



Public Health
England

2013 – 2014 Report of UK National Reference Laboratory for Food Microbiology

Activities for *Listeria monocytogenes*, coagulase-positive staphylococci, *Escherichia coli* (including VTEC), campylobacter, salmonella and antimicrobial resistance

September 2013 to March 2014

About Public Health England

Public Health England's mission is to protect and improve the nation's health and to address inequalities through working with national and local government, the NHS, industry and the voluntary and community sector. PHE is an operationally autonomous executive agency of the Department of Health.

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Introduction

Public Health England (PHE; a successor organisation to the Health Protection Agency) was awarded the contract to provide the service of the UK's National Reference Laboratory (NRL) for food microbiology by UK's Competent Authority, Foods Standards Agency (FSA) under EU regulation 882/2004 for the following work areas: *Listeria monocytogenes*, coagulase positive staphylococci, *Escherichia coli* (incl. VTEC), campylobacter, salmonella and antimicrobial resistance.

This report summarises the activities of the NRL between September 2013 and March 2014, covering secretariat services, advice and representation within the UK/EU and method development, audits and ring trials as part of the core functions listed in the contract.

Core Function One: Secretariat services

Establish NRL Web Presence

Whilst the Health Protection Agency (HPA) web pages remain live and linked to Public Health England, a dedicated area was identified, and the UK National Reference Laboratory for Food Microbiology established a page in September 2013. Various documents and news items have been subsequently loaded and there are plans to expand the NRL web presence by creating separate pages for each of the activities; *Listeria monocytogenes*, coagulase positive staphylococci, *Escherichia coli* (incl. VTEC), campylobacter, salmonella and antimicrobial resistance.

The web-site address is

<http://www.hpa.org.uk/ProductsServices/MicrobiologyPathology/SpecialistMicrobiologyServices/FoodWaterEnvironmentalMicrobiologyServices/NationalReferenceLaboratoryForFoodMicrobiology/>. As this is a long and complicated address, we have been advising OCLs and other stakeholders to use a search engine and type 'fwe nrl', as the NRL web page is normally the top hit.

Related to Core Function(s): 1.1, 1.3, 1.5.

Establish food methods archive on NRL website

It is PHE policy to have official documents placed on the web-site to be approved internally and corporate-branded, via the Gateway process. Therefore, the PHE Standard Methods for internal use by the PHE OCLs have to be re-formatted for external use, whilst retaining the content. This has been completed for one method to initially ensure any problems are resolved; 'Enumeration of coagulase-positive staphylococci (*Staphylococcus aureus* and other species), F12'.

Several other Standard Methods are in the Gateway process, and over time, all the methods that are related to the NRL activities will be available on the NRL webpage. In the interim, food methods written primarily for the PHE FWEMN are available upon request.

Related to Core Function(s): 1.5, 2.4, 2.7

Preparation of 2014 NRL meeting (OCL user day)

A face-to-face meeting will be held on the 23rd April to inform the OCLs of the NRL's activities and update them on the EURL's work programmes. Preparations included drafting an agenda, confirming speaker's attendance and inviting OCLs and other stakeholders. A short report will be made available once the user day has taken place.

Related to Core Function(s): 1.1, 1.3, 1.4, 2.5, 2.6

Provide monthly reports on NRL activities

Monthly reports have been submitted to the FSA since April 2013 (see Annex). These are sent electronically to FSA, along with an NRL document inventory, which is updated on a monthly basis (see Annex). In addition, NRL representatives met with FSA quarterly (03/09/2013, 02/12/13, 17/03/14) to discuss progress made, difficulties met, and future activities.

Related to Core Function: 1.4

Engage with the Scottish Reference Laboratories for *E.coli* and Salmonella

As the EU officially recognises the UK as one Member State, it is important to notify the Scottish Reference Centres for *E.coli* and Salmonella of any news or activities arising from the EURLs. The UK NRL has therefore forwarded any important information

regarding EURL meetings, training or newsletters to the laboratories in Scotland. In addition, a teleconference was set up in October 2013 to establish more efficient information flows and uniform communication to OCLs throughout the UK on availability of reference facilities.

