Laboratory Notification
Flowcharts
March 2006
version 1.3
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NSW Health Laboratory Notification Flowcharts (Version 1.3)
Foreword

Under the NSW Public Health Act 1991, there are 50 Scheduled Medical Conditions which NSW laboratories are required to notify to the NSW Health Department. In recognition of the public health benefits of ensuring receipt of these notifications in a timely manner, and the necessity for a well documented and explicit set of rules for the generation of a notification, the Population Health Division, NSW Health Department, began the eNotification project in November 2004. The eNotification (electronic pathology laboratory notification) project aims to replace paper-based notification from the top twenty laboratories, by volume of notification, with electronic notification.

The first step in developing a robust eNotification system in NSW was considered to be the development and documentation of detailed specifications for laboratory notification triggers (based on existing case definitions) and a set of business rules detailing when to report, how to report and who reports.

A working group was established (the NSW eNotification Project – Business Rules Working Group) with representation from the Public Health Laboratory Network (PHLN), private and public pathology laboratories, the Royal College of Pathologists of Australasia, Australian Government Department of Health and Ageing, NSW Public Health Units and the NSW Health Department. The Working Group spent several months reviewing each of the PHLN and Communicable Diseases Network of Australia (CDNA) case definitions (for the NSW notifiable diseases) and translating the case definitions into flowcharts depicting the disease-specific internal laboratory processes for identifying evidence of infection and points within the process where notification of a result to the health authorities would be expected. (Submissions have also been prepared for the PHLN and CDNA case definition working groups outlining instances where the NSW eNotification Project – Business Rules Working Group considered revision of the case definition was required.) The Working Group has agreed to continue to meet to maintain and review the flowcharts and triggers for NSW Health.

Should you have comments on any aspect of the document we would be most happy to receive them at ndd@doh.health.nsw.gov.au. Similarly, should you consider the documents to be useful for similar activities within your organisation or jurisdiction, you are welcome to use any part of the document, with appropriate acknowledgements. Should you make any amendments to the flowcharts for use in your organisation or jurisdiction we would be keen to hear about this since it may also inform future revisions in NSW.

Associate Professor Roger Wilson
Chair, NSW eNotification Project – Business Rules Working Group

March 2006
About this document

Under the NSW Public Health Act 1991, there are 50 Scheduled Medical Conditions which NSW laboratories are required to notify to the NSW Health Department.

In recognition of the public health benefits of ensuring receipt of these notifications in a timely manner, and the necessity for a well documented and explicit set of rules for the generation of a notification, the NSW eNotification (electronic pathology laboratory notification) Project was commenced in November 2004.

The first step in developing a robust eNotification system in NSW was considered to be the development and documentation of detailed specifications for laboratory notification triggers (based on existing case definitions) and a set of business rules detailing when to report, how to report and who reports.

This document aims to record the business rules and triggers for laboratory initiated notification of Scheduled Medical Conditions, whether the notification is delivered electronically or by conventional means. A companion document, Public Health Action Flowcharts, which outlines the public health interventions that accompany notification of a Scheduled Medical Condition, is under development.

The triggers for notification of laboratory results shown in the flowcharts are defined by surveillance case definitions for notifiable diseases developed by the Communicable Diseases Network of Australia (CDNA). The CDNA surveillance case definitions are based on laboratory case definitions produced by the Public Health Laboratory Network (PHLN), which describe diagnostic tests available for each notifiable disease and their performance characteristics. These documents may be accessed on the CDNA and PHLN websites:

http://www.health.gov.au/internet/wcms/publishing.nsf/Content/Case+definitions-1; and

Laboratory best practice recommends that the case definitions and therefore, the triggers, are most appropriate when certain criteria apply, namely:

- The test has been performed in the context of an appropriate clinical setting and illness;
- The utility of the test should be known in the population from which the test sample is derived;
- The specific test is within the scope of the performing laboratory’s accreditation with the National Association of Testing Authorities (NATA); and
- Tests, particularly, but not only, nucleic acid tests (NATs), have appropriately documented validation.

However, ALL laboratory results that meet the triggers outlined in this document should be notified to the NSW Health Department.
**Using the flowcharts**

The flowcharts are consistently arranged by category or activity. That is:

<table>
<thead>
<tr>
<th>Specimen</th>
<th>For the majority of conditions any clinical specimen is acceptable. However, if the case definition requires a certain specimen, or the particular test is validated only for a particular type of specimen, these details are specified.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Testing</td>
<td>The types of laboratory tests currently being used, or those that are likely to be used in the near future, for the identification of infection.</td>
</tr>
<tr>
<td>Trigger</td>
<td>The laboratory result, or results, that initiate notification of a Scheduled Medical Condition.</td>
</tr>
<tr>
<td>Validation</td>
<td>Only trigger events validated by a senior laboratory staff member should be notified.</td>
</tr>
<tr>
<td>Report Generation</td>
<td>An individual report (eNotification message) is generated at each level of evidence of disease (for additional information see explanation below).</td>
</tr>
<tr>
<td>Evidence of Disease</td>
<td>Indicates the level of evidence that an individual laboratory result, generated in an appropriate clinical setting, signifies a specific condition or disease, from a public health perspective.</td>
</tr>
<tr>
<td>Notes</td>
<td>Additional information provided where a particular issue requires clarification or emphasis.</td>
</tr>
</tbody>
</table>
Evidence of disease

Although laboratory results in isolation can only provide evidence of infection not disease, the term ‘evidence of disease’ has been used throughout this document assuming that the majority of these results will be generated in the context of clinical symptoms. It is the nature of the laboratory results, and the associated evidence of disease, that initiates the public health response. Under these circumstances the following definitions apply:

Presumptive Laboratory Result –represents the initial screening or preliminary identification of organisms, most commonly performed in the primary laboratory.

Confirmed Laboratory Result - provides the definitive result following preliminary testing and is most commonly used when presumptively identified organisms are ratified by further definitive testing.

Suggestive Evidence of Disease – these test results are often not fully specific for the disease being investigated. Additional testing is usually required to confirm the diagnosis. This category includes nucleic acid tests (NAT) which detect the presence of genes similar to those found in related non-pathogens. For example, most PCR assays for Neisseria gonorrhoeae target genes that, occasionally, are found in non-pathogenic Neisseria species. A positive result is therefore only suggestive of infection with N. gonorrhoeae and requires supplementary testing.

Definitive Evidence of Disease – these are test results, which on their own are good evidence of a specific diagnosis. For example, PCR tests for Bordetella pertussis detect the toxin gene, which is found only in this organism. A positive result in this instance is strong evidence of infection.

Further clarification, and colour coding, around the type of results generated by the laboratory (presumptive OR confirmed) and the type of evidence of disease (suggestive OR definitive) has been incorporated into these flowcharts.

