

A CAREER FRAMEWORK FOR HEALTHCARE SCIENTISTS IN THE NHS

The Constituent Healthcare Scientist Disciplines

The Healthcare Science workforce comprises of a number of distinct disciplines which are grouped into three divisions as outlined below based on primary work function but recognising that some overlapping functions may be delivered.

LIFE SCIENCES: Anatomical pathology • Andrology • Blood transfusion science/transplantation
 • Clinical biochemistry, including Paediatric Metabolic Biochemistry • Clinical cytogenetics • Clinical embryology
 • Clinical immunology • Cytopathology including Cervical Cytology • Electron microscopy
 • External Quality Assurance • Haematology • Haemostasis & thrombosis • Histocompatibility and immunogenetics
 • Histopathology • Molecular genetics • Microbiology • Phlebotomy • Tissue Banking • Toxicology.

PHYSIOLOGICAL SCIENCES: Audiology • Autonomic neurovascular function • Cardiac physiology
 • Clinical perfusion • Critical care technology • Gastrointestinal physiology • Neurophysiology
 • Ophthalmic science • Respiratory physiology • Sleep physiology • Urodynamics • Vascular technology
 • Vision science.

PHYSICAL SCIENCES: Biomechanical engineering • Clinical measurement • Diagnostic radiology and MR physics
 • Equipment management and clinical engineering • Maxillofacial prosthetics and reconstruction
 • Medical electronics and instrumentation • Medical engineering design • Medical illustration and clinical photography
 • Nuclear medicine • Radiation protection and monitoring • Radiopharmacy • Radiotherapy physics
 • Rehabilitation engineering • Renal dialysis technology • Ultrasound and non-ionising radiation.

Healthcare Scientists cross-cutting contribution to patient care

Healthcare scientists and the scientific services provided are a key element of most patient pathways and this contribution is often cross cutting in terms of the contribution to general healthcare delivery and priority (as outlined below) rather than for a single condition or disease entity.



Roles of Healthcare Scientists

In the delivery of high quality, evidence based scientific services collectively they deliver:

- tests and investigations for diagnostic and monitoring purposes
- therapeutic intervention (eg acute and domiciliary nasal ventilation, rehabilitation of hearing loss)
- direct patient care and management (eg tinnitus management)
- clinical liaison, advice and interpretation of results
- public health and health and safety surveillance (eg radiation protection, infection control)
- healthcare and patient associated equipment design, evaluation and management
- introducing new technologies into healthcare
- directing, managing and planning services
- teaching and training for a wide range of healthcare professionals, for patients and the public
- research and development (basic and applied)

LEARNING AND DEVELOPMENT

SKILLS AND COMPETENCES INFORMED BY THE HEALTHCARE SCIENCE NATIONAL OCCUPATIONAL STANDARDS

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VERY SENIOR SCIENTISTS AND CONSULTANT HEALTHCARE SCIENTIST DIRECTORS

Scientific staff with highly developed and advanced clinical and scientific and/or management expertise, with responsibility for decision-making and accountability, providing leadership across a number of areas/disciplines, bringing strategic direction, innovation and influence through practice, research and education and carrying responsibility similar to consultant medical staff. They will have attained high level relevant postgraduate qualifications and appropriate professional awards and qualifications (and vocational evidence) at a level meeting Medical Royal College examinations/admission criteria for HCSs (where they exist).

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CONSULTANT/PRINCIPAL HEALTHCARE SCIENTISTS

Scientific staff working at a very high level of clinical and scientific expertise within an area/discipline/s, bringing strategic direction, innovation and highly developed and specialised skills and/or having responsibility and accountability for the management and planning of services/departments or initiating or leading formal research activities. They will have attained high level postgraduate qualifications (at masters or doctorate level) or equivalent level vocational/professional qualifications and awards (or through other evidence of vocational achievement) appropriate to the role being undertaken.

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ADVANCED HEALTHCARE SCIENTISTS

Experienced clinical/scientific/technical professionals who have developed their skills and theoretical knowledge to a very high standard, performing a highly complex role, and continuously developing clinical, scientific or technical practice within a defined field and/or having management responsibilities for a section/small department. They will have their own caseload or work area responsibilities and will be studying for or have attained a masters or higher level postgraduate qualifications or equivalent level vocational/professional qualifications and awards (or through other evidence of vocational achievement) appropriate to the role being undertaken.

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SENIOR OR SPECIALIST HEALTHCARE SCIENTISTS

Staff with a higher degree of autonomy and responsibility performing a complex clinical/scientific/technical role and/or manages and supervises a team. Specialist healthcare scientists will include clinical scientists in first post registration jobs who fulfil a complex clinical and scientific role. They will be studying for or have attained a relevant postgraduate qualification or equivalent level vocational/professional qualifications and awards (or through other evidence of vocational achievement) appropriate to the role being undertaken.

