

**COMPETENCES REQUIRED FOR APPLICANTS
TO ATTAIN STATE REGISTRATION AS CLINICAL SCIENTISTS**

SPECIALTY :

CLINICAL EMBRYOLOGY



This document comprises a discipline-specific version of the general competence document and provides additional guidance as to how to complete the general document, Appendix 1 of the Guidelines, that you must submit with your application.

Remember that the aim of the process is for the candidate to satisfy the assessor that he or she has the appropriate basic qualifications and length of experience for issue of the Certificate of Attainment, and that the training programme/period of supervised practice has enabled the candidate to achieve the basic level of competence required for registration as a clinical scientist.

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GENERIC COMPETENCES		SPECIFIC COMPETENCES
HPC Standards of Proficiency Code – Clinical Scientist	1-SCIENTIFIC	Be able to demonstrate the rigorous application of scientific methods in his/her experience to date
3a.1	<ul style="list-style-type: none"> understanding the science that underpins the specialty (modality) and the broader aspects of medicine and clinical practice 	<ul style="list-style-type: none"> must understand the principles of the techniques and methods employed in the discipline must be able to advise on a choice of treatments or referral to clinical colleagues or GPs where relevant must be familiar with the evidence for, and limitations of, the common procedures relevant to the discipline used in the diagnosis and treatments of patients must have a basic knowledge of related disciplines in order to be able to integrate relevant diagnostic results into an interpretation must be familiar with information on developments and needs in the discipline
3a.1	<ul style="list-style-type: none"> demonstrating a strong base of knowledge appropriate to the specialty and to the investigations and therapeutic options available 	
2b.1	<ul style="list-style-type: none"> experience of searching for knowledge, critical appraisal of information and integration into the knowledge base 	
2b.4	<ul style="list-style-type: none"> ability to apply knowledge to problems associated with the routine provision, and development, of the service 	
2a.1	<ul style="list-style-type: none"> ability to identify the clinical decision which the test/intervention will inform 	
2a.3, 2c.1	<ul style="list-style-type: none"> ability to make judgements on the effectiveness of procedures 	
2a.2	<ul style="list-style-type: none"> application of the knowledge base to the specialty (modality) and to the range of procedures/investigations available 	
<i>Achievement of:</i>	<ul style="list-style-type: none"> a critical understanding of the scientific and clinical methods employed in the practice of clinical embryology a critical understanding of the application of investigative protocols and diagnostic tests to assess the fertility potential of a couple, including semen analysis, function tests and hormonal assessments a critical understanding of interpretation and integration of investigative tests with clinical assessment of the infertile couple a critical understanding of the scientific methods and the tools required to evaluate, develop and/or modify both current and emerging technologies as diagnostic and therapeutic tools in clinical embryology developed research skills and expertise sufficient to support supervised and collaborative research initiatives in clinical embryology and reproductive medicine 	
<i>Achieved through:</i>	<ul style="list-style-type: none"> participation in appropriate ACE training programmes (eg ACE Certificate in Clinical Embryology) or additional courses eg appropriate MSc course, PhD participation in local research meetings and evidence of supervised and collaborative research initiatives, potentially leading to publication or a PhD the presentation of outcomes of method evaluations, protocol development and clinical research initiatives eg at scientific meetings 	
<i>Assessed by:</i>	<ul style="list-style-type: none"> the locally nominated and ACE Training Committee approved supervisor national assessor and examiner network for clinical embryology satisfactory performance in ACE CPD scheme 	

