Lab Dept:  Serology
Test Name:  Q FEVER, IGG/IGM ANTIBODIES

General Information
Lab Order Codes:  QFEV
Synonyms:  Q Fever Antibodies, Serum; C. burnetii; Coxiella Titer; Febrile Agglutinins for Q Fever; Typhus; Weil Felix for Q Fever
CPT Codes:  86638 x4 – Antibody; Coxiella burnetii
Test Includes:  Q Fever IgG (phase I and phase II levels) and IgM (phase I and phase II levels) reported as titers.

Logistics
Test Indications:  Q Fever, a rickettsial infection caused by Coxiella burnetii, has been recognized as a widely distributed zoonosis that has the potential for causing both sporadic and epidemic disease.

The infection is spread by the inhalation of infected material, mainly from sheep and goats. They shed the organism in feces, milk, nasal discharges, placental tissues and amniotic fluid.

The resistance of Coxiella burnetii to heat, chemical agents, and desiccation allow the agent to survive for extended periods outside the host.

The clinical spectrum of disease ranges from inapparent to fatal. Respiratory manifestations usually predominate; endocarditis and hepatitis can be complications.

Lab Testing Sections:  Serology - Sendouts
Referred to:  Mayo Medical Laboratories (MML Test QFP)
Phone Numbers:  MIN Lab: 612-813-6280
               STP Lab: 651-220-6550
Test Availability:  Daily, 24 hours
Turnaround Time:  1 - 3 days, test set up Monday - Friday
Special Instructions:  Specimens will be held for 2 weeks.
Specimen

Specimen Type: Blood

Container: Red top tube

Draw Volume: 1.5 mL (Minimum: 1.0 mL) blood

Processed Volume: 0.5 mL (Minimum: 0.25 mL) serum

Collection: Routine venipuncture

Special Processing: Lab Staff: Centrifuge specimen, remove serum aliquot into a screw-capped round bottom plastic vial. Store and ship at refrigerated temperatures. Forward promptly.

Patient Preparation: None

Sample Rejection: Specimens other than serum; gross hemolysis; gross lipemia; mislabeled or unlabeled specimens

Interpretive

<table>
<thead>
<tr>
<th>Reference Range</th>
<th>Titer Interpretation:</th>
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<tbody>
<tr>
<td>IgG, Phase I</td>
<td>&lt;1:16</td>
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<tr>
<td>IgG, Phase II</td>
<td>&lt;1:16</td>
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<tr>
<td>IgM, Phase I</td>
<td>&lt;1:16</td>
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Phase I antibody titers greater than or equal to phase II antibody titers are consistent with chronic infection or convalescent phase Q Fever.

Phase II antibody titers of greater than or equal to phase I antibody titers are consistent with acute/active infection.

A negative result argues against Coxiella burnetii infection. If early acute Q fever infection is suspected, obtain a second specimen 2-3 weeks later and retest.

In Q fever sera, it is most common to see IgG titers of 1:128 or greater to both phase I and phase II antibody titers. IgG class antibody titers appear very early in the disease, reaching maximum phase II titers by week 8 and persisting at elevated titers for longer than a year. Phase I titers follow the same pattern, although at much lower levels, and may not be initially detected until convalescence.

In Q fever sera, it is common to see IgM titers of 1:64 or greater.

IgM class antibody titers appear very early in the disease, reaching maximum phase II titers by week 3 and declining to very low levels by the 14th week. Phase I titers follow the same pattern, although at much lower levels, and may not be initially detected until convalescence.

**Critical Values:** N/A

**Limitations:** Serologic responses are time-dependent. Specimens obtained early in the disease may not have detectable antibody levels. A second specimen 2 – 4 weeks later may be necessary to detect antibody.

**Methodology:** Indirect Immunofluorescence (IFA)

**References:** Mayo Medical Laboratories Web Page July 2015

**Updates:**

- 10/26/2004: Mayo enhanced this test to include both phase I and phase II IgG and IgM levels. Note change in reference ranges.
- 1/28/16: CPT update