

# Public Health Specialist Rotation in Microbiology

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## **A. General Placement Information**

### **A.1. Who is this placement for?**

This document is aimed at public health registrars on the higher health protection specialist training programme who are looking to do a rotation in microbiology. This rotation can be done any time during the higher health protection specialist training but registrars may find it useful to undertake a rotation in microbiology prior to starting their 6-month higher HPT rotation.

As usual with any rotation in the higher health protection specialist training programme it may be useful to speak to the Health Protection deputy Training Programme Director or the PHE Field Epidemiology Service (FES) Consultant prior to arranging the rotation to see how it can fit in with your educational requirements.

Rotations in microbiology will generally be for 3 to 4 months and will involve rotating between the laboratories, the microbiology team, the virology team and the infection control team.

### **A.2. Key Aims and Objectives**

A rotation in microbiology can provide a unique experience and understanding of the different services and processes that are completed prior to receiving a phone call at the local health protection team. You will be able to gain a number of experiences whilst on rotation, potentially including:

#### **A.2.1 Laboratory**

- Understanding how samples are received and processed by the laboratories
- Learning about different laboratory procedures towards identifying various organisms
- Learning about how notifiable infectious samples are processed (CL3)

#### **A.2.2 Microbiology**

- Gaining a base understanding of microbiology relating to common hospital and community acquired organisms as well as gaining an understanding of common antibiotic agents.
- Understanding and gaining experience verifying results processed from the laboratories.
- Understanding when samples need to be sent off to the reference lab and when samples are notified to the public health teams.
- Gaining experience phoning out results to clinical hospital teams, GPs, HPTs, and the infection control team.

#### **A.2.3 Virology**

- Gaining experience and a general understanding of how virology results are reported and read.
- Gaining a core understanding of viruses and antivirals.

#### **A.2.4 Infection Control**

- Taking part in hospital infection and prevention control meetings
- Understanding infection prevention and control measures in a hospital setting
- Understanding surveillance of hospital related infections

## **B. Rotation Work Plan**

During your rotation in microbiology you will spend time in the laboratories, the microbiology reporting room, the virology reporting room and the infection control room. The consultants recognise that each trainee will have different learning outcomes. As such your rotation can be flexible and adaptive to meet your individual needs. This will however need to be discussed prior to or at the start of your rotation. \*The consultants are happy to meet in advance of starting your placement, as it will be important to tailor the placement to the needs of the individual registrar.

The following work plan is not prescriptive but gives a general overview of what a normal rotation may consist of.

### **B.1 Day-To-Day Work**

#### **B.1.1 Induction (Approx. 2 weeks)**

All rotations will normally start with two weeks of induction in the laboratories and the lab benches. This will consist of rotating between the bacteriology lab, the serology lab and the molecular lab.

At the start of your placement you will be given an induction checklist to ensure that you have experienced all the induction sessions listed above.

During your first week you will also be provided with a weekly timetable that consists of information pertaining to weekly ward rounds and weekly teaching sessions. A microbiology timetable (as of April 2016) is attached in Appendix 1 and a virology timetable is attached in Appendix 2. These timetables will however change depending on when you start your clinical rotation. A sample laboratory rotation is shown in Appendix 3.

#### **B.1.2 Microbiology Placement (Approx. 2 months)**

During your rotation with the microbiology team you will practice daily activities such as validating key microbiology results, attending ward rounds with the microbiology consultants, attending infection control meetings and working in the laboratories.

You will spend time in the reporting room learning how to verify microbiology results, calling out certain microbiology results and potentially taking phone calls from clinicians looking for microbiology advice.

On days you are not scheduled to be in the reporting room you will be on a personal study day which will allow you time to work on a clinical project/audit as agreed with your clinical supervisor. Details of potential project work are explained in further detail in section C.

#### **B.1.3 Virology Placement (Approx. 3-4 weeks)**

Similar to your rotation with microbiology, your placement in virology will consist of learning and validating key virology results, attending ward rounds and potentially attending virology based clinics. Depending on your learning needs this can be discussed further with the virology consultant.

