



Institute of
Biomedical Science
Education

IBMS CLINICAL SCIENTIST CERTIFICATE OF ATTAINMENT (EXPERIENTIAL ROUTE)

PROGRAMME HANDBOOK

Version 4

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Institute of Biomedical Science, 12 Coldbath Square, London EC1R 5HL

Tel 020 7713 0214 Fax: 020 7837 9658 E-mail equivalence@ibms.org Website: www.ibms.org

IBMS Clinical Scientist Certificate of Attainment (Experiential Route) Programme Handbook

1. Introduction

1.1. Clinical scientist is the protected title for those who are employed in healthcare and responsible for the application of science in the prevention, diagnosis and control of illness, disease and disability. The primary job functions of clinical scientists are:

- maintaining the scientific basis of healthcare
- practising at the science:clinical interface
- managing and auditing the application of scientific techniques and procedures
- developing, evaluating and providing new scientific services
- conducting and directing research and development
- participating in clinical audit
- teaching scientists, scientific support workers and other health professionals
- developing and maintaining quality standards
- advising and training clinical colleagues

To perform these functions, clinical scientists require a complex set of interlocking skills - clinical, scientific, technical, research and development, problem-solving and managerial.

- 1.2. Those wishing to use the protected title are required by statute to register with the Health and Care Professions Council (HCPC) www.hcpc-uk.org which is the regulatory body, created under the 1999 Health Act.
- 1.3. Clinical scientists were first regulated with the Council for Professions Supplementary to Medicine (CPSM) and then with the Health Professions Council now the Health and Care Professions Council – (HCPC) which became legally established in July 2003. The routes to clinical scientist registration via the award of a Certificate of Attainment have been provided by the Association of Clinical Scientists and more recently through the Scientist Training Programme, or assessment of STP equivalence offered by the Academy of Healthcare Science.
- 1.4. The Institute of Biomedical Science (IBMS) has developed a new and distinct route to registration as a clinical scientist: the IBMS Clinical Scientist Certificate of Attainment (Experiential Route). This provides individuals for whom the existing routes are either not suitable or for which they are ineligible to apply an alternative option to demonstrate they are already practicing in a specialist area, at a level that meets the threshold standards for registration as a clinical scientist.
- 1.5. The award is currently offered in four specialist areas of practice:
- Clinical Biochemistry
 - Clinical Immunology

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- Clinical Microbiology
 - Haematology
- 1.6. Applicants will be required to go through a multi-stage process made up of the following stages:
- Initial application and applicant screening for admittance to the programme
 - Compilation of evidence mapped against the IBMS Clinical Scientist Certificate of Attainment Experiential Portfolio
 - Assessment of the applicant's portfolio of evidence and mapping document
 - *Viva voce* examination of the application of HCPC standards of proficiency for clinical scientists to the candidate's scope of practice
 - Statement of outcomes and award (if appropriate)
- 1.7. So as not to cause confusion with the HCPC's assessment of international applicants, applicants for the IBMS Clinical Scientist Certificate of Attainment (Experiential Route) who hold a non-UK degree will only be considered if they have met the admittance criteria for working in healthcare science in the UK. Individuals seeking HCPC registration who are working outside of the UK are advised to consult the HCPC directly. Information for this can be found at <http://www.hcpc-uk.org/apply/international/>.

2. Programme Rationale

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- 2.1. The IBMS Clinical Scientist Certificate of Attainment (Experiential Route) is an award granted to an individual by the IBMS upon successful completion of a robust assessment process of their knowledge, skills and behavior against the HCPC standards of proficiency for clinical scientists. Evidence for this can be demonstrated through a combination of education, training and experience that has already been gained in their professional practice.
- 2.2. The award is based on HCPC standards of education that state (SET 1.1) that the HCPC Council “normally expects that the threshold entry route to the register for clinical scientists will be: Master’s degree for clinical scientists (with the Certificate of Attainment awarded by the Association of Clinical Scientists, or equivalent)”.
- 2.3. In the context of education, training, qualifications and experience equivalence is said to exist when the outcomes of two processes are directly comparable even though the paths to achieving them are different. When equivalence is shown to exist between an accepted qualification and the alternative qualification and/or experience a person already has, further supplementary education or training is unnecessary.
- 2.4. The process for recognising equivalence is required for a number of reasons:
 - To facilitate transition of individuals in the scientific workforce to the protected title of clinical scientist *where it is commensurate with the job function they are already undertaking*, i.e. by the recognition of experiential learning
 - To permit continued diversity of individuals from scientific and health backgrounds to progress from the biomedical science profession where they have developed to fulfil the requirements for statutory regulation as a clinical scientist
- 2.5. The IBMS Clinical Scientist Certificate of Attainment (Experiential Route) is expected to attract applicants from the UK with relevant professional experience and qualifications who can evidence M-level practice in a specialty and who wish to register as a clinical scientist.
- 2.6. To successfully complete the programme applicants will be expected to demonstrate that in their current role they meet the threshold standards of knowledge and skills required in the HCPC standards of proficiency for clinical scientists (December 2014)*. This is achieved through mapping to the IBMS Clinical Scientist Certificate of Attainment Experiential Portfolio. Applicants will also have a second stage of assessment (*viva voce*) to confirm their eligibility for the award of an IBMS Clinical Scientist Certificate of Attainment (Experiential Route).

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- 2.7. Upon award of the IBMS Clinical Scientist Certificate of Attainment (Experiential Route) individuals will be eligible to apply to the HCPC for registration as a clinical scientist. This approach will give successful candidates the opportunity to apply for access to higher scientific training programmes for which registration as a clinical scientist is required.

3. Programme Management

- 3.1. The Institute of Biomedical Science (IBMS) is a company limited by guarantee and a registered charity. Its governing document is its Memorandum and Articles of Association. Together they provide the IBMS with a legal identity and specific powers.
- 3.2. The IBMS Council (Boards of Trustees) is the elected body with legal responsibility for the governance of the organization. Its purpose is to ensure that the IBMS is effectively led, properly governed and meets the need for which the IBMS was established.
- 3.3. The Council has fiduciary responsibility and its main functions are to:
 - enhance, promote and protect the reputation of the IBMS and the profession
 - be accountable to the membership
 - set the strategic direction and high level objectives of the IBMS
 - agree the values of the IBMS and promote the values through behaviours
 - allocate resources
 - delegate authority to other governance bodies
 - monitor performance and ensure conformance
 - oversee membership critical issues
 - appoint and direct a Chief Executive
- 3.4. The Council fulfills its governance responsibilities through its standing committees that contribute to the delivery of the IBMS objectives and its overall strategy in accordance with their agreed remits.
- 3.5. The Council sets the strategic direction of the IBMS and the standing committees assist the Council in its work within their delegated authorities. The work of the IBMS is planned, budgeted and structured against the corporate objectives and is delivered through its standing committees which report directly to Council.
- 3.6. There are five standing committees:
 - Executive and Finance Committee
 - Education and Professional Standards Committee
 - Membership and Marketing Committee
 - Remuneration Committee
 - Audit Committee

3.7. Executive and Finance Committee

All budgetary and financial matters are the responsibility of the IBMS's Executive and Finance Committee. The financial position of the IBMS in relation to income and investment performance is subject to quarterly monitoring to identify trends and to take correctional measures where necessary to ensure the security of the organization and sustainability of the services it provides. The monitoring process includes that of income and expenditure on the provision of educational programmes and professional qualifications against agreed Key Performance Indicators.

3.8. Education and Professional Standards Committee

The Education and Professional Standards Committee has devolved responsibility for the education and training functions of the IBMS and is governed by its terms of reference that are reviewed annually and approved by Council. Business that falls outside of its devolved responsibility is referred to Council with a Committee recommendation.

Matters relating to professional standards, education, training and professional development of individuals working in biomedical science are the responsibility of the Education and Professional Standards Committee. The Committee develops and monitors the implementation of the education strategy, develops criteria and standards for accreditation of academic programmes, assesses compliance with regulatory and national requirements, oversees the development of the IBMS scheme for continuing professional development and the standards for training.

The Committee accounts to Council through an annual report outlining progress against their work programme.

The Education and Professional Standards Committee comprises nine Council members who are appointed by the President to serve for a period of one year. A representative of Heads of University Centres for Biomedical Science (HUCBMS) is a non-voting member of the Committee. The Committee is supported by the Executive Head of Education who, as one of five senior managers accountable to the Chief Executive within the IBMS, is jointly responsible for delivering the work programmes that underpin the IBMS's corporate strategy and operational leadership and management of education staff in the department.

3.9. Advisory Panels

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The IBMS has established advisory panels in the following specialties:

- Cellular Pathology
- Clinical Chemistry
- Cytopathology
- Haematology
- Immunology
- Medical Microbiology
- Transfusion Science
- Virology

Advisory panels comprise expert members and are chaired by one of the members who are appointed by the Education and Professional Standards Committee.

The Chair of the Specialist Advisory Panel is supported by a Deputy Chair and a panel of up to 10 other members that include:

- Chief Examiner (*ex officio*)
- 2 Deputy Chief Examiners
- Company Member
- Maximum of 6 ordinary members

The members of the advisory panels are a source of advice on a broad range of topics including patient/service user perspective which in addition to their specialist knowledge, is brought by virtue of their interaction with service users as a normal part of service delivery.

3.10. Service User Engagement Group

A Service User and Patient Carer Engagement Group will ensure service users and carers are involved in the programme and add their voice and perspective to the process of review and continued improvement of the programmes.

Service user and carer members (6)

- Lay representatives x2 (to input to the review and development of the programme from a service user and carer perspective and raise issues that are important to service users patient carers)
- Professional group representative x2 (e.g. phlebotomist, POCT nurse, medical practitioner) that has professional interactions with registered practitioners from pathology services
- Service provider representatives x2 to advise on interaction with service users

and carers from a service delivery and staff development perspective

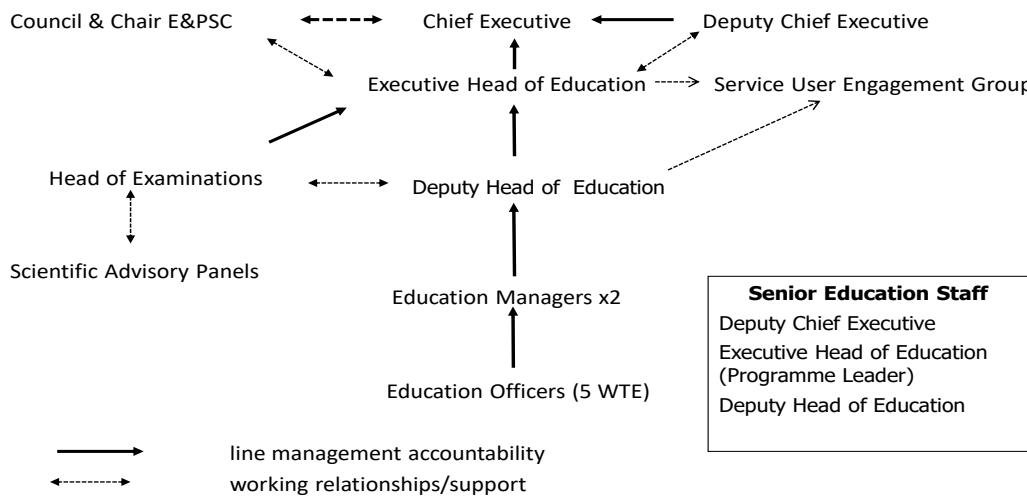
Service user and carer members will be supported by the following programme team members:

- Member of the IBMS Education and Professional Standards Committee (to act as Chairperson)
- Executive Head of Education (as Programme Leader)
- Deputy Head of Education (with responsibility for registration standards)

The group will input to the management and development of all of the IBMS's HCPC approved programmes. The group will meet atleast once a year as part of the programme cycle and be expected to participate in annual monitoring process and the review of programme documentation.