Related to Core Function(s): 1.1, 1.3, 1.4

Core Function Two: Advice and representation within the UK/EU

Provide appropriate training for scientific post

The scientist has continued to receive on-the-job training, including laboratory training, attendance of meetings and support from PHE staff. Since September 2013, they have also attended one practical EURL training course and the antimicrobial resistance EURL workshop, to understand the EURL activities and functions, and interact with the other NRL representatives within the EU. Additional meetings attended include a Food & Water MSc Module at PHE – Colindale.

Related to Core Function(s): 2.2, 2.5, 3.1

Produce a schedule of relevant EURL meetings

A running schedule of the *Listeria monocytogenes*, coagulase-positive staphylococci, *Escherichia coli* (incl. VTEC), campylobacter, salmonella and antimicrobial resistance EURL meetings are incorporated into the monthly reports submitted to the FSA. As agendas for the meetings are received, these are forwarded on to the FSA (see Annex).

Related to Core Function(s): 1.4, 2.2

Representation at relevant EURL meetings and prepare meeting reports

There has been at least one UK NRL representative attending both of the two relevant EURL meetings in the seven months of this report (see Table 1; names in red are NRL/PHE representatives). Individual meeting reports have been submitted to FSA within two months after the meeting (see Annex).

In addition, presentations from the UK were made at both the campylobacter and *E.coli* meetings, entitled 'Study of Campylobacter counts on retail chicken in the UK' and 'Sequencing results of the VTEC O157 typing phages', respectively.

Table 1. List of EURL meetings, September 2013 to March 2014

EURL Meeting	Date: From	Date: To	Location	EURL funded	NRL funded	Guest/other
Campylobacter	19/09/2013	20/09/2013	Aberdeen, Scotland	Frieda Jorgensen	Andy Lawson	
<i>E. coli</i>	10/10/2013	11/10/2013	Rome, Italy	Claire Jenkins		Lauren Cowley

Related to Core Function(s): 1.1, 2.2, 2.3

Other activities

As part of the 2013 OCL audit, many OCLs requested a list of reference facilities in order to submit isolates or food samples for further confirmation or characterisation. This is currently in draft and awaiting inclusion of charging policies and advice to Scottish OCLs, as submission to one reference laboratory is dependent on the organism or test. The NRL envisages this will become available to OCLs in 2014.

The European Regulation 882/2004, which governs official controls in the food and agriculture industry, is currently under review. The NRL sent comments to FSA (the UK's Competent Authority) regarding the changes in autumn 2013, to submit to the European Commission. It is envisaged that more consultations to this Regulation will be proposed in 2014, where NRL will submit comments, where necessary.

Core Function Three: Method development, audits and ring trials

Participate in EURL ring trials and other initiatives as UK-NRL

Between September 2013 and February 2014, there have been ten ring trial distributions from all six EURLs, covering various aspects of the work of OCLs and

Reference Laboratories, including detection, enumeration, typing and antimicrobial resistance. Table 2 lists these activities, and a summary of results and remedial action is in the Annex.

In addition, there have been numerous questionnaires, surveys and information from the EURLs. These are described below by work activity.

Listeria monocytogenes

In November 2013, the EURL requested comments from the NRLs on a revised version of the “EURL Lm Technical Guidance Document for conducting shelf-life studies on *Listeria monocytogenes* in refrigerated ready-to-eat foods”. The UK NRL did not have any comments to submit and the EURL distributed version 3 of the above document in February 2014 (see Annex). In addition, the EURL circulated a document in December 2013 detailing how the strain panel for challenge testing was selected (see Annex).

