## SOP number C12
### Single case of Legionnaires’ disease

**Date Ratified:** January 2013  
**Review Date:** January 2015

#### Details of case
Call from microbiologist or clinician about a case of legionella, presumptive or confirmed (see supporting information). Obtain relevant details

#### Initial Actions
- Ensure completion of the national Legionnaires' disease questionnaire to identify any risk factors (include all patient movements during last 14 days)
- This can be done by speaking to the patient, relative or hospital doctor or via the EHO depending on the circumstances of the case.
- Ask clinicians to take sputum sample from patient if possible.
- Check for any links to other cases on the NSC database
- Inform relevant Environmental Health Department (EHD). They may need to investigate to exclude any environmental risk factors.
- Discuss the need to take environmental samples and any other actions with responsible organisation e.g. EHD, Health & Safety Executive (HSE)
- If the case has stayed at a hotel accommodation in NSC ensure that the Hotel owner/manager receives a copy of the “Information for Hoteliers” Factsheet, which includes the 14 point checklist, either directly or via EHO

#### Risk Assessment
- Confirm that patient fulfils case definition with microbiologist or clinician. See supporting information for case definitions.
- Some cases may be in an intensive care unit, which can make accurate information gathering difficult. Assess each situation and consider the need to re-interview case/family at a later date for further clarification.
- Assess any potential sources and populations exposed.

#### Discussion Alert
- Consider the need to investigate domestic premises (see supporting information).
- If likelihood of hospital acquired infection discuss further actions with CCDC
- If CfI identify two cases associated with the same accommodation in NSC area within 2 years, they will contact HPU to request completion of Investigating Reporting Forms A & B.

#### Communications
- Factsheet is available for family/household members.
- Email copy of questionnaire to the Legionella Section at Health Protection Services, Colindale on legionella@hpa.org.uk
- Contact HPA regional comms team if case is sensitive e.g. death

#### Records
- Record as a case on HPZone
- Use the “post” function in HPZone to make the Regional Epidemiology Unit Information Officer (Ruth Roach) aware of the case
- Ensure all electronic and/or paper records comply with NSC records management protocol.

#### Follow up
- Confirm any laboratory results
- Follow up results of any environmental sampling
- Inform patient/family member of result of investigation as appropriate

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Diagnosis of Legionnaires’ Disease
Culture of specimens (lower respiratory tract secretions, e.g. sputum and bronchoscopy samples) and isolation of legionella is the gold standard. If legionella are isolated from clinical and environmental samples, it also enables typing to determine whether they are the same strains.

Detection of antigen in urine combines reasonable sensitivity and high specificity with rapid results. However, it is only sensitive for L. pneumophila serogroup 1.

Estimation of serum antibody levels can be undertaken, but not for rapid diagnosis.

Case definitions used by the National Surveillance Scheme for Legionnaires’ Disease

Confirmed case:
A clinical diagnosis of pneumonia with laboratory evidence of one or more of the following:

- Isolation (culture) of legionella species from clinical specimens.
- Seroconversion (a four-fold or greater increase in titre) determined using a validated indirect immunofluorescent antibody test (IFAT) incorporating a monovalent L. pneumophila serogroup 1 antigen.
- The presence of L. pneumophila urinary antigen determined using validated reagentskits.

Presumptive case:
A clinical diagnosis of pneumonia with laboratory evidence of one or more of the following:

- A single high titre of 128 using IFAT as above (or a single titre of 64 in an outbreak).
- A positive direct fluorescence (DFA) on a clinical specimen using validated monoclonal antibodies (also referred to as a positive result by Direct Immunofluorescence [DIF]).

Hospital acquired case:
The following classifications of nosocomial Legionnaires’ disease are used for surveillance purposes:

1. **Definite nosocomial** – Legionnaires’ disease in a person who was in hospital for all ten days before the onset of symptoms

2. **Probable nosocomial** – Legionnaires’ disease in a person who was in hospital for between one and nine of the ten days before the onset of symptoms and either became ill in a hospital associated with one or more previous cases of Legionnaires’ disease, or yielded an isolate that was indistinguishable (by monoclonal antibody [mAb] subgrouping or by molecular typing methods) from isolates obtained from the hospital water system at about the same time.

3. **Possible nosocomial** – Legionnaires’ disease in a person who was in hospital for between one and nine of the ten days before the onset of symptoms in a hospital not previously known to be associated with any case of Legionnaires’ disease and where no microbiological link has been established between the infection and the hospital.

Criteria for considering investigation of domestic premises:

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<tr>
<th>Rationale for testing</th>
<th>Justification/evidence</th>
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| Eliminating the house as a source of infection in an individual case for epidemiological investigation purposes only. | • House unoccupied for several days before illness (may be associated with travel)  
• Problems relating to maintenance of the water system  
• Recent plumbing works  
• House not been used for long periods of time. |
| Identifying a continuing risk of exposure in situations where there is reason to believe that another occupant of the property might be at increased risk of developing illness. | • Other households occupants with predisposing risk factors: smoker, COPD, immunosuppression  
• Potential for reinfection |
| Evidence of Legionella-like illness in the previous six months amongst occupants of the same house. | • Potential for an outbreak or continued exposure of occupants with previous illness  
• Potential for reinfection |
| Evidence that sampling of water system would contribute information to inform prevention and control of legionellosis in general terms and which could not otherwise be obtained. | • For research or surveillance purposes |