

Modernising Scientific Careers: The England Action Plan



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Foreword



The healthcare science workforce in the NHS plays a major role in patient care today, delivering almost a billion diagnostic tests every year and ensuring for example that over 1.5 million fractions of radiotherapy are delivered safely each year. This unique contribution was recently highlighted in *Extraordinary You*, which told the stories of people working in the scientific specialisms, as a nurse, I did not fully realise how this workforce makes a difference in all pathways of care.

I want to be sure that those working in healthcare science are well equipped to meet the challenges and opportunities of the future so that they can deliver great care for people and play a major role in prevention and bringing innovation into healthcare. This is why *Modernising Scientific Careers* is so important.

Modernising Scientific Careers: The England Action Plan sets out an ambitious programme of work following the publication of *Modernising Scientific Careers: The UK Way Forward*. The plan will ensure the continued delivery of high quality care as well as improved productivity, working with Strategic Health Authorities, the professions, the education sector, employers, trades unions and others to implement the changes to make a difference for patients.

Professor Ann Keen MP

Parliamentary Under Secretary of State for Health

Introduction



Scientific and technological advances constantly provide new opportunities to improve the quality of care. They also offer the means of changing how and where care is delivered.

In order that patients can fully benefit from these advances, we need to modernise scientific careers in the NHS to equip staff with the right set of knowledge and skills to deliver them.

The changes set out in *Modernising Scientific Careers: The UK Way Forward*, published on 26 February 2010, were based on extensive consultation and stakeholder engagement. We value the insights developed as a result of this collaborative approach and our work with stakeholders will continue to be central to the implementation phase of the Modernising Scientific Careers (MSC) programme described here in the England Action Plan.

The changed economic environment means that it is now even more important to focus on delivering high quality care for all while improving efficiency and effectiveness. The healthcare science (HCS) workforce has a key role to play, given that they make a contribution to 80% of all diagnoses.

Modernising Scientific Careers has been designed jointly with the other countries of the UK. The England Action Plan is the result of co-production with Strategic Health Authorities (SHAs) to ensure delivery of a sustainable, fit for purpose, scientific workforce for the future that is affordable, builds upon the best of the past and ensures that patients and the public receive the greatest benefit from its skills and talents. It will enable employers to profile the workforce more effectively and ensure that it is appropriately trained and developed, where appropriate, to take on more advanced clinically facing roles. It will also enable the education sector to better understand the needs of the NHS and support the education and training of the scientific workforce.

The changes that are being made to healthcare science career pathways, training and education, and associated standards, will be carefully planned with each SHA and other key stakeholders for a phased implementation across the country. The MSC programme team will work with SHAs and key stakeholders to ensure that the significant benefits we have identified are realised as quickly as possible and that clarity is provided regarding transition arrangements.

Modernising Scientific Careers will also be a vehicle to deliver the *NHS Constitution* Pledge to the HCS workforce,¹ providing it with clear roles and responsibilities and rewarding jobs for teams and individuals. Importantly, it will ensure that trainees receive high quality training and outcomes from the training experience.

These changes are far reaching, exciting and will enable the workforce to provide 21st century care. The journey has only just begun and has been made possible through the contributions of a very large number of people including SHA colleagues and members of the scientific workforce. I thank you for your hard work and look forward to completing the journey with you.

A handwritten signature in black ink that reads "Sue Hill". The signature is written in a cursive, flowing style.

Professor Sue Hill
Chief Scientific Officer
Department of Health

¹ Department of Health (2009) *The NHS Constitution for England*. London: DH

Executive summary

1 The healthcare science (HCS) workforce in the NHS sits at the centre of high quality innovative care. Those working in healthcare science make an often unique and highly expert contribution to diagnostic and specialist therapeutic and rehabilitative services, as well as to research, development and improvement. Their contribution stretches across all pathways of care and includes prevention and helping people to stay healthy.

2 This diverse workforce consists of some 50,000² people in England alone, working in the NHS and its related bodies. The size and range of skills in this workforce indicates the extent to which science, technology, engineering and mathematics are applied to healthcare across the biosciences, encompassing biology, genetics, physiology, physics and bioengineering. This workforce needs to keep pace with scientific and technological development and requires sustainable education and training pathways to ensure its contribution to patient care is both maintained and optimised in changing models of delivery.