The EURL launched an online survey for NRLs to complete in January 2014, regarding numbers of listeria strains from humans, food and the environment, the surveillance systems used, what typing methods are used and the future of whole genome sequencing in their countries. The UK’s response was captured after submission and can be seen in the Annex.

In March 2014, the EURL sent a questionnaire to all NRLs related to the use of the EURL Lm “Guidance document to evaluate the competence of laboratories implementing challenge tests on the growth potential of *Listeria monocytogenes* in ready-to-eat foods” (Version 0 – 03/02/2012). This document complements the Technical Guidance document (for laboratories), as it advises Food Business Operators (FBOs) and Competent Authorities what to expect from those laboratories that perform challenge testing. As this document was circulated a couple of years ago, the EURL wanted to gather information on its usefulness and circulation to Competent Authorities, OCLs and other institutes. The UK replied within the stated deadline, and verified that it was circulated within the UK and is recognised, but not used by FSA (the UK’s food Competent Authority), as simpler guidance is available from Campden BRI (see Annex).

Coagulase-positive staphylococci

Following the UK NRLs performance of the CPS enterotoxin testing PT (see Table 2), the EURL requested more information regarding when the UK NRL were going to establish the European Screening Method (ESM) and whether any OCLs perform the same method. The UK replied with the following:

'Due to the low numbers of food submitted requesting for CPS toxin detection, we are unable to maintain competence and proficiency. Therefore a laboratory outside the UK but within the EU has been identified, to process these samples on behalf of the UK. If you require any further information (eg; exact number of isolates referred), please contact us; fwe.nrl@phe.gov.uk).' – taken from the discrepancies recorded form submitted to the EURL.

'We asked our OCLs (N=16) if they performed CPS toxin detection in food, and we received replies from 14 OCLs:

- 9 OCLs refer their food to the NRL (PHE-Colindale)
- 1 OCL does perform toxin detection, but uses the 3M Tecra Elisa kit
 - Another OCL refers their food to the above OCL, and they are both part of a private consortium
- 1 other OCL refers their food to a different OCL, but that lab would refer it on to PHE – Colindale (they are one of the nine above)
- the other 2 OCLs do not receive food for CPS toxin detection, and therefore do not perform or refer any food

Data concerning the numbers of food received by PHE Colindale from 2006 – 2012 (7 year period) are as follows:

- eight food samples requested CPS enterotoxin detection
 - In five of these enterotoxin was detected
- the last food sample received for toxin testing was in July 2009
 - Therefore no testing performed on food samples for past 3 ½ years

So based on the number of laboratories not performing CPS toxin detection, and the low numbers of food samples received, it is increasingly difficult to retain expertise and competence for this test.' – taken from email correspondence to the EURL.

Table 2. NRL participation in EURL ring trials, September 2013 to March 2014

Month Received	Organism – Test ¹	Reference	Matrix/Pure culture	UK Recipient	Comments
September 2013	Salmonella– detection	PT VI	Minced chicken	FWE London	Fulfilled criteria of good performance
October 2013	Listeria – enumeration	ILPT Lm 2013	Diced poultry	FWE Birmingham	No incorrect results but excluded from statistical analysis as the CAMP test was not performed
October 2013	Salmonella – AMR	15 th	Pure cultures	GBRU	No deviations from intended – excellent performance
October 2013	Campylobacter - AMR	15 th	Pure cultures	GBRU	8.3% deviation – since 2014, achieving more reproducible results
November 2013	VTEC – detection	PT12	Sprouted seeds	FWE Porton & Preston	Porton - No deviations – excellent performance Preston – 14 penalty points as the other virulence gene assays were not performed; however, satisfactory as detected and isolated the VTEC strain
November 2013	Salmonella – typing	18 th	Pure cultures	GBRU	Graded good performance for serotyping
November 2013	CPS - enterotoxin detect	EILA/Anses LSAI/CAT-BAC/2013/03	Cheese & roast chicken	GBRU	Excluded from analysis as the European Screening Method was not followed; however, all results were incorrect
November 2013	CPS – enumeration	EILA/Anses LSAI/LR UE CPS/EDB/2013/01	Powdered infant formula	FWE Porton	Achieved good performance, with low k and z scores
March 2014	Campylobacter – enumeration and detection	PT13	Minced meat	FWE Porton	Results not analysed
March 2014	Campy – detection & characterisation	PT14	Milk	FWE Porton	Results not analysed