As a consequence there are now three variations: ‘Presumptive Laboratory Result - Suggestive Evidence of Disease’, ‘Confirmed Laboratory Result - Suggestive Evidence of Disease’ and ‘Confirmed Laboratory Result - Definitive Evidence of Disease’, where the disease is seen in a public health context.

There is also a clear pathway for reporting additional information that rules out the notifiable condition (eg a non-toxigenic isolate), ‘Confirmed Laboratory Result – Not Indicative of Infection’.

Dotted lines indicate a test currently being used for research purposes or one that is not widely used.
Glossary

Certain terminology used throughout this document is defined below.

Detection of IgM: This is usually sufficient to indicate recent infection. However following some infections - such as those due to the alphaviruses and flaviviruses - IgM persists for months to years, and may only provide suggestive evidence of recent infection. IgM can also cross-react, particularly with flavivirus infections. False positive IgM reactions are a recognised problem in serological diagnosis, and laboratories should have ensured that their methods and protocols take this into account. An IgG level should always be measured as this may help to interpret the significance of a single IgM. The presence of IgM in the absence of IgG suggests either early infection, in which case it should be possible to demonstrate seroconversion if a second serum is collected, or a false positive if it remains absent. In general, a single IgM does not constitute definitive evidence of infection and confirmatory testing (such as neutralisation assays in titration series) should be performed.

Seroconversion – a change from IgG negative to IgG positive, generally between acute and convalescent samples. Identification of seroconversion may be used for confirming recent infection, using tests that do not quantify the antibody levels. This includes most enzyme immunoassay, particle agglutination, immunofluorescent antibody and latex agglutination tests as performed routinely. Results are valid only if both sera have been tested in parallel in the same laboratory.

Significant increase in antibody level or titre - this is generally confined to tests that use titrations in two-fold dilutions, in which a four-fold increase is regarded as significant. For enzyme immunoassay tests that are not titred, it may be possible to establish changes in absorbance that may be regarded as significant. This has to be determined and validated for individual tests, and should be approached with caution. Results are valid only if tested in parallel in the same laboratory.

Single high titre - generally the level constituting a single high titre is not stated as this may vary between tests and laboratories. In these cases the criterion for high titre needs to be evaluated and validated from local data and experience. If possible, a second serum should be collected and tested in parallel with the first serum to monitor changes in antibody level.

Supplementary testing – this type of analysis often provides further information about an isolate for public health purposes. Examples of supplementary testing are toxigenicity testing, serotyping and phage typing and can include the use of an alternative serological method to provide additional information about an antibody response.

Specialist laboratory – a laboratory that is able to provide testing not normally performed in routine diagnostic laboratories owing to a lack of appropriate expertise associated with a specific testing methodology or organism, unavailability of reagents, or a lack of specific funding mechanisms. ‘Specialised’ tests include, but are not limited to, salmonella serotyping and phagetyping, toxin testing and serology for diagnosis of disease caused by individual flaviviruses. The process for deciding which laboratories are specialist laboratories is an issue outside the scope of this document.
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Anthrax

Testing

Specimen (including blood, CSF, wound, intestinal contents or respiratory tract)

- Culture
- Direct Microscopy
- Antigen Assay
- NAT
- Confirmatory Testing (Specialist Laboratory)

Trigger

- Isolation of presumptive Bacillus anthracis
- Microscopic evidence (plus clinical features)
- Detection of B. anthracis antigen
- Detection of B. anthracis

Validation

- Assessment and Validation (Senior Staff Member)

Report Generation

- Report A Generation
- Report B Generation
- Report C Generation
- Report D Generation

Evidence of Disease

- Presumptive Laboratory Result
  Suggestive Evidence of Disease
  PHONE NOTIFICATION
- Confirmed Laboratory Result
  Suggestive Evidence of Disease
  PHONE NOTIFICATION
- Confirmed Laboratory Result
  Definitive Evidence of Disease
  PHONE NOTIFICATION
- Confirmed Laboratory Result
  Not Indicative of Disease
  PHONE NOTIFICATION

Notes

NSW Health Laboratory Notification Flowcharts (Version 1.3)
**Arboviral Infection – Alphaviruses**

**Specimen**
- Clinical Specimen

**Testing**
- Serology
  - Single Sample
  - Paired Sera
  - Detection of IgM to specific alphavirus
  - Seroconversion or significant rise in antibody level to a specific alphavirus
  - Isolation of specific alphavirus
  - Detection of specific alphavirus

**Trigger**
- PHONE/Routine Notification
- 1 A specific virus can be assigned if the antibody is shown to be limited to an individual virus by neutralisation, or another specific test
- 2 IgM can persist in some cases for years, so a single IgM result should be considered in the context of the clinical setting and may not be definitive evidence of disease
- 3 Seroconversion or significant rise in antibody level to a specific alphavirus, between acute and convalescent phase sera (tested in parallel at the same laboratory)
- 4 PHONE public health priority for alphaviruses acquired in a low/no risk area, ROUTINE for other cases

**Validation**
- Assessment and Validation (Senior Staff Member)

**Report Generation**
- Report A Generation
- Report B Generation

**Evidence of Disease**
- Confirmed Laboratory Result
  - Suggestive Evidence of Disease
    - PHONE/Routine Notification
  - Definitive Evidence of Disease
    - PHONE/Routine Notification

**Notes**
- PHONE public health priority for alphaviruses acquired in a low/no risk area, ROUTINE for other cases
Arboviral Infection – Flaviviruses

Specimen

Clinical Specimen

Testing

Serology

Culture

NAT

Supplementary Testing

Trigger

Single Sample

Paired Sera

Detection of IgM to flavivirus 1, 2, 3

Seroconversion or fourfold rise in specific flavivirus titre 1, 4

Isolation of specific flavivirus 1

Detection of specific flavivirus 1

Detection of individual flavivirus antibody

Positive

POSITIVE

POSITIVE

POSITIVE

POSITIVE

POSITIVE

Validation

Assessment and Validation (Senior Staff Member)

Report A Generation

Report B Generation

Report C Generation

Report Generation

Evidence of Disease

Confirmed Laboratory Result
Suggestive Evidence of Disease
PHONE NOTIFICATION

Confirmed Laboratory Result
Definitive Evidence of Disease
PHONE NOTIFICATION

Confirmed Laboratory Result
Definitive Evidence of Disease
PHONE NOTIFICATION

Notes
1 A specific virus can be assigned if the antibody is shown to be limited to an individual virus by neutralisation, or another specific test
2 IgM can persist in some cases for years, so a single IgM result should be considered in the context of the clinical setting and may not be definitive evidence of disease
3 Also includes IgM in CSF
4 Seroconversion or significant rise in antibody level to a specific alphavirus, between acute and convalescent phase sera (tested in parallel at the same laboratory)
Botulism