3 The MSC programme will be an enabler of change, and will support the delivery of high quality productive care for the benefit of patients, the public and staff. MSC and its implementation by Strategic Health Authorities (SHAs) in England will:

- address the quality and productivity challenge in scientific services in the changing economic environment
- ensure the NHS, working with academia and industry, supports the timely and systematic adoption of scientific and technological advances to improve patient care
- support the workforce to take on broader roles, including in clinical care, leadership, management and education, ensuring that staff are engaged in decisions that affect them and the services they provide
- develop the skills of the workforce so that the NHS remains at the forefront of research, development and innovation, ensuring that science and evidence sit at the core of healthcare

² The NHS non-medical workforce census in September 2008 showed 46,279 members of staff assigned to the HCS workforce code. Some staff are incorrectly coded. Approximately 50,000 is used as a reasonable assumption of the actual headcount.

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- improve workforce planning for healthcare science to become more strongly driven by, and integrated with, service and patient pathway needs, underpinning the commissioning of education and training, and supporting reprofiling of the workforce
 - ensure the future workforce will acquire the right balance of broad-based and specialist skills and knowledge, with less emphasis in initial training on experience in a single specialism, to provide greater flexibility to support changing care models, patient pathways and health needs
 - simplify career structures, making them more equitable, transparent and attractive to new entrants and existing staff, achieving greater alignment with the career pathways of other healthcare professionals and quality outcomes from the training experience
 - formalise training and education to deliver coherent and consistent pathways for all new and existing HCS staff, ensuring equity of access; this includes academic and workplace-based training at all levels, introducing structured formal arrangements in those areas of high clinical risk where they are currently absent
 - clearly define awards and qualifications associated with MSC training programmes and establish robust arrangements for assessment of equivalence of achievement
 - prepare for the requirements for regulation, proportionate to risk, in the light of MSC
 - identify transparent and secure SHA funding arrangements for education and training programmes and, in partnership with other funding bodies, secure better value for money and outcomes for the investment made in education, training and development of the HCS workforce
 - attract and develop the very best people into healthcare science and give staff the support they need to succeed and continuously improve their skills.
- 4 Implementation of the MSC programme, in partnership with SHAs, Trades Unions and other key stakeholders, will deliver savings in NHS investment in services and education and training programmes. It will take time for the full savings to be realised, but there are real opportunities for improved delivery of efficient, high quality care that provides value for money.
 - 5 Work with SHAs will continue to plan the phased implementation of MSC to support the development of the right workforce needed to meet local care pathway requirements. The adoption of the new MSC education and training programmes will begin to gather speed from 2010/11 through to 2013/14. The pace of change will depend on local SHA priorities in managing the transition.
 - 6 A joint Department of Health (DH)/NHS England Implementation Board will strategically oversee and co-ordinate implementation arrangements reflecting the partnership and co-production discussions that have led to the production of this Action Plan. Implementation arrangements will be discussed with each SHA based on their assessment of their state of readiness and their local needs. Medical Education England and its Healthcare Science Programme Board will provide a national professional advisory function which includes Trades Unions representatives. New strategic arrangements will also be put in place with the higher education sector and with partner organisations.
 - 7 The action that is described in this plan outlines roles and responsibilities of different stakeholders and the timeline for delivery. Working together, these actions will deliver benefits for individuals, for the health service, and importantly for patients and the public.

Chapter 1: Introduction



- 1** The NHS Constitution unites the NHS behind a common goal to improve quality by setting out the values and principles of the NHS and by outlining the rights and responsibilities of patients, service users and staff. There are three essential components of high quality care: patient safety, clinical effectiveness and improved patient experience. Delivery of this challenging agenda, together with the need for increased productivity, will require an effective team of professionals working together across clinical, managerial and supporting roles. It is vital that the healthcare science (HCS) workforce is empowered to play its full part in rising to these challenges.
- 2** In November 2008, the UK Health Departments published a document for consultation: *The Future of the Healthcare Science Workforce. Modernising Scientific Careers: the Next Steps*. It set out proposals to ensure that the HCS workforce was educated and trained to meet the challenges of modern healthcare. Following independent analysis of responses
- to the consultation,³ *Modernising Scientific Careers: The UK Way Forward* was published on 26 February 2010. It sets out key deliverables for the Modernising Scientific Careers (MSC) programme across the UK and a commitment to develop action plans for each country. This Action Plan sets out how implementation will be taken forward in England.
- 3** The Action Plan for England takes account of wider drivers for change including the NHS Quality, Innovation, Productivity and Prevention (QIPP) Challenge (March 2010), which will ensure that quality is delivered and sustained in the changing economic environment, and the *Life Sciences Blueprint*,⁴ which describes how the NHS will play its part in the UK science, technology, engineering and mathematics (STEM) agenda, through skills development of its workforce and ensuring that ground-breaking scientific and technological advances are adopted quickly to improve the quality of care for patients.