¹ AMR = Antimicrobial resistance testing, VTEC = Verocytotoxin-producing *E. coli*, CPS = Coagulase-positive staphylococci

Escherichia coli (including VTEC)

In December 2013, the EURL sent the NRLs a questionnaire requesting information on their molecular typing expertise, including numbers of VTEC strains from food, animals and the environment, and current and future use of particular typing methods. To ensure a representative response from the UK, the NRL contacted the Scottish *E. coli* Reference Laboratory (SERL) in order to make joint response. Therefore the UK replied with both activities from PHE and SERL, which can be seen in the Annex.

The EURL invited applications to attend training at the EURL in Rome, Italy, ranging in direct detection of VTEC in food to molecular typing using PFGE. The UK submitted four applications in January 2014, and in February the EURL told the NRL that one applicant was successful to be trained in the 'Identification of the different groups of pathogenic *E. coli*' in Autumn 2014. This will support the NRL in expanding the repertoire of assays to capture other important *E. coli* causing chronic disease.

In February, the EURL also offered bioinformatics training using the software BioNumerics. This was predominantly for the analysis of PFGE, which, at the UK NRL, has now been superseded by MLVA and in the future, whole genome sequencing. Furthermore, MLVA is analysed using BioNumerics, which PHE has many years of utilising. Therefore, the NRL did not apply for training. In addition, the EURL provides news updates from events around the world, including detection of VTEC O121 in flour in the United States.

Salmonella

No additional information was requested from the NRLs in the seven month period. However, two newsletters were received by email link, informing NRLs of the EURL activities, including proficiency test and workshop preparations and a literature search of relevant salmonella scientific papers. In addition:

- the October edition included the workplan for 2014
- the December edition detailed the EURL involvement in various ISO/CEN work groups

Both newsletters can be found in the Annex.

Antimicrobial resistance

With the advent of the monitoring and reporting of antimicrobial resistance in zoonotic bacteria (Decision 2013/652/13), the EURL initiated a source of custom-made microbroth panels, in line with the stipulated antimicrobials in the Decision. A set of microbroth plates was agreed by interested NRLs and produced by TREK. These are now available to purchase either directly from TREK or through an approved supplier; however, the UK NRL for food microbiology will not require these, as agar dilution, the gold standard for MIC testing, is performed over broth dilution.

The NRLs received the annual EURL newsletter in December, which contains information regarding tentative breakpoint for quinopristin/dafopristin in *Enterococcus faecium*, a phenotypic/genotypic comparison of resistance genes, the new EU Decision and the tentative epidemiological cut-off for colistin in *Salmonella spp* (see Annex). In addition, the EURL informed the NRLs of a seminar in Lisbon in the use of antimicrobials in animal production in October 2013 (UK NRL did not attend).

Related to Core Function(s): 3.1

OCL participation in the European Food Microbiology Legislation Proficiency Testing Scheme

The 2013 OCL audit indicated that although all laboratories participate in proficiency testing (PT) schemes, no single scheme is being used by all laboratories which are relevant to the NRL responsibilities under the EU regulation 882/2004. Therefore, the NRL identified one scheme that is tailored for laboratories that examine foods for compliance with Regulation (EC) 2073/2005 and subsequent amendments, and which is provided by Public Health England (PHE). The European Food Microbiology Legislation (EFL) Scheme assesses participants' ability to test and interpret laboratory results in accordance with EU food safety and process hygiene criteria. In addition, this scheme is accredited by the United Kingdom Accreditation Service (UKAS) to the international standard ISO 17043: 2010 'Conformity assessment – General requirement for proficiency testing' and will allow for direct comparison of performance between the OCLs. The scheme comprises of four distributions with three samples each year and further details can be found at this link:

<http://www.hpa.org.uk/ProductsServices/MicrobiologyPathology/ExternalQualityAssessmentProficiencyTesting/EQAPTForFoodWaterAndEnvironmentalMicrobiology/FoodLawScheme/>

The NRL therefore invited all OCLs to register to the above scheme, as recommended by the FSA, where the registration costs would be covered by the NRL. Although it is not mandatory to join the scheme, the NRL stressed that participation of all OCLs will provide overall assurance of laboratory competence, identify areas of weakness and OCLs will have access to expert advice and support from the Food and Environmental Proficiency Testing Unit (FEPTU) and/or the NRL. Twelve OCLs registered to the EFL scheme for the 2014 – 15 distributions (see Annex for calendar).

The EFL scheme is organised completely independently from the NRL and participant's results will remain confidential and no individual laboratory will be identifiable to the FSA or the NRL, unless permission from the participant is granted. Consolidated results will be available for all laboratories and if persistent poor performance is identified, the individual laboratory will be invited to seek assistance from the NRL. In addition, individual performance data will be helpful to support future compliance with the ISO 17025 standard and UKAS accreditation.

Related to Core Function(s): 1.2, 3.5

Liaise with AHVLA to harmonise existing antimicrobial resistance testing

In order to re-form close links with AHVLA, a second meeting was held in October 2013 at PHE – Colindale. This was a presentation-based meeting, focusing on Salmonella epidemiology and whole genome sequencing (WGS) in the morning, and Campylobacter programmes, the use of MALDI, and risk ranking of food/pathogen combinations in the afternoon (see Annex).

Key points from the meeting include:

- to complement PHE and AHVLA activities through joint studies, possibly funded externally
- to create better links between PHE and AHVLA in order to have real-time exchange of clinical and veterinary outbreaks/investigations, to reduce infection and enhance control management

- although WGS correlates well with MLST and can identify other useful targets, there needs to be harmonisation of genome analysis within the EU to enable to compare data confidently between countries
- future Campylobacter studies include prospective WGS isolates from chickens (AHVLA) and enumeration of 4000 retail chickens in 2014 (PHE)

It was hoped to arrange a third joint meeting at AHVLA before March 2014. However, due to organisation restructuring, this has been deferred until the summer 2014. Topics such as more Campylobacter, informatics, transfer of data and mapping processes, lessons learnt exercises.

Related to Core Function(s): 1.1, 3.2

Support the implementation of the amendment to Regulation 2073/2005 for detection of VTEC in sprouted seeds

The UK NRL has continued to support the OCLs in this significant change in the Microbiological Criteria Regulation (EU Regulations 208-211/2013) since its implementation on 1 July 2013. Various activities and initiatives have involved the UK NRL, which are listed below.

At the time of writing, at least two OCLs have the capacity to perform detection of VTEC by real-time PCR, and both are hoping to gain accreditation in these tests by the summer 2014. The NRL has been informed of at least one other OCL, based in Scotland, which has applied for Schedule 5 registration. In addition, the PHE OCLs have been involved in both routine testing of beansprouts and outbreak investigations of watercress.

VTEC teleconference meetings

There have been eight teleconference meetings involving the NRL and other PHE OCLs, in order to discuss and enact the practical arrangements needed to apply the new regulations. Topics have included new drafts of the relevant PHE Standards, production of risk assessments and reporting algorithms, acquisition of reference materials, validation and performance data, and preparation of the UK VTEC practical workshop (see below item).