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GENERIC COMPETENCES		SPECIFIC COMPETENCES
HPC Standards of Proficiency Code – Clinical Scientist	2-CLINICAL	Be able to demonstrate the following relevant to the contribution of his/her specialty to patient care:
2a.4, 2b.2, 2c.1	<ul style="list-style-type: none"> ability to 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 	<ul style="list-style-type: none"> a critical understanding of the treatment options and processes available to the infertile couple provide advice to clinical colleagues and couples themselves on the interpretation of diagnostic tests and implications for treatment awareness of HF and E Act 1990 and subsequent revisions and the regulations surrounding the techniques employed awareness of HFEA Code of Practice and ACE Accreditation Standards and Guidelines for the IVF laboratory plus any other relevant publications from DoH or professional bodies ability to give opinion on variation of treatment options according to clinical history and embryological observations during treatment cycle
2b.3, 3a.1	<ul style="list-style-type: none"> understanding of the wider clinical situation relevant to the patients presenting to his/her specialty 	
2b.3	<ul style="list-style-type: none"> ability to develop/devise an investigation strategy taking into account the complete clinical picture 	
1a.5, 3a.2	<ul style="list-style-type: none"> understanding of the clinical applications of his/her specialty and the consequences of decisions made upon his/her actions/advice 	
3a.2	<ul style="list-style-type: none"> awareness of the evidence base that underpins the use of the procedures employed by the service 	
<i>Achievement of:</i>	<ul style="list-style-type: none"> a critical understanding of practical and theoretical processes underpinning treatment options available to infertile couple a critical understanding of how a treatment plan is devised taking into account diagnostic tests and relevant history a complete knowledge of the prevailing statutory framework and professional guidelines regulating ART as they apply to clinical embryology a level of knowledge and practical skills sufficient to manage correctly a patient's treatment within the clinical embryology laboratory 	
<i>Achieved through:</i>	<ul style="list-style-type: none"> participation in appropriate ACE training programmes (eg ACE Certificate of Clinical Embryology) or additional courses eg appropriate MSC course, PhD participation in local clinical meetings and clinical case reviews participation in clinical audit 	
<i>Assessed by:</i>	<ul style="list-style-type: none"> the locally nominated and ACE Training Committee approved supervisor national assessor and examiner network for clinical embryology satisfactory performance in ACE CPD scheme 	

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GENERIC COMPETENCES		SPECIFIC COMPETENCES
HPC Standards of Proficiency Code – Clinical Scientist	3-TECHNICAL	Be able to demonstrate the following, relevant to the modality or area of specialisation in which he/she wishes to be recognised
3a.2	<ul style="list-style-type: none"> understanding of the principles associated with a range of techniques employed in the modality 	<ul style="list-style-type: none"> a critical understanding of embryological methods and principles that underpin the provision of treatment to the infertile couple an appropriate level of experience in each of the embryology skills an understanding of relevant regulation including COSHH, Health and Safety and risk assessment and its application within the laboratory an understanding of the indicators of laboratory performance with sufficient knowledge and experience to troubleshoot evidence of participation in QA schemes both nationally and in-house
2b.4	<ul style="list-style-type: none"> knowledge of the standards of practice expected from these techniques 	
2b.4	<ul style="list-style-type: none"> experience of performing these techniques 	
2b.4	<ul style="list-style-type: none"> the ability to solve problems that might arise during the routine application of these techniques (troubleshooting) 	
2c.1, 2c.2	<ul style="list-style-type: none"> understanding of the principles of quality control and quality assurance 	
2c.1, 2c.2	<ul style="list-style-type: none"> experience of the use of quality control and quality assurance techniques including restorative action when performance deteriorates 	
<i>Achievement of:</i>	<ul style="list-style-type: none"> an understanding of the practical processes underpinning treatment options available to the infertile couple a level of knowledge and practical skills sufficient to manage correctly a patient’s treatment from within the clinical embryology laboratory 	
<i>Achieved through:</i>	<ul style="list-style-type: none"> participation in appropriate ACE training programmes (eg ACE Certificate of Clinical Embryology), incorporating a fully supervised programme of acquiring core practical skills and recorded in a validated log book a logbook recording attainment of technical skills as required by prevailing HFEA standards 	
<i>Assessed by:</i>	<ul style="list-style-type: none"> the locally nominated and ACE Training Committee approved supervisor national assessor and examiner network for clinical embryology 	

