.
- food establishment does not include an establishment that offers only prepackaged foods that are not time / temperature controlled for safety food, a produce stand that only offers whole, uncut fresh fruits and vegetables, a food processing plant, a cottage food industry, an area where cottage food is prepared, sold or offered for human consumption, a Bed and Breakfast Limited facility as defined in this chapter, or a private home that receives catered or home-delivered food.

**Regulatory authority**--The local, state, or federal enforcement body or authorized representative having jurisdiction over the food establishment.

**REVISION HISTORY**

January 2022
- 'Invasive Streptococcal Infection: Case Status Classification' flow chart deleted due to Group A and Group B Streptococcal Infections no longer classified as reportable conditions in Texas.