Preparation of documents

The NRL has drafted two SOP methods for guidance for all OCLs. The first SOP involves screening the *vtx1*, *vtx2* and *eae* genes from all matrices, including beansprouts, seeds intended for sprouting and irrigation water and the second SOP details the further serogroup and isolation steps to confirm presence of VTEC. These are now at a final editing stage and once approved by the FWE PHE Methods Group, they can be Gateway-approved and deposited on the NRL web-page for OCL access. A risk assessment has also been produced and can be available to OCLs upon request.

EURL training

In September 2013, two PHE personnel (including the NRL Scientist) visited the VTEC EURL to receive practical training for “Detection of VTEC in food by ISO TS 13136:2012” at their laboratory in Rome, Italy (Istituto Superiore di Sanita). The three-day course began with the initial enrichment of food samples and concluded with confirmation of suspect VTEC colonies (see Annex for program).

UK VTEC practical workshop

Following the training received at the VTEC EURL, the NRL hosted its first workshop for the detection of Shiga toxin-producing *Escherichia coli* (STEC) in food using polymerase chain reaction (PCR) on 31 October to 1 November 2013 at PHE – Colindale. Sixteen people participated from twelve Official Control Laboratories (OCL) in the UK that either had PCR or Containment Level 3 (CL3) facilities, or were interested in introducing these capacities.

The workshop began with presentations on the background to the new EU regulations and principles of PCR, but was predominantly focused on learning practical molecular diagnostic methods (see Annex for workshop booklet). +Activities included:

- DNA extraction from enrichment broth
- preparation of PCR reactions
- a demonstration of the real-time PCR instrumentation

There were also tours of a CL3 laboratory and a linear flow PCR suite. The workshop concluded with:

- analysing and interpretation of results and trouble-shooting the participants' data
- presentations concerning UKAS accreditation and the role of the *E. coli* reference laboratory
- discussions on further steps of the ISO 13136:2012 standard
- general health and safety issues and concerns of the whole process

Although the prime objective is to equip OCLs to perform procedures under ISO 13136:2012, these fundamental skills can be applied for any organism to be detected or confirmed from food by real-time PCR. Feedback from the participants was overall very good; many participants gained further understanding of the theoretical and practical elements to the new EU regulations.

Related to Core Function(s): 1.1, 1.2, 1.3, 2.1, 2.2, 2.5, 2.6, 3.3, 3.4

Proposed PHE NRL Activities, April 2014 – March 2015

Core Function One: Secretariat services

- 1.1 Disseminate information/advice supplied by the EURLs to FSA, OCLs and other UK laboratories in a timely and effective manner.
- 1.1 Engage with the Scottish Reference Laboratories and ensure information flows from the EURL meetings.
- 1.2 Co-ordinate the OCL User Day to update UK OCLs and other relevant UK laboratories to the NRL core functions.
- 1.3 Maintain a mechanism for disseminating information by expanding information on the NRL webpages.
- 1.4 Provide regular updates to the FSA on NRL activities by producing monthly reports.
- 1.5 Establish food methods archive on NRL website.
- 1.6 Maintain OCL accreditation list using audit data.

Core Function Two: Advice and representation within the UK/EU

- 2.1 Provide impartial expert advice to FSA, OCLs and other UK laboratories, upon request and establish and maintain a food examiner and an expert witness register, to be available to OCLs.
- 2.2 Represent the UK at relevant EURL meetings; consult FSA prior to meetings and submit an internal report after attendance of meetings.
- 2.3 Attend training workshop at the VTEC EURL for identification of the different groups of pathogenic *E. coli* (organised by EURL, ISS, Rome).