Specimen

Specimen 1
(blood, vomitus, wound, swab/pus, faeces, serum)

Testing

Culture

Neurotoxin Detection
(Specialist Laboratory)

Antigen Assay

NAT

Mouse Bioassay

Confirmatory Testing
(Specialist Laboratory)

Trigger

Isolation of presumptive Clostridium botulinum

Detection of C. botulinum toxin

Detection of C. botulinum toxin gene

Detection of C. botulinum toxin

Characterisation of toxigenic C. botulinum

Validation

Assessment and Validation (Senior Staff Member)

Assessment and Validation (Senior Staff Member)

Assessment and Validation (Senior Staff Member)

Assessment and Validation (Senior Staff Member)

Report Generation

Report A
Generation

Report B
Generation

Report C
Generation

Report D
Generation

Evidence of Disease

Presumptive Laboratory Result
Suggestive Evidence of Disease
PHONE NOTIFICATION

Confirmed Laboratory Result
Suggestive Evidence of Disease
PHONE NOTIFICATION

Confirmed Laboratory Result
Definitive Evidence of Disease
PHONE NOTIFICATION

Confirmed Laboratory Result
Not Indicative of Disease
PHONE NOTIFICATION

Notes

1 Detection of Clostridium botulinum or neurotoxin in implicated food should also be notified in line with CDNA/PHLN case definitions.
**Brucellosis Testing**

**Specimen**
- Clinical Specimen

**Testing**
- Serology
  - Single Sample
  - Paired Sera
- NAT
- Culture ¹

**Trigger**
- Seroconversion or fourfold or greater rise in Brucella agglutination titre ³
- Detection of Brucella sp.
- Isolation of Brucella sp.

**Validation**
- Assessment and Validation (Senior Staff Member)

**Evidence of Disease**
- Confirmed Laboratory Result
- Suggestive Evidence of Disease
- Definitive Evidence of Disease

**Report Generation**
- Report A Generation
- Report B Generation
- Report C Generation

**Notes**
1. Testing performed at a specialist laboratory, for safety reasons non-specialist laboratories should avoid culture
2. All Brucella isolates should be referred to a specialist laboratory for further characterisation
3. Seroconversion or fourfold or greater rise in Brucella agglutination titre between acute and convalescent phase sera (tested in parallel at the same laboratory)
Chancroid

Specimen

Clinical Specimen

Testing

NAT

Culture

Trigger

Detection of Haemophilus ducreyi

isolation of H. ducreyi

POSITIVE

POSITIVE

Validation

Assessment and Validation (Senior Staff Member)

Assessment and Validation (Senior Staff Member)

Report Generation

Report A Generation

Report B Generation

Evidence of Disease

Confirmed Laboratory Result
Suggestive Evidence of Disease
ROUTINE NOTIFICATION

Confirmed Laboratory Result
Definitive Evidence of Disease
ROUTINE NOTIFICATION

Notes
Chlamydia Trachomatis (non LGV)

Specimen

Testing

Trigger

Validation

Report Generation

Evidence of Disease

Notes

1. Antigen detection assay result should be confirmed with an appropriate test
2. Commercial assays for *C. trachomatis* have only been validated for genital/urinary specimens
**Cholera**

**Specimen**

Clinical Specimen

**Testing**

**Trigger**

Isolation of *Vibrio cholerae*  
POSITIVE

Culture

Supplementary Testing (Specialist Laboratory)

**Validation**

Assessment and Validation (Senior Staff Member)

**Report Generation**

Report A  
Generation

Report B  
Generation

Report C  
Generation

Report D  
Generation

**Evidence of Disease**

Confirmed Laboratory Result  
Suggestive Evidence of Disease  
PHONE NOTIFICATION

Confirmed Laboratory Result  
Suggestive Evidence of Disease  
PHONE NOTIFICATION

Confirmed Laboratory Result  
Definitive Evidence of Disease  
PHONE NOTIFICATION

Confirmed Laboratory Result  
Not Indicative of Disease  
PHONE NOTIFICATION

**Notes**  
1 All *Vibrio cholerae* isolates should be referred to a specialist laboratory for further characterisation and laboratories should notify all toxigenicity testing results, whether positive or negative
Cryptosporidiosis

Clinical Specimen

Direct Microscopy (including tissue)

Antigen Assay

NAT

Detection of Cryptosporidium cysts

Detection of Cryptosporidium antigen 1

Detection of Cryptosporidium cysts

Assessment and Validation (Senior Staff Member)

Confirmed Laboratory Result
Definitive Evidence of Disease
HIGH ROUTINE NOTIFICATION

Notes
1 Confirmation by microscopy recommended
2 HIGH public health priority if in a cluster, ROUTINE priority for all others
Diphtheria

Clinical Specimen 1

Culture

Isolation of Corynebacterium diphtheriae or C. ulcerans (toxin production unknown)

POSITIVE

Supplementary Testing (Specialist Laboratory) 2

Detection of toxigenic C. diphtheriae or C. ulcerans

POSITIVE

NEGATIVE

Assessment and Validation (Senior Staff Member)

Assessment and Validation (Senior Staff Member)

Assessment and Validation (Senior Staff Member)

Report A Generation

Report B Generation

Report C Generation

Confirmed Laboratory Result
Suggestive Evidence of Disease
PHONE NOTIFICATION

Confirmed Laboratory Result
Definitive Evidence of Disease
PHONE NOTIFICATION

Confirmed Laboratory Result
Not Indicative of Disease
PHONE NOTIFICATION

Notes
1 Isolates from non-pharyngeal diphtheria should also be notified
2 All Corynebacterium isolates should be referred to a specialist laboratory for further characterisation and laboratories should notify all toxigenicity testing results, whether positive or negative
Donovanosis (Granuloma inguinale)

Specimen (smears or biopsy specimens)

Direct Microscopy

Demonstration of Donovan bodies

POSITIVE

NAT

Detection of Klebsiella (Calymmatobacterium) granulomatis

POSITIVE

Assessment and Validation (Senior Staff Member)

Report A Generation

Confirmed Laboratory Result
Definitive Evidence of Disease
ROUTINE NOTIFICATION

Notes
**Giardiasis**

**Specimen**
- Direct Microscopy
- Antigen Assay
- NAT

**Testing**
- Detection of G. lamblia cysts or trophozoites
- Detection of G. lamblia antigen
- Detection of G. lamblia

**Trigger**
- POSITIVE
- POSITIVE
- POSITIVE

**Validation**
- Assessment and Validation (Senior Staff Member)

**Report Generation**
- Report A Generation

**Evidence of Disease**
- Confirmed Laboratory Result
- Definitive Evidence of Disease
- ROUTINE NOTIFICATION

**Notes**
1 Confirmation by microscopy recommended
Gonorrhoea

Specimen

Clinical Specimen

Testing

Microscopy

Culture\(^1\)