### **B.1.4 Infection Control Shadowing (Ad Hoc)**

Infection control shadowing will likely be dependent on what occurs in the hospital during your microbiology rotation. This can include following the infection control team when they carry out infection control audits, following staff when there is a potential ward closure and attending MDT based infection control meetings or hospital outbreak meetings.

During the first week of induction it will be important to meet the lead infection control nurse if you are interested in projects involving infection control and to arrange a potential day shadowing the team.

There are a number of infection control meetings you can attend that occur weekly and monthly. For example there are monthly team meetings every third Thursday of the month, quarterly infection control meetings as well as individual root-cause analysis for cases of *C.difficile* and MRSA. If you would like to find out more about these meetings and to attend them please have a chat with Dr. David Enoch, as he oversees the infection control aspects of the placement.

### **B.1.5 Specialty Interests**

If you have any particular specialty interests, for example interest in tuberculosis or hepatitis, an attachment with a relevant specialist can be arranged. Please let your supervisor know ahead of time so they can arrange with the appropriate clinician.

## **B.2 Public Health Considerations**

### **B.2.1 On-Going Public Health Commitments**

While you are on attachment in microbiology you will usually remain on your local public health on-call rota. To ensure that you are available to meet your training objectives, please discuss on-call arrangements and dates with your clinical supervisor at the start of your microbiology rotation.

### **B.2.2 Considerations for Trainees from a Non-Medical Background**

As we recognise that public health trainees can come from a wide range of backgrounds, including non-medical, it will be useful to have a discussion with your clinical supervisor, at the start of your placement, to identify which areas you may want to focus on. Your placement can be flexible to your needs; however you will need to discuss this in detail with your supervisor so they can make the necessary adjustments for your rotation. In addition, please use the reading material identified in section E as they are good starting points for your placement.

### **B.2.3 Annual Leave**

At the start of your placement please let your supervisor know the dates of any annual leave you will be planning to take ahead of time.

## **C. Potential Project Work**

The following are examples of potential projects available:

- Clinical audit
- Research study (prospective or retrospective)
- Work on hospital screening programmes ( MRSA, C.Diff programmes)
- Strategy work on infection and prevention control
- Antibiotic guideline updates
- Hospital policy work
- Work on hospital data (EPIC system)

Please discuss your options for project work with your clinical supervisor.

## **D. Teaching and Presentations**

The microbiology trainees will have a weekly registrar-led teaching session. You will be allocated a slot in the teaching rota along with a clinical supervisor who will support you with the presentation.

The topics for presentation are normally allocated but it may be useful to focus on a public health or health protection based presentation.

Examples of potential teaching with a larger public health focus:

- Principles of Hospital Infection Control
- Surveillance of Hospital Infections
- Outbreak Investigation
- Environment, Water and Food Sampling

Topics can be discussed further with your clinical supervisor. Please see Appendix 4 for a sample teaching programme.

## E. Contact Information and Other Helpful Information

### E.1 Laboratory and Microbiology

Specialty	Primary Contact Information
<b>Microbiology</b> Dr. Fiona Cooke will assign you a clinical supervisor during your rotation.	<b>Dr. Fiona Cooke</b> ( <a href="mailto:Fiona.Cooke@addenbrookes.nhs.uk">Fiona.Cooke@addenbrookes.nhs.uk</a> )
<b>Laboratories</b> Including microbiology, serology and molecular	<b>Marie Blackman Northwood</b> ( <a href="mailto:Marie.Blackmannorthwood@addenbrookes.nhs.uk">Marie.Blackmannorthwood@addenbrookes.nhs.uk</a> )
<b>Virology</b>	<b>Dr. Hongyi Zhang</b> ( <a href="mailto:Hongyi.Zhang@addenbrookes.nhs.uk">Hongyi.Zhang@addenbrookes.nhs.uk</a> )
<b>Infection Control Team</b>	<b>Rachel Thaxter</b> ( <a href="mailto:Rachel.Thaxter@addenbrookes.nhs.uk">Rachel.Thaxter@addenbrookes.nhs.uk</a> )

### E.2 Useful Reading Material

Whilst on placement in Addenbrookes you will have access to the Cambridge University Medical Library. The following books are either located in the medical library, the registrar's room, or the reporting room and will be useful starting points for your placement in microbiology.