³ *Modernising Scientific Careers. A Consultation Analysis of Organisational, Individual and Deliberative Event Responses* (conducted for the Department of Health). Ipsos MORI Social Research Institute. September 2009.

⁴ *Life Sciences Blueprint. A statement from the Office for Life Sciences*. July 2009.

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- 4 The following chapters will outline the key drivers for change; how MSC will be delivered in England; the changing roles in healthcare science; the new Career Framework and career pathways and education and training programmes; how workforce planning and education commissioning will be improved; and how the MSC team will support Strategic Health Authorities through implementation.

Chapter 2: Drivers for change



This chapter describes how Modernising Scientific Careers (MSC) responds to key drivers for change in the NHS by:

- increasing productivity and improving the quality of services, ensuring they are focused on individuals' needs and choices
- encouraging rapid adoption of new medicines and technologies, supporting high quality and innovative care in new settings closer to home
- increasing workforce flexibility and strengthening clinical and other stakeholder engagement in delivering change
- engaging with the *Life Sciences Blueprint* and the broader science agenda.

The context

- 1 Changes to the career and education and training pathways for the healthcare science (HCS) workforce are set in the context of:
 - the need for increased quality and productivity in a changing economic environment, for example increasing the scrutiny given to the ordering of diagnostic tests
 - the more complex healthcare demands of an ageing population and the greater focus on disease prevention and personalised medicine
 - the need to systematically identify those at highest risk of developing disease and to support the management of that risk
 - new opportunities and demands in service delivery, requiring greater flexibility and new roles and ways of working, including a significant shift from secondary to primary care where this is possible and appropriate

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- stronger involvement of clinicians and other stakeholders in shaping and delivering change in services for the benefit of patients, as described in the NHS Constitution
- the need for rapid adoption of new science, medicines and technologies to deliver care more innovatively, such as remotely or closer to home. Rapid adoption in the NHS can also bring benefits for the wider economy through partnerships between the NHS, higher education and industry, as described in the *Life Sciences Blueprint*
- recognition that skills development in science, technology, engineering and mathematics (STEM) subjects is essential to high quality evidence based care and to economic regeneration in the UK.

2 In responding to these drivers for change, we will work with our stakeholders in the NHS, professional bodies, Trades Unions, education sectors and industry to deliver high quality education, training and scientific services, fit for the 21st century healthcare system.

The NHS Quality, Innovation, Productivity and Prevention (QIPP) Challenge

- 3** The NHS needs to provide healthcare services with a greater focus on prevention and earlier intervention, more care delivered closer to home, fewer acute beds and greater standardisation of care pathways. Work within NHS London⁵ suggests that up to 60% of the activity in accident and emergency departments and up to 55% of outpatient attendances and interventions could take place in the community. Since scientific testing supports up to 80% of clinical diagnoses, the HCS workforce will be a key enabler of this change.
- 4** Scientific and technological advances, coupled with the improvements in training and education that MSC will bring, will mean that this workforce will be in a unique position to harness technology to enable radical changes in service delivery. The success of new models of care delivery such as polysystems depends upon

the HCS workforce being an integral part in their development and delivery.

