



FACULTY OF PATHOLOGY

ROYAL COLLEGE OF
PHYSICIANS OF IRELAND

Post CSCST Training in

CLINICAL MICROBIOLOGY Antimicrobial Stewardship



This curriculum of training in Clinical Microbiology, Antimicrobial Stewardship was developed in 2017 and undergoes an annual review by Dr Karen Burns Subject Matter Expert, Dr Ann O’Shaughnessy, Head of Education, Innovation & Research and by the Clinical Microbiology Training Committee. The curriculum is approved by the Faculty of Pathology.

Version	Date Published	Last Edited By	Version Comments
0.0	01/07/2017	Ann Coughlan	New curriculum

Table of Contents

INTRODUCTION	4
ENTRY REQUIREMENTS	4
RECRUITMENT AND SELECTION	4
DURATION AND ORGANISATION OF TRAINING	4
TRAINING PROGRAMME.....	5
TRAINEE NUMBERS	5
EPORTFOLIO	5
PROGRAMME MANAGEMENT	5
SPECIALTY SECTION	6
FUNDAMENTAL SKILLS	7
CORE KNOWLEDGE	8
OUT-OF-HOURS' WORKING	9
ANTIMICROBIAL STEWARDSHIP.....	10
OUTPATIENT PARENTERAL ANTIBIOTIC THERAPY (OPAT)	11
CLOSTRIDIUM DIFFICILE	12
HIQA COMPLIANCE	13
DOCUMENTATION OF MINIMUM REQUIREMENTS FOR TRAINING	14

Introduction

Antimicrobial Stewardship is the specialty concerned with a systematic approach to optimising antimicrobial therapy, through a variety of structures and interventions. Antimicrobial Stewardship includes not only limiting inappropriate use but also optimising antimicrobial selection, dosing, route, and duration of therapy to maximise clinical cure or prevention of infection, while limiting the unintended consequences, such as the emergence of resistance, adverse drug events, and cost.

Antimicrobial resistance is well recognised as a global threat to human health. Infections caused by antimicrobial-resistant micro-organisms in hospital are associated with increased morbidity, mortality and healthcare costs. Antimicrobial resistance is closely linked to antimicrobial use, and it is estimated that 50% or more of hospital antimicrobial use is inappropriate. In addition to promoting antimicrobial resistance, excessive or inappropriate antimicrobial use is associated with avoidable adverse drug reactions, with implications for patient safety.

This post CSCST 1 year Clinical Fellowship programme will provide advanced training in Clinical Microbiology with special emphasis on Antimicrobial Stewardship. The curriculum is designed to develop the skills required to independently lead an antimicrobial stewardship programme in an acute hospital. Antimicrobial Stewardship programmes have been shown to reduce inappropriate antimicrobial use, with resulting reductions in antimicrobial resistance, and also lead to more appropriate antimicrobial therapy for infections where therapy is required, with improved clinical outcomes for patients.

Entry Requirements

Applicants for the Post CSCST Fellowship in Antimicrobial Stewardship will have successfully completed the RCPI Higher Specialist Training programme in Clinical Microbiology within two years of the start date of the Post CSCST Fellowship programme.

Prior experience in Antimicrobial Stewardship during Clinical Microbiology training would be an advantage.

Recruitment and Selection

Post CSCST Fellowship training in Antimicrobial Stewardship will build on broad basic and early core specialist training in Clinical Microbiology. This is in line with training models internationally. Selection of candidates for Post CSCST Fellowship training in Antimicrobial Stewardship will be via a competitive recruitment process coordinated by the relevant Training Body. Recruitment will follow similar timeline where possible to HST recruitment and post will commence in July of each year (unless otherwise specified).

Duration and Organisation of Training

The Post CSCST Fellowship in Antimicrobial Stewardship is a one year training programme designed to dovetail with the Irish Higher Specialist Training programme in Clinical Microbiology. The curriculum is competency-based, however it is anticipated that the candidate will complete training within one year.

The curriculum takes into account the major areas of competence required by the subspecialist in Antimicrobial Stewardship and will be supervised by the Faculty of Pathology of the Royal College of Physicians in Ireland. Doctors who have successfully completed the RCPI Higher Specialist Training programme in Clinical Microbiology and are within two years of completion will be deemed eligible to apply for the Post CSCST Fellowship in Antimicrobial Stewardship. Completion of this program will ensure the knowledge and competencies in all areas of the curriculum, meeting international standards for best practice and allowing candidates to practice as a subspecialist in Antimicrobial Stewardship.