#### **Oxford Handbook of Infectious Diseases and Microbiology**

*Authors: Estee Torok, Ed Moran and Fiona Cooke*



#### **Medical Microbiology and Infection at a Glance**

*Authors: Stephen Gillespie and Kathleen Bamford*



#### **Medical Microbiology: Illustrated**

*Authors: Stephen Gillespie*



#### **Addenbrookes Antimicrobial Guidelines**

*On the trust intranet*

### **E.3 Documents Required**

You will need an honorary contract for your rotation.

Medical staffing will require specific documents to prove your right to work. This normally consists of providing a passport in addition to two documents showing proof of address. Yet again please check with medical staffing prior to commencing.

### **E.4 Computer Access**

On your first week you will be provided with log-in details for your addenbrooke's computer account.

You will need to have a computer induction session to learn about the hospital system "Epic." This can be organised through:

**Nigel Spencer-Ruddle** ([nigel.spencerruddle@addenbrookes.nhs.uk](mailto:nigel.spencerruddle@addenbrookes.nhs.uk))

In case you have day-to-day issues with your EPIC account the best first point of contact is:

**Rachel Doughton** ([rachael.doughton@addenbrookes.nhs.uk](mailto:rachael.doughton@addenbrookes.nhs.uk))



## F. Potential Learning Outcomes ( 2015 curriculum)

You will be able to gain evidence for a number of learning outcomes during your placement. The following is a list of potential learning outcomes gained through a placement in microbiology. This list is not exhaustive and will depend on what project you undertake.

Learning Outcome	Description
1.1	Address a public health question using data and intelligence by refining the problem to an answerable question or set of questions.
1.2	Apply principles of information governance for a range of organisations
1.3	Access data and information from a variety of organisations and sources
1.5	Display data using appropriate methods and technologies to maximise impact in presentations and written reports for a variety of audiences
1.6	Use and interpret quantitative and qualitative data synthesising the information to inform action
2.1	Define, document and conduct structured reviews of scientific literature relevant to questions about health and health care
2.2	Formulate balanced evidence-informed recommendations both verbally and in writing using appropriate reasoning , judgement and analytical skills
2.3	Build consensus where there are gaps in evidence or controversies to its implications
2.4	Identify the need for overviews of research to inform operational or strategic decisions about health and health care and advocate this approach
3.1	Display an awareness of current national and international policies
3.2	Evaluate a situation and identify the steps required to achieve change, preparing options for action
3.3	Appraise options for policy and strategy for feasibility of implementation
4.2	Demonstrate appropriate presentation, communication and listening skills
4.3	Assess, communicate and understand the management of different kinds of risks
4.6	Use influencing and negotiating skills in a setting where you do not have direct authority to advocate for action on a public health issue of local, national or international importance
6.6	Demonstrate knowledge and awareness of main stakeholders and agencies at a local, national and international level involved in health protection and their roles and responsibilities
6.8	Apply principles of prevention in health protection work
7.8	Appraise, select and apply tools and techniques for improving safety, reliability and patient-orientation of health and care services.
8.2	Apply principles of epidemiology in public health practice
8.5	Identify research needs based on patient/population needs and in collaboration with relevant partners
8.7	Make a significant contribution to the design and implementation of a study in collaboration with an appropriate team and relevant partner

## Appendix 1. Microbiology Clinical Timetable (As of April 2016)

Times	Monday	Tuesday	Wednesday	Thursday	Friday
<b>Morning</b> <ul style="list-style-type: none"> <li>• <b>10:00</b></li> <li>• <b>11:00</b></li> </ul>	Clinical Handover Meeting  Bench Round	Bench Round	ID MDT  Bench Round	8:30 NICU Ward Round  Bench Round	Bench round Renal/Transplant/Paediatric Oncology Ward round
<b>Lunchtime</b> <ul style="list-style-type: none"> <li>• <b>13:00-14:00</b></li> </ul>	Infectious Disease Teaching ( D10 Seminar Room)	Registrar-Led Lunchtime Teaching (Large Meeting Room)	Grand Round (Clinical School)	Case of the Week Presentations (Library/Reg Room)	
<b>Afternoon</b> <ul style="list-style-type: none"> <li>• <b>14:00-15:00</b></li> </ul>	ICU Ward Round	ICU Ward Round NCCU Ward Round	ICU Ward Round	Haematology Ward Round ICU Ward Round	ICU Ward Round