- 5** MSC will support delivery of improvements for patients by preparing the current and future workforce for what is required of them and by providing a standardised national framework of career and training pathways, continuing professional development (CPD) opportunities, and regulation where appropriate.
- 6** Analysis conducted in the pathology workforce profiling report,⁶ has already shown that some tasks could be undertaken by staff at lower Career Framework levels on the basis of the skills and competences required to deliver services. MSC will be a major enabler to realise savings from pathology reconfiguration and the QIPP pathology workstream while maintaining quality outcomes in end to end patient pathways.
- 7** MSC will also provide a framework for employers to help them determine their workforce needs, especially where no formalised structured approaches are currently in place. This particularly applies to the medical scientific interface in some specialisms at the more senior end of the Career Framework. It will also enable employers to focus their training and education investment on CPD for the current workforce to maintain skills and competence, e.g. for Radiation Protection Advisors, rather than as now on pre and immediate post registration training. The level of investment on this latter type of training is difficult to estimate accurately, but a small pilot study has shown it to be significant.
- 8** MSC will deliver improvements in the quality and value for money of education and training arrangements, providing Strategic Health Authorities (SHAs) with the means to make better use of the Multi-Professional Education and Training (MPET) budget available, by developing new shared arrangements to commission education and training programmes and to deliver national curricula that maximise

⁵ *Delivering Healthcare for London: An Integrated Strategic Plan 2010–2015*. First stage report. NHS London. January 2010.

⁶ *Pathology: towards a competence-based workforce*. DH. May 2008.

the scope for shared learning across specialisms and professions as appropriate.

- 9** Our modelling of costs and savings in the NHS, presented in the Financial Impact Assessment published with this Action Plan, show that the full potential annual savings identified will not be realised immediately and will be dependent on the pace of implementation across the NHS. By providing SHAs with the means to make better use of the MPET funds available there may also be opportunities through MSC to enhance the quality and reduce the costs of training in the longer term.

Modernising Scientific Careers: delivering quality and safety

- 10** The planned changes in MSC are informed by the core principles of a focus on quality, being patient-centred, clinically driven and flexible, valuing people and promoting lifelong learning.

- 11** MSC focuses on higher quality, effective and safe care through:

- a **standardised national framework** and defined career pathways to ensure staff have rewarding roles and careers that enable them to deliver the best possible care
- education and training to prepare them for new roles in the future
- accreditation of education and training programmes to ensure **consistency in standards** that will ultimately replace the current complex mix of programmes (some ad hoc) in generally single disciplines
- national curricula, developed in **partnership with clinical leaders** in each of the healthcare science areas
- a post-graduate route and senior scientist route which will ensure that employers can retain staff and develop senior roles to promote science in the NHS as a strong career choice as well as providing the public with access to a **high quality specialist workforce**, where it is needed.

- a learning and development framework to support the introduction of training and development opportunities and defined roles and functions for **assistants and associates** so their potential to make a greater contribution to scientific services can be realised
- structured access to **continuing professional and personal development**, which will ensure that staff are in a better position to deliver the right care first time
- **partnerships with education commissioners** and workforce planners to support better value for money in delivery of education and training for local clinical visions, skill mix and new ways of working.

The Life Sciences Blueprint

- 12** The HCS workforce, its education and training, and its ways of working are central to delivering the Office for Life Sciences' *Life Sciences Blueprint*. The blueprint aims to develop the UK's life science industry through a partnership of the NHS, higher education, pharmaceutical, medical biotechnology and medical technology industries.

- 13** Implementation of MSC will reflect developments outlined in the blueprint, including:
- new accreditation requirements for all bioscience degrees
 - developments to upgrade clinical pharmacology and pathology education in the post-graduate and higher training programmes led by the Medical Research Council
 - the need for research and development partnerships with industry
 - rapid uptake and use of new medical biotechnology and medical technology requiring new ways of working
 - the support required by other members of the healthcare team in the use of new technologies in patient care.

The *Life Sciences Blueprint* and Modernising Scientific Careers

- 14** The changes to the HCS training and career framework will deliver a workforce capable of:
- delivering high quality patient care that also supports the UK's life sciences industries
 - developing and taking up new ground-breaking and cost-effective technologies giving access to cutting-edge new treatments and services
 - becoming part of an internationally recognised UK Life Sciences Super Cluster
 - supporting the development of other healthcare staff in the use of new technologies, leading to the design of new and improved ways of working that deliver high quality, safe and efficient services for patients in the 21st century.
- 15** The next chapter describes our approach to implementation, working in partnership with key stakeholders to deliver the changes needed.