3.11. The Executive Head of Education is responsible for the day to day management of the administrative Education Team, the approval of protocols that determine the delivery of service, the training of staff and the monitoring and maintenance of standards. All members of administrative Education Team receive training against the protocols to ensure the delivery of a standardised and consistent level of service for this programme. All inquiries and questions from applicants and those enrolled on the programme come to the Education Team via a dedicated email address or through the education phone lines. Senior members of the education team will answer specific queries and provide professional advice to candidates.

Governance Structure



3.12. Responsibility for the quality of programmes provided by the IBMS ultimately lies with the Executive Head of Education and senior education team but careful monitoring of this takes place at several other points:

- The Executive Head of Education and education team undertake the day-to-day responsibility for programme provision
- A designated Clinical Scientist member of the Advisory Panel will provide advice and support to the Executive Head of Education with respect to the specialty specific aspects of the IBMS Clinical Scientist Certificate of Attainment (Experiential Route) programme
- The Education and Professional Standards Committee receive quarterly reports on the education department workload. They will review copies of assessment panel reports (individual and Final Stage One report, Stage Two report and recommendations) and applicant/mentor feedback reports
- The Executive Head of Education in conjunction with Education and Professional Standards Committee considers overall issues affecting the quality of the programme on a quarterly basis
- External Examiners' Reports will provide an annual external assessment of quality measures
- Annual Programme Report – monitors overall programme performance in each academic session and produces action plans to address any major issues

- Service User Patient Carer Engagement Group will input to the management and development of all of the IBMS's HCPC approved programmes
- 3.13. The recommendation to apply to the HCPC for approval of a clinical scientist equivalence route, in addition to the existing approved programmes approved, was made to Council by the Education and Professional Standards Committee in response to a perceived service need. As expected numbers of applicants was low it was established that the IBMS's education department, comprising five full time members of administrative staff professionally led by a HCPC registered Executive Head of Education and supported by the Deputy Head of Education could support the delivery of the programme as a core business element alongside other approved education programmes that support HCPC registration. These financial implications of this are monitored through the IBMS's accounting system.
- 3.14. The programme is managed under the direction of the Institute's Education and Professional Standards Committee (see above explanation of committee governance arrangements and relationship to the Council). This committee meets quarterly and comprises nine members of Council, is chaired by an individual elected from the Committee membership and is supported by the Executive Head of Education. Minutes of all meetings are taken and provide a report to the quarterly meetings of the IBMS's Council.
- 3.15. Each candidate admitted to the programme will have their own personal file created at the point of acceptance. This file will be used to maintain a record of all monitoring processes.

4. Programme Admissions

4.1. Entry Requirements

- 4.1.1. Applicants applying for admission may have a variety of relevant qualifications and experience and will be considered on an individual basis. They are not required to be members of the IBMS.
- 4.1.2. Applicants are strongly advised to read the Guidance to Candidates and Curriculum Handbook for their specialism prior to considering an application.
- 4.1.3. Applicants will be required to provide a statement confirming that they currently work with a high level (M level) professional practice in health or scientific settings that equates to the role of an HCPC registered clinical scientist.
- 4.1.4. Applicants will be expected to confirm their ability to provide evidence that they have already undertaken training and assessment by clinical scientists or medical practitioners to work at this level.
- 4.1.5. An MSc degree level qualification or equivalent is a pre-requisite for an IBMS Clinical Scientist Certificate of Attainment (Experiential Route) to be awarded.
- 4.1.6. Applicants are required to submit a fitness to practise declaration from their employer as part of the application. Applicants should note that professional misconduct during the application or assessment process could lead to their withdrawal from the programme.
- 4.1.7. If English is not the first language evidence of English language competency to IELTS 7.0 with no element falling below 6.5 must be provided.
- 4.1.8. The IBMS operates an equality and diversity policy which applicants are invited to complete. A copy of the monitoring form can be downloaded from the IBMS website.
<https://www.ibms.org/resources/documents/ibms-equality-and-diversity-monitoring-form/>
- 4.1.9. The initial application process is completed by submitting hard copies of documents. Where an applicant requires assistance with completion of the application they can contact the IBMS Education Department via a dedicated email equivalence@ibms.org

4.1.10. All elements of the process must be completed in line with the guidance and criteria supplied in this document.

4.2. Application Rules

4.2.1. Only one application can be made at any time. Reapplications following a rejection are permitted but must include how the applicant has addressed the outcomes previously determined as being unsatisfactory.

4.2.2. The full application fee must be paid at the time of the application.

4.2.3. If a fraudulent submission is suspected of being made, other external bodies may be contacted for information. Applicants who are considered to have deliberately made fraudulent applications will be informed they are not permitted to continue, although they have the right to appeal within the structure of the process. Instances of proven or suspected fraud by an applicant already registered with the HCPC will be reported to the HCPC.

4.2.4. Applicants are required to submit a valid Disclosure and Barring Services (DBS) check: this was previously known as the Criminal Record Bureau (CRB) check. Applications that are submitted without at least a basic level version will not be processed.

If the employer does not currently retain a valid DBS check on behalf of the applicant (and their current address is in the UK) they can request a basic disclosure from:

- <https://www.gov.uk/disclosure-barring-service-check/overview>
- For applicants in Scotland <https://www.disclosurescotland.co.uk>
- For applicants in Northern Ireland <http://www.disclosuresni.co.uk>

Applicants who have a criminal conviction from overseas are expected to declare this on their application form.

4.2.5. If the candidate has a disability that might affect the assessment viva voce, it must be declared upon application, and the panel will be provided with a declaration of the disability. The panel must then consider how to mitigate the effects on the interview and ensure fairness. Any disability that is not declared on the application form cannot be taken into account at viva.

4.2.6. Following initial screening applicants who are not accepted are provided with a report summarising the reasons for their rejection. Applicants will not be eligible to re-apply within 12 months and must be able to demonstrate they have engaged in further professional development through systems that ensure

periods of education and training are effective in meeting the standards of proficiency.

- 4.2.7. Once accepted onto the programme applicants are expected to comply with the HCPC standards of conduct, performance, and ethics (2016) as these are reflected in the standards of proficiency against which the candidate will be providing evidence from their prior learning and development. Their understanding of the implications of the standards of performance and ethics must be confirmed in the application form. If, during the programme, the employer or mentor has any issues or concerns about a candidate's profession-related conduct this should be reported to the IBMS. Failure to comply with these standards of conduct, performance, and ethics could lead to withdrawal from the programme.
- 4.2.8. Concerns should be submitted to the IBMS Executive Head of Education in written form explaining in relation to professional conduct, which standard has been breached, the evidence for this and what action has been taken (this will depend on the seriousness of the breach). A report will then be provided to the Education and Professional Standards Committee who will make a decision on whether or not the evidence of unprofessional conduct affects the candidate's eligibility to apply to the HCPC for registration as a clinical scientist and whether the action taken by the employer is sufficient to mitigate the concerns. The basis for judging this will be the HCPC standards of conduct, performance and ethics.
- 4.2.9. The Education and Professional Standards Committee decide one of the following outcomes:

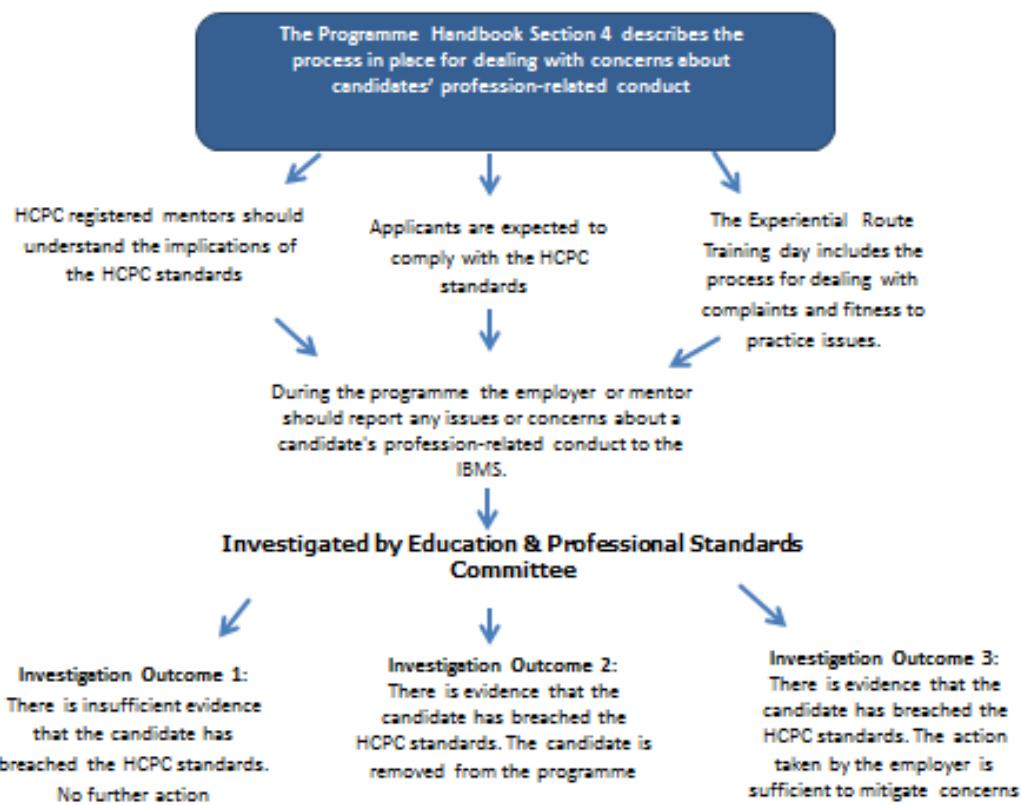
Outcome 1. The candidate remains on the programme with no further action taken because there is insufficient evidence that the candidate has breached the HCPC standards of conduct, performance and ethics.

Outcome 2. The candidate is withdrawn from the programme because there is evidence that the professional conduct of the candidate has breached the HCPC standards of conduct, performance and ethics and the evidence indicates that the candidate requires further training. If further training is required this would not be appropriate for the programme approved by the HCPC as it is exempt from the HCPC standards of education and training related to training and therefore the IBMS does not have any way of quality assuring learning experiences undertaken post application.

Outcome 3. The candidate is not withdrawn from the programme because although there is evidence that the professional conduct of the candidate has

breached the HCPC standards of conduct, performance and ethics but the evidence indicates that the candidate does not require further training and the action taken by the employer is sufficient to mitigate concerns. Committee will require confirmation from the mentor that there has been no further breach of the standards in the final monitoring report.

- 4.2.10. Decisions by the Committee will be communicated to the employer, mentor and candidate after the meeting and recorded in their file for information.
- 4.2.11. Appeals can be made using the IBMS appeal process (contact equivalence@ibms.org for further information). They can only be made on procedural grounds. The outcome of the appeal is final.