- 2.3 Participate and contribute to the scientific input at EURL meetings that support UK policy.
- 2.4 Implement the UK coordination of the food aspect of the EU-wide AR monitoring (Decision 2013/652/EU), liaising with FSA, OCLs relevant Reference Laboratories and AHVLA.
- 2.5 Keep abreast of methodology developments and advise FSA and OCLs.
- 2.5 Prepare a list of reference facilities, including charging policies, for submissions of culture for all OCLs.
- 2.5 Advise FSA on draft proposal relating to review of EU Regulation 882/2004.
- 2.6 Establish links with the BSI AW9 microbiology committee.
- 2.6 Identify and inform FSA and OCLs of emerging analytical issues or developments; supporting the implementation of the amendment to Regulation 2073/2005 for detection of VTEC in sprouted seeds.
- 2.7 Assist the FSA of a process for Competent Authority approval of methods under Article 5 (5) para 4 of Reg 2073/2005.

Core Function Three: Method development, audits and ring trials

- 3.1 Participate as UK-NRL in ring trials including method comparison or validation studies and other initiatives organised by the EURL (on-going) and report to FSA.
- 3.2 Liaise with VLA, audit and review strategy for harmonization of existing antimicrobial resistance testing.
- 3.3 Organise training workshop for Campylobacter isolation, detection, identification and enumeration.
- 3.4 Liaise with FEPTU and monitor OCL's comparative testing performance.

3.4 Produce reference materials for RT-PCR detection of VTEC genes for OCL availability.

3.5 Report on outcomes of comparative testing and assist OCLs in the implementation of corrective measures.

Proposed NRL activities for April 2014 to March 2015

Activities	Function	Core	1	2	3	4	5	6	7	8	9	10	11	12
			April 2014	May	June	July	August	September	October	November	December	January 2015	February	March
CPS enterotoxin ILS for ref materials from IRMM (Belgium)	Evaluation	3.2												
Coag+ Staph enum in infant formula EQA from EURL	EURL EQA	3.1												
E.Coli id and typing EQA from EURL (PT 13)	EURL EQA	3.1												
AMR for <i>E. coli</i> , enterococci and staphylococci PT from EURL	EURL PT	3.1												
VTEC EQA in bean sprouts from EURL (PT 14)	EURL EQA	3.1												
Salmonella detect in minced chicken from EURL	EURL PT	3.1												
AMR Salmonella & Campylobacter from EURL	EURL EQA	3.1												
Listeria detect in RTE iceberg or environmental samples from EURL	EURL EQA	3.1												
Salmonella typing EQA from EURL	EURL PT	3.1												
Campy detection in sock/swab PT from EURL	EURL PT	3.1												
Campy detection in food matrix PT from EURL	EURL PT	3.1												
Antimicro Resist 8 th Workshop in Kgs. Lyngby, 7-8 th	EURL Workshop	2.2												
Listeria 8 th Workshop in Teramo, 9-11 th	EURL Workshop	2.2												
Salmonella Workshop in Zaandam, 26-27 th	EURL Workshop	2.2												
Coag+ Staph Workshop in Anses, 4-6 th	EURL Workshop	2.2												
E.coli 7 th Workshop in Rome, 20-21 st	EURL Workshop	2.2												
Campy 9 th Workshop in Uppsala, 29 Sep-1 Oct	EURL Workshop	2.2												
Establish links with BSI AW9 microbiology committee	Advice & representation	2.6												
OCL User Day meeting at NRL, 23 rd	Meeting	1.2												
Coordinate UK food aspect of EU AR monitoring (2013/652/EU)	AR implementation	2.4												
Organise campylobacter workshop for UK OCLs	Workshop	3.3												
Liaise with FEPTU and monitor OCL's comparative testing	UK PT	3.4&3.5												
Producing/acquiring reference material for ISO 13136; STEC RT-PCR	Method development	3.4												
Establishment of a UK Food Examiner register	Secretariat	2.1												
Maintain and update NRL web content on PHE website	Website	1.3												

Monthly reporting to FSA	Coordination	1.4	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Intended application of NRL tender	Coordination		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Annual report to FSA	Coordination	1.4	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Meetings with FSA	Coordination	1.4	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

