Modernising Scientific Careers Overview

January 2012

Healthcare Science Workforce

Life Sciences (50%)

• Anatomical pathology

- Blood transfusion / transplantation
- Clinical biochemistry including paediatric metabolic biochemistry
- Clinical cytogenetics
- Clinical embryology and andrology
- Clinical immunology
- Cytopathology
- Electron microscopy
- External quality assurance
- Haematology and Haemostasis and Thrombosis
- Histocompatibility& Immunogenetics
- Histopathology
- Molecular genetics
- Microbiology
- Phlebotomy
- Tissue banking
- Toxicology

HCS = 5% NHS workforce

52,000 in England

51 scientific disciplines/ professional groups

Physiological Sciences (30%)

- Audiology
- Autonomic neurovascular function
- Cardiac physiology
- Clinical perfusion
- Critical care technology
- Gastrointestinal physiology
- Neurophysiology
- Ophthalmic science
- Respiratory physiology
- Sleep physiology
- Urodynamics and urological measurements
- Vascular technology
- Vision science

Workforce planning

- 40+ routes
- Many small groups
- •Overlapping roles / functions
- •Difficult to match supply/demand
- Ad-hoc funding / commissioning

Regulation Inconsistent

Physical Sciences and Engineering (20%)

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

Education, Training and Career Pathways •Diverse •In some cases inflexible

 In some cases inflexible and complex

UK wide government strategy for flexible trained HCS workforce

- Career pathways
 - clear structure, lifelong learning, regulation
- Education and Training
 - Equitable entry, explicit standards, professionally managed and delivered programs, Integrated E+T
 - Centrally funded for new entrants, overseen by Academy of Healthcare Sciences
- Workforce planning
 - Evidence based, fit new models of service delivery, commissioning of places overseen by Medical Education England (MEE) working with SHAs (soon to be Local Education and training Boards (LETBs), overseen by Health Education England (HEE)) DOH doc - ...

MSC in current context

Changing patient population and their expectations Scientific and technological advances New models of care provision Innovation QIPP

> Severe economic downturn Pathology modernisation Opposition to NHS legislation NHS Future Forum Review

MSC Work Programme

Education and Training	 HSST curriculum development & Accredited Specialist Expertise Development of Scientist Practitioner and Scientist Training Programmes/Curriculum with SHA Educational Commissioners Genetics pilot Academic (R & D) developments Assessment strategies and tools Development of e.g. BMed Sci /HEFCE academic developments (Masters) with SHA Educational Commissioners and HEIs Infrastructure to support training, e.g. training the trainers, Schools of HCS, Quality Control of workplace based training Leadership pilot Understanding a science student's/graduate's career intentions
Regulation and Accreditation, Awards and Qualifications and Quality Assurance	 Governance and performance management of programme Accreditation, Validation & Awarding Body Processes Learning & Development Framework (inc. Awards & Qualifications) Regulatory arrangements
Workforce planning and Horizon scanning, Funding/Commissioning	 Developing SHA Funding & Workforce Planning Models Service reviews and delivery models Employment arrangements e.g. Terms & Conditions, transition, recruitment Engagement with HCS Programme Board
Communication and Stakeholder engagement	 Large numbers of stakeholders, e.g. SHAs, professional bodies, regulatory bodies, HEFCE Manage Consultation process and analysis Careers and Raising the Profile of Scientists
Extending roles	 Extending Prescribing to Scientists New ways of working and the unique role of HCS, e,g. Community HCS



Healthcare Science Assistants and Associates

- > Perform task and protocol based roles
- Range of vocational qualifications underpinned by a learning and development framework
- > Progress...

Being taken forward by 'Skills for Health' Will need input from 'us' for

curriculum development

HCSP – Training (PTP)

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PRACTITIONER TRAINING PROGRAMME -

- Three year undergraduate course
- Module based
- From sample receipt to report
- Technical strength
- Leadership and management



HSC Training -STP

- Three year course
 - Blood sciences
 - Infection sciences
 - Tissue sciences
- Module based
- Patient care pathways
- Integrated Masters degree (MSc)
- Leadership and management



Overview STP curriculum

Year 3 Specialist Practice	H with integ	Healthcare Science Specialist Learning with integrated Professional Practice [30]		Research Project Students would usually begin a workplace-based research project in Year 2 and complete the project in Year 3 [30]	
	Specialism				
Year 2 Specialist Practice	Research Methods [10]	Healthcare Science Specialist Learning with integrated Professional Practice [20]		Research Project Students would usually begin a workplace based research project in Year 2 and complete the project in Year 3. [30]	
	Generic	Specialism			
Year 1 Core Modules	Healthcare Science Integrating science and Professional Practice [20]		Healthcare Science Integrating underpinning knowledge required for each rotational element with Professional Practice [40]		
	Generic			Divisional	