Chapter 3: Delivery



This chapter describes the approach of the Modernising Scientific Careers (MSC) programme to:

- work together with our key partners to deliver change to agreed timescales in the most efficient and effective ways
- improve communications and building stakeholder engagement
- oversee and co-ordinate implementation in partnership with Strategic Health Authorities (SHAs).

Our approach to delivery: working together to deliver change

- 1 The MSC programme will continue to work closely in association with: the three other UK Health Departments, SHAs, NHS Employers, Trades Unions, Skills for Health (the Sector Skills Council), Medical Education England (MEE), the MEE Healthcare Science Programme Board, a new overarching Professional Bodies Advisory Group (to provide advice to the Department of Health Chief Scientific Officer), Medical Royal Colleges, higher education institutions (HEIs), the further education sector, regulatory bodies and other interest groups to implement MSC. Annex 1 shows our key partners in the implementation of MSC in England and their roles.
- 2 The Social Partnership Forum (SPF) brings together NHS Employers, Trades Unions and the Department of Health (DH) to discuss, debate and involve partners in the development and implementation of the workforce implications of policy. The SPF will continue to receive regular progress reports regarding the MSC programme.
- 3 Partnership working at all levels will be critical to the successful implementation of the new service models, new workforce roles and new education, training and career pathways for healthcare science. At national, regional and local levels, it will be essential that there is effective communication and that Trades Unions are able to contribute to the decision-making processes. New national advisory groups will be established to fully reflect these working principles. One will focus on the employment related aspects of implementation and the other on aspects of education and training. Both will include Trades Union representation.

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4 Given the key role of higher education in delivering many of the proposed new education and training programmes, in research and development and in academic career pathways, a strategic forum with membership drawn from the most senior levels of higher education will be established to focus specifically on healthcare science. We will explore with the Higher Education Funding Council for England (HEFCE) how healthcare science can be addressed within the existing DH/HEFCE strategic alliance. Local arrangements with the further education sector to support the training and development of assistants and associates will be developed through SHAs and Skills for Health, supported where appropriate by the MSC programme team.

**Professional advisory machinery and
Modernising Scientific Careers**

- 5** MEE was established in 2009 and includes medicine, dentistry, healthcare science and pharmacy. The introduction of MEE has meant that healthcare professions are able to have a meaningful voice and scrutiny function in education and training, workforce planning and commissioning.
- 6** The MEE Healthcare Science (Professional Advisory) Programme Board is in place with four current working groups (Education and Training, Workforce Planning, Academic Career Pathways and Leadership). With MEE, the Healthcare Science Programme Board will provide advice on aspects of the implementation of MSC and undertake specific related projects as required.
- 7** Regional advisory machinery is being established to provide multi-professional and clinical pathway advice on workforce planning at SHA level and we will work to ensure that there is appropriate scientific representation.

A phased approach to delivery

8 There will be no 'big bang' approach to MSC implementation, but action will be taken forward quickly to maximise the benefits for patient care, allowing potential savings to be released early. Full account will be taken of the planning cycles and constraints of partner

organisations, including existing contractual relationships, financial constraints and planning lead-in times. We will adhere to the principles published in *The Future of the Healthcare Science Workforce. Modernising Scientific Careers: The Next Steps* and confirmed in the *UK Way Forward* document (Annex 2).

- 9** While there will be a structured and consistent national programme across England, it is recognised that it will be best practice for individual SHAs to have discussed implementation arrangements by spring 2010, following dialogue and a joint assessment of national and local priorities. This process will seek to ensure that there is systematic whole systems change across the breadth of the career pathway that is sustainable and cost effective and benefits from the economies of scale that a national programme brings.
- 10** New education and training programmes will be phased in by SHAs and HEIs from autumn 2010, taking account of the cost model agreed with SHAs. We will work with SHAs to ensure that the transition is well managed and fulfils service, workforce and education and training requirements. Any concerns over the delivery of change will be addressed by building on evidence from early adopter sites and the evaluation of new MSC programmes.
- 11** The phased implementation of MSC across the SHAs will draw on the learning from the genetics programme, which commenced in September 2009, recruiting trainees to the Scientist and Practitioner Training Programmes in genetics, and the Practitioner Training Programme in radiotherapy physics (dosimetry), which will commence in spring 2010 (see Chapter 6).
- 12** We will establish early adopter sites by spring 2010 to take forward different aspects of the implementation of MSC (see Chapter 6). The early adopters approach will ensure that tangible benefits for service are delivered early on and these can then be communicated widely. There will be a national early adopter project steering group with representatives from Trades Unions, and this arrangement will be mirrored within the sites themselves.