NAT

Supplementary Testing

Trigger

Detection of Gram negative intracellular diplococci\(^2\)

Isolation of *Neisseria gonorrhoeae*

Detection of *N. gonorrhoeae* by a sensitive screening test\(^3,4\)

Notes

1. It is recommended that culture be performed where possible
2. In smears of urethral exudates from symptomatic men or endocervical secretions from women
3. Commercial assays for *N. gonorrhoeae* have only been validated for genital/urinary specimens
4. Positive and negative predictive values (PPV/NPV) of PCR tests will depend on primer design and the test population (discrepant results should not be notified)

Validation

Assessment and Validation (Senior Staff Member)

Assessment and Validation (Senior Staff Member)

Assessment and Validation (Senior Staff Member)

Report Generation

Report A Generation

Report B Generation

Report C Generation

Evidence of Disease

Confirmed Laboratory Result Suggestive Evidence of Disease NOT NOTIFIABLE

Confirmed Laboratory Result Definitive Evidence of Disease ROUTINE NOTIFICATION

Confirmed Laboratory Result Definitive Evidence of Disease ROUTINE NOTIFICATION
**Haemophilus influenzae (Type b)**

**Specimen**
- **Culture**
- **Antigen Assay**
- **NAT**
- **Supplementary Testing (Specialist Laboratory)** ∨

**Testing**
- Isolation of Haemophilus influenzae
- Detection of H. influenzae type b (Hib) antigen in CSF only
- Detection of Hib

**Trigger**
- **Culture**: POSITIVE
- **Antigen Assay**: POSITIVE
- **NAT**: POSITIVE
- **Supplementary Testing** (Specialist Laboratory): POSITIVE

**Validation**
- Assessment and Validation (Senior Staff Member)

**Report Generation**
- **Report A Generation**
- **Report B Generation**
- **Report C Generation**

**Evidence of Disease**
- **Confirmed Laboratory Result**
  - Suggestive Evidence of Disease
  - PHONE NOTIFICATION
- **Confirmed Laboratory Result**
  - Definitive Evidence of Disease
  - PHONE NOTIFICATION
- **Confirmed Laboratory Result**
  - Not Indicative of Disease
  - PHONE NOTIFICATION

**Notes**
1 All Haemophilus influenzae isolates should be referred to a specialist laboratory for further characterisation and laboratories should notify all supplementary testing results, whether positive or negative.
2 When other laboratory parameters are consistent with meningitis.

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**NSW Health Laboratory Notification Flowcharts (Version 1.3)**

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Hepatitis A (HAV)

Testing

Specimen

Clinical Specimen

Serology

Single Sample

Detection of IgM to HAV

POSITIVE

NAT

Paired Sera

Seroconversion or significant increase in antibody level to HAV

POSITIVE

Trigger

POSITIVE

Validation

Assessment and Validation (Senior Staff Member)

Report Generation

Report A Generation

Evidence of Disease

Confirmed Laboratory Result
Definitive Evidence of Disease
PHONE NOTIFICATION

Notes
1 Seroconversion or significant increase in antibody level to HAV between acute and convalescent phase sera (tested in parallel at the same laboratory)
Hepatitis B (HBV)

Specimen

Clinical Specimen

Testing

Serology

Single Sample

NAT

Supplementary Testing

Trigger

Detection of HBsAg

POSITIVE

Detection of HBV

POSITIVE

Detection of IgM to HBV core antigen

POSITIVE

Validation

Assessment and Validation (Senior Staff Member)

Report A Generation

Assessment and Validation (Senior Staff Member)

Report B Generation

Evidence of Disease

Confirmed Laboratory Result
Definitive Evidence of Disease \(^1\)
ROUTINE NOTIFICATION

Notes

1 The patient’s previous notification history and any supplementary testing (such as IgM or IgG against hepatitis B core antigen) will be considered by the public health network before further classification into acute, chronic or unspecified infection.
**Hepatitis C (HCV)**

**Specimen**
- Clinical Specimen

**Testing**
- NAT
- Serology
- Supplementary Testing

**Trigger**
- Detection of HCV
- Detection of anti-HCV antibody

**Validation**
- Assessment and Validation (Senior Staff Member)

**Report Generation**
- Report A Generation
- Report B Generation

**Evidence of Disease**
- Confirmed Laboratory Result
- Definitive Evidence of Disease
- ROUTINE NOTIFICATION

**Notes**
1. The patient's previous notification history and any supplementary testing will be considered by the public health network before further classification into acute, chronic, past or unspecified infection.
Hepatitis D (HDV)

**Specimen**

- Clinical Specimen
  - Serology
    - Single Sample
      - Detection of IgM to HDV
        - POSITIVE
    - Paired Sera
      - Seroconversion or significant increase in antibody level to HDV
        - POSITIVE
  - NAT
  - Antigen Assay

**Testing**

- Detection of HDV
- Detection of HDV in liver biopsy by monoclonal antibody

**Trigger**

- POSITIVE
- POSITIVE
- POSITIVE

**Validation**

- Assessment and Validation (Senior Staff Member)

**Report Generation**

- Report A Generation

**Evidence of Disease**

- Confirmed Laboratory Result
  - Definitive Evidence of Disease
  - ROUTINE NOTIFICATION

**Notes**

1. Tested only on patients infected with hepatitis B virus
2. Seroconversion or significant increase in antibody level to HDV between acute and convalescent phase sera (tested in parallel at the same laboratory)
Hepatitis E (HEV)

**Specimen**

- Clinical Specimen

**Testing**

- Serology
  - Single Sample
  - Paired Sera

- NAT

**Trigger**

- Detection of IgM to HEV
  - POSITIVE

- Seroconversion or significant increase in IgG level or titre to HEV
  - POSITIVE

**Validation**

- Assessment and Validation (Senior Staff Member)

**Report Generation**

- Report A Generation

**Evidence of Disease**

- Confirmed Laboratory Result
- Definitive Evidence of Disease
- URGENT PHONE NOTIFICATION

**Notes**

1. If the person has not travelled outside Australia in the preceding 3 months, the antibody result must be confirmed by a specialist laboratory.
2. Seroconversion or significant increase in IgG level or titre to HEV between acute and convalescent phase sera (tested in parallel at the same laboratory).
Influenza

**Specimen**
- Clinical Specimen
  - Serology
    - Single Sample
      - High stationary influenza-specific antibody titre measured by CF or IF
        - POSITIVE
    - Paired Sera
      - Seroconversion or significant increase in antibody level to influenza virus
        - POSITIVE