Training Programme

The training programme offered will provide opportunities to fulfil all the requirements of the curriculum of training for Antimicrobial Stewardship in approved training hospitals. Each post within the programme will have a named trainer/educational supervisor and the programme will be under the direction of the National Specialty Director for Clinical Microbiology

Trainee Numbers

It is expected that the Post CSCST Fellowship in Antimicrobial Stewardship will be awarded to one candidate per year.

ePortfolio

The trainee will be required to keep their ePortfolio up to date and maintained throughout their Fellowship training. The ePortfolio will be countersigned as appropriate by the Trainer to confirm the satisfactory fulfilment of the required training experience and the acquisition of the competencies set out in the Curriculum. This will remain the property of the Trainee and must be produced at the end of year Evaluation meeting. At the end of year Evaluation, the ePortfolio will be examined. The results of any assessments and reports by the named trainer/educational supervisor, together with other material capable of confirming the trainee's achievements, will be reviewed.

Programme Management

- Coordination of the training programme will lie with the Medical Training Department.
- The training year will usually run from July to July in line with HST programmes
- Annual evaluations will usually take place between April and June each year
- Each trainee will be registered to the ePortfolio and will be expected to fulfil all requirements relating to the management of yearly training records
- Opportunities for audit and research may be available
- Each trainee will be issued with a training agreement on appointment to the training programme and will be required to adhere to all policies and procedures relating to Post CSCST Fellowships.

Specialty Section

Fundamental Skills

Objective: To further develop managerial, leadership, communication and team building skills, in addition to core laboratory and clinical skills, so that at the completion of the Fellowship, the appointee will have developed advanced skills which enable him/her to successfully compete for consultant appointments.

KNOWLEDGE

Having completed the FRCPATH examination and achieved their CSCST in Clinical Microbiology, the appointee to this Fellowship in Antimicrobial Stewardship should:

- Have a comprehensive understanding of the diagnosis, management and prevention of infection and the capability to act as a senior decision maker and leader of the multi-disciplinary team
- Demonstrate ongoing and proactive engagement with their continuing professional development, acquisition of new knowledge, skills and experience, which are integral to this Fellowship
- Demonstrate the ability to supervise, educate and support team members – NCHD, scientific, pharmacy and nursing colleagues
- Have the ability to recognise critical incidents and understand how to manage them
- Understand the importance of clinical audit and risk management.

SKILLS

- Development of policies, procedures and guidelines relevant to antimicrobial stewardship and *C. difficile* infection
- Undertaking clinical audit and development of data analysis and reporting skills
- Use of clinical audit data to inform quality improvement – use of quality improvement tools to guide improvement programmes
- Development of skills in adverse incident investigation, risk management and clinical governance
- Through the above, to further develop communication skills and to function as part of a multi-disciplinary team

ASSESSMENT & LEARNING METHODS

- Mini-CEX
- Leading a quality improvement (QI) project, presentation at hospital quality meetings and reflective learning QI project report
- Review of relevant policies, procedures and guidelines relevant to antimicrobial stewardship and *C. difficile* infection

Core Knowledge

Objective: To achieve advanced understanding of laboratory microbiology and virology to offer advice on relevant investigations, infection control procedures and interpretation of results.

KNOWLEDGE

- Participation in the microbiology laboratory quality management system: EQA, development of policies, procedures, guidelines, laboratory audit
- Participation in the microbiology laboratory INAB accreditation process, taking the lead as appropriate in one/two laboratory areas
- Ability to autonomously sign out final microbiology reports
- Ability to lead the clinical microbiology daily laboratory round and make decisions on specimen testing and referral
- Develop experience in diagnosis, management and prevention of infection in specialist infection areas:
 - Invasive infections such as endocarditis, osteomyelitis, particularly diabetic foot osteomyelitis, implant associated infections
 - Neurosurgical infection
 - Infection in renal transplant recipients
 - Infection in patients with haematological malignancy
 - Infection in patients with cystic fibrosis

SKILLS

- Participation in preparation of business case for procurement of new equipment, service development, new staff appointments
- Participation in interview boards
- Development and revision of laboratory policies, procedures and guidelines

ASSESSMENT & LEARNING METHODS

- Review of relevant reports, policies, procedures and guidelines
- Chairing departmental meetings
- Minute taking and editing for departmental meetings

Out-of-Hours' Working

Objective: Provision of the weekend and on-call clinical microbiology service, through regular participation in the on-call rota as 'first on-call', supported by the on-call consultant microbiologist.