5. Programme Outcomes

The integration of knowledge with professional practice and the application of this to the candidate's scope of practice in their specialism will be the basis for assessing other elements of competence to practise as a clinical scientist in the following overarching areas.

A broad understanding of:

- a. The structure and function of the human body, as relevant to practice, together with a knowledge of health, disease, disorder and dysfunction, and pathology
- b. The role of other professions in health and social care
- c. The theoretical basis, and the variety of approaches to, assessment and intervention
- d. The legislation and professional and statutory codes of conduct that affect health and social care practice
- e. Philosophy and policy of health and social care and its translation into ethical and evidence-based practice
- f. The need to establish and maintain a safe practice environment

A detailed knowledge of:

- a. The principles and applications of scientific enquiry, including the evaluation of treatment efficacy and the research process
- b. The basic science underpinning the modality in which the registrant practices, relevant basic clinical medicine and the fundamental principles of clinical practice
- c. The wider clinical situation relevant to the patients presenting to the specialty
- d. The ways in which professional principles are translated into action through a number of different diagnostic, monitoring, treatment and management approaches, and how to select approaches to meet the needs of an individual
- e. The clinical applications of the specialty and the consequences of decisions made upon actions and advice
- f. The evidence base that underpins the use of the procedures employed by the service

- g. The principles associated with a range of techniques employed in the modality
- h. The standards of practice expected from techniques

The ability to:

- a. Identify the clinical decision which the test/intervention will inform
- b. Make judgement on the effectiveness of procedures
- c. Provide interpretation of data and a diagnostic (therapeutic) opinion, including any further action to be taken by the individual directly responsible for the care of the patient
- d. Understand the wider clinical situation relevant to the patients presenting in the specialty
- e. Develop/devise an investigation strategy taking into account the complete clinical picture
- f. Supervise others as appropriate to areas of practice
- g. Respond to enquiries regarding the service provided when dealing with clinical colleagues
- h. To communicate with patients, carers and relatives, the public and other healthcare professionals as appropriate
- i. Communicate the outcome of problem solving and research and development activities

6. Curriculum Underpinning the Certificate of Attainment Experiential Portfolio and Experiential Portfolio Assessment

- 6.1. The curriculum for the IBMS Clinical Scientist Certificate of Attainment Experiential Portfolio is underpinned by knowledge and skill standards expressed in the Quality

Assurance Agency (QAA) for Higher Education Benchmark statement: Health care programmes (Clinical science) 2004.

6.2. The curriculum comprises broad generic components and specialist components related to a particular specialty. The generic components include professional practice standards, quality assurance and audit, health and safety, legislation, evidence based medicine, development in reflective practice, critical thinking and research methods and are predominately defined by the HCPC standards of proficiency and outcome of the aforementioned QAA subject benchmark statement. The subject specific components are defined by the requirements for Masters level professional practice characteristic of the specialism and based on the curriculum Modernising Scientific Careers Scientist Training Programme (STP) MSc Curriculum for Blood Sciences and the Association of Clinical Scientists competences for clinical biochemistry, clinical immunology and haematology.

6.3. The subject specific curriculum is divided into the following sections:

- Clinical Management
- Clinical Physiology and Pathology
- Investigative Techniques and Procedures
- Investigative Disorders

These areas are the basis for the learning outcomes, i.e. statements that describe significant and essential knowledge, understanding and skills that the candidate has achieved and can reliably demonstrate as evidence that the HCPC standards of proficiency have been met. Each learning outcome in the module is mapped to one or more HCPC standard of proficiency in the IBMS Clinical Scientist Certificate of Attainment Experiential Portfolio.

6.4. Changes to the curriculum are informed by Council members, IBMS examiners and discipline specific experts on the basis of the operational and strategic implications arising from new initiatives that may impact on professional practice.

6.5. The IBMS Council through its Education Department and Education & Professional Standards Committee is responsible for initiating and managing the review of its standards, guides, policies and processes in response to scheduled updates made at quarterly meetings and annual External Examiner reports to ensure their appropriateness to current professional and regulatory standards.

7. Academic Knowledge and Skills for Clinical Scientists

- 7.1. Applicants will be expected to have an MSc degree or equivalent academic level of qualification and be able to evidence M-level practice that requires a high level experience of autonomous professional practice and expertise in one of the following specialities:

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- Clinical Biochemistry
 - Clinical Immunology
 - Clinical Microbiology
 - Haematology
- 7.2. The academic knowledge and skills are designed to show that those able to demonstrate they have met the HCPC standards of proficiency for clinical scientists (December 2014) have a strong scientific role with specific clinical elements that is applied in a specialist area. The vehicle for this is the IBMS Clinical Scientist Certificate of Attainment Experiential Portfolio.
- 7.3. The IBMS Clinical Scientist Certificate of Attainment Experiential Portfolio groups the standards of proficiency for clinical scientists that the HCPC published in December 2014 into modules that relate to specific areas of practice.
- 7.4. The purpose of this is to relate the standards to distinct areas of practice and to reduce duplication of evidence. The HCPC standards themselves are organised into knowledge and competence learning outcomes against which the individual is assessed. Candidates will be expected to demonstrate they have met the knowledge and skills in the modules, thus requiring them to demonstrate they have achieved the HCPC threshold standards of academic learning, professional skills and the application of these in their professional scope of practice.
- 7.5. The modules are grouped under two sectional headings:

Section 1: Professional Conduct

This is core to the principles of fitness to practise and is defined by standards that relate to professional roles and conduct. The relevant modules grouped under Professional Conduct are:

- Module 1: Personal Responsibility and Development
- Module 2: Equality and Diversity
- Module 3: Communication
- Module 4: Patient Records and Data Handling
- Module 5: Professional Relationships

Section 2: Professional Skills and Standards

This is core to applicants being expected to show they have the skills and standards required to practise as a clinical scientist.

- Module 1: Application of Professional Knowledge
- Module 2: Health and Safety
- Module 3: Quality
- Module 4: Performing Standard Investigations
- Module 5: Research and Development

7.6. Modular Aims, Curriculum, and Learning Outcomes

Section 1: Professional Conduct

Module 1: Personal Responsibility and Development

To complete this section of the IBMS Clinical Scientist Certificate of Attainment Mapping Document you must be able to demonstrate you have worked in an environment that has enabled you to receive training and gain experience relevant to the learning outcomes for this specialty. You must provide evidence to demonstrate you meet the standards of proficiency required to practise as a clinical scientist.

You are required to demonstrate an understanding of contractual responsibilities and expected behaviour of a clinical scientist. The HCPC standards of conduct, performance and ethics and the Institute of Biomedical Science Code of Conduct and Guide to Good Professional Practice are reference points, together with other organisational and national/international standards. As a registered Clinical Scientist you must be able to recognise the responsibilities you have for your own professional behaviour and its impact on others, the level of autonomy that comes with your responsibility for completing tasks and procedures, for using judgment within broad parameters and being able to reflect on this and other learning opportunities to inform self-development. Central to this is the contribution of healthcare science to patient care, patient safety, service delivery, research and innovation, often at the cutting edge of science. All clinical scientists must understand the impact of their work on patients and patient care and remember that their work has a direct or indirect impact on patient care.

In the context of service users there are three areas of practice that are considered appropriate when interpreting the standards of proficiency:

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1. Patients or carers in clinics and/or wards where there is direct contact with biomedical and clinical scientists
2. Professional groups that have direct patient healthcare role which relies on pathology services including clinical laboratory investigation, advice, treatment evaluation and research
3. Service providers that employ biomedical and/or clinical scientists for services that contribute to the patient healthcare pathway.

Aims

To demonstrate a detailed knowledge and experience base for the candidate's own professional behaviour and awareness of its impact on others. This includes the level of autonomy that comes with responsibility for completing tasks and procedures, for using judgment within broad parameters and being able to reflect on this and other learning opportunities to inform self-development as a clinical scientist.

Indicative Curriculum

- Standards of proficiency for clinical scientists
- Structure and organisation of the department, its relationship to the local clinical setting and how this compares with other locations in the UK
- Role of service users with respect to their rights, dignity, values, and autonomy including their role in the diagnostic and therapeutic process and in maintaining health and wellbeing
- Basic understanding of financial accountability, budget control and resource management
- Principles of clinical governance including clinical audit, accreditation requirements relevant to the specialism including equality and diversity, confidentiality, informed consent and data security
- Management principles and structures
- European Community (EC) Working Time Directive (1996) and its principles
- The role of appraisal in staff management and development
- Principles of training and development of staff
- Principles of lifelong learning and continuing professional development

Learning Outcomes

To be able to:

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1. *Describe the appropriate action and referral mechanisms available when personal limit of practice has been reached. (HCPC SoP 1, 1.1, 2, 4.5)*
2. *Show an understanding of the importance of financial accountability, budgetary control and resource management.(HCPC SoP 1.2)*
3. *Demonstrate a detailed knowledge of all aspects of the department's operations, of their inter-relationships and of the pre-, intra- and post-analytical factors that affect quality and service delivery and how it fits into the local clinical setting and the relationship of the service to the interests and needs of different service users. (HCPC SoP 2.1-2.5)*
4. *Explain and critically evaluate the structures, processes and methodologies that underpin the quality of the service provided by their employer and quality improvement initiatives to promote high-quality patient care and enhance patient safety, and discuss the quality mechanisms relevant to your division/specialism. (HCPC SoP 2.1-2.5)*
5. *Show an understanding of the way the specialty is structured and practiced in other locations within the UK. (HCPC SoP 2.1-2.5)*
6. *Demonstrate the competence, and therefore the potential, to provide leadership and support for staff continuity in the different aspects or areas of departmental activity, e.g. scientific, technical, research and development; quality assurance, audit, accreditation; reporting, clinical liaison; health and safety, staff training; IT, budget and management (management principles and tools used in the services and factors that influence access to and use of services available). (HCPC SoP 4, 4.1, 4.2, 4.3, 4.4, 4.5, 14.1)*
7. *Demonstrate the ability to conduct duties and responsibilities in accordance with local, professional and regulatory policies and practice to ensure there is a high standard of care and trust with service users even in circumstances of personal incompatibility (HCPC SoP 2.4, 2.6, 2.7, 3.1)*
8. *Describe how principles of self-management and time keeping are applied in relation to service delivery and prioritising the workload. (HCPC SoP 1.2)*
9. *Demonstrate an understanding of the role of the Health and Care Professions Council (HCPC) by describing its role and requirements for statutory regulation with specific reference to:*
 - *How HCPC standards of proficiency apply to professional practice*

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- *How the HCPC standards of conduct, performance and ethics (2016) apply to professional practice*
- *Professional Indemnity Insurance and the relevance of this to their scope of practice*. (HCPC 2.2, 3)*

**To note: you must make sure that the professional indemnity arrangement you have in place provides appropriate cover, i.e. appropriate to your practice, taking into account the nature and extent of its risks. If you are a member of the IBMS your professional indemnity insurance covers you for your role whether you are a biomedical scientist or clinical scientist. If you are not a member you should check with your employer that you are covered with respect to your employment role, i.e. as either a biomedical scientist or clinical scientist.*