**Testing**
- Culture
- Antigen Assay
- NAT

**Trigger**
- ROUTINE NOTIFICATION
  - Confirmed Laboratory Result
  - Definitive Evidence of Disease
    - ROUTINE NOTIFICATION
  - Assessment and Validation (Senior Staff Member)

**Validation**
- ROUTINE NOTIFICATION
  - Confirmed Laboratory Result
  - Suggestive Evidence of Disease
  - ROUTINE NOTIFICATION
  - Assessment and Validation (Senior Staff Member)

**Report Generation**
- ROUTINE NOTIFICATION
  - Definitive Evidence of Disease
  - ROUTINE NOTIFICATION
  - Report A Generation
  - Report B Generation

**Evidence of Disease**
- ROUTINE NOTIFICATION
  - Confirmed Laboratory Result
  - Suggestive Evidence of Disease

**Notes**
1. Seroconversion or significant increase in antibody level to influenza virus between acute and convalescent phase sera (tested in parallel at the same laboratory)
Invasive Pneumococcal Disease

**Specimen**

Specimen (normally sterile site)

**Testing**

- Antigen Assay
- Direct Microscopy
- Culture
- NAT

**Trigger**

- Detection of *Streptococcus pneumoniae* antigen in CSF
- Detection of Gram positive diplococci in CSF
- Isolation of *S. pneumoniae*
- Detection of *S. pneumoniae*

**Supplementary Testing**

(Specialist Laboratory) 1

**Validation**

Assessment and Validation (Senior Staff Member)

**Report Generation**

- Report A Generation
- Report B Generation
- Report C Generation

**Evidence of Disease**

- Confirmed Laboratory Result Suggestive Evidence of Disease NOT NOTIFIABLE
- Confirmed Laboratory Result Definitive Evidence of Disease ROUTINE NOTIFICATION
- Confirmed Laboratory Result Definitive Evidence of Disease ROUTINE NOTIFICATION

**Notes**

1 All *Streptococcus pneumoniae* isolates should be referred to a specialist laboratory for further characterisation.
Lead Poisoning

Specimen (blood sample only)

Chemistry

Detection of a venous blood lead level of >0.72µmol/L (15µg/dl)

POSITIVE

Assessment and Validation (Senior Staff Member)

Report A Generation

Confirmed Laboratory Result
Definitive Evidence of Disease
ROUTINE NOTIFICATION

Specimen

Testing

Trigger

Validation

Report Generation

Evidence of Disease

Notes
Legionellosis

**Specimen**
- Clinical Specimen

**Testing**
- NAT
- Serology
  - Single Sample
  - Paired Sera
- Antigen Assay
- Culture

**Trigger**
- Detection of Legionella (laboratory defined)
- Seroconversion or significant increase in antibody level to Legionella
- Detection of Legionella by DFA
- Detection of Legionella urinary antigen
- Isolation of Legionella sp.

**Validation**
- Assessment and Validation (Senior Staff Member)

**Report Generation**
- Report A
- Report B
- Report C

**Evidence of Disease**
- Confirmed Laboratory Result: Suggestive Evidence of Disease
  - PHONE NOTIFICATION
- Confirmed Laboratory Result: Definitive Evidence of Disease
  - PHONE NOTIFICATION
- Confirmed Laboratory Result: Definitive Evidence of Disease
  - PHONE NOTIFICATION

**Notes**
1. All Legionella isolates should be referred to a specialist laboratory for further characterisation.
2. Seroconversion or significant increase in antibody level to Legionella between acute and convalescent phase sera (tested in parallel at the same laboratory).
Leprosy

Specimen (split skin smears and biopsies prepared from the ear lobe or other relevant sites)

Testing

Direct Microscopy

Histology

NAT

Trigger

Demonstration of characteristic acid fast bacilli

Compatible skin or nerve biopsy

Detection of Mycobacterium leprae

Validation

Assessment and Validation (Senior Staff Member)

Report Generation

Confirmed Laboratory Result
Definitive Evidence of Disease
ROUTINE NOTIFICATION

Notes 1. Where confirmed by sequencing or validated species-specific PCR
Leptospirosis

**Specimen**

**Testing**

**Trigger**

- Single Sample
  - Positive Leptospira EIA (IgM) result

- Paired Sera
  - Single Leptospira MAT against a pathogenic species greater than or equal to 400
  - Seroconversion of fourfold rise in antibody titre against a pathogenic Leptospira sp. by MAT
  - Detection of pathogenic Leptospira

**Validation**

- Assessment and Validation (Senior Staff Member)

**Report Generation**

- Report A Generation
- Report B Generation
- Report C Generation

**Evidence of Disease**

- Confirmed Laboratory Result Suggestive Evidence of Disease NOT NOTIFIABLE
- Confirmed Laboratory Result Suggestive Evidence of Disease ROUTINE NOTIFICATION
- Confirmed Laboratory Result Definitive Evidence of Disease ROUTINE NOTIFICATION

**Notes**

1 A fourfold or greater rise in Leptospira agglutination titre between acute and convalescent phase sera (tested in parallel at the same laboratory)
**Listeriosis**

**Specimen**

- (normally sterile site, including foetal gastrointestinal contents)

**Testing**

- Microscopy
- Culture
- Supplementary Testing (Specialist Laboratory) \(^1\)

**Trigger**

- Detection of Gram positive bacilli
- Isolation of *Listeria monocytogenes*

**Validation**

- Assessment and Validation (Senior Staff Member)

**Report Generation**

- Report A Generation
- Report B Generation
- Report C Generation

**Evidence of Disease**

- Confirmed Laboratory Result Suggestive Evidence of Disease
  - NOT NOTIFIABLE
- Confirmed Laboratory Result Definitive Evidence of Disease
  - PHONE NOTIFICATION
- Confirmed Laboratory Result Definitive Evidence of Disease
  - PHONE NOTIFICATION

**Notes**

1 All *Listeria monocytogenes* isolates should be referred to a specialist laboratory for further characterisation.
Specimen

Antigen Assay

Serology

Culture

NAT

Trigger

Detection of Chlamydia trachomatis antigen

Seroconversion or fourfold rise in C. trachomatis titre by CFT confirmed by MIF alone

Isolation of C. trachomatis

Detection of C. trachomatis

Validation

Assessment and Validation (Senior Staff Member)

Culture and NAT Streams ONLY

Report Generation

Report A Generation

Report B Generation

Report C Generation

Evidence of Disease

Confirmed Laboratory Result Suggestive Evidence of Disease URGENT PHONE NOTIFICATION

Confirmed Laboratory Result Definitive Evidence of Disease ROUTINE NOTIFICATION

Confirmed Laboratory Result Not Indicative of Disease PHONE NOTIFICATION

Notes

1 Characterisation of C. trachomatis serovars L1, L2 and L3 in genital or rectal specimens also constitutes definitive evidence of disease