- 13** Any employment issues that may arise as a result of introducing the new training and career framework will be considered jointly with SHAs, Trades Unions, NHS Employers and early adopter organisations.
- 14** Work to improve scientific leadership and cohesion across all levels of scientific specialisms will be implemented through the establishment of SHA senior scientific leads and through working with NHS Employers, the Association of UK University Hospitals group and new programmes in NHS trusts.

Communications and stakeholder engagement

- 15** Communications and stakeholder engagement will be strengthened through the delivery phase of MSC. The MSC team will develop materials such as frequently asked questions (FAQs) and a communications toolkit for use in communications nationally and locally. Timely and relevant bulletins to all stakeholders will include the Chief Scientific Officer (CSO) bulletin and a linked *MSC Matters* update, which will share progress and information on implementation. This and other information will be readily available through the CSO web pages: www.dh.gov.uk/cso
- 16** The public perception of the role of healthcare science needs to change to ensure that those already in the workforce, or considering entering it, see the positive opportunities to play a key role in patient care and in science innovation. A comprehensive communications strategy for the public and potential new healthcare science recruits will be produced in partnership with SHA communications leads and NHS Careers, linked to healthcare science networks and groups.
- 17** Sharing of improvement, innovation and developments in science and technology/scientific services is essential. This will be achieved more systematically through the collection and widespread dissemination of evidence-based case studies.
- 18** We will continue with events to raise the profile of science in healthcare across schools and colleges, universities and with the general public
- in collaboration with the Science, Technology, Engineering and Mathematics network (STEMNet) and the Science and Society initiative led by the Department for Business, Innovation and Skills (BIS).

Co-ordinating and overseeing implementation

- 19** A new joint DH/NHS England Implementation Board will co-ordinate and oversee the strategic implementation of MSC across England. This Board will review key deliverables and the national strategic risks and issues that will be identified as SHAs develop their implementation plans as part of the local programme and project arrangements.
- 20** Through its membership the Board will ensure that MSC is aligned to other policies that may be key to its implementation and will seek to understand how MSC impacts on other DH policies and on other groups and initiatives.
- 21** The Board will make strategic links across central Government and with key stakeholders as relevant, including the Workforce Availability Policy Programme Implementation Group (WAPPIG), Workforce Leadership Group, Social Partnership Forum and the MEE Healthcare Science (Professional Advisory) Programme Board.
- 22** The SHA MSC leads group will continue to play a key role in informing MSC developments and will continue to meet monthly with the MSC programme team to discuss the detail that informs implementation and to share lessons learnt.
- 23** We will continue to work with the other countries of the UK to ensure a synergistic and coherent oversight approach to implementation.
- 24** The next chapter describes how the healthcare science workforce will change in the future and the new MSC education and training pathways designed to support these changes.

Chapter 4: Delivering tomorrow's healthcare science workforce



This chapter covers:

- the changing healthcare science (HCS) roles and functions in the delivery of care
- development of leadership and management in healthcare science
- the new healthcare science Career Framework
- the new healthcare science education and training framework
- the new Healthcare Science Education and Training Board (HCS ETB)
- academic training and career pathways.

The changing role of healthcare science in care delivery

1 The HCS workforce comprises approximately 50,000 staff in the NHS in England. Many have unique, highly specialised roles and at senior levels some have recognised similarities with medical consultants.

- 2** Innovations in science and technology present new opportunities and will result in new roles and functions for the HCS workforce. For example:
- robotics and automation are likely to both free up time and require a different skill mix
 - miniaturisation and point of care devices with remote monitoring capabilities are likely to promote opportunities to change where services are delivered and how the scientific workforce can contribute to immediate clinical decision-making to inform early treatment
 - complex and advanced scientific tests and procedures will be introduced, requiring greater expertise in both performance and interpretation.

