

# BRIEF OVERVIEW OF CAREER PROGRESS OF CLINICAL SCIENTISTS

## HEALTHCARE SCIENCES

In the UK there are two branches of science in hospitals - **clinical science** (CS) and **biomedical science** (BMS). There is a strict and formal post graduate training programme for both careers followed by state registration for each with the Health Professions Council (HPC), for the safety and assurance of the customers - the patients. They Are two similar but distinct careers with parallel but different training paths and different entry requirements.

"Clinical Scientist", just as "Biomedical Scientist", is a protected title under the law (there is a £5000 fine for transgressors who fraudulently use the title without being registered). People who are not in training in the UK and working with patients in the NHS will have to gain registration. The HPC are the registration body who monitor this and ensure registrants maintain standards of proficiency, conduct, performance and ethics - as well as maintaining continuous professional development (CPD) and education and training. HPC can strike people off the register for malpractice in just the same way as for doctors. For more information on the HPC see [www.hpc-uk.org](http://www.hpc-uk.org) . The Association of CLinical Scientists is a distinct separate body responsible for assessing trainee Clinical Scientists to allow them to become registered with the HPC.

## "APPROVED COURSES" FOR CLINICAL SCIENTISTS

The HPC registers many branches of Healthcare Scientist and generally, e.g. for physiotherapists, chiropodists and radiographers, registration with HPC entails completing an "approved degree course" to allow submission and registration. This does **NOT** apply for CS and BMS where no approved courses exist since these professions are postgraduate ENTRY into training rather than completion of that training in University. For training clinical scientists, it is the Association of Clinical Scientists' (ACS) Certificate of Attainment that is the "approved route" to registration with HPC.

So for CS, UK applicants must go through that 4-year postgraduate training and then obtain a Certificate of Attainment following successful assessment by the ACS. Only Overseas trained CS applicants may apply directly to HPC under their International route if they are fully trained, qualified and working abroad already. This overseas requirement mainly relates to your professional training being overseas – if your initial academic education to degree or postgraduate level was in the UK but your professional training was then undertaken overseas, then you can still apply directly to the HPC under the International registration route. Overseas applicants should also take care to ensure they apply for registration under the correct profession since job titles and training provided overseas may be very different to that in the UK. Hence there is often confusion between CS and BMS – both being registered by HPC. Only the former has the clinical training needed to interpret results at clinics while the latter is the technician performing the tests and ensuring the results are valid. CS work in clinics assisting medical doctors diagnose and monitor treatment of patients while BMS are the technicians that carry out the tests without any clinical interpretive training.

Clinical Scientist training in the UK involves enrolment of graduates into an extensive 4-year training scheme leading to certification and eventual State Registration before starting career structure and workign towards higher vocational qualifications such as Fellowship of the Royal College of Pathologists. The following are the recognised branches (modalities) of clinical science that have formal training courses –

- Audiology
- Clinical Biochemistry
- Clinical Embryology
- Clinical Genetics
- Clinical Immunology
- Clinical Microbiology
- Haematology
- Histocompatibility and Immunogenetics
- Medical Physics and Clinical Engineering

They would generally work towards ACS assessment via Route ONE (the 4-year route).

There is no recognised formal training course for the following CS recognised modalities but they can approach registration by Route TWO – see below.

- Clinical Physiology
- Cellular Science

- Developing Sciences – a special combination modality where experience transcends more than one modality.

Minimum entry to CS is a good first or second class honours degree in an appropriate subject. Many apply with an MSc or even PhD but there is no reduction for this in the time needed to registration.

Entry to Biomedical Scientist careers also requires you to have a period of training prior to State Registration but intake requirements are lower. It is the Clinical Scientist who has the clinical interpretative role while the Biomedical Scientist is more the technologist, though both can rise to managerial levels in their different professions. BMS can later in their career undertake further training to register as CS if they wish.

If you are really interested in BMS registration, we cannot help you but only refer you to the IBMS who will provide all the information required to enter and succeed in that career- [www.ibms.org](http://www.ibms.org) though they will also eventually register with the HPC.

There are in the order of 4500 registered CS in the UK while there are around 25000 registered BMS. Obviously the annual intake and possibility for training places in BMS is greater than for CS where often many excellent candidates have to be turned away each year due to lack of funds and facilities for their training.

The rest of this document deals ONLY with Clinical Scientists registration.

