

<b>Dept of Medical Microbiology, Division of Clinical Microbiology, Galway University Hospitals</b>		
<b>NSSLRL Users Guide</b>	<b>Version: 3.3</b>	<b>Ref: NSRLLP001</b>
<b>Prepared by: Niall De Lappe</b>	<b>Issue Date: 28/10/2011</b>	<b>Page 1 of 7</b>

### **CURRENT VERSION AMENDMENTS**

Each Policy and Procedure has an individual record of amendments. The amendments for the current version are listed below.

<b>Amendment Number/ Date</b>	<b>Version no. Discarded</b>	<b>Version no. Issued</b>	<b>Page</b>	<b>Section(s) involved</b>	<b>Amendment</b>
6/28.10.11	3.2	3.3	1	Title	Updated title to National <i>Salmonella</i> , <i>Shigella</i> & <i>Listeria</i> Reference Laboratory (NSSLRL)
			1	Contact details	Deleted Juliette Ward and Geraldine Doran's e-mail addresses
			2	Role of NSSLRL	Added in details about <i>Shigella</i> and <i>Listeria</i>
			5	Services offered	Ninety-five percent of samples will be reported within 15 days
			6	Minimum Requirements	The patient name and referring lab number and/or date of birth must be on both the form and side of slope

Change Control No.       MIC025/11

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# National *Salmonella, Shigella & Listeria* Reference Laboratory Users Guide

## Contact details

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## Address

National *Salmonella, Shigella & Listeria* Reference Laboratory  
 Department of Medical Microbiology  
 University Hospital Galway  
 Galway

## Role of NSSLRL and relationships with other Agencies

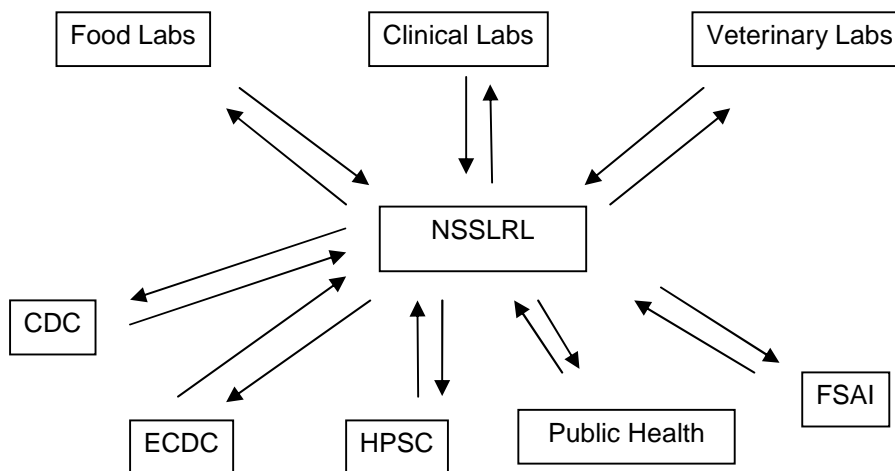


Fig.1 NSSLRL Organisational Chart

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Primary clinical laboratories identify *Salmonella*, *Shigella* and *Listeria* to species level and determine the isolates susceptibility to those antimicrobial agents immediately relevant to patient treatment. This provides immediate information to the clinician for treating an individual patient.

Isolates are referred to the NSSLRL for confirmation and for subtyping. The NSSLRL confirms the result of the clinical laboratory and may detect low-level antimicrobial resistance or resistance to less commonly used antimicrobial agents by reference methods.

The NSSLRL also adds a national public health dimension to the work of the clinical laboratories by recognition and confirmation of links between individual cases of infection, even where outbreaks are widely dispersed. This information is primarily to guide public health intervention to recognise and control transmission of infection. Trends of *Salmonella* infections in Ireland can also be more closely followed. Typing of isolates from food and animal sources help in tracing the sources of infection.

The NSSLRL works in tandem with numerous agencies in protecting public health. The laboratory which identifies the pathogen and any clinician involved in the care of the patient is obliged to notify the case to Public Health (PH). The 9 PH departments in the country regularly review surveillance data locally to determine if incidence is increased or if trends are occurring in age groups, areas and concerns are discussed with the NSSLRL. PH contacts the case to try and determine the source of infection and give advice to prevent spread of infection to others. The above actions may be carried out by medical staff from PH with the assistance of Environmental Health officers. Stool specimens may subsequently be submitted to clinical laboratories to determine if contacts of the cases are also infected (outbreak) and/ or food (and occasionally water) samples may be sent to a food and water laboratory to try to determine a source of infection. If a relevant pathogen is isolated in those laboratories the isolates will be sent to the NSSLRL for comparison with the isolate from the first case or outbreak. As part of the investigation a questionnaire is administered to investigate possible risk-factors (contact with animals, occupation etc), travel history and recent food history. When more than one case is detected cross-comparison of

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questionnaires may allow a putative source to be identified through statistical analysis.

The Health Protection Surveillance Centre (HPSC) looks at national trends. The two tier surveillance ensures local trends are picked up by PH and that national trends can be detected by HPSC. When major outbreaks occur an outbreak control team (OCT) may be set up at the discretion of the Director of Public Health (regional level) or by the Health Protection Surveillance Centre (National Level). Staff of NSSLRL are consulted regarding the need for an OCT and the consultant microbiologist from NSSLRL (and sometimes other staff of NSSLRL) is involved as a member of the OCT to guide the interpretation of the microbiology results. Other agencies involved include HPSC, PH and Food Safety Authority of Ireland (FSAI).