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HPC Standards of Proficiency Code – Clinical Scientist	4-RESEARCH AND DEVELOPMENT	Be able to demonstrate a training in research which should include:
2b.1	<ul style="list-style-type: none"> ability to read and critically appraise the literature 	<ul style="list-style-type: none"> an awareness of sources of relevant literature an understanding of how to interpret critically and appraise scientific reports and articles a familiarity with basic research methods, as applicable to clinical embryology a familiarity with the principles of research and clinical trials an ability to incorporate research and development methods into the development of new techniques participation in journal clubs, local or national scientific meetings possibly leading to publication of work
2b.1	<ul style="list-style-type: none"> ability to develop the aims and objectives associated with a project 	
2b.1	<ul style="list-style-type: none"> ability to develop an experimental protocol to meet the aims and objectives in a way that provides reliable and robust data (i.e. free of bias) 	
2b.1	<ul style="list-style-type: none"> ability to perform the required experimental work ability to produce and present the results (including statistical analysis) 	
2b.1	<ul style="list-style-type: none"> ability to critically appraise results in the light of existing knowledge and the hypothesis developed and to formulate further research questions 	
1b.4, 2b.1	<ul style="list-style-type: none"> ability to present data and provide a critical appraisal to an audience of peers – both spoken and written 	
<i>Achievement of:</i>	<ul style="list-style-type: none"> a critical understanding of research methods and skills up to date knowledge base by continuing appraisal of the literature 	
<i>Achieved through:</i>	<ul style="list-style-type: none"> involvement in IVF units research programme a structured taught element (eg ACE Diploma in Clinical Embryology) incorporating a research project or additional courses eg approved MSc course, PhD a journal based learning scheme (eg component of ACE CPD)/journal clubs/attendance at scientific meetings 	
<i>Assessed by:</i>	<ul style="list-style-type: none"> scientific presentation/publication record other documentary evidence of research activity/awareness eg CPD participation or a supporting statement from a supervisor/line manager 	

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HPC Standards of Proficiency Code – Clinical Scientist	5-COMMUNICATION	Be able to communicate in both the written and spoken media to colleagues, peers and patients:
1a.6	<ul style="list-style-type: none"> ability to assess a situation and act accordingly when representing the specialty 	<ul style="list-style-type: none"> understand and demonstrate the ability to communicate clearly, effectively and promptly with other clinical embryologists within the team ability to liaise effectively with clinical, nursing and other colleagues ability to discuss treatment options and communicate proposed changes to treatment options in light of laboratory observations ability to communicate sensitively and empathetically with patients ability to present or publish scientific material
1a.6	<ul style="list-style-type: none"> ability to respond to enquiries regarding the service provided when dealing with clinical colleagues 	
1a.2, 1b.1, 1b.3	<ul style="list-style-type: none"> ability to communicate with patients, carers and relatives, the public and other healthcare professionals as appropriate 	
1b.3, 1b.4	<ul style="list-style-type: none"> ability to communicate the outcome of problem solving and research and development activities 	
2b.1	<ul style="list-style-type: none"> evidence of presentation of scientific material at meetings and in the literature 	
<i>Achievement of:</i>	<ul style="list-style-type: none"> an ability to communicate the treatment plan to clinical colleagues and couples in treatment impart clinical embryological knowledge to peers and patients and explain its relevance demonstrable communication skills 	
<i>Achieved through:</i>	<ul style="list-style-type: none"> a structured taught element (eg ACE Diploma in Clinical Embryology) detailing the importance of development of communication skills additional relevant courses experientially-acquired skills 	
<i>Assessed by:</i>	<ul style="list-style-type: none"> the locally nominated and ACE Training Committee approved supervisor national assessor and examiner network for clinical embryology 	