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HEALTHCARE SCIENTIST PRACTITIONERS

Practitioners performing a range of complex clinical, scientific or technical procedures, accountable for their own actions and for staff that they direct or supervise. Most frequently are regulated practitioners in first jobs prior to specialisation or taking on more senior responsibilities. Will be studying for or have attained a relevant vocational degree or equivalent vocational/professional qualifications or awards (or through other evidence of vocational achievement) appropriate to the role being undertaken.

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ASSOCIATE HEALTHCARE SCIENTISTS

Delivering scientific/technical procedures and/or clinical care previously performed by regulated practitioners usually under direction of the responsible regulated practitioner. In some disciplines, may be working independently, usually as part of a team with practice appropriate for statutory regulation. Will be studying for or have attained a relevant foundation degree or BTEC HND or equivalent level vocational qualification or award.

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SENIOR ASSISTANT HEALTHCARE SCIENTISTS

Higher level of responsibility performing a range of protocol driven tasks. May work without close supervision. May supervise others with reference to professional advice. May be studying for or have attained a relevant NVQ based award at level 3 or BTEC National Certificate or equivalent.

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ASSISTANT HEALTHCARE SCIENTISTS KEY SUPPORT WORKERS

Key support worker position performing protocol limited tasks in a narrow area and working within a team – may be studying for or have attained a relevant NVQ level 2 award.

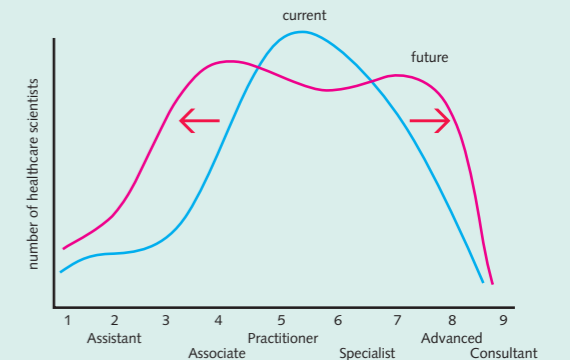
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INITIAL ENTRY LEVEL ASSISTANT HEALTHCARE SCIENTISTS

Posts requiring very little formal education or previous knowledge, skills or experience in delivering, or supporting delivery of healthcare.

Healthcare Scientist Workforce

The healthcare scientist workforce in the NHS and related organisations such as the National Blood Service and the Health Protection Agency totals approximately 50,000. Accurate information on the constituent HCS disciplines is not currently available however the T matrix of the DH workforce census is starting to collect more detail from NHS Trusts and organisations to inform local workforce planning and commissioning.



In the diagram above the blue line below provides an indicative profile of the current workforce, the pink line is an illustration of the workforce profile required to support the delivery of the NHS Improvement Plan including the provision of more services in the community.

The above indicates some key projected changes for the future:

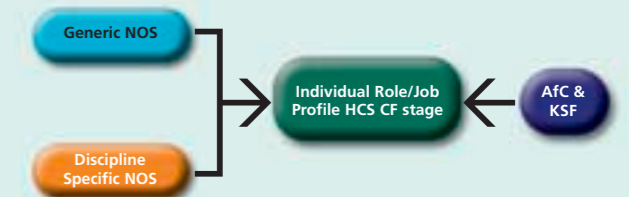
- the need for more skills and competences to be transferred to assistants and associates
- the creation of more advanced and consultant level posts to support the scientific and technological advancement of healthcare and new roles at the medical scientific interface
- the need for scientific workforce numbers to increase

Identifying and Developing the Workforce

A UK wide competence framework has been developed for healthcare scientists and comprises of 64 sets of Healthcare Science (HCS) National Occupational Standards (NOS) representing 51 discipline specific and 13 common/generic functions.

These HCS NOS can be viewed through the following websites www.noshcs.com and www.skillsforhealth.org.uk. The NOS, together with the HCS Career framework level descriptors and the functional guide and the supporting Agenda for Change and KSF information can be used to describe roles and help with appraisal and development planning.

Transferable roles within the HCS Career framework will be underpinned by nationally developed and agreed learning and development modules. It is important that the skills and competences required to deliver local scientific services are identified and matched to roles.



A Modernising Healthcare Science Careers Programme within Skills for Health will continue implementation work to introducing the following :

- HCS NOS mapped to HCS Career Framework stages
- Learning and development framework
- Indicative framework of HCS roles
- Award and qualification framework

