Enteric Redmouth Disease (ERM)

I. Causative Agent and Disease
Enteric redmouth disease (ERM) is caused by Gram-negative, motile bacteria known as *Yersinia ruckeri*. The name ERM is derived from the inflammation and petechial hemorrhages of the lower hind gut and in and around the mouth of infected fish that are not necessarily unique characteristics of infection by this bacterium. ERM is an acute septicemia in salmonids with bacterial foci, necrosis and inflammation in all tissues. In Alaska, two serotypes of the bacteria, known as Type I and Type II, can cause the disease. The two serotypes are differentiated from each other based on biochemical and/or serological tests. The virulence varies considerably within each serogroup but *Y. ruckeri* Type I has been more pathogenic in Alaskan salmonids. The bacteria are found in North America and Europe and there are a total of 6 serotypes worldwide.

II. Host Species
Rainbow trout are the most susceptible host, but all salmonids and several other fish species are susceptible to infection.

III. Clinical Signs
Externally, clinical signs can be similar to other bacterial septicemias. Infected fish are often lethargic and dark in color. Inflammation and petechiation are prominent in and around the mouth, the isthmus and on the opercula. Petechial hemorrhages are commonly seen at the base of the fins. Fish often exhibit exophthalmia and a distended abdomen. Internally the stomach is often filled with watery fluid and petechiation may be present in the musculature and visceral organs, most notably in the hind gut and liver.

IV. Transmission
The bacterium is horizontally transmitted from fish to fish via the fecal oral route and often becomes localized in the lower intestine of fish surviving a disease outbreak. Bacteria can remain viable for a limited time in ambient water to infect susceptible fish. Other reservoirs of the bacteria include fish eating birds reported near aquaculture facilities.

V. Diagnosis
Presumptive diagnosis is made by the cultivation of a Gram-negative, oxidase negative, motile bacterial rod from blood, kidney, or lesions when inoculated on bacteriological media. Diagnosis is confirmed with biochemical tests or fluorescent antibody tests specific for *Yersinia ruckeri* Types I and II.

VI. Prognosis for Host
Under aquaculture conditions, diseased fish generally die if there is no antibiotic intervention. Prognosis for the population is good if the condition is recognized early so that antibiotic therapy can be initiated.

VII. Human Health Significance
There are no human health concerns associated with *Yersinia ruckeri*. 
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Petechial hemorrhages of the liver as seen in enteric redmouth disease

Severe internal hemorrhaging typically seen in bacterial septicemia like enteric redmouth disease