<table>
<thead>
<tr>
<th>Animal Group(s) Affected</th>
<th>Transmission</th>
<th>Clinical Signs</th>
<th>Severity</th>
<th>Treatment</th>
<th>Prevention and Control</th>
<th>Zoonotic</th>
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<tbody>
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<td>Several teleost species, especially in warm water.</td>
<td>Unknown, probably oral.</td>
<td>Septicemia, enteritis, skin ulcers, petechiae.</td>
<td>Variable, can be severe with concurrent stressors.</td>
<td>Systemic antibiotics based on culture and sensitivity and regulations.</td>
<td>Remove stressors; improve disinfection.</td>
<td>Yes.</td>
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**Fact Sheet compiled by:** Catherine Hadfield  
**Sheet completed on:** 28 November 2013; updated 6 July 2013  
**Fact Sheet Reviewed by:** Leigh Clayton, Lester Khoo

**Susceptible animal groups:** Various teleost species, usually those found in warm water. Common in American, European, and Japanese eels, channel catfish, carp, bass, Japanese flounder, and many tropical marine teleosts. It can also cause disease in some invertebrates, amphibians, reptiles, and mammals.

**Causative organism:** Enterobacteriaceae, *Edwardsiella tarda* and *Edwardsiella piscicida*. These species cannot be differentiated phenotypically, so earlier reports of *E. tarda* may represent *E. piscicida*. Molecular diagnostics are required for differentiation. Other strains may be identified in the future.

**Zoonotic potential:** Yes. Usually necrotic skin wounds or gastroenteritis but it can spread systemically.

**Distribution:** Worldwide.

**Incubation period:** 5-7 days.

**Clinical signs:** Acute or chronic presentation may include: lethargy, inappetance, ulcers, hyperemia, petechiation, erythema, pale gills, coelomic distension, positive buoyancy, and ocular lesions (such as keratitis, uveitis, and exophthalmia). Mortalities tend to be low.

**Post mortem, gross, or histologic findings:** Congestion and/or focal necrosis of spleen, liver, kidney, and heart are observed. Malodorous abscesses in the viscera or skeletal muscle may be seen. Small, straight Gram negative rods which may be motile can be present. Inflammation, often supplicative but may be granulomatous, can be observed in infected organs, such as kidneys.

**Diagnosis:** Bacterial culture from lesions, blood or organs. PCR, DNA hybridization, or sequencing required for differentiation of *E. tarda* and *E. piscicida*. However, bacteria may be present in the gastrointestinal tract of healthy fish.

**Material required for laboratory analysis:** Blood culture can be performed. Tissue swabs or preferably tissue samples for bacterial culture, especially kidney. Samples should be transported at 4°C.

**Relevant diagnostic laboratories:** Most laboratories should be able to culture *Edwardsiella* spp., but further identification may require specialist fish laboratories.

**Treatment:** Removal of stressors is important for successful treatment and good supportive care should be provided. Water quality and disinfection should be improved. Systemic antibiotics, based on culture and sensitivity and relevant legislation, e.g., trimethoprim sulfa, florfenicol, can be used. However, as of June 2013, no FDA-approved medications are available for use in food fish. Immunostimulants, e.g., glucans, glycans, alginate, or ascorbic acid.

**Prevention and control:** Stressors (e.g., temperature, water quality, stocking density, and organic load) should be reduced in the environment. Water can be disinfected with UV or ozone. *E. tarda* vaccines are under trial.

**Suggested disinfectant for housing facilities:** Susceptible to most common disinfectants: 1% sodium
**EDWARDSIELLOSIS**

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<th>hypochlorite, 70% ethyl alcohol, iodophors, phenols.</th>
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<td><strong>Notification:</strong> None.</td>
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<td><strong>Measures required under the Animal Disease Surveillance Plan:</strong> None.</td>
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<td><strong>Measures required for introducing animals to infected animal:</strong> Introduction of animals should be avoided if clinical signs are present.</td>
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<td><strong>Conditions for restoring disease-free status after an outbreak:</strong> Not known; animals can carry the bacteria asymptomatically.</td>
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<td><strong>Experts who may be consulted:</strong> Most fish clinicians will be familiar with Edwardsiellosis and can be consulted if an outbreak is encountered.</td>
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**References**