3 Rapid advances in science and technology and changes in patient needs are beginning to blur the lines between specialisms. Specialisms are changing too, with new ones emerging. The changing patient demographics and challenges of, for example, more patients with

multiple long-term conditions, will also impact on the future requirements from the HCS workforce.

Modernising Scientific Careers and patient care

- 4 The new Modernising Scientific Careers (MSC) education and training framework has been designed to develop staff who:
- have the right set of skills and knowledge to deliver high quality care in a changing economic, scientific and technical environment and in new care settings
 - have a key role in prevention and public health
 - provide their unique contribution within multi-professional teams
 - engage with the public on science and its role in health and broader society
 - are involved in translational, cutting-edge research, in clinical trials and innovation
 - recognise the importance of leadership and can take on professional and other leadership and management roles.

The Healthcare Science Career Framework

- 5 High level role descriptors are defined within the new training and career pathway as described in *Modernising Scientific Careers: The UK Way Forward*. These are shown in Annex 3. The new training and career pathway means that existing roles outlined in *Career Framework for Healthcare Scientists in the NHS* will need to be reviewed. A wide range of stakeholders will be involved in mapping out new roles within each healthcare science specialism to describe the maximum potential of these new roles to provide rewarding jobs that make a difference to patients, ensure maximum workforce productivity and provide clarity in education and training requirements and service provision.

Key elements of the Career Framework

- 6 The Career Framework is built on the principle of offering career development that is fair and

open to all, where everyone has the chance to progress and to achieve their full potential and where diversity and equality as well as human rights are valued. The full application of the Career Framework will open up greater learning and career opportunities for all staff, regardless of their background. This will deliver the NHS Constitution's aim to invest in a workforce that has the skills and commitment to deliver health services to an increasingly diverse society and to enable the NHS to make the best use of the available pool of talent in young people.

New and extended roles

- 7 We will identify future scientific developments, focusing on those likely to have the greatest impact on the quality of care. This will help to clarify if patients could benefit from extended roles within the current HCS workforce. Skills for Health will have a key role in facilitating this work with other stakeholders.

Nationally transferable roles

- 8 Skills for Health is currently developing a suite of nationally transferable roles. Any that relate to roles in healthcare science, and specifically awards, qualifications and roles in Career Framework levels one to four will be the subject of joint discussion, and this work will be informed by the early adopter sites described in Chapter 6. Consistent and nationally transferable roles and job titles will be reflected and recorded in occupation codes used in the NHS Electronic Staff Record (ESR).

Agenda for Change, job profiles and job evaluation

- 9 The new roles outlined in *Modernising Scientific Careers: The UK Way Forward* are not equivalent to NHS pay bands. Under the NHS pay scheme, Agenda for Change (AfC), jobs are evaluated initially by comparison with national profiles. Only when an individual job description cannot be matched is a full evaluation carried out. This enables a cost-efficient process and enhances national transferability and consistency.

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10 AfC job profiles will be reviewed to ensure that new role descriptions, new education and training pathways and agreed equivalence of experience and prior learning arrangements can be easily and consistently mapped to them. A consistent national approach to the development of job descriptions for new MSC programme trainees employed by the NHS will also be considered, taking into account the learning from the MSC genetics and dosimetry programmes described in Chapter 6.

Knowledge and Skills Framework and development review

11 An individual's progression through pay bands depends on their ability to demonstrate full competence in role at a gateway after 12 months of employment. Competence is defined with reference to the NHS Knowledge and Skills Framework (KSF). The MSC programme will work with stakeholders to develop model KSF outlines representative of the roles described in MSC.

Functional Guide revision

12 The Functional Guide set out in *A Career Framework for Healthcare Scientists in the NHS*⁷ will be updated to describe the new roles and their functions at each of the nine stages of the Career Framework, to inform local workforce planning and development. The guide will be reviewed in the light of the new education and training curricula so that the functions reflect the impact of these modernised training programmes.

Consultant/Very Senior Healthcare Scientist posts

13 A key priority is to identify and gain consensus about the role of the consultant/very senior healthcare scientist both in service and in academia. The Academy of Medical Royal Colleges is examining their role within clinical pathways and the delivery of care through a project involving healthcare scientists and medical representatives. The Academy will also consider and make recommendations on the nature of assessment that it would be

appropriate for senior scientists to attain. Their report is expected in spring 2010.