Annex

Core Function One: Secretariat services	
<p>Establish NRL Web Presence <i>Related to Core Functions: 1.1, 1.3, 1.5</i></p> <p>Establish food methods archive on NRL website <i>Related to Core Functions: 1.5, 2.4, 2.7</i></p> <p>Preparation of 2014 NRL meeting (OCL user day) <i>Related to Core Functions: 1.1, 1.3, 1.4, 2.5, 2.6</i></p> <p>Provide monthly reports on NRL activities <i>Related to Core Functions: 1.4</i></p> <p>Engage with the Scottish Reference Laboratories for <i>E.coli</i> and Salmonella <i>Related to Core Functions: 1.1, 1.3, 1.4</i></p>	<ul style="list-style-type: none"> • UK NRL Monthly log_Sept13_FINAL • UK NRL Monthly log_Oct13_FINAL • UK NRL Monthly log_Nov13_FINAL • UK NRL Monthly log_Dec13_FINAL • UK NRL Monthly log_Jan14_FINAL • UK NRL Monthly log_Feb14_FINAL • UK NRL Monthly log_Mar14_FINAL • Minutes_030913_FINAL • Minutes_021213_FINAL with Actions • Minutes_170314_FINAL_JMcLa
Core Function Two: Advice and representation within the UK/EU	
<p>Provide appropriate training for scientific post <i>Related to Core Functions: 2.2, 2.5, 3.1</i></p> <p>Produce a schedule of relevant EURL meetings <i>Related to Core Functions: 1.4, 2.2</i></p> <p>Representation at relevant EURL meetings and prepare meeting reports <i>Related to Core Functions: 1.1, 2.2, 2.3</i></p>	<ul style="list-style-type: none"> • EURL Campylobacter workshop 2013 Preliminary Program • 8th Annual Workshop 2013_Agenda_Ecoli • CRL Campylobacter workshop and CHRO 2013_Individual Report_AL + FJ • 8th EURL Meeting 2013_Individual Report_Ecoli
Core Function Three: Method development, audits and ring trials	
<p>Participate in EURL ring trials and other initiatives as UK-NRL: <i>Listeria monocytogenes</i>, coagulase-positive staphylococci, <i>Escherichia coli</i> (including VTEC), Salmonella, Antimicrobial resistance <i>Related to Core Function: 3.1</i></p> <p>OCL participation in the European Food Microbiology Legislation Proficiency Testing Scheme <i>Related to Core Functions: 1,2, 3.5</i></p> <p>Liaise with AHVLA to harmonise existing antimicrobial resistance testing <i>Related to Core Functions: 1.1, 3.2</i></p> <p>Support the implementation of the amendment to Regulation 2073/2005 for detection of VTEC in sprouted seeds: VTEC teleconference meetings, Preparation of documents, EURL training, UK VTEC practical workshop <i>Related to Core Functions: 1.1, 1.2, 1.3, 2.1, 2.2, 2.5, 2.6, 3.3, 3.4</i></p>	<ul style="list-style-type: none"> • UK Participation of 2013 EURL Proficiency Tests • LIS-Cr-201403D1_Technical Guidance Document on shelf life studies on ready to eat foods v3 • LIS-Cr-201317R_Creation of Lm panel for challenge testing • EURL Lm – 2014 Inventory of typing methods for <i>Listeria monocytogenes</i> • LIS-Cr-201404Q Questionnaire related to EURL Lm Guidance doc to evaluate challenge tests on growth potential on ready to made foods • UK PHE and SERL Mol Typing_QES2013 • EURL – Salmonella Newsletter October 2013 • EURL – Salmonella Newsletter – December 2013 • AR EURL 2013_12_newlsetter_no7 • EFL 2014-5 scheme • AHVLA_PHE_Agenda_10.10.13 • ISO TS 13136_2012 training program • VTEC workshop booklet Final

To access the above documents please email fwe.nrl@phe.gov.uk