10. *Demonstrate an understanding of the need to respect and uphold the rights, dignity, values, and autonomy of service users, including their role in the diagnostic and therapeutic process and in maintaining health and wellbeing. (HCPC SoP 2.3)*
11. *Demonstrate how the principles of patient confidentiality are upheld by working in accordance with policies that protect the dignity, privacy and confidentiality of service users. (HCPC SoP 2.3, 2.4)*
12. *Demonstrate an understanding of the importance of maintaining physical and mental well-being and how to take appropriate action in response to one's own health issues. (HCPC SoP 3.2)*
13. *Demonstrate an understanding of the implications of the European Community (EC) Working Time Directive (1996) and its principles. Demonstrate how you comply with departmental time-keeping policy. (HCPC SoP 3.2)*
14. *Demonstrate an understanding of the principles of continuing professional development (CPD) in relation to responsibility for maintaining personal competence and that of staff being supervised. (HCPC SoP 3.3, 11,11.1)*
15. *Discuss and appraise the ethical foundations of professionalism, including critical reflection, and how these relate to the clinical scientist, the patient, the practice of healthcare science and the wider healthcare environment. (HCPC SoP 3.3, 11,11.1)*
16. *Demonstrate that active participation in the training and professional development of staff and work towards targets for personal, academic, professional and career development. (HCPC SoP 4.5, 4.7)*

Evidence for this module is expected to come from the following sources:

- Personal statement that summarises employment history and how specialty specific competences have been developed at postgraduate level. This should be supported by copies of certificates of relevant postgraduate qualifications, competence assessment reports, reports on placements or secondments.
- Involvement in management, supervision and/or training of staff within the laboratory.
- Expert briefing/individual tutoring sessions.
- Self-directed learning activities, personal critical reflection, personal development plan, CPD activities.
- Evidence based (e.g. reflective statements) participation in local seminars and meetings, attendance at clinical audit meetings and clinical governance committees.
- Personal involvement in recognition and solution of problems with laboratory or clinical scenarios that demonstrate the opportunity for experience-based learning and enhancement of self-development.

Module 2: Equality and Diversity

To complete this section of the IBMS Clinical Scientist Certificate of Attainment Mapping Document you must be able to demonstrate you have worked in an environment that has enabled you to receive training and gain experience relevant to the learning outcomes for this specialty. You must provide evidence to demonstrate you meet the standards of proficiency required to practise as a clinical scientist.

You must be able to recognise and respect the equality culture and diversity of people and their rights and responsibilities. You are expected to be proactive against discrimination and act as a role model.

Aims

To demonstrate a detailed knowledge and experience base with respect to developing and maintaining an equality culture that recognises the diversity of people and their rights and responsibilities.

Curriculum

HCPC standards of conduct, performance and ethics.

Equality and diversity policies and legislation a local and national level.

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Principles of equality and diversity.

Learning outcomes

To be able to:

1. *Demonstrate an understanding of HCPC standards of conduct, performance and ethics (2016) by describing how it applies to equality and diversity. (HCPC SoP 5, 6)*
2. *Demonstrate an understanding of how local policies and national legislation on diversity and equal opportunities apply to your professional practice. (HCPC SoP 5.1)*
3. *Demonstrate the application of the principles of equality and diversity in their own practice and to those you supervise. (HCPC SoP 6)*

Evidence for this module is expected to come from the following sources:

- Local training and development courses
- Personal statement to demonstrate understanding and application in practice
- Witness statements

Module 3: Communication

To complete this section of the IBMS Clinical Scientist Certificate of Attainment Mapping Document you must be able to demonstrate you have worked in an environment that has enabled you to receive training and gain experience relevant to the learning outcomes for this specialty. You must provide evidence to demonstrate you meet the standards of proficiency required to practise as a clinical scientist.

You will be expected to apply a variety of communication methods and approaches, appropriate to others and the situation, in order to facilitate and promote constructive outcomes. You will be expected to be able to communicate effectively on difficult, complex and sensitive issues and demonstrate the ability to overcome barriers to communication. This must take into account factors such as age, capacity, learning ability and physical ability, characteristics and consequences of verbal and non-verbal communication and how this could be affected by factors such as age, culture, ethnicity, gender, socio-economic status

and spiritual or religious beliefs and needs of assisted communication (use of interpreter).

Aims

To demonstrate a detailed knowledge and experience base for responding to enquiries regarding the service provided when dealing with clinical colleagues and other healthcare professionals, to communicate with patients, carers and relatives, and to communicate the outcomes of problem solving and research and development activities.

Applicants who do not have English as their first language and do not have a UK degree are required to provide evidence of English language skills with a minimum International Language Testing System (IELTS) score of 7.0 with no element less than 6.5, or a Test of English as a Foreign Language (TTOEFL) Internet Based Test with a minimum score of 100/120. (HCPC SoP 8.2)

Curriculum

Application of a variety of communication methods and approaches in order to facilitate and promote constructive outcomes in different situations relative to the specialty.

Effective communication on difficult, complex and sensitive issues, including ethical aspects of communication with patients and the public.

Overcoming barriers to communication.

Presentation skills.

Learning outcomes:

To be able to:

1. *Demonstrate the ability to communicate clearly and with confidence to clinical and other professional colleagues both within and outside the profession of the specialism. (HCPC SoP 8, 8.1, 8.2, 8.3, 8.5). This includes the following :*
 - *How communication should be modified to address and take account of factors such as age, capacity, learning ability and physical ability*
 - *How communication can be affected by factors such as age, culture, ethnicity, gender, socio-economic status and spiritual or religious beliefs*
 - *How communication needs of the service users can be assisted (e.g. through the use of an interpreter)*

2. Demonstrate the ability to appropriately summarise and present complex scientific ideas and information in order to educate and train others both within and outside the profession for the specialism. (HCPC SoP 8.10)
3. Demonstrate the use of correct clinical and medical language and terminology pertinent to the specialism. (HCPC 8.6)
4. Demonstrate the ability to communicate with patients, carers and relatives, the public and other healthcare professionals as appropriate. (HCPC 8.4, 8.7, 8.8)
5. Demonstrate the ability to receive and respond to a variety of sources of information and be able to solve problems by a variety of methods, including the use of appropriate software. (HCPC SoP 8.1)
6. Clearly convey information or results to the appropriate level of detail, demonstrate an understanding that different communication methods may be required to facilitate effective feedback and participation of others. (HCPC 8.9)
7. Explain the principles of effective written and verbal communication and feedback, considering the needs and dignity of patients, the public, health professionals and scientists. (HCPC SoP 8.4, 8.10)

Evidence for this module is expected to come from the following sources:

- Presentations at scientific meetings, oral and written communications within and outside the department, through seminars, case presentations, posters, peer-reviewed publications in the specialty.
- Representative appointments, e.g. committee membership, advisory panel, specialist interest groups.

Module 4: Patient Records and Data Handling

To complete this section of the IBMS Clinical Scientist Certificate of Attainment Mapping Document you must be able to demonstrate you have worked in an environment that has enabled you to receive training and gain experience relevant to the learning outcomes for this specialty. You must provide evidence to demonstrate you meet the standards of proficiency required to practise as a clinical scientist.

You must be able to demonstrate the knowledge and skills needed to follow correct procedures for recording, sharing, storing and accessing information in the laboratory with respect to your role as a clinical scientist.

Aims

To demonstrate a detailed knowledge and experience base to follow and initiate correct procedures for recording, sharing, storing and accessing information in the laboratory with respect to the role of a clinical scientist.

Curriculum

Information governance, data security.

Legislation, protocols and guidance for managing records.

Information management systems and the use of information technology relevant to the specialism.

Learning outcomes

To be able to:

1. *Demonstrate an understanding of the data protection policies by describing the extent to which the Data Protection Act 1998, and other legislation and professional guidance covers patients, research and laboratory records. (HCPC SoP 7, 7.1, 7.3, 10.1, 10.2)*
2. *Apply knowledge of data security and apply due diligence to password strength, email attachments, downloading file, backup storage etc. (HCPC SoP 10.1, 10.2)*
3. *Demonstrate the ability to maintain accurate, clear laboratory records in accordance with legislation requirements and local procedures for handling and recording clinical and other types of information. (HCPC SoP 10, 10.1)*
4. *Demonstrate ability to educate and train others in the purpose of accurate, clear laboratory records, and the need to follow standard operating procedures for handling and recording clinical and other types of information. (HCPC SoP 7.2, 10)*
5. *Demonstrate an understanding of all aspects of information technology pertinent to service provision and a competence to use it for effective practice in the specialism. (HCPC SoP 7.2, 10)*

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- Personal statement to demonstrate understanding and use of IT pertinent to service provision and support of effective practice to the level required in the specialism
- Training certificates
- Witness statements

Module 5: Professional Relationships

You must demonstrate that you can sustain a consistent approach to work relationships in the context of the role of a clinical scientist in order to achieve the best results for service users. This is achieved by recognising and valuing the contributions of other team members and demonstrating the ability to work effectively with others and develop productive working relationships. This includes the building and sustaining professional relationships as an independent practitioner.

In the context of service users there are three areas of practice that are considered appropriate when interpreting the standards of proficiency:

1. Patients or carers in clinics and/or wards where there is direct contact with biomedical and clinical scientists
2. Professional groups that have direct patient healthcare role which relies on pathology services including clinical laboratory investigation, advice, treatment evaluation and research
3. Service providers that employ biomedical and/or clinical scientists for services that contribute to the patient healthcare pathway

Aims

To demonstrate a detailed understanding and experience base to contribute effectively to work undertaken as part of a multi-disciplinary team as a clinical scientist.

Curriculum

Role of clinical scientist.

Principles of team working.

Recognising and valuing the contributions of other team members.

Working effectively with others and develop productive working relationships.

Learning outcomes

1. *Demonstrate how the role of a clinical scientist impacts on other professional groups in the provision of patient focussed healthcare. (HCPC SoP 9, 9.1, 9.2, 9.3, 13.3, 13.4). These may include:*
 - a) *Groups that have professional interactions with patients and carers relying on the output of pathology services and including:*
 - Other pathology disciplines
 - Accident and Emergency
 - Intensive Care Unit
 - Theatres
 - Wards (including specialist units)
 - Outpatient clinics
 - Mortuary
 - General practitioners
 - Health education
 - Occupational health/ Social Care services
 - Public health/Epidemiology
 - b) *Patients in clinics and wards (e.g. POCT, phlebotomy) where there is direct contact*
 - c) *Employers who interact with professional groups to which pathology services are provided and who therefore rely on the knowledge and skills of registrants for service delivery and improvement*
2. *Demonstrate an understanding of how the role of a clinical scientist relates to their personal scope of practice and the relationship to other professionals, and the ability as an independent practitioner to build and sustain professional*

*relationships in order to contribute effectively as part of a multi-disciplinary team.
(HCPC 9.2, 9.4)*

3. *Demonstrate an understanding and application of the principles of team working with respect to leadership, individual contributions and differing opinions in the laboratory team. (HCPC SoP 9.2)*

Evidence for this module is expected to come from the following sources:

- Job description
- Self-statement (with examples) on how contributions to multi-disciplinary team meetings have been effective
- Evidence based examples of responsibility taken for supervision, team leadership.
- Representative appointments, e.g. committee membership, advisory panel, specialist interest groups and evidence of professional contribution
- Please note evidence must include a reflective report demonstrating an understanding of the importance of the experience gained by interaction with service users patient carers, and the contribution this makes to professional development, for example in planning and evaluating diagnostics, treatments and interventions

7.6.2. Section 2: Professional Skills and Standards

Module 1: Professional Knowledge

To complete this section of the IBMS Clinical Scientist Certificate of Attainment Mapping Document you must be able to demonstrate you have worked in an environment that has enabled you to receive training and gain experience relevant to the learning outcomes for this specialty. You must provide evidence to demonstrate you meet the standards of proficiency required to practise as a clinical scientist.