More information on specific careers can be found from the appropriate professional body website -

The **Association of Clinical Scientists (ACS)** is an umbrella organisation acting on behalf of all the branches of Clinical Science in the UK (click on the acronym to access the websites of any organisation)–

• PROFESSION (MODALITY)	• SUB-MODALITY	• PROFESSIONAL BODY	• ACRONYM
• Audiology	•	• British Academy of Audiology	• <a href="#">BAA</a>
• Cellular Science	•	• Association of Clinical Electron Microscopists	• <a href="#">ACEM</a>
• Clinical Biochemistry	•	• Association for Clinical Biochemistry	• <a href="#">ACB</a>
• Clinical Biochemistry	• Analytical Toxicology	• Association for Clinical Biochemistry	• <a href="#">ACB</a>
• Clinical Biochemistry	• Paediatric Metabolic Biochemistry	• Association for Clinical Biochemistry	• <a href="#">ACB</a>
• Clinical Embryology	•	• Association of Clinical Embryologists	• <a href="#">ACE</a>
• Clinical Genetics	• Cytogenetics	• Association of Clinical Cytogenetics	• <a href="#">ACC</a>
• Clinical Genetics	• Molecular Genetics	• Clinical Molecular Genetics Society	• <a href="#">CMGS</a>
• Clinical Immunology	•	• Association for Clinical Biochemistry	• <a href="#">ACB</a>
• Clinical Microbiology	•	• Association of Clinical Microbiologists	• <a href="#">ACM</a>
• Clinical Physiology	• Respiratory Physiology	• Association of Respiratory Technology and Physiology	• <a href="#">ARTP</a>
• Clinical Physiology	• NeuroPhysiology	• British Society for Clinical Neurophysiology	• <a href="#">BSCN</a>

• Haematology	•	• British Society of Haematology	• <a href="#">BSH</a>
• Haematology	• Blood Transfusion	• British Blood Transfusion Society	• <a href="#">BBTS</a>
• Histocompatibility and Immunogenetics	•	• British Society for Histocompatibility & Immunogenetics	• <a href="#">BSHI</a>
• Medical Physics and Clinical Engineering	•	• Institute of Physics and Engineering in Medicine	• <a href="#">IPEM</a>

- Clinical Immunologists were represented by the Association of Clinical Scientists in Immunology (ACSI) which has now amalgamated to become a Division of the Association for Clinical Biochemistry (ACB). Immunologists are recommended to contact the Immunology Special Interest Group of the ACB for assistance.

## **YOUR ALTERNATIVES**

1. If you are an overseas enquirer who is fully trained and qualified, experienced and working abroad already then you can apply directly to the HPC under their INTERNATIONAL application route to registration. You do not need to apply to the ACS at all and we cannot help you with this application - please contact the HPC directly [www.hpc-uk.org](http://www.hpc-uk.org). However, you need to be very clear whether you are a true CCS or a BMS – the clinical interpretation competences is the key major difference.
2. If you are an enquirer who is fully UK trained, experienced and has undergone formal pre-registration (formerly called Grade A) CS training then you would work towards an ACS Route ONE (4-year) working already and spent a MINIMUM of 3 years working in the role of a supervised clinical scientist then you can apply to the ACS under the Route TWO 6-year route for certification to allow registration. See details on this website.
3. If you are either pre-University, about to graduate or immediately post-graduate, or if your only experience is MSc or PhD, then you will need to enter a 4-year pre-registration (formerly called Grade A) training course as explained below. The postgraduate degrees you may have simply indicate your (perhaps extensive) academic skills and perhaps research capabilities but do not reduce the training needed for clinical interpretation in the role. The only alternative is to obtain a job as a supervised worker in a hospital doing the role of the clinical science of your choice for a minimum of THREE years to be able to consider the ACS Route TWO described above. Only in this way will you be able to meet all the competences listed in the ACS Appendix 1 document which really sums up what is required.

Without registration you cannot work unsupervised and enter the higher career bands of a Clinical Scientist.

PLEASE NOTE - if you are/will be only involved with research or academic work or in industry, there is NO need for registration. This is because your actions will not directly affect the treatment or wellbeing of the patients and so jeopardise their safety - requiring registration.

## **PRE\_REGISTRATION (formerly called GRADE A) TRAINING**

With a first or second class degree you would be eligible for entry into CS training. An MSc or PhD would supersede this minimum requirement if you did not have this level of first degree.