HEALTHCARE SCIENTIST CAREER FRAMEWORK FUNCTIONAL GUIDE

	Knowledge, Training & Experience	Analytical and Clinical Skills	Patient Care and Public Health	Organisational Skills and Autonomy/Freedom to Act	Planning, Policy and Service Development	Financial, Physical and Human Resources	Research and Development
1	Understanding of small number of routine work procedures gained through short induction or on the job training.	Performs limited clinical, technical or scientific tasks in a narrow area.	Assists patients/clients/relatives during incidental contacts. May handle patient information.	Works with close supervision and to established procedures.	Follows policies determined by others.	Observes personal duty of care in relation to equipment and resources used in course of work.	May perform simple audits or surveys relevant to own work area.
2	Understands a wider range of work procedures following on the job training.	Performs clinical, technical or scientific tasks in a narrow area. Makes judgements involving straight-forward job-related facts or situations.	In addition to the above, provides basic clinical technical services.	In addition to the above, may organise own day-to-day work tasks or activities.	Follows policies determined by others.	In addition to above, may be responsible for safe use of equipment used by others. May assist in training of new staff within work area.	May perform simple audits or surveys relevant to own work area.
3	Understands some non-routine procedures with basic formal training or experience.	Performs a wider range of protocol driven clinical, technical or scientific tasks. Makes judgements some of which require analysis.	Provides basic clinical technical services for patients and clients.	May work without close supervision but within established procedures. May organise work tasks of others and have supervisory responsibilities.	May comment on policies, procedures or possible service developments.	Responsible for safe use of equipment used by others. May carry out training related to own work activity.	Performs simple audits or surveys and may assist with occasional clinical trials or research projects.
4	Intermediate level of knowledge gained through formal training or experience	Performs clinical, technical, or scientific procedures. Makes judgements requiring analysis and comparison of options.	Provides clinical technical services for patients and clients.	Plans straightforward HCS tasks. Work guided by standard operating procedures. May supervise or coordinate others.	In addition to the above, may propose changes to working practices or procedures for own work area.	Responsible for safe use of expensive/highly complex equipment. May be responsible for maintaining stock. May undertake training.	May actively contribute to clinical trials or research projects within own work area.
5	Expertise within HCS specialism or discipline underpinned by theoretical or relevant practical knowledge and experience.	Performs broad range of clinical, technical or scientific procedures. Makes judgements requiring analysis, interpretation and comparison of options.	Provides clinical technical services for patients and clients. May provide advice in relation to the care of patients and clients.	Plan, organise and prioritise own work. Work is managed rather than supervised.	May develop policies and procedures or propose changes to working practices or procedures for own work area.	Responsible for safe use of expensive/highly complex equipment. Trains staff (HCS and/or other healthcare workers). May contribute to administration and management. Contribute to administration and management of work area or department. May teach and train staff (HCS staff and/or other healthcare workers).	May evaluate equipment, techniques and procedures. May undertake straightforward or complex audit or assist with clinical trials or research projects.
6	Specialist knowledge covering range of procedures and practices underpinned by relevant broad based knowledge, experience and competence.	Performs specialist clinical, technical or scientific roles/functions. Makes judgements involving a range of complex facts, options, analysis and interpretation.	Provides specialist HCS services and/or advice.	Plan, organise and prioritise own work activities and tasks. May manage and supervise a team.	Implement policy and propose changes to working practices or procedures. May plan complex activities involving liaison with others and/or over long time periods.	May hold delegated budget for manage research for part of service. May be responsible for purchasing and/or maintenance of assets. May undertake supervision and/or teaching and training as major job role.	May also carry out R&D as a major activity. May regularly undertake clinical trials or research projects.
7	Highly developed HCS specialist knowledge covering a range of procedures and underpinned by relevant broad based knowledge, experience and competence.	Performs highly specialist roles and may be accountable for direct delivery of part of HCS service. Makes complex judgements.	Provides specialist or highly specialist clinical, technical, and/or scientific services.	May be responsible for work area, specialist services or clinical pathways and/or management of staff. May be accountable for direct delivery of part of HCS service.	Proposes changes to practices or procedures which impact beyond own work area. May plan and/or organise a broad range of complex activities or programmes with formulation of strategies.	In addition to above may devise training or development programmes. May hold a budget. May manage staff and services ranging in size and complexity.	In addition to above, may initiate and develop R&D programmes.
8	Advanced specialist knowledge across a discipline/s or over more than one discipline acquired over a long period OR in-depth specialist knowledge, experience and competence.	Provides clinical and scientific expertise within an area/discipline/s. Makes complex or highly complex judgements. Able to act as an expert in one or more service areas.	Provides specialist or highly specialist clinical, technical or scientific HCS services and/or advice.	In addition to above may direct and influence commissioning and/or service provision. May be accountable for direct delivery of part or all of a HCS service/s.	In addition to above may plan, develop and implement policy and service developments which impact beyond own area of responsibility beyond organisation.	In addition to the above may be responsible for overall delivery of teaching and training programmes. Likely to be a budget holder for one or more services and be responsible for physical assets.	In addition to above, may coordinate and implement R&D programmes and/or initiate and develop programmes with external impact.
9	Advanced and highly developed theoretical and practical knowledge over a wide range of clinical, scientific, technical and/or management functions.	Provides clinical and scientific expertise and leadership which may be recognised at national and/or international level.	In addition to above, may have corporate responsibility or lead provision of clinical and scientific services which may extend beyond employing organisation.	In addition to the above interprets policy and strategy to set goals and standards and direct services with responsibility and accountability.	In addition to above may carry responsibility for policy implementation and policy or service development at directorate/division or organisational level or with other organisations and agencies. May involve formulating long term strategic plans impacting across or beyond organisation.	Responsibility for delivery against local and national quality and performance frameworks.	In addition to above, may also be responsible for coordination of R&D programmes.