2 Seroconversion or fourfold rise in Chlamydia trachomatis titre by CFT, confirmed by MIF alone, between acute and convalescent phase sera (tested in parallel at the same laboratory)
**Lyssavirus Testing**

1. **Specimen**
   - Serology
   - NAT
   - Culture

2. **Testing**
   - **Trigger**
     - Serology 1
     - NAT 1
     - Culture 1
   - **Validation**
     - Laboratory defined criteria
     - Detection of Lyssavirus
     - Isolation of Lyssavirus
   - **Assessment and Validation** (Senior Staff Member)
   - **Report Generation**
     - Report A
     - Report B

3. **Evidence of Disease**
   - Confirmed Laboratory Result
     - Suggestive Evidence of Disease
     - NOT NOTIFIABLE
     - Confirmed Laboratory Result
     - Definitive Evidence of Disease
     - ROUTINE NOTIFICATION

4. **Notes**
   1. Testing performed at a specialist laboratory
   2. Product amplified from CSF, nuchal biopsy, brain, salivary gland, saliva, tissue culture supernatant or equivalent formalin fixed tissue
Specimen (blood)

Antigen Assay

Direct Microscopy

NAT

Supplementary Testing (Specialist Laboratory)¹

Characterisation of Plasmodium sp.

Assessment and Validation (Senior Staff Member)

Assessment and Validation (Senior Staff Member)

Assessment and Validation (Senior Staff Member)

Microscopy Stream ONLY

Report A Generation

Report B Generation

Report C Generation

Confirmed Laboratory Result Definitive Evidence of Disease ROUTINE NOTIFICATION

Confirmed Laboratory Result Definitive Evidence of Disease ROUTINE NOTIFICATION

Confirmed Laboratory Result Definitive Evidence of Disease ROUTINE NOTIFICATION

Notes

¹ Review of microscopy results by a specialist laboratory is recommended as laboratories that lack regular experience may fail to identify mixed infections and or speclate reliably

² Rapid immunodiagnostic test should always be confirmed by microscopy
Measles

**Clinical Specimen**

- **Serology**
  - Single Sample
    - Detection of measles specific IgM antibody
      - POSITIVE
  - Paired Sera
    - Seroconversion or significant increase in antibody level to measles virus
      - POSITIVE

- **Antigen Assay**
  - Detection of measles virus antigen
    - POSITIVE

- **Culture**
  - Isolation of measles virus
    - POSITIVE

- **NAT**
  - Detection of measles virus
    - POSITIVE

**Supplementary Testing (Specialist Laboratory)**

**Trigger**

- Detection of measles specific IgM antibody
  - POSITIVE

**Validation**

- **Assessment and Validation (Senior Staff Member)**
  - Culture and NAT Streams ONLY

**Report Generation**

- **Report A Generation**
  - Confirmed Laboratory Result
    - Suggestive Evidence of Disease
    - PHONE NOTIFICATION

- **Report B Generation**
  - Confirmed Laboratory Result
    - Definitive Evidence of Disease
    - PHONE NOTIFICATION

- **Report C Generation**
  - Confirmed Laboratory Result
    - Definitive Evidence of Disease
    - PHONE NOTIFICATION

**Evidence of Disease**

- **Characterisation of measles subtype**
  - Assessment and Validation (Senior Staff Member)

**Notes**

1. All measles isolates and amplification products should be referred to a specialist laboratory for further characterisation.
2. It is recommended that single positive IgM results be confirmed by an alternative kit or method.
3. Seroconversion or significant increase in antibody level to measles virus between acute and convalescent phase sera (tested in parallel at the same laboratory).
Meningococcal Disease

Specimen

Serology

Direct Microscopy

Culture

NAT

Supplementary Testing

Testing

Single Sample

Paired Sera

Trigger

Specimen (normally sterile site, conjunctival swab)\(^1\)

POSITIVE

POSITIVE

POSITIVE

POSITIVE

Validation

Assessment and Validation (Senior Staff Member)

Assessment and Validation (Senior Staff Member)

Assessment and Validation (Senior Staff Member)

Report Generation

Report A Generation

Report B Generation

Report C Generation

Evidence of Disease

Confirmed Laboratory Result Suggestive Evidence of Disease PHONE NOTIFICATION

Confirmed Laboratory Result Definitive Evidence of Disease PHONE NOTIFICATION

Confirmed Laboratory Result Definitive Evidence of Disease PHONE NOTIFICATION

Notes

1 Notification of conjunctival isolates is required in NSW

2 All Neisseria meningitidis isolates and positive amplification products should be referred to a specialist laboratory for further characterisation

3 Seroconversion or significant increase in IgM or IgG levels to outer membrane protein antigen of Neisseria meningitidis between acute and convalescent phase sera (tested in parallel at the same laboratory)
Mumps

Specimen

Clinical Specimen

Testing

Serology

Single Sample

Detection of mumps specific IgM antibody

POSITIVE

Paired Sera

Seroconversion or significant increase in antibody level to mumps virus

POSITIVE

Culture

Isolation of mumps virus

POSITIVE

NAT

Detection of mumps virus

POSITIVE

Trigger

Assessment and Validation (Senior Staff Member)

Report A Generation

Assessment and Validation (Senior Staff Member)

Report B Generation

Validation

Confirmed Laboratory Result

Suggestive Evidence of Disease

ROUTINE NOTIFICATION

Evidence of Disease

Confirmed Laboratory Result

Definitive Evidence of Disease

ROUTINE NOTIFICATION

Notes

1. Seroconversion or significant increase in antibody level to mumps virus between acute and convalescent phase sera (tested in parallel at the same laboratory)
Pertussis (Whooping Cough)

Specimen

Clinical Specimen

Testing

Serology

Single Sample

Paired Sera

Culture

NAT

Trigger

High IgA level to *Bordetella pertussis*

Seroconversion or significant increase in antibody level to *B. pertussis*

Isolation of *B. pertussis*

Detection of *B. pertussis*

Validation

Assessment and Validation (Senior Staff Member)

Report Generation

Report A Generation

Report B Generation

Evidence of Disease

Confirmed Laboratory Result
Suggestive Evidence of Disease
PHONE NOTIFICATION

Confirmed Laboratory Result
Definitive Evidence of Disease
PHONE NOTIFICATION

Notes
1 Seroconversion or significant increase in antibody level to *B. pertussis* between acute and convalescent phase sera (tested in parallel at the same laboratory)
**Plague**