The NSSLRL and HPSC liase with the European Centre for Disease Control (ECDC) to help identify and control international dimensions to outbreaks. This involves sharing data, countries issuing outbreak alerts and monthly outbreak summaries.

### **Services offered**

The NSSLRL only performs analysis on isolates received on nutrient agar bijoux. The NSSLRL does not test primary samples, e.g. faeces, blood or food, therefore results are qualitative and not quantitative.

The NSSLRL types isolates from food and animal sources as well as those of human origin. The primary role of the NSSLRL is to protect human health. Clients should be aware that if animal or food isolates are similar to those from sporadic or outbreak-associated human isolates this information will be shared with relevant bodies, e.g. Food Safety Authority of Ireland (FSAI), Health Protection Surveillance Centre (HPSC) and European Centre for Disease Control (ECDC) when it is necessary to do so to protect public health. In general users will be informed in advance of sharing the source laboratory information with these agencies. These bodies may then require further information from the client laboratories.

If users wish to use data from the NSSLRL in publications they must contact the laboratory director at [martin.cormican@hse.ie](mailto:martin.cormican@hse.ie) or in his absence one of the scientific staff.

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- Salmonella* - Serotyping and antimicrobial susceptibility testing (AST)
- Phage typing of *S. Enteritidis* and *S. Typhimurium*
- MLVA analysis of *S. Typhimurium*
- Pulsed field gel electrophoresis (PFGE) when appropriate
- Shigella* - Serotyping
- AST
- PFGE
- Listeria* - Biochemical identification and limited serotyping on human clinical isolates or isolates from official food laboratories.
- PFGE

Ninety-five percent of samples will be reported within 15 days and specimens that are identified by telephone call as urgent will be prioritized. The average turnaround time for *Salmonella* typing is approximately 5 days.

### **Opening times**

Mon – Fri 9:00am- 5:00pm (lunch from 1:00 – 2:00pm)

### **Out of hours work**

This is performed at the discretion of the Consultant Microbiologist or the laboratory scientific staff on urgent samples, e.g. during an outbreak investigation.

### **Specimen Rejection Policy**

Specimens sent to the NSSLRL will be rejected if:

- isolates are sent on agar plates, plastic universals or large bijoux
- specimens contain a mixed bacterial culture
- specimen slope is broken
- specimen form and/or slope are unlabelled, mismatched or incomplete
- transportation of samples to the NSSLRL is not followed correctly, i.e.
  - slopes not enclosed in a crushproof container
  - external packaging not labeled correctly

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- if for any other reason the specimen is not in a safe condition for processing and/or can not be clearly identified.

### **Minimum requirements for completion of NSSLRL request forms**

NSSLRL request forms must be completed in legible handwriting or typing and all details must be entered.

- Human isolates
  - The patient name and referring lab number and/or date of birth must be on both the form and side of slope.
  - If there is reason to suspect the isolate could be a *Salmonella* Typhi or *Salmonella* Paratyphi, e.g. patient from an endemic country, this must be noted on the form.
  - If the isolate is suspected to be part of an outbreak this must be noted on the form.
  
- Non-human isolates
  - The referring lab number and isolate source must be on both the form and side of slope
  - Isolate source must be clearly stated, e.g. pork, chicken, beef, otherwise a report will not be issued.

### **Transportation of samples**

Slopes must be packaged and transported according to IATA regulations.

- Grow isolate overnight on a small nutrient agar slope and remove any fluid accumulating at the bottom of the slope using a sterile Pasteur pipette.
- Place slope(s) into an inner crushproof hard plastic container and place this into a cardboard box or envelope.
- Label with an emergency contact number for the sender and an Infectious substance label.
- Label box with UN3373 and add sticker with “BIOLOGICAL SUBSTANCE, CATEGORY B”.

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- This can be then sent to the Reference laboratory via a courier company, e.g. Hays DX (01-8421088), Capital Freight (01-8852064), Claymon (1800-252967) or Nightline couriers (091-795100).
- A number of slopes may be sent in each crush-proof container but each slope must be individually wrapped in an adsorbent material to prevent breakage during transit.

### **Retention times**

Additional examinations may be requested during specimen storage time by telephoning the NSSLRL. Agar slopes (apart from CL3 isolates) are kept for a minimum of 6 weeks while isolates are stored at -25°C for 5 years.

### **Analytical failures**

In the event of a specimen being unsuitable for processing or where there is an analytical failure, the laboratory will be informed by phone or in writing.

### **Discussion of reports**

Please contact Prof. M.Cormican at [martin.cormican@hse.ie](mailto:martin.cormican@hse.ie), Dr. Deirbhile Keady at [deirbhile.keady@hse.ie](mailto:deirbhile.keady@hse.ie), Dr.Una NiRiain at [una.niriain@hse.ie](mailto:una.niriain@hse.ie), Dr. Eithne McCarthy at [eithne.mccarthy@hse.ie](mailto:eithne.mccarthy@hse.ie) or Dr. Teck Wee Boo at [teck.boo@mailn.hse.ie](mailto:teck.boo@mailn.hse.ie).

**Note: If users have a complaint or feel that any part of the service is unsatisfactory or could be improved on in any way they should contact the laboratory. A complaints form is available to download from the NSSLRL website [www.nuigalway.ie/salmonella\\_lab/](http://www.nuigalway.ie/salmonella_lab/)**