Routine algorithm for testing of specimens from a suspected measles and rubella case

Suspected measles or rubella case

Collect samples of:

- Blood (serum)
- Throat, nasal, or nasopharyngeal swab and urine

1. **Does the case have a direct epidemiological link with a laboratory-confirmed case?**
   - **NO**
     - Continue with algorithm
   - **YES**
     - **Immunological testing**

   - **IgM test**
     - **IgM-positive**
       - Confirmed by epidemiological link
     - **IgM-negative**
       - Clinically confirmed

   - REPORT

2. **Immunological testing**
   - **RT-qPCR viral isolation**
     - **RT-qPCR-positive**
     - Conclusively confirm with sequencing and genotype identification

3. **Immunological testing**
   - **IgM-positive**
     - IgM-positive
     - IgM-negative

   - **Suspected false IgM-positive**
     - YES
     - Do RT-qPCR viral isolation
     - RT-qPCR-positive
     - Conclusively confirm with sequencing and genotype identification
   - **Suspected false IgM-negative**
     - YES
     - Do RT-qPCR viral isolation
     - RT-qPCR-positive
     - Conclusively confirm with sequencing and genotype identification
   - **NO**
     - Report


Complementary algorithm for serological testing of specimens with an initial IgM-positive or indeterminate results

Is any of the first serum sample left over?

- **YES**
  - Do IgG test
    - IgG-negative
      - Collect a second serum sample
    - IgG-positive
      - Collect a second serum sample

- **NO**
  - Collect a second serum sample
  - Do IgG test
    - IgG-negative
      - Collect a second serum sample
    - IgG-positive
      - Do avidity testing
        - Discarded recent infection

- **Evidence of recent infection**
  - IgG-positive
    - IgG-negative
      - Collect a second serum sample
    - IgG-positive
      - IgG-negative

- **Evidence of previous immune response**
  - IgG-negative
    - IgG-negative
      - Collect a second serum sample
    - IgG-positive
      - IgG-negative

- **Low avidity**
  - IgG-negative
    - IgG-negative
      - Collect a second serum sample
    - IgG-positive
      - IgG-negative

- **High avidity**
  - IgG-negative
    - IgG-negative
      - Collect a second serum sample
    - IgG-positive
      - IgG-negative