**Specimen**
- Clinical Specimen

**Testing**
- Culture
- NAT
  - Isolation of *Yersinia pestis*
  - Detection of *Y. pestis*
  - POSITIVE

**Trigger**
- PHONE NOTIFICATION
  - Assessment and Validation (Senior Staff Member)

**Validation**
- Report A Generation

**Report Generation**
- Confirmed Laboratory Result
- Definitive Evidence of Disease
- PHONE NOTIFICATION

**Evidence of Disease**

**Notes**
Poliomyelitis

Specimen

Testing

Clinical Specimen

Serology

Paired Sera

Culture

NAT

Confirmatory Testing
WHO Western Pacific Poliovirus RRL

Trigger

Seroconversion or significant increase in poliovirus type specific antibody level

POSITIVE

Isolation of presumptive poliovirus

POSITIVE

Detection of poliovirus

POSITIVE

Validation

Assessment and Validation (Senior Staff Member)

Report A Generation

Report B Generation

NOT NOTIFIABLE

Evidence of Disease

Confirmed Laboratory Result
Suggestive Evidence of Disease
Definitive Evidence of Disease
ROUTINE NOTIFICATION

Notes
1 Seroconversion or significant increase in poliovirus type specific antibody level between acute and convalescent phase sera (tested in parallel at the same laboratory)
Psittacosis (Ornithosis)

Specimen

Clinical Specimen

Testing

Serology

Single Sample

High titre to Chlamydia psittaci by MIF \(^1\)

POSITIVE

Paired Sera

Seroconversion or fourfold rise in antibody titre to \(C.\) psittaci by MIF \(^1,2\)

POSITIVE

Culture

Isolation of \(C.\) psittaci

POSITIVE

NAT

Detection of \(C.\) psittaci

POSITIVE

Trigger

Validation

Assessment and Validation (Senior Staff Member)

Report Generation

Report A Generation

Confirmed Laboratory Result
Suggestive Evidence of Disease RTEUINE NOTIFICATION

Evidence of Disease

Confirmed Laboratory Result
Definitive Evidence of Disease
RTEUINE NOTIFICATION

Notes

1 In the absence of similar rises in antibody titre to other \(Chlamydia\) species
2 Seroconversion or fourfold or greater rise in MIF antibody titre to \(Chlamydia\) psittaci between acute and convalescent phase sera (tested in parallel at the same laboratory)
Q Fever

**Specimen**

- Clinical Specimen

**Testing**

- Serology
  - Single Sample
  - Paired Sera

- Detection of specific IgM
- Seroconversion or significant increase in antibody level to phase II antigen

- Culture
- Isolation of Coxiella burnetii by culture
- Detection of C. burnetii

**Trigger**

- ROUTINE NOTIFICATION
- Definitive Evidence of Disease

**Validation**

- Assessment and Validation (Senior Staff Member)

- ROUTINE NOTIFICATION
- Suggestive Evidence of Disease

**Report Generation**

- Report A
- Report B

**Evidence of Disease**

- Confirmed Laboratory Result
  - ROUTINE NOTIFICATION

**Notes**

1. Culture should not be attempted except where appropriate facilities and training exist
2. IgM EIA testing has low specificity, diagnosis needs to be confirmed by more definitive methods
3. Seroconversion or significant increase in antibody level to phase II antigen in paired sera (tested in parallel at the same laboratory)
Rubella

Specimen

Clinical Specimen

Testing

Serology

Culture

NAT

Supplementary Testing

Trigger

Single Sample

Paired Sera

Detection of rubella specific IgM

Seroconversion or significant increase in antibody level to rubella virus

Isolation of rubella virus

Detection of rubella virus

Seroconversion or significant increase in antibody level to rubella virus in paired sera (tested in parallel at the same laboratory)

Notes

1. Supplementary IgM testing by a different serological assay or an alternative method, such as haemagglutination inhibition (HAI) on sucrose density gradient IgM fractions, is recommended in pregnancy.

2. Seroconversion or significant increase in antibody level to rubella virus in paired sera (tested in parallel at the same laboratory).
Salmonella Infection

Specimen

Clinical Specimen

Testing

Culture

Supplementary Testing (Specialist Laboratory) ¹

Supplementary Testing (Specialist Laboratory) ¹

Trigger

Isolation of Salmonella sp.

POSITIVE

Validation

Assessment and Validation (Senior Staff Member)

Assessment and Validation (Senior Staff Member)

Assessment and Validation (Senior Staff Member)

Report Generation

Report A Generation

Report B Generation

Report C Generation

Evidence of Disease

Confirmed Laboratory Result
Definitive Evidence of Disease
PHONE/ROUTINE NOTIFICATION ²

Confirmed Laboratory Result
Definitive Evidence of Disease
PHONE/ROUTINE NOTIFICATION ²

Confirmed Laboratory Result
Definitive Evidence of Disease
PHONE/ROUTINE NOTIFICATION ²

Notes
1 All Salmonella isolates should be referred to a specialist laboratory for further characterisation
2 Typhoid is PHONE notifiable, Salmonella clusters and Salmonella paratyphi infections are PHONE notifiable, ROUTINE for all others
### Shiga Toxin Producing E. Coli

**Specimen**

- Clinical Specimen
  - Antigen Assay
    - Detection of Shiga toxin in diarrhoeal stool
      - POSITIVE
  - Culture
    - Isolation of Shiga toxin producing *Escherichia coli* (STEC)
      - POSITIVE
  - NAT
    - Detection of Shiga toxin genes in faeces
      - POSITIVE

**Testing**

- Supplementary Testing (Specialist Laboratory)¹
  - Characterisation of STEC serotype and virulence factors

**Trigger**

- Assessment and Validation (Senior Staff Member)

**Validation**

- Report A Generation
- Report B Generation
- Report C Generation

### Evidence of Disease

- Confirmed Laboratory Result
- Suggestive Evidence of Disease NOT NOTIFIABLE

- Confirmed Laboratory Result
- Definitive Evidence of Disease
- PHONE NOTIFICATION

- Confirmed Laboratory Result
- Definitive Evidence of Disease
- PHONE NOTIFICATION

### Notes

1. All STEC isolates be referred to a specialist laboratory for further characterisation
2. By a validated NAT able to identify specific toxin sequences
Shigellosis

Specimen

Clinical Specimen

Testing

Culture

Supplementary Testing (Specialist Laboratory) \(^1\)

Isolation of Shigella sp.