Haematology and Transfusion specific STP modules: 10 credits each

Year 1	
Module 1:	Introduction to H+BT
Year 2	
Module 2:	Routine haematology and coagulation
Module 3:	Transfusion 1
Year 3	
Module 4:	Haematology/oncology and red cell disorders
Module 5:	Specialised haemostasis
Module 6:	Transfusion 2

Transfusion module 1 Draft workbased learning outcomes

- Perform routine pre-transfusion procedures and serological tests, correctly interpret results and resolve anomalies to ensure provision of compatible blood for patients
- Select and issue appropriate blood, components and products for patients with a wide range of clinical conditions, in routine and emergency settings
- Investigate suspected adverse reactions and events according to clinical presentation
- Manage blood stocks including full traceability and maintenance of the cold chain
- Work within appropriate national guidelines for transfusion, applicable regulatory requirements (e.g. Blood Safety and Quality Regulations), and quality management systems in the hospital transfusion laboratory
- Form good working relationships with other hospital based staff involved in the transfusion process

Transfusion module 2 Draft workbased learning outcomes

- Troubleshoot serological tests, investigate patient and donor blood grouping anomalies, and to make interpretations in clinical context
- Select, perform, and interpret the results of non-routine additional tests to elucidate antibodies in more complex cases, and liaise with clinicians and blood services regarding transfusion support
- Select and perform serological tests to investigate AIHA and to identify suitable blood for transfusion
- Apply algorithms for routine / non-routine antenatal testing and anti-D prophylaxis, and perform FMH testing.
- Select and perform tests to predict and monitor HDFN, and provide appropriate transfusion therapy for the fetus and neonate
- Gain experience of the linkages between the hospital blood transfusion department and the specialist blood transfusion services.

STP modules

Specific learning outcomes	6-8 subject areas
Academic knowledge and skills	Taught and assessed at HEI
Associated work based knowledge and practical skills	Acquired in workplace – application of academic knowledge.
Specific work based competencies	Apply to work based knowledge and skills On-line assessment tool.
Suggested clinical experience	Emphasis on clinical interaction
Educational resources	Reading list, websites etc.

The Assessment Tools

Workplace

- Case Based Discussions (CBD)
- Direct Observation of Practical Skills (DOPS)/ Mini- cex (direct observation in a clinical setting)
- Multi Source Feedback (MSF) HCS Only
- Competency Log e-portfolio
- End of Year and End of Programme Assessment in OSCE (Objective Structured Clinical Examination) format organised by the National School/Academy

Assessment outline





- Genetics pilot first students taken on in Oct 2009
- Hosted by West Midlands HA
- STP / PTP at Nottingham University
- Training trainers
- New STP and PTP manuals
- On line assessment
- National School of Genetics established
- First STP recruitment 2011 started Sept 2011
- Running alongside existing qualification routes

HCS - Training (STP) 2012

- National central funding through for new places
- Places commissioned via SHAs and employers, based on workforce planning info. from CfHI
- National recruitment of STP students
- Overseen by Medical Education England (MEE)
- 3 year placements paid approx. £25k Band 6
- Approx 2/3 workplace training, 1/3 in HEI

STP information

- Recruitment 2012 starts next week with advert in 'New Scientist' and on www.jobs.ac.uk
- NHS Careers 0345 60 60 655.
- NHS employers website www.nhsemployers.org
 - planningyourworkforce/modernisingscientificcareers/MSC/implementingMSC/Pages/scientific Training Program(STP).aspx
- IBMS website
 - FAQ on STP recruitment www.ibms.org

Senior Scientist and Advanced specialist practice

- > undertake an in depth highly complex role
- Explicit qualifications and experience (set as for the Higher Specialist Scientific Training [HSST] curriculum) and linked to a common standard of proficiency for annotation on register

Not clear how this will work ? Additional taught courses specialising at M level ? Input from IBMS / BBTS for transfusion

Consultant Scientists

- > provide consultant level expertise, advice and leadership
- 4/5 year discipline specific training programme with curricula which define new higher specialist registration requirements
- Higher Specialist Scientific Training (HSST)
- Entry via STP
- Royal College exit examinations

Agreement HSC can sit RCPath Exams Curriculum development at RCP 5 year course - ? 2012 start

Questions (not too hard please!)