This is the basis for statutory regulation as a clinical scientist and you must be able to demonstrate a strong knowledge base appropriate to the specialty and to the investigations, therapeutic intervention strategies and to development and evaluation of new and current methods.

Aims

To demonstrate a detailed understanding and experience base to provide interpretation of data and a diagnostic opinion, including further action to be

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taken in the care of the patient. This includes demonstrating individual leadership responsibility for specific work of the laboratory service related to the specialty.

Curriculum

Fundamental principles for an understanding of the pathogenesis, clinical features and classification of the major categories of disorders investigated relevant to the specialism.

Basic principles and structures underpinning history taking, clinical examination and clinical decision making.

Clinical applications of the specialty.

Patient history and examination and development of clinical investigation and management plans.

Learning outcomes

To be able to:

1. *Explain fundamental principles for an understanding of the pathogenesis, clinical features and classification of the major categories of disorders investigated relevant to their specialism. (HCPC SoP 13, 13.1, 14)*
2. *Demonstrate accountability for individual leadership and team responsibilities for specific work of the laboratory service related to the specialty. (HCPC SoP 13.5)*
3. *Discuss, compare and contrast a range of leadership models, including those that underpin current NHS Leadership and Competency Frameworks, and identify and critically evaluate how your personal values, principles and assumptions affect your personal leadership style. (HCPC SoP 13.5).*
4. *Describe and evaluate the basic principles and structures underpinning history taking, clinical examination and clinical decision making and show the application of this in the context of their role in their specialty through the integration of specialty parameters with other diagnostic parameters in the overall clinical assessment of the patient. (HCPC SoP 14, 14.8, 14.9, 14.13)*
History taking and clinical examination should cover:
 - *Importance of patient-centred care, treating patients with respect, honesty and compassion, maintaining patient dignity and confidentiality and putting the patient first*
 - *Duty of candour and the importance of this in healthcare*
 - *Informed consent*

- *Principles, guidance and law with respect to informed consent*
- *Introduction to the patient, including role of the Clinical Scientist*
- *Explanation to the patient*
- *Structured models for presenting a patient history*
- *Process of patient-centred interviewing and the features of a good consultation with respect to: initiating the session, gathering information, building the relationship, explaining and planning, closing the session*
- *Link between the patient history and examination and development of clinical investigation and management plans*
- *Shared clinical decision making*
- *How information from a history and examination is used to develop clinical management plans*

5. Demonstrate an experience-based understanding of all aspects of the diagnostic process and the wider clinical situation relevant to the service user including:

- *Comprising history-taking*
- *Clinical examination*
- *Formulation of differential diagnoses*
- *The role of pathology and other clinical service investigations; and the consequent integration of knowledge relevant to the clinical situation of individual patients, including how practice may change to take account of new developments or changing contexts such as the effect of drugs or treatments. (HCPC SoP 13.2, 13.6, 13.8, 13.9, 14, 14.1, 14.8, 14.10, 14.12, 14.17, 14.22)*

6. Recognise the need to be aware of emerging technologies and new developments in order to demonstrate the application of evidence-based investigation and clinical management of the patient. (HCPC SoP 12.10)

7. Demonstrate the application of evidence-based professional knowledge to interpret data in order to provide diagnostic and therapeutic opinions, including any further action which the individual directly responsible for the care of the patient or service user should take. (HCPC SoP 12.10, 14.9, 14.17, 14.22)

8. Demonstrate an experience based understanding of the clinical relevance of the results of specialty specific investigations for the patient, and where appropriate, family members, and the ability identify the clinical decision which the test/intervention will inform. (HCPC SoP 14.11)

Evidence for this module is expected to come from the following sources:

- Employer reference
- Evidence of training
- Job description
- Case studies
- Research
- Reporting of laboratory investigations, clinical interpretation/advice
- Examples of clinic leadership
- Participation in scientific meetings
- Notes from clinical liaison meetings
- Attendance at ward rounds, clinical audit and governance meetings
- Clinical report authorisation
- Witness testimonies

Module 2: Health and Safety

To complete this section of the IBMS Clinical Scientist Certificate of Attainment Mapping Document you must be able to demonstrate you have worked in an environment that has enabled you to receive training and gain experience relevant to the learning outcomes for this specialty. You must provide evidence to demonstrate you meet the standards of proficiency required to practise as a clinical scientist.

Aims

To ensure a detailed understanding and experience base to work in accordance with national legislation and organisational policy for health and safety and contribute to the evaluation and improvement of procedures in the specialty.

Curriculum

Requirements and obligations of health and safety, including infection control. Health and safety legislation/policies at local and national level applicable to the specialism.

Procedures for risk assessments and reporting of injuries, diseases, dangerous occurrences regulations (RIDDOR).

Immunisation requirements.

Learning outcomes

To be able to:

1. Demonstrate an understanding of how the laboratory health and safety policies, controlling legislation and appropriate procedures of risk assessment (e.g. RIDDOR, clinical governance) for the specialty. (HCPC SoP 15, 15.2, 15.3)
2. Demonstrate an understanding of the potential hazards associated with the handling of tissue and other biological products in the specialty. (HCPC SoP 15, 15.2, 15.6)
3. Demonstrate the ability to establish safe environments for practice, which minimise risks to service users, those treating them and others, including the use of hazard control and infection control. (HCPC SoP 15, 15.1, 15.2, 15.5,) This includes:
 - Determining when it is not possible to work safely and take remedial action in order to work in accordance with laboratory safety protocols. (HCPC SoP 15.2)
 - Confirming that work is carried out with due respect to different types of hazards including fire, electrical, biological, chemical, radiation, moving and handling and the use of visual display units. (HCPC 15.3)
 - Knowing the correct use of personal protective equipment and how this applies to each biohazard category. (HCPC SoP 15.4)
 - Knowing the risks associated with specimens (fixed and unfixed), clinical waste and equipment and describe the correct procedure for handling samples that may contain hazard group 2, 3 and 4 pathogens.(HCPC 15.5)
 - Knowing the immunisation requirements for the laboratory staff and the role of occupational health. (HCPC SoP 15.7)
 - Knowing the principles and applications of disinfectants, methods for sterilisation and decontamination and for dealing with waste and spillages correctly. (HCPC SoP 15.8)

Evidence for this module is expected to come from the following sources:

- Evidence of initiating and evaluating health and safety audits
- Authors/review of health and safety policies
- Evidence based attendance (e.g. reflective statements) of participation in health and safety training seminars
- Evidence of initiating and evaluating risk assessments
- Critical appraisal of laboratory practices

- Evidence based involvement in recognition and solution of problems with laboratory or clinical scenarios

Module 3: Quality

You must demonstrate experience of maintaining quality improvement programmes and improving the quality of your own work and that of others against the organisational and professional standards that are used to measure it.

In the context of service users there are three areas of practice that are considered appropriate when interpreting the standards of proficiency:

1. Patients or carers in clinics and/or wards where there is direct contact with biomedical and clinical scientists
2. Professional groups that have direct patient healthcare role which relies on pathology services including clinical laboratory investigation, advice, treatment evaluation and research
3. Service providers that employ biomedical and/or clinical scientists for services that contribute to the patient healthcare pathway

Aims

To ensure a detailed understanding and experience base for the application of internal and external quality control and assessment procedures, audit and accreditation procedures and performance criteria relevant to evaluating the provision and reproducibility of the laboratory testing service in the specialty.

Curriculum

- Patient safety
- Horizontal and vertical audit
- Clinical audit
- Pathology accreditation schemes
- National quality assurance programmes
- Quality methodologies
- Quality processes and procedures
- Clinical governance
- Current NHS quality management and improvement systems
- Quality assurance to protect patients and assure high-quality healthcare science services, and deliver safe and effective services

Learning outcomes

To be able to:

1. *Contribute effectively in case conferences and other methods of review and recognise the value of these in the clinical diagnosis of the patient. (HCPC SoP 11.2)*
2. *Demonstrate an understanding of the role of accreditation in pathology and the requirement for accreditation schemes relevant to the modality. (HCPC SoP 12.6)*
3. *Demonstrate an experience based understanding of the sources of variation that can occur in the performance of the major categories of specific procedures in their specialism and through a continued awareness how they demonstrate, by example, a climate of quality management, assurance and maintenance of quality improvement programmes in the laboratory. (HCPC SoP 12)*
4. *Demonstrate an experience based understanding and application of maintaining different types of audit used in quality management system. (HCPC 12.1, 12.3, 12.4)*
5. *Demonstrate an understanding and experience in the use of quality control and quality assurance techniques including restorative action when performance deteriorates. (HCPC SoP 12.5)*
6. *Demonstrate an experience base and understanding (for example through active participation in seminars, discussion groups and training) of the application of the principles of quality assurance, clinical performance parameters, accreditation and clinical audit to evaluating and improving the reproducibility of the commonly requested investigations relevant to this modality. (HCPC 12.1, 12.2, 12.3, 12.4, 12.5, 12.7, 12.8, 12.9)*
7. *Demonstrate the ability to make judgements on the effectiveness of common procedures relevant to the discipline used in the diagnosis and management of patients and revise an investigation strategy in conjunction with other service users taking into account the complete clinical picture. (HCPC SoP 12.7)*

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- Evidence-based participation in national quality schemes
- Evidence-based attendance (e.g. reflective statements) of participation in quality audits
- Examples of initiating and evaluating quality assessments
- Critical appraisal of laboratory practices
- Examples of involvement in recognition and solution of problems with laboratory or clinical scenarios

Module 4: Performing Standard Investigations

You must demonstrate you have achieved a high level of competence in performing analytical techniques and procedures in common use in this specialty at a standard that produces consistently valid results.

You must be able to demonstrate an understanding of the requirements of accuracy and precision of a procedure in the context of diagnosis, prognosis, monitoring and treatment and the effects of pre- and post-analytical variables, including the effects of confounding factors such as age, pregnancy and drugs.

Aims

To ensure a detailed understanding and experience base for performing analytical techniques and procedures in common use in this specialty at a standard that produces consistently valid results.

Curriculum

Principles and application of common procedures/investigations/techniques used in the specialism.

Selection of appropriate diagnostic tests for individual patients and interpretation of results.

Collection, receipt, retention, storage and respectful disposal of human tissues and samples.

Troubleshooting problems that might arise during the routine application of techniques.

Use of quality control and quality assurance, including remedial action when performance deteriorates.