## Appendix 2. Virology Time Table (As of April 2016)

Day	Time	Activity
Monday	12:30-13:30	Papworth Transplant MDT meeting
	13:00-14:00	Infectious Disease Lecture
Tuesday	13:00-14:00	Registrar Trainee Tutorial
Wednesday	10:00-12:00	Infectious Diseases Ward Round
	12:30-13:30	Hospital Staff Round
	16:00-17:00	HIV/GUM Case Discussion
	16:00-18:00	Monthly Regional HIV Video Conference
Thursday	12:15-12:30	Case of the Week
	12:30-13:30	Departmental Seminar
	14:00-15:30	Adult Haematological Oncology Ward Round
Friday	11:00-13:30	Transplantation, Paediatric Intensive Care, Paediatric Oncology Unit Ward Round
	11:00-12:00	Multi-visceral Transplant MDT meeting
	14:30-15:00	Virology Case Discussion

### Appendix 3. Laboratory Time Table (Example Programme)

<b>DATE</b>	<b>TIME</b>	<b>SUBJECT</b>	<b>TRAINER</b>	<b>VENUE</b>
<b>Tuesday</b>	<b>9am – 10:30am</b>	Pre analytical: Unpacking, booking in Overview of EPIC receiving	HCSSW / BMS	Bacteriology
	<b>11:00 - 12:00</b>	Screening bench: Faeces & Genitals	BMS	Work cell Room
	<b>12:00 – 13:00</b>	General reading; Wounds	HCSSW	Urine Room
	<b>14:00 – 15:00</b>	MRSA / URTF		Urine Room
<b>Wednesday</b>	<b>9:00 – 11:00</b>	Urine Process Urine plate read	BMS	Urine Room
	<b>11:30 –12:30</b>	CL3 overview		CL3 Suite
	<b>14:00 – 15:00</b>	Urgent bench: Slides, germ tubes, CSF, OCP		Bacteriology
<b>Thursday</b>	<b>9:00 – 10:00</b>	Sputum Process & Sputum Read	HCSSW / BMS	CL3 Suites
	<b>10:00 – 11:30</b>	Blood Culture / CSF plate read including 11am Medic round	BMS	Bacteriology
	<b>12:00 – 13:00</b>	MALDI	BMS	
	<b>14:00 – 15:00</b>	BSAC	HCSSW	
<b>Friday</b>	<b>All Day</b>	Serology; overview, tests, reporting	BMS / SBMS	Serology
<b>Monday</b>	<b>All Day</b>	Molecular, overview, tests, reporting	BMS / SBMS	Molecular

## Appendix 4. Sample Teaching Rotation

Date	Subject	Topics to be covered
03/05/2016	Principles of Hospital Infection Control	Infection Control Committee, DIPC, Important national documents and guidelines, Care Bundles
10/05/2016	Cleaning, Sterilisation and disinfection	Including endoscope decontamination.
17/05/2016	Environment, water & food sampling	Environment, water & food sampling
24/05/2016	Sterilisation & CSSD (central sterilization services department)	Tour of CSSD by Dr Rodney Wood (Head of CSSD)
31/05/2016	Journal Club	
07/06/2016	Surveillance of hospital infections	Introduction to surveillance, MESS, Quarterly reports, Surgical Site Infections etc
14/06/2016	Infection control in virology	IC for resp viruses, Noro, needlestick injuries & occupational health issues related to this.
21/06/2016	Theatres	ventilation systems, rituals and behaviour in theatres
28/06/2016	Journal Club	
05/07/2016	Outbreak investigation	
12/07/2016	How to design a hospital	Infection control perspective (some overlap with theatres and ventilation systems above). Include Legionella & PAE
19/07/2016	Epidemiological Typing methods	
26/07/2016	Whole Genome Sequencing	
02/08/2016	Journal Club	
09/08/2016	Antimicrobial Stewardship	
16/08/2016	Journal Club	