KNOWLEDGE

- Knowledge of what is urgent and what can be left for the next working day

SKILLS

- Recognise one's own limitations in knowledge
- Liaise and respond to ensure continuity of care
- Liaise with on-call consultant as appropriate
- Prioritise regarding urgency
- Deal with difficult situations independently
- Liaise with patient flow team, public health department, occupational health department as necessary

ASSESSMENT & LEARNING METHODS

- Review of cases with colleagues at weekly handover meetings
- Effective handover
- Audit of on-call clinical advice

Antimicrobial Stewardship

Objective: To develop the skills required to independently lead an antimicrobial stewardship programme in an acute hospital

KNOWLEDGE

- Active participation in the clinical microbiology service and antimicrobial stewardship team activities
- Clinical leadership for established antimicrobial stewardship rounds with the antimicrobial pharmacist
- Clinical leadership to establish specialist ward rounds with an antimicrobial stewardship focus (C. difficile, restricted antimicrobial use, vancomycin)
- Leadership of a quality improvement project on antimicrobial stewardship promotion. The Hospital has an existing surgical antimicrobial prophylaxis quality improvement programme, which to date has demonstrated success in colorectal and orthopaedic surgery and there will be an opportunity to expand that to other surgical specialties
- Active participation in the RCSI Hospitals Antimicrobial Stewardship Committee. To act as medical secretary (in conjunction with the chair to agree the annual plan, set meeting agenda and coordinate quarterly meetings)
- Participation in antimicrobial guideline review and development process
- Undertaking the annual point prevalence survey of antimicrobial use and hospital acquired infections, with the antimicrobial pharmacist and consultant microbiologist

SKILLS

- Leadership of an antimicrobial stewardship round
- Opportunity to chair Antimicrobial Stewardship Committee meetings
- Opportunity to take minutes of meetings
- Opportunity to work with antimicrobial pharmacist in preparation of quarterly antimicrobial consumption and spend reports
- Opportunity to contribute to the production of the antimicrobial stewardship committee annual report
- Data analysis and reporting of antimicrobial stewardship activities, with feedback
- Presentation of key learning points related to antimicrobial stewardship activities at medical and surgical grand rounds

ASSESSMENT & LEARNING METHODS

- Review of minute taking activities
- Feedback on committee chairing skills
- Review of audit reports
- Review of educational materials
- Submission of an antimicrobial stewardship abstract for an educational meeting
- Preparation of an antimicrobial stewardship paper for submission to a peer reviewed journal

Outpatient Parenteral Antibiotic Therapy (OPAT)

Objective: To develop skills required to lead an acute hospital OPAT programme

KNOWLEDGE

- Active participation in the clinical microbiology service and antimicrobial stewardship team activities
- Clinical leadership for the established OPAT service, working closely with the OPAT liaison nurses – dealing with daily OPAT referrals and decision making regarding appropriateness for OPAT or alternative treatment
- Review of patients requiring OPAT, including patient counselling regarding OPAT and follow-up
- Active participation in the production of quarterly OPAT activity reports, including review of patient outcomes
- Participation in the production of the annual OPAT activity report
- Presentation of key learning points related to OPAT activities at medical and surgical grand rounds
- Participation in OPAT guideline review and care pathway development process
- Clinical support to establish a planned OPAT nurse-led outpatient clinic, whereby OPAT patients may be reviewed weekly, along with monitoring blood tests

SKILLS

- Oversee an OPAT programme
- Development of clinical assessment skills for patients requiring OPAT
- Undertaking audit of OPAT service
- Production of reports, feedback
- Focus on developing a local OPAT education programme for nurses and doctors to optimize use of the service and ensure safe, effective transfer of patient care

ASSESSMENT & LEARNING METHODS

- Review of OPAT activity reports
- Review of audit data
- Submission of an OPAT abstract for educational meeting
- Preparation of an OPAT paper for submission to a peer reviewed journal

Clostridium Difficile

Objective: To develop clinical skills in management of patients with *C. difficile* infection (CDI) and skills for monitoring hospital epidemiology of CDI

KNOWLEDGE

- Clinical leadership to establish specialist ward rounds of patients with a diagnosis of *C. difficile* infection (CDI), with particular focus on CDI management, antimicrobial stewardship, minimizing risk of recurrent CDI and infection prevention and control
- There will be an opportunity to undertake a quality improvement project on *C. difficile* infection prevention
- Active participation in the infection prevention and control team weekly meetings, quarterly infection control committee meetings
- Active participation in the enhanced surveillance of CDI in the hospital, with the surveillance scientists

SKILLS

- Leadership of a CDI ward round
- Conducting root cause analysis on hospital acquired CDI
- Production of CDI surveillance reports

ASSESSMENT & LEARNING METHODS

- There will be opportunity to conduct research into epidemiology of CDI and to prepare a manuscript for submission to a peer-reviewed journal

HIQA Compliance

Objective: To familiarise oneself with the HIQA National Standards for Prevention & Control of HCAI and the process of HIQA monitoring inspection. The anticipated publication of revised National Standards in 2017 is an excellent opportunity for the Fellow to familiarise themselves with the updated standards document and to actively participate in the Hospital's preparations for HIQA monitoring inspection visits under the new standards.