Learning Outcomes

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To be able to:

1. Demonstrate an understanding of the legal and professional requirements for the collection, receipt, retention, storage and respectful disposal of human tissues and samples. (HCPC SoP 13.7)
2. Demonstrate an understanding of the scientific, operational and outcomes associated with the range of techniques employed in the subject specific curriculum and be able to recognise, solve and minimise problems with standards of practice expected from these techniques. (HCPC SoP 13.7, 13.10, 13.11, 13.12, 14.3, 14.5, 14.6, 14.7, 14.16)
3. Demonstrate a high level of practical competence in any specialist techniques relevant to an intended or actual area of specialisation. (HCPC SoP 13.12, 14.2, 14.4)
4. Demonstrate the ability to identify the clinical decision which the test/intervention will inform and undertake or arrange investigations relevant to the clinical situation. (HCPC SoP 13.10, 14.14)
5. Demonstrate an understanding and the requirements for accuracy and precision of a procedure in the context of diagnosis, prognosis, monitoring and treatment and the ability to make judgements on the effectiveness of procedures taking into account the effects of pre- and post-analytical variables (including the effects of confounding factors such as age, pregnancy and drugs) for the appropriate interpretation and assessment of diagnostic procedures, (HCPC SoP 14.15)

Evidence for this module is expected to come from the following sources:

- Evidence based statements on work experiences
- Participation of approved training programmes
- Formal training and competence assessment records at local or national
- Practical training and assessment of junior staff
- Employer statement on scope of practice

Module 5: Research and Development

To complete this section of the IBMS Clinical Scientist Certificate of Attainment Mapping Document you must be able to demonstrate you have worked in an environment that has enabled you to receive training and gain experience relevant

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to the learning outcomes for this specialty. You must provide evidence to demonstrate you meet the standards of proficiency required to practise as a clinical scientist.

You must demonstrate you have applied your knowledge and understanding of disease processes in the context of the study/investigation of those processes. You should be able to generate ideas, assess, plan, conduct, evaluate, interpret and report research and undertake projects, which includes original research; and disseminate the findings and, where appropriate, the adoption of the findings. You should also be able to use research to improve practice by applying your knowledge and understanding from a professional, evidence-based approach to research into the pathogenesis and origins of disease processes, and the diagnosis and monitoring of disease.

Aims

To ensure a detailed understanding and practical experience base for the role of research, development and innovation in the NHS in improving patient care, including prevention, diagnostics, treatment and service delivery.

Curriculum

Ethics approval processes and research governance (e.g. Human Tissue Act).
Key statistical concepts and methods typically used in research.
Intellectual property issues and copyright.
Critical evaluations of scientific literature and writing up a literature review.
Presenting quantitative and qualitative data, publishing and communicating research results.

Learning outcomes

1. *Demonstrate the ability to design, plan, conduct and report on investigations which may bring new techniques into the laboratory. (HCPC SoP 14.21)*
2. *Discuss and justify the research, audit and innovation process from idea generation to dissemination/implementation, including patient/user. (HCPC SoP 14.21, 14.26)*
3. *Explain and justify current UK ethical and governance frameworks and processes spanning the conduct of human and animal research, innovation and audit. (HCPC SoP 14.21)*

4. *Critically evaluate the literature/evidence base in the light of existing knowledge to identify a research question and create a new approach or technique to improve patient care or service delivery. (HCPC SoP 14.20, 14.23, 14.27)*
5. *Demonstrate the ability to conduct experimental work, produce and present result of statistical analysis, give a clear and accurate account of a subject, marshal arguments, and engage in debate and dialogue both with specialists and non-specialists. (HCPC SoP 14.18, 14.19, 14.24, 14.25, 14.26)*
6. *Demonstrate the ability to present outcomes of research or development work at a standard suitable for presentation. (HCPC SoP 14.28)*
7. *Discuss and critically evaluate the context within which research, development, innovation and audit are undertaken to improve patient care, promote innovation and improve service delivery. (HCPC 14.29)*

Evidence for this module is expected to come from the following sources:

- Critical evaluation of literature to identify research questions
- Grant applications
- Supervised or collaborative research project (abstract only required)
- Examples of participation on research and development projects
- Peer reviewed papers, posters/presentations
- Evidence based participation in local research meetings

8. Subject Specific Curriculum

Each specialism has a subject specific curriculum that is based on the curriculum Modernising Scientific Careers Scientist Training Programme (STP) MSc Curriculum for Blood Sciences (the development of which had input from the IBMS Specialist Advisory panels) and the Association of Clinical Scientists competences for clinical biochemistry, clinical immunology and haematology.

The specific curriculum for each specialty underpins the HCPC standards of proficiency (SoP) represented in *Section 2: Module 1 Application of Professional Knowledge* of the the IBMS Clinical Scientist Certificate of Attainment Experiential Portfolio. However, through the integration of knowledge with professional practice the application of this to the candidate's scope of practice in their specialism will also be the basis for assessing other elements of competence to practise as a clinical scientist in the following broad areas.

The subject specific curriculum is divided into the following sections:

- Clinical Management
- Clinical Physiology and Pathology
- Investigative Techniques and Procedures
- Investigative Disorders

These areas are the basis for the learning outcomes, i.e. statements that describe significant and essential knowledge, understanding and skills that the candidate has achieved and can reliably demonstrate as evidence the HCPC standards of proficiency have been met. Each learning outcome in the module is mapped to one or more HCPC standard of proficiency in the IBMS Clinical Scientist Certificate of Attainment Experiential Portfolio.

Subject areas are detailed in full in separate Curriculum Handbooks (Clinical Biochemistry; Clinical Immunology; Haematology). The key areas for these are:

8.1. Clinical Biochemistry

To cover the following areas:

- Clinical and Laboratory Management
- Clinical Physiology and Pathology
- Fluid and Electrolyte Disorders
- Acid-Base Disorders
- Kidney Disease

- Liver Function and Associated Disease States
- Biochemical Investigation of Diabetes Mellitus and Hypoglycaemia
- Lipids, Lipoproteins and Cardiovascular Disease: Core analytes: Cholesterol, Triglyceride, HDL-Cholesterol, Creatine Kinase, Troponin, BNP or NTproBNP. Associated analytes: CK-MB, Myoglobin, hs-CRP
- Major Lipids in Atherosclerosis and Cardiovascular Disease
- Diagnosis of Cardiovascular Disease Risk Factors
- Diagnosis of Acute Coronary Syndrome
- Diagnosis of Chronic Heart Failure
- Disorders of Calcium, Phosphate and Magnesium Homeostasis
- Cancer Biochemistry and Tumour Markers (including PSA, AFP, CEA, HCG, FOB and HIAA)
- Specific Protein Markers
- Hyperuricaemia and Gout
- Investigation of Micronutrients ((vitamins, Trace Elements))
- Gastrointestinal Disorders and Malabsorption
- Therapeutic Drug Monitoring
- Chemical Toxicology (General Toxicology, Drugs of Abuse)
- Gastrointestinal Inherited Metabolic Disorders and Newborn Screening: Prenatal Screening for Predicting Down's Syndrome
- Investigation of Thyroid Disease
- Abnormal Pituitary Function
- Reproductive Endocrinology
- Investigation of Adrenal Disease
- Point of Care Testing (POCT)

8.2. Clinical Immunology

To cover the following areas:

- Clinical and Laboratory Management
- Clinical Physiology and Pathology
- Light Microscopy, Fluorescent Microscopy, Image Capture and Analysis
- Immunochemical Techniques
- Investigation of Rheumatological Diseases:
 - Diagnosis and monitoring of Rheumatoid Arthritis
 - Antinuclear Antibodies
 - dsDNA Antibodies
 - Extractable Nuclear Antigens (ENAs)
 - Phospholipid Antibodies
- Gastrointestinal Disorders:

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- Coeliac Disease
- Liver Disease
- Pernicious Anaemia
- Renal Disease:
 - Antineutrophil Cytoplasmic Antibodies (ANCA)
 - Myeloperoxidase and Proteinase 3
 - Glomerular Basement Membrane
 - Phospholipase A2 Receptor (PLA2R) Antibodies
- Neurological Disease:
 - Autoantibodies Associated with Neurological Disease
- Endocrine Disease:
 - Adrenal Cortex
 - Ovary and Testes
 - Type I Diabetes Mellitus
 - Thyroid Antibodies
- Dermatological Disease:
 - Pemphigus and Pemphigoid Antibodies
- Immunoglobulins:
 - Serum Immunoglobulins G, A, M, E and D
 - Immunoglobulin Light Chains and Bence-Jones Protein
 - Cryoglobulin
 - Immunoglobulin Subclasses and Specific Antibodies
 - Total IgE and Allergen Specific IgE
 - Oligoclonal Bands
- Complement & Other Acute Phase Proteins:
 - Complement Cascade
 - Disorders of Complement
 - Acute Phase Proteins
- Cellular Immunology:
 - Immunophenotyping T and B cells
 - T Lymphocyte and Natural Killer Cell Function
 - Neutrophil Function Tests

8.3. Clinical Microbiology

To cover the following areas:

- Clinical and Laboratory Management
- Clinical Physiology and Pathology
- Pathogen Characterisation Techniques
 - Light Microscopy, Fluorescent Microscopy, Image Capture and Analysis
- Serological Diagnosis
- Antimicrobial Susceptibility Testing
- Identification of Pathogenic Microorganisms
 - Phenotypic Techniques
 - Matrix Assisted Laser Desorption Ionisation Time of Flight (MALDI-ToF)
 - Molecular Techniques
 - Typing
 - Toxin Detection
 - Point of Care Testing
- Sample Specific Considerations
 - Urinary Samples
 - Microscopy
 - Automated Screening Techniques
 - Bacterial Pathogens
 - Urinary Antibiotics
- Genital Samples
 - Microscopy
 - Genital Tract Pathogens
- Gastro-Intestinal Tract
 - Bacterial Pathogens
 - Detection of Viral Pathogens
 - Detection of Toxins and Markers
 - Serological Identification of Bacteria
 - Typing Techniques
 - Faecal Ova, Cysts and Parasites
- Mucosal and Soft Tissue Samples
 - Microscopic Interpretation
 - Wound and Abscesses, Mucosal Surfaces, Tissue Samples, Orthopaedic Samples
 - Detection of Toxins

- Cerebral Spinal Fluid and other normally sterile body fluids
 - Microscopy
 - Bacterial and Non-Bacterial Pathogens
- Blood Culture Samples
 - Principles and use of Blood Culture Systems
 - Microscopy
 - Bacterial Pathogens
- Lower Respiratory Tract Samples
- Mycology
- Principles of infection control

8.4. Haematology

To cover the following areas:

- Clinical and Laboratory Management
- Clinical Physiology and Pathology:
 - White Blood Cells, Red Blood Cells, Platelets
 - Malignancy, Haemostasis, Transfusion
- Investigative Techniques and Procedures:
 - Basic Laboratory Procedures and Techniques
 - Immunochemical Techniques
 - Light Microscopy
 - Fluorescent Microscopy
 - Image Capture
- Primary Investigations of Blood and its Components
 - Cell Counting and Haemoglobin Concentration Measurement
 - Erythrocyte Sedimentation Rates (ESR)/Plasma Viscosity
 - Identification and Enumeration of Peripheral Blood Cells by Microscopy
 - Infectious Mononucleosis
- Abnormal Haemoglobins and Thalassaemia
 - Sickle Cell
 - Haemoglobin Variants (HbS, C, D, E)
 - Imbalanced Globulin Chain Production
 - Unstable Haemoglobin
- Investigation of enzymopathies
- Haemolytic Anaemia
 - Haemolytic Anaemia Screening Tests
 - Inherited and Acquired Haemolytic Anaemia
- Micronutrients
 - Functional Iron Deficiency and Iron Overload

- Vitamin B12/Folate Deficiency
- Malaria
 - Malaria Parasites
- Malignancies
 - Haematological Malignancies
- Haemostasis
 - Haemostasis Function
 - Fibrinogen
 - D-Dimer Measurement
 - Anticoagulant Therapy
 - Bleeding Disorders
 - Thrombotic Disorders
 - Lupus Anticoagulant

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9. Application Process

9.1. The following documents will be required for **initial application** for admittance to the programme:

- Completed application form
- Description of current role¹ to confirm the applicant is working at M-level in their specialty and has the ability to demonstrate they can evidence the requirements of IBMS Clinical Scientist Certificate of Attainment Experiential Portfolio. This should also confirm that the environment in which the candidate developed their practice prior to application had resources sufficient, appropriate and available to support their development and scope of practice to the threshold level of clinical scientist registration
- Assessment fee (£300). Please note unsuccessful applications will incur a £50 administration fee, and the remainder of the fee will be refunded
- Proof of ID (Copy of passport or government issued photo ID e.g. driving licence)
- Photocopy of the applicant's qualification certificate(s)
- Photocopy of change of name (if relevant)
- UK NARIC² comparability for any non-UK qualification(s)
- Valid Disclosure and Barring Services (DBS) check³
- Evidence of English language (IELTS level 7), if English not first language
- Completed laboratory training self-assessment form

¹Candidates will only be considered if they are currently working in healthcare science in the UK. Individuals seeking HCPC registration who are working outside of the UK are advised to consult the HCPC directly. Information for this can be found at <http://www.hcpc-uk.org/apply/international/>.