Your procedure would be -

1. Apply for a training post in the year prior to the October of commencing the training. This should be done in the January prior to entry the following October. Vacancies for the following year will be available from the late November or December of that previous year.
2. After the training (2 years for genetics, embryology and physics or 3 years for the other sciences - you may receive a Certificate of Competence or Certificate of Completion after this period) during which you are employed at a training hospital, you need another year or two (to make 4 in total as an employed trainee) gaining experience in your work. Your salary will be on NHS Agenda for Change Band 6 – currently around £23000-31000 pa. During this time you will probably undergo a fully financed MSc though this may be omitted if you have already got one that is considered relevant to the topic, and to the type of training it would have provided – though it would not reduce the period of training at all.

3. After this 4th year you apply for a Certificate of Attainment from the Association of Clinical Scientists (ACS). Processing takes around 3 months from application.
4. With the certificate you can automatically apply to become registered with the HPC. Processing for this takes around 2-4 weeks from application.
5. Once registered you continue in your career - retaining your registration with the HPC at each 2-yearly renewal. At this stage you would become a practitioner (formerly called Grade B) scientist. You may go on to sit Royal College of Pathologists (RCPATH) examinations achieving the Diploma, Membership and finally Fellowship during your career development. You would also maintain Continuous Professional Development (CPD) monitoring to maintain your standards or work – essential for both registration and RCPATH membership

If you require more information on this for next year, please contact the central recruitment office for Clinical Scientists at [www.nhsclinicalscientists.info](http://www.nhsclinicalscientists.info) or email- [ClinicalScientist@northgate-is.com](mailto:ClinicalScientist@northgate-is.com) for details.

For 2009 intake the numbers of vacancies per profession was as follows –

BRANCH	PROFESSION	TRAINING PLACES	CENTRES
LIFE SCIENCES	Biochemistry	35	Cambridge, Luton, Nottingham, Leicester, London, Manchester, Southampton, Oxford, Brighton, Reading, Kent, Plymouth, Exeter, Bristol, Cardiff, Stoke, Coventry, Birmingham, Hull
	Biochemistry-Analytical Toxicology	2	London
	Cytogenetics	11	Cambridge, London, Liverpool, Manchester, Oxford, Bristol, Birmingham, Cardiff
	Embryology	3	Liverpool, Manchester, Cardiff
	Haematology	6	London, Manchester, Oxford, Exeter
	Immunology	9	Oxford, Southampton, Plymouth, Preston, London, Sheffield
	Molecular Genetics	10	Nottingham, Cambridge, London, Newcastle, Liverpool, Manchester, Bristol, Birmingham
	Histocompatibility & Immunogenetics	10	Cambridge, Leicester, Manchester, London, Cardiff
	Microbiology	7	London, Manchester, Bristol
PHYSIOLOGICAL SCIENCES	Audiology	19	Norwich, Cambridge, Sheffield, Manchester, Reading, Windsor, Portsmouth, Southampton, Swansea, Wrexham, Bodelwyddan, Birmingham
PHYSICAL SCIENCES	Medical Physics	45	Leicester, Sheffield, Leeds, Manchester, Reading, Oxford, Northampton, Southampton, Portsmouth, Surrey, Midsstone, Brighton, Canterbury, Bath, Bristol, Cheltenham, Exeter, Plymouth, Cardiff, Swansea, Rhyl, Birmingham, Coventry, Stoke, Wolverhampton, Hull
	Medical Physics & Bio Engineering	4	London,
	Medical Physics & Clinical Engineering	27	Cambridge, Nottingham, London, Liverpool,
	Clinical Engineering	5	Oxford, Portsmouth, Salisbury, Cardiff, Hull
	Medical Physics & Engineering	1	Leeds

These are filled in open competition as the result of an annual advertisement inviting new graduates, undergraduates and post-doctoral candidates to apply for these posts.

Minimum requirement is 1st or 2nd class honours degree in an appropriate subject. Competition is fierce and there are only around 30-50 training places for each of biochemistry and physics each year with fewer numbers for the other clinical sciences. There are often more than 10 or 20 applications for each vacancy so competition is very keen resulting in many good candidates being turned away each year due to lack of funds for places.

## **POST-TRAINING ACS CERTIFICATION**

The Association of Clinical Scientists (ACS) deals with the certification prior to state registration for clinical scientists.

The HPC (Health Professions Council) is a separate body that actually carries out the registration.

These are two completely separate bodies.

You must contact the appropriate professional body for specific details on the career that interests you. All the contact details for professional bodies in Clinical Science are on this ACS website.

This administrative office can only deal with procedural queries and you are expected to have read the information on the website to have a background of what is required and how we can help. ALL forms and details including an extensive FAQ section is on the website for you to read and download.