KNOWLEDGE

- Participation in multi-disciplinary hygiene audits at ward level
- Participation in observational hand hygiene audit
- Attendance at a lead hand hygiene auditor training session in HPSC

SKILLS

- Preparation of hand hygiene audit report and feedback to relevant healthcare staff
- Preparation of local surveillance data for presentation to HIQA in event of a monitoring inspection visit
- Preparation of antimicrobial stewardship activity data for presentation to HIQA in event of a monitoring inspection visit

ASSESSMENT & LEARNING METHODS

- HPSC lead hand hygiene auditor assessment
- Review of hand hygiene audit report
- Review of surveillance and antimicrobial stewardship data prepared for HIQA inspection

Documentation of Minimum Requirements for Training

- These are the minimum number of cases you are asked to document as part of your training. It is recommended you seek opportunities to attain a higher level of exposure as part of your self-directed learning and development of expertise.
- You should expect the demands of your post to exceed the minimum required number of cases documented for training.
- If you are having difficulty meeting a particular requirement, please contact your specialty coordinator.

Curriculum Requirement	Required/Desirable	Minimum Requirement	Reporting Period	Form Number
Section 1 - Training Plan				
Personal Goals Plan (Copy of agreed Training Plan for your current training year signed by both Trainee & Trainer)	Required	1	Training Programme	Form 052
Personal Goals Review Form	Required	1	Training Programme	Form 137
Weekly Timetable (Sample Weekly Timetable for Post/Clinical Attachment)	Required	1	Training Programme	Form 045
Section 2 - Training Activities				
Outpatient Clinics				Form 001
Outpatient Parenteral Antibiotic Therapy (OPAT)	Required	10	Training Programme	Form 001
Antimicrobial Stewardship	Required	10	Training Programme	Form 001
Ward Rounds	Required	40	Training Programme	Form 002
On call /dealing with queries of Transplantation Medicine Clinical Microbiology	Desirable	50	Training Programme	Form 003
Additional/Special Experience Gained- Clinical Microsystems QI training (depending on availability)	Desirable	1	Training Programme	Form 005
Section 3 - Educational Activities				
Mandatory Courses /Activities				Form 006
Mycology NEQAS Course Health Economics Course	Required	2	Training Programme	Form 006
Observership in Clinical Virology NVRL	Required	1	Training Programme	Form 006
Patient Survey	Required	1	Training Programme	Form 006
Non – Mandatory Courses				
Viral Infections in Immunocompromised host ESCMID Course	Desirable	1	Training Programme	Form 007
Communications course	Desirable	1	Training Programme	Form 007
In-house activities				Form 011

Curriculum Requirement	Required/Desirable	Minimum Requirement	Reporting Period	Form Number
Journal Club	Required	10	Training Programme	Form 011
MDT Meetings	Required	30	Training Programme	Form 011
One to one meetings with Antimicrobial Pharmacist, members of the Antimicrobial Stewardship team, OPAT Liaison Nurses	Required	1	Training Programme	Form 011
Examinations	Desirable	1	Training Programme	Form 012
Formal Teaching Activity (1 per month)				
Lecture	Required	4	Training Programme	Form 013
Tutorial	Required	4	Training Programme	Form 013
Research	Desirable	1	Training Programme	Form 014
Audit activities/ leading a QIP HODW / ward processes audits and Quality Improvement programmes	Required	9	Training Programme	Form 015
Clinical Audit Report form	Required	3	Training Programme	Form 135
Review /Development of policies, procedures and guidelines for antimicrobial stewardship and <i>C.difficile</i> infection	Required	1	Training Programme	Form 135
Review of OPAT activity reports	Required	1	Training Programme	Form 135
Chairing departmental meetings, minute taking and editing for departmental meetings	Desirable	1	Training Programme	Form 063
Publications	Desirable	1	Training Programme	Form 016
Preparation of an antimicrobial stewardship paper for submission to peer reviewed journal	Required	1	Training Programme	Form 016
Preparation of an OPAT paper for submission to a peer reviewed journal	Required	1	Training Programme	Form 016
Presentations	Required	5	Training Programme	Form 017
National/International meetings	Desirable	1	Training Programme	Form 010
Additional Qualifications	Desirable	1	Training Programme	Form 065
Committee Attendance	Required	3	Training Programme	Form 063
Section 4 - Assessments				
Mini-CEX	Required	1	Training Programme	Form 023
CBD	Required	1	Training Programme	Form 020
Quarterly Assessments	Required	4	Training Programme	Form 092
End-of-Post/End-of-Year Assessments	Required	1	Training Programme	Form 092