²The National Academic Recognition Information Centre for the United Kingdom (UKNARIC) is used to ensure overseas qualifications are equivalent to those in the UK and therefore a photocopy of UK NARIC comparability for any non-UK qualification(s) must be included.

³Applicants who have a conviction outside of the UK will be expected to also declare this.

Please note: All photocopied I.D. material and certificates must be signed by the applicant's manager as verification to the authenticity of the document(s).

- 9.2. If the candidate has a disability that might affect the assessment viva, it must be declared upon application, and the panel will be provided with a declaration of disability form. The panel must then consider how to mitigate the effects on the interview and ensure fairness. Any disability that is not declared on the application form cannot be taken into account at interview.
- 9.3. This application screening process will ensure the validity of qualifications and periods of experience are appropriate to the applicant's potential to gather evidence to fulfil the requirements of the IBMS Clinical Scientist Certificate of Attainment Experiential Portfolio.
- 9.4. Applicants must have access to a named mentor who is HCPC registered as a Clinical Scientist and has read and understood the information available on the IBMS website related to the IBMS Clinical Scientist Certificate of Attainment (Experiential Route) award. The mentor is to provide professional support and advice for the applicant's submission of evidence. Please note: Applicants who do not have a mentor may contact the IBMS prior to application.
- 9.5. IBMS executive staff will check the application and submitted documentation to confirm the criteria for admittance to the programme have been met.
- 9.6. If the criteria for admittance have been met successful applicants will be issued with electronic copies of the IBMS Clinical Scientist Certificate of Attainment Experiential Portfolio and Mapping Document and given 12 months from the date of issue to submit the required documents for assessment.
Submission of evidence can occur at any time during this period. They will be advised that the portfolio of evidence must include:
- Evidence of academic and vocational qualifications where relevant to the standards of proficiency for clinical scientists
 - Evidence of prior structured training and competence assessment appropriate to their current scope of practice
 - Evidence of experiential learning and CPD in their current practice
 - Evidence of their scope of practice (witness testimonies, case studies, presentations, audits, clinical case work; research projects or collaborations, for example)
 - Evidence must demonstrate they have been assessed in the specialty by appropriately qualified individuals (clinical scientist or medical practitioner)
- 9.7. Each candidate accepted onto the programme is required to submit to the IBMS Education Department **1 electronic copy** of their completed IBMS Clinical Scientist Certificate of Attainment Experiential Portfolio Mapping Document and **1 paper**

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copy of their portfolio of evidence within 12 months of acceptance onto the programme plus an electronic version of each. Evidence must be clearly indexed and cross-referenced to the corresponding sections of the IBMS Clinical Scientist Certificate of Attainment Experiential Portfolio and HCPC standards of proficiency for clinical scientists.

- 9.8. Applicants who do not meet the criteria will be notified their application has been rejected and which criteria they failed to meet.

10. Candidate Support

- 10.1. Candidates are not required to be members of the IBMS but are able to contact the IBMS Education Department staff for support in relation to completion of applications, evidence for completion of portfolios, application progress and outcomes. A designated email address ClinicalScientistexperiential@ibms.org will provide access to IBMS executive staff for advice during working hours. Additional guidance is available from the IBMS website information and programme documents.
- 10.2. Candidates will have additional support from mentors. Mentors are identified before applications have been submitted and are not identified by the IBMS. Applicants are advised that mentors should be HCPC registered clinical scientists and therefore able to advise on suitable evidence for the standards of proficiency. A separate document Role of Mentors: Guidance for Candidates and Mentors is available on the IBMS website.
- 10.3. Candidates and their mentor will be asked to complete individual feedback reports after three months in order to monitor progress and provide an opportunity for any problems to be highlighted and resolved before the time limit for submission of evidence expires.
- 10.4. Candidates and their mentor will also be asked to complete final feedback reports at the end of the programme. These will be used as part of the annual monitoring and programme review/quality enhancement process.
- 10.5. Candidates can apply for extensions to periods of evidence collection and portfolio completion by writing to the IBMS Education Department and formally setting out extenuating circumstances for the extension. The IBMS senior education team are experienced in offering advice or counselling on all aspects related to completion of evidence for the HCPC approved routes to registration offered by the IBMS.
- 10.6. All details of extenuating circumstances (including periods of sickness) submitted by a candidate for an extension to periods of evidence collation and portfolio completion will be dealt with in confidence.
- 10.7. Extenuating circumstances will be reviewed by IBMS executive staff and an extension may be granted. Durations of extensions may vary but the maximum period for an extension before reapplication is required is 6 months (i.e. a total of 18 months to submit evidence since the initial application was accepted).

- 10.8. Candidates and mentors should also note that advice on further training in order to produce evidence for the Experiential Portfolio will only be provided prior to the application. As this is an experiential route all training must be completed before the application as evidence must be based on retrospective learning and practice only. Advice of training will not be provided once the candidate has been admitted to the programme.
- 10.9. Individuals are able to register a complaint at any time about the equivalence process if they feel the IBMS has not provided the service it has stated in its programme documentation. Complaints will be dealt with in accordance with the IBMS complaint handling procedure which can be found at <https://www.ibms.org/contact-us/customer-service/>

11. Assessment Process

- 11.1. Assessment of the evidence provided for the IBMS Clinical Scientist Certificate of Attainment (Experiential Route) will be carried out by peer review: an assessment panel comprising a clinical scientist who will act as the designated lead, a biomedical scientist (both of these specific to the specialty) and a lay representative.
- 11.2. Each assessor will be appointed by the IBMS and all will have undergone IBMS training to be assessors for the IBMS Clinical Scientist Certificate of Attainment Experiential Portfolio.
- 11.3. There are two parts to the assessment.
- 11.4. **Part One:** Each member of the assessment panel will receive copy of the candidate's IBMS Clinical Scientist Certificate of Attainment Experiential Portfolio mapping document, and a Part One assessment report form.
- 11.5. Each member will determine, on a case by case basis, whether the evidence mapped by the candidate to the IBMS Clinical Scientist Certificate of Attainment Experiential Portfolio is at the level required to meet the HCPC standards of proficiency for Clinical Scientists. They will confirm this for each standard of proficiency. A final collated report will be agreed by the assessors indicating whether or not there is sufficient evidence to initially confirm the standards of proficiency have been met. This collated report will make a recommendation whether or not the candidate should proceed to Part Two based on the following outcomes:
 - Outcome 1: Candidate has met all of the requirements for mapping evidence against the IBMS Clinical Scientist Certificate of Attainment Experiential Portfolio and may proceed to Part Two
 - Outcome 2: Candidate has partially met the requirements for mapping evidence against the IBMS Clinical Scientist Certificate of Attainment Experiential Portfolio and is required to submit further evidence to address specific standards of proficiency before they proceed to Part Two

As candidates must have already completed their training before being accepted onto the programme they will be advised that evidence must relate to prior learning and development and must not be generated from additional training that has taken place since they were admitted to the programme. They will also be advised on the possible sources of evidence specific for the standard

that would be suitable to demonstrate the standard has been met. Candidates will be allowed a maximum of 6 months to submit further evidence. Only the standards requiring additional evidence will be reassessed. If the evidence submitted by the candidate is insufficient further advice will be provided and the candidate will have a further 3 months to provide suitable evidence. Following this stage either outcome 1 or outcome 3 of the portfolio assessment will apply.

- Outcome 3: Candidate has failed to meet the requirements for mapping evidence against the IBMS Clinical Scientist Certificate of Attainment Experiential Portfolio and will need to resubmit their portfolio of evidence for full assessment. Candidates will be advised on the type of evidence that would be suitable to demonstrate the standards have been met. As further training may be required candidates will not be allowed to remain on the programme and will need to re-apply for admittance to the programme. They will not be able to re-apply before 12 months has elapsed. A charge of £100 will apply for re-assessment and admission.

If the evidence provided has been accepted and a recommendation made for the candidate to proceed to Part Two of the assessment process, the candidate will be sent a copy of the final Part One report by the IBMS and invited to attend a *viva voce* with the assessment panel. If the evidence provided is not accepted as sufficient and the recommendation in the final Part One report is not to proceed to Part Two the candidate will be advised in accordance with the recommendations of the report.