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<small>HPC Standards of Proficiency Code – Clinical Scientist</small>	6-PROBLEM SOLVING	Be able to deal with the unexpected and thus be able:	
2a.2	<ul style="list-style-type: none"> • to assess a situation 	<ul style="list-style-type: none"> • understand the indicators of laboratory performance • ability to recognise deterioration in laboratory performance • ability to recognise critical incidents and develop rapid response strategies • understand and demonstrate the ability to establish a programme of changes to rectify underlying problems with key indicators • understand the basis of external factors which have the potential to affect laboratory performance 	
1a.6, 2b.1	<ul style="list-style-type: none"> • determine the nature and severity of the problem 		
1a.6, 2b.1	<ul style="list-style-type: none"> • call upon the required knowledge and experience to deal with the problem 		
1a.6,2b.1	<ul style="list-style-type: none"> • initiate resolution of the problem 		
1a.6	<ul style="list-style-type: none"> • demonstrate personal initiative 		
<i>Achievement of:</i>		<ul style="list-style-type: none"> • understanding and ability to perform regular performance audit • deal with unexpected situations in appropriate and effective manner 	
<i>Achieved through:</i>		<ul style="list-style-type: none"> • a structured taught element (eg ACE Diploma in Clinical Embryology) detailing the importance of audit and troubleshooting skills • practical knowledge and skills gained through experience 	
<i>Assessed by:</i>		<ul style="list-style-type: none"> • the locally nominated and ACE Training Committee approved supervisor • national assessor and examiner network for clinical embryology • satisfactory performance in ACE CPD scheme 	

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	GENERIC COMPETENCES	SPECIFIC COMPETENCES
HPC Standards of Proficiency Code – Clinical Scientist	7-PROFESSIONAL ACCOUNTABILITY	Be able to demonstrate an understanding of management principles and techniques, including the following:
1a.1	<ul style="list-style-type: none"> Understanding of the legal and ethical boundaries of the modality, and the ethical aspects of scientific research. 	<ul style="list-style-type: none"> must be able to recognise legal and ethical boundaries of the modality and practice and conduct research within these boundaries must be able to recognise the limits of his/her knowledge and skills must understand the principles of clinical governance and be able to audit, reflect on and review practice must understand the need for and basic requirements of accreditation schemes appropriate to the modality must understand the importance of effective communication with colleagues and be able to function as an effective member of a multidisciplinary team must understand the principles of appraisal and be able to supervise staff in his/her area of responsibility must participate in an appropriate CPD scheme (after completion of training) must have acquired a basic knowledge of health and safety requirements appropriate to the discipline must have acquired a basic understanding of the structure and organization of the department, and relevant financial aspects.
1a.6	<ul style="list-style-type: none"> Ability to recognise the limits of personal practice and when to seek advice. 	
1a.7	<ul style="list-style-type: none"> Ability to manage personal workload and prioritize tasks appropriately. 	
1a.3, 1a.4, 2b.5, 2c.2	<ul style="list-style-type: none"> Understanding of the principles of clinical governance including clinical audit, accreditation requirements relevant to the modality. The importance of confidentiality, informed consent and data security 	
1b.2	<ul style="list-style-type: none"> Ability to contribute effectively to work undertaken as part of a multi-disciplinary team 	
1b.4	<ul style="list-style-type: none"> Ability to supervise others as appropriate to area of practice. Understanding of the role of appraisal in staff management and development. 	
1a.8, 2c.2	<ul style="list-style-type: none"> Understanding of the need for career-long self-directed learning and the importance of continuing professional development. 	
1a.5, 1a.8, 2b.4, 3a.3	<ul style="list-style-type: none"> Understanding of the need for, and ability to establish and maintain, a safe practice environment. 	
	<ul style="list-style-type: none"> Understanding of the structure and organization of the department and how it fits into the local clinical setting, General understanding of the way the modality is structured and practised in other locations within the UK. Basic understanding of the importance of financial accountability, budgetary control and resource management. 	
<i>Achievement of:</i>	<ul style="list-style-type: none"> an understanding of the management principles and tools used in the service the ability to act as a professional and work effectively as part of a team understanding of the importance and principles of accreditation, audit, confidentiality, data security and safe working practice 	

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<i>Achieved through:</i>	<ul style="list-style-type: none"> • a structured taught element (eg approved MSc course or approved lecture programme), participation in appropriate training programmes and local courses on general, personnel and financial management, health and safety, audit, etc • participation in local seminars and meetings, attendance at clinical audit meetings and clinical governance committees. • attendance at departmental management meetings • involvement, under supervision, in management within the laboratory • mentoring by an experienced practitioner
<i>Assessed by:</i>	<ul style="list-style-type: none"> • the nominated local supervisor and appropriate professional body external advisor/tutors