The following general overview may help you understand the procedures and better judge what applies to your situation and how you should move forward to progress your career opportunities -

## **STATE REGISTRATION**

To enter career grade Clinical Science you must be state registered with the Health Professions Council (HPC). Experienced practitioners in Clinical Science who meet the criteria (usually those having gone through the above training) can (*indeed have to*) become registered having applied for and received a Certificate of Attainment from the Association of Clinical Scientists (ACS). We administer this on behalf of all the Clinical Science professions. So the procedure is to go through the formal training as described above employed by a hospital and then you apply to the ACS for Certification (cost £125-£300 for the assessment – depending upon discounts for those who are members of the affiliated professional bodies.). The Certificate is the Approved Route and you submit it to the HPC (Health Professions Council) who maintain your name on a register. HPC fees are £50 one-off scrutiny fee at first registration, plus a registration fee of £144 per 2-year cycle which would be discounted by 50% in your first registration cycle. Your registration covers a 2-year period and has to be renewed at that interval – 1<sup>st</sup> October 2007, 2009, 2011, 2013, 2015 etc is the anniversary for Clinical Scientists. Fees for ACS and HPC are tax-deductible as essential work-related allowances.

## **TRAINING OVERVIEW - CLINICAL SCIENCE**

Intake into the majority of the Clinical Sciences in the UK must be through official Pre-Registration (formerly called Grade A) training courses run by the accredited hospitals. Only in this way can applicants receive the correct training and experience to become state registered to allow unsupervised work later in their career. Most of these training posts in the hospitals include an MSc or other higher education certificate during the 2-3 year period of training. Entry with an MSc or PhD in an appropriate topic would obviate this – but if the topic is not allied to the science or is considered not to have provided the sort of experience the normal MSc would, then another MSc may be required. About 130 to 150 clinical scientist training posts across the professions are available each year through the national formal training scheme and they are filled in open competition as the result of an annual advertisement inviting new graduates, undergraduates and post-doctoral candidates to apply for these posts.

Minimum requirement is 1st or 2nd class honours degree in an appropriate subject. It is difficult to be precise on what is “appropriate” but easier to consider what is not appropriate. For instance, a Physics degree would be appropriate to enter Medical Physics or Audiology or neurophysiology – but NOT to enter haematology. The degree must provide the basic laboratory based skills and health and safety background essential for your type of work as well as the knowledge of the terminology and background areas that you will be dealing with as a clinical scientist. Competition is fierce and there are only around 30-50 training places for each of biochemistry and physics each year with fewer numbers for the other clinical sciences.

Training starts in the October of each year and applications must be in by the end of the previous February each year as a start to the selection process. Scotland and Ireland do not join this central England and Wales NHS scheme and advertise individually - usually in the New Scientist for vacancies. For England and Wales hospitals, however, the process is handled by -

The Clinical Scientists Recruitment Office, c/o Northgate Outsourcing, 239 Thorpe Park, Peterborough PE3 6JY

Tel: 0871 433 3070, E-mail: [ClinicalScientist@northgate-is.com](mailto:ClinicalScientist@northgate-is.com) Website: [www.nhsclinicalscientists.info](http://www.nhsclinicalscientists.info)

YOU SHOULD APPLY TO THEM FOR DETAILS AND APPLICATION FORMS IN THE NOVEMBER OR DECEMBER PRIOR TO YOUR DESIRED APPLICATION PERIOD. YOU SHOULD MAKE YOUR APPLICATION IN THE YEAR YOU EXPECT TO GRADUATE AS LONG AS YOU HAVE EXPECTATIONS OF MEETING THE QUALITY OF DEGREE REQUIRED - DO NOT WAIT UNTIL YOU HAVE THE RESULT OR YOU WILL HAVE TO WAIT ANOTHER YEAR. You may wish to send your application directly to the named person at the hospitals of your choice if there are delay problems with the official website due to volume of enquiries – this is perfectly acceptable. You may also wish to contact those persons in advance of your application to visit the hospital of discuss the career.

The ACS cannot help you further with entry into training posts - please contact the Recruitment Office OR the appropriate Professional Body OR the hospitals directly.

For further information about the different scientist and technical roles within the NHS we recommend you browse the NHS Careers website: [www.nhscareers.nhs.uk](http://www.nhscareers.nhs.uk) and of course the particular website of the profession you are interested in.

I hope this helps and I wish you every success in your career.