Positive

Trigger

Assessment and Validation (Senior Staff Member)

Characterisation of specific Shigella serotype and biotype

Validation

Assessment and Validation (Senior Staff Member)

Report A Generation

Report B Generation

Evidence of Disease

Confirmed Laboratory Result
Definitive Evidence of Disease
PHONE/ROUTINE NOTIFICATION \(^2\)

Notes

1. All Shigella isolates should be referred to a specialist laboratory for further characterisation
2. Clusters of Shigella are PHONE notifiable, ROUTINE for all others
Smallpox

Specimen

Clinical Specimen

Testing

Culture

NAT

Microscopy

Confirmatory Testing (VIDRL)

Trigger

Isolation of variola virus pending confirmation

Detection of variola virus pending confirmation

Detection of poxvirus by electron microscopy

Validation

Assessment and Validation (Senior Staff Member)

Assessment and Validation (Senior Staff Member)

Assessment and Validation (Senior Staff Member)

Report Generation

Report A Generation

Report B Generation

Report C Generation

Evidence of Disease

Confirmed Laboratory Result
Suggestive Evidence of Disease
PHONE NOTIFICATION

Confirmed Laboratory Result
Definitive Evidence of Disease
PHONE NOTIFICATION

Confirmed Laboratory Result
Not Indicative of Disease
PHONE NOTIFICATION

Notes
Local testing protocols for smallpox may be modified according to the level of biothreat according to States and Territories smallpox response plans and the National Guidelines for Smallpox Outbreak, Preparedness, Response and Management (Jan 2004)
Syphilis

Specimen

- Direct Microscopy
  - Microscopic evidence
    - POSITIVE
- NAT
  - Detection of Treponema pallidum
    - POSITIVE
- Serology
  - Single Sample
  - Results of BOTH tests
    - ONE Positive and ONE Negative
    - BOTH Positive

Testing

Trigger

Validation

- Assessment and Validation (Senior Staff Member)
- Assessment and Validation (Senior Staff Member)
- Assessment and Validation (Senior Staff Member)

Report Generation

- Report A Generation
- Report B Generation
- Report C Generation

Evidence of Disease

- Confirmed Laboratory Result Suggestive Evidence of Disease ROUTINE NOTIFICATION
- Confirmed Laboratory Result Definitive Evidence of Disease ROUTINE NOTIFICATION
- Confirmed Laboratory Result Definitive Evidence of Disease ROUTINE NOTIFICATION

Notes

1 Full report required, including reagin test
Tuberculosis

Specimen

Clinical Specimen

Direct Microscopy

NAT

Culture

Supplementary Testing (Specialist Laboratory)\(^1\)

Testing

Demonstration of characteristic acid fast bacilli\(^2\)

Detection of Mycobacterium tuberculosis complex

Isolation of M. tuberculosis complex

Characterisation of M. tuberculosis complex

Trigger

POSITIVE

POSITIVE

POSITIVE

Validation

Assessment and Validation (Senior Staff Member)

Assessment and Validation (Senior Staff Member)

Assessment and Validation (Senior Staff Member)

Culture Stream ONLY

Report Generation

Report A Generation

Report B Generation

Report C Generation

Evidence of Disease

Confirmed Laboratory Result
Suggestive Evidence of Disease
NOTIFIABLE

Confirmed Laboratory Result
Definitive Evidence of Disease
ROUTINE NOTIFICATION

Confirmed Laboratory Result
Definitive Evidence of Disease
ROUTINE NOTIFICATION

Notes

1 All Mycobacterium tuberculosis isolates (from the culture stream) should be referred to a specialist laboratory for further characterisation

2 Should be confirmed by culture
Tularaemia

**Specimen**
- Clinical Specimen
  - Culture
    - Isolation of presumptive *Francisella tularensis*
      - POSITIVE
  - NAT
    - Detection of *F. tularensis*
      - POSITIVE

**Testing**
- Confirmatory Testing (Specialist Laboratory)

**Trigger**
- POSITIVE
- NEGATIVE

**Validation**
- Assessment and Validation (Senior Staff Member)

**Report Generation**
- Report A
- Report B
- Report C
- Report D

**Evidence of Disease**
- Presumptive Laboratory Result Suggestive Evidence of Disease PHONE NOTIFICATION
- Confirmed Laboratory Result Definitive Evidence of Disease PHONE NOTIFICATION
- Confirmed Laboratory Result Not Indicative of Disease PHONE NOTIFICATION

**Notes**
Typhus

Specimen

Clinical Specimen

Testing

Serology

Single Sample

Paired Sera

Trigger

Detection of Rickettsia prowazekii antibody

POSITIVE

Serconversion or significant increase in antibody level to R. prowazekii

POSITIVE

Validation

Assessment and Validation (Senior Staff Member)

Report A Generation

Assessment and Validation (Senior Staff Member)

Report B Generation

Report Generation

Evidence of Disease

Confirmed Laboratory Result Suggestive Evidence of Disease PHONE NOTIFICATION

CONFIRMED LABORATORY RESULT DEFINITIVE EVIDENCE OF DISEASE PHONE NOTIFICATION

Notes 1 Seroconversion or significant increase in antibody level to R. prowazekii between acute and convalescent phase sera (tested in parallel at the same laboratory)
Viral Haemorrhagic Fevers

Specimen
- Clinical Specimen
  - Culture
  - Serology
  - NAT
    - Single Sample
    - Paired Sera

Testing
- Trigger
  - Isolation of specific virus
    - POSITIVE
  - Detection of IgM to specific virus
    - POSITIVE
  - Seroconversion or significant increase in IgG antibody level to specific virus
  - Detection of specific virus
    - POSITIVE

Validation
- Assessment and Validation (Senior Staff Member)
  - Report A Generation
  - Report B Generation
  - Report C Generation

Report Generation
- Phone Notification

Evidence of Disease
- Confirmed Laboratory Result Suggestive Evidence of Disease
- Confirmed Laboratory Result Definitive Evidence of Disease
- Confirmed Laboratory Result Not Indicative of Disease

Notes

NSW Health Laboratory Notification Flowcharts (Version 1.3)
Yellow Fever

Testing

- Serology
  - Single Sample
  - Paired Sera
  - Detection of yellow fever specific IgM
  - Seroconversion or a fourfold rise in titre to yellow fever virus

- Culture
  - Isolation of yellow fever virus

- Antigen Assay
  - Detection of yellow fever virus antigen

- NAT
  - Detection of yellow fever virus

Trigger

- Confirmation of disease
  - Seroconversion or fourfold rise in titre to yellow fever virus
  - Detection of yellow fever virus

Validation

- Assessment and Validation (Senior Staff Member)

Report Generation

- Report A Generation
- Report B Generation

Evidence of Disease

- Confirmed Laboratory Result
  - Suggestive Evidence of Disease
  - PHONE NOTIFICATION
- Confirmed Laboratory Result
  - Definitive Evidence of Disease
  - PHONE NOTIFICATION

Notes
1 Detected in the absence of IgM to other flaviviruses
2 Seroconversion or fourfold rise in specific IgM or IgG titres to yellow fever virus between acute and convalescent phase sera (tested in parallel at the same laboratory)
3 In tissues by immunohistochemistry