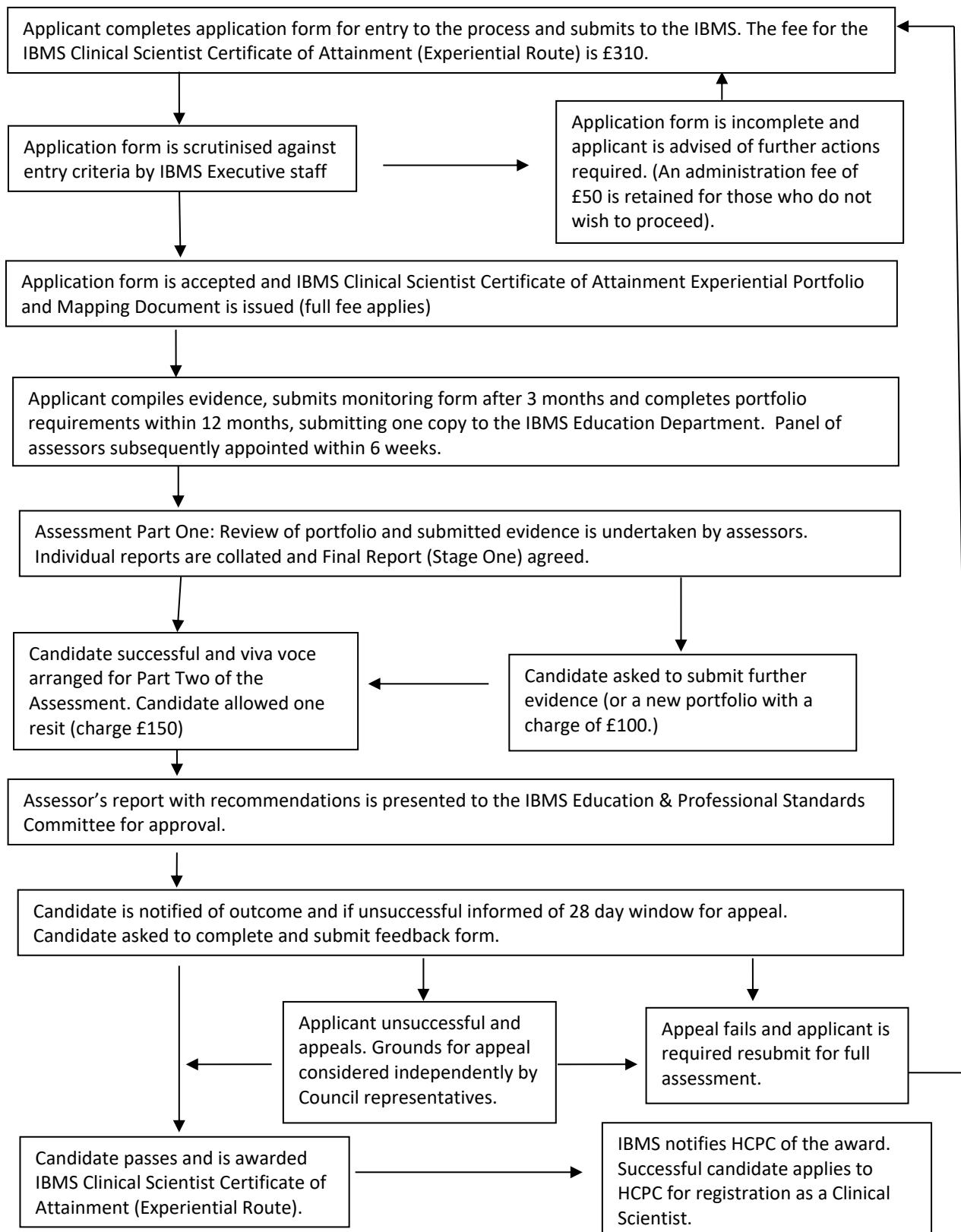
- 11.6. In the event of the assessors being unable to reach a consensus opinion on the assessment outcome the candidate is still referred to Part Two and areas of concern are specifically examined in addition to other areas of the portfolio. However, in this instance a third assessor will automatically be appointed to the *viva* panel, with a requirement that they are a registered clinical scientist.
- 11.7. **Part Two:** A *viva voce* will be held in order for the panel to explore aspects of the candidate's education and training, and their understanding of the standards of proficiency based on the evidence submitted in the portfolio and questions related to the practice of their specialty, thereby confirming their suitability for the award. Each assessment will normally last about 60 minutes.

The assessors will together produce a final Part Two outcome report and a recommended outcome of the assessment process for submission to the IBMS Education and Professional Standards Committee.

The assessors will be expected to make one of the following summative recommendations in their report:

- Outcome 1: Candidate has met all of the requirements for the award of the IBMS Clinical Scientist Certificate of Attainment (Experiential Route)
 - Outcome 2: Candidate has failed to meet the requirements for the award of the IBMS Clinical Scientist Certificate of Attainment (Experiential Route)
- 11.8. In the event of the assessors being unable to reach a consensus opinion on the assessment outcome it is referred back to the IBMS Education and Professional Standards Committee for the appointment of an independent assessor. This individual would be required to review all submitted material and assessor reports and to discuss the issues with the two professional assessors to enable a final recommendation to be reached.
- 11.9. Following consideration of all reports from Stage One and Stage Two by the IBMS Education and Professional Standards Committee candidates will be notified in writing of the outcome of their assessment and invited to complete a feedback form to enhance process monitoring. If all of the necessary outcomes of the programme have been met the letter to the candidate will include the award of an IBMS Clinical Scientist Certificate of Attainment (Experiential Route) and confirmation that their name has been forwarded to the HCPC and they are eligible to apply for admittance to the register as a clinical scientist.
- 11.10. If the necessary outcomes of the programme have not been met the candidate will be advised in the letter whether a period of education/training is required in order to meet a shortfall against the standards.
- 11.11. Candidates who are unsuccessful after Stage Two will be allowed one opportunity to resit the *viva voce*. This will incur a charge of £150.
- 11.12. Unsuccessful candidates will have the opportunity to appeal on procedural matters related to the assessment process. Appeals must be made within 28 days of the applicant being notified of their assessment outcome. Appeals must be made in writing to the IBMS Executive Head of Education and clearly state the reasons for the appeal with supporting evidence where appropriate. Appeals will be considered by an appeals panel of the external examiner and two HCPC registered members of the IBMS Council who are not associated with any aspect of the application.

11.13. Flowchart to summarise application and assessment process.



Institute of Biomedical Science, 12 Coldbath Square, London EC1R 5HL

Tel 020 7713 0214 Fax: 020 7837 9658 E-mail equivalence@ibms.org Website: www.ibms.org

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12. Assessment Strategy

- 12.1. The assessment strategy is based on the principle that eligibility to apply for HCPC registration is achieved through completion of IBMS Clinical Scientist Certificate of Attainment Experiential Portfolio which is the vehicle for demonstrating an individual meets the HCPC standards of proficiency for clinical scientists.
- 12.2. Individuals are expected to achieve the broad threshold standards of academic learning and professional skills, and specialty specific competences for their current professional practice.
- 12.3. The candidate has a flexible approach to the submission of evidence for assessment in that relevant and equivalent achievements are recognised in order to avoid a requirement to repeat levels of education and/or training that have already been exceeded.
- 12.4. All evidence presented for recognition of experiential learning must be in keeping with the IBMS Code of Conduct and policy for Good Professional Practice.
- 12.5. The range of evidence required to establish the standards of proficiency for clinical scientists have been met should enable assessment of the scientific knowledge base including: understanding and application in the work place; practical skills, communication skills and professionalism for the specialism.
- 12.6. The professional judgements to establish the standards of proficiency for clinical scientists have been met through the evidence provided at each stage of the assessment are made by a pair of trained assessors comprising a clinical scientist and a biomedical scientist specific for the specialty. .
- 12.7. To ensure a standardised approach to the application and assessment process External Assessors must have attended an IBMS Clinical Scientist Certificate of Attainment (Experiential Route) Portfolio Initial Assessment Training prior to appointment and attend Assessor Refresher Days at least once in two years.
- 12.8. To ensure a standardised approach to the application and assessment process IBMS education executive staff must have attended an IBMS Clinical Scientist Certificate of Attainment (Experiential Route) Portfolio Initial Assessment Training prior to assessment of applications and attend Assessor Refresher Days at least once in two years.
- 12.9. Appointed assessors should use their professional knowledge, understanding and where appropriate, experience of the role of a clinical scientist to assess the

applicant's competence and fitness to practice against the assessment outcome indicators in the following table:

Assessment Outcome Indicators		
Assessment Outcome Part One	Action	Reason
Portfolio is rejected	Candidate advised further training is required before reapplication	Many of the standards lack appropriate evidence. There may be omissions or lack of depth in the evidence that indicate candidate lacks experience in the scope of practice required to meet the standards of proficiency for a clinical scientist.
Portfolio partially accepted	Candidate asked to address shortfall in evidence against specific HCPC standards of proficiency and resubmit evidence within 6 months	Evidence demonstrates majority of standards of proficiency (<80%) have been met but evidence for some may be limited in depth and extent.
Portfolio accepted	Action proceeds to Part Two of the assessment process.	Evidence is sufficient to demonstrate HCPC standards of proficiency have been met or can be met based on further exploration in the <i>viva voce</i> .
Assessment Outcome Part Two	Action	Reason
Candidate has met all of the requirements for the award of the IBMS Clinical Scientist Certificate of Attainment (Experiential Route);	Candidate recommended for award of IBMS Certificate of Attainment	Candidate displays a sound understanding of the central issues. There are no significant absences in evidence of knowledge and ability relevant to the subject specific areas of the specialty.
Candidate has failed to meet the requirements for the award of the IBMS Clinical Scientist Certificate of Attainment (Experiential Route).	<p>Candidate not recommended for award of IBMS Certificate of Attainment.</p> <p>Candidate must resubmit their application.</p>	<p>Candidate attempted to address the questions but answers contains some significant factual or conceptual errors.</p> <p>There may be major omissions related to knowledge or ability relevant to the subject specific areas of the specialty indicating insufficient understanding to merit a pass.</p>

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12.10. Assessment decisions are based on generic curriculum of the programme and subject specific academic curriculum articulated in the Curriculum Handbooks, and specifically the Programme Learning Outcomes for IBMS Clinical Scientist Certificate of Attainment Experiential Portfolio which are mapped to the HCPC standards of proficiency for clinical scientists. The candidate should be able to provide evidence that they have worked in an environment that has enabled them to receive training and gain experience at a level that can unequivocally demonstrate the relevant standard of proficiency for clinical scientists has been met.

13. Assessment Regulations and Award

- 13.1. The IBMS ensures through its formal assessment process described in this document that only individuals meeting the requirements of all the HCPC standards of proficiency for clinical scientists are eligible to receive the IBMS Clinical Scientist Certificate of Attainment (Experiential Route).
- 13.2. The final decision for the award rests with the IBMS Education and Professional Standards Committee.
- 13.3. The award confers eligibility for the recipient to apply to the HCPC for registration as a clinical scientist. It cannot result in the award of an academic qualification, automatic registration with the HCPC or automatic changes to employment bands.
- 13.4. All of the HCPC standards of proficiency for clinical scientists must be met. There will be no compensation or condonement of competences related to these.
- 13.5. There are no other awards offered as outcomes of the assessment process.
- 13.6. Appeals can be made using the IBMS appeal process. They can only be made on procedural grounds. The outcome of the appeal is final.
- 13.7. Reports will be made to the IBMS Education and Professional Standards Committee (E&PSC) and an annual quality review will be undertaken by an External Examiner. These will be based on information collected from the assessments (e.g. outcomes, common areas of failure, feedback from assessors and applicants). Recommendations from E&PSC meetings will be used to monitor and review guidance information and processes as required. The annual review will be used to improve and update processes to ensure processes are maintained and consistent with current practice and standards.

14. Staff Development

- 14.1. IBMS Education Department staff will receive initial training prior to undertaking activities related to programme internal administrative processes and updates as part of normal staff development.
- 14.2. To ensure a standardised approach to the application and assessment process IBMS senior education staff must have attended an IBMS Clinical Scientist Certificate of Attainment (Experiential Route) Portfolio Initial Assessment Training day prior to assessment of applications and attend annual Assessor Refresher Days at least once in two years.
- 14.3. External assessors must attend an initial training day and meet the learning outcomes for this. Refresher training for external assessors will take place annually as part of the annual quality review. External assessors are expected to participate at least once in two years.
- 14.4. Opportunities to engage in related professional development exist as part of wider IBMS functions, namely:
 - Annual Council and advisory panel update and development meetings
 - IBMS training conferences and the biennial Congress
 - Annual/biennial CPD officer update days
 - Local presentations
 - IBMS Clinical Scientist Certificate of Attainment (Experiential Route) assessor training days

About this document

Title:	IBMS Clinical Scientist Certificate of Attainment (Experiential Route): Programme Handbook
Produced by:	Education Department
Version:	Version 4
Active date:	December 2020
Review date:	September 2023
Contact:	Education Department T: +44 (0)20 7713 0214 E: equivalence@ibms.org

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