14 A consistent definition of Consultant Healthcare Scientist posts needs to be agreed. Scientists who successfully complete Higher Specialist Scientist Training (HSST) equivalent to medical Higher Specialist Training, with 4 to 5 years of specialty-specific training, should be considered competent to provide consultant-level clinical scientific expertise advice and leadership. In partnership with professional bodies, NHS Employers and representative Trades Unions, a process will be agreed for the appointment of Healthcare Scientist Consultants in accordance with AfC. This will include the role of assessors and their training.

Leadership and management

15 The National Leadership Council (NLC) has been established to deliver a step change in the development of leadership across healthcare. The HCS workforce needs leaders at all stages of the Career Framework to actively seek out and identify opportunities for quality improvement and increased efficiency and effectiveness for the benefit of patients. Leaders in the HCS workforce will need to feel empowered to constructively challenge the status quo and understand how to overcome any barriers and obstacles.

16 Through work with the NLC, the HCS workforce will be given many more opportunities to develop leadership capacity and capability. This will be informed by the report and recommendations of the Medical Education England Healthcare Science (MEE HCS) Programme Board working group on leadership due in spring 2010 and by specific work in NHS Trust sites.

17 Taking a systematic prospective approach, leadership competences, based on the medical leadership framework, will be embedded within the new education and training programmes.

18 Working with the new SHA Senior Scientific Leads and their HCS networks, leadership will

⁷ *A Career Framework for Healthcare Scientists in the NHS*. DH and Skills for Health. November 2005.

be promoted and encouraged in all parts of the current and future HCS workforce.

- 19** The annual Chief Scientific Officer (CSO) Healthcare Scientist of the Year Awards will continue to include a leadership award to further acknowledge and encourage exemplars of leadership.
- 20** There are also a number of excellent examples of healthcare scientists who have secured senior management positions throughout the NHS as a result of their own drive and motivation. The British Association of Medical Managers (BAMM) has been asked to undertake a scoping study on their further management development needs with a report expected in summer 2010. This will be used to inform both the development of the existing workforce and to identify skills and competences that will be embedded within the new MSC education and training programmes.

Supply and administration of medicines

- 21** The scope for the HCS workforce to have a greater role in the supply and administration of medicines needs to be explored. Where there is a sound case which would improve the quality of patient care and productivity, the necessary steps to outline the case, undertake consultation and, if there is widespread support, change the legislation required, will be made.

Education and training framework and programmes

- 22** When fully implemented the education and training framework detailed in *Modernising Scientific Careers: The UK Way Forward* and shown in Figure 1 (Annex 3, page 41) will:
- enable improved quality, efficiency and value for money through greater flexibility in skills and knowledge development
 - introduce a framework for learning and development of assistants and associates and a new professionalism for these key members of the HCS workforce. This will link with broader 'technician' initiatives across science and engineering in other sectors

- reduce the costs of initial training through the development of a new set of full-time undergraduate programmes which will dovetail academic learning and workplace-based training, funded principally by the Higher Education Funding Council for England's (HEFCE's) block grant to higher education institutions (HEIs) for the academic component, with NHS funding for workplace-based placements in accordance with the outcomes of the ongoing review of MPET
- focus on more specialist training only after initial, broader-based training is complete, setting specialisms in their wider context of related scientific disciplines, such as in blood sciences
- reduce the costs and improve the quality of scientist training through the introduction of a three-year Scientist Training Programme with nationally approved curricula and specifically commissioned Masters programmes to ensure that national standards are met consistently across the country
- introduce a new Higher Specialist Scientist Training Programme in some specialisms and subspecialisms, with an award at doctoral level through working with relevant Medical Royal Colleges
- further define the requirements for accredited specialist expertise working with NHS Employers and other stakeholders
- enable newly qualified staff to take a broader perspective in responding to patients' increasingly complex needs
- provide a more sustainable approach and transparency in MPET funding and in the support for training in the workplace.

Inclusion of a generic curriculum

- 23** All education and training programmes will include a generic curriculum at the appropriate academic level. This will include, as appropriate, relevant core elements such as professionalism, patient and carer perspectives, health inequalities, prevention, well-being

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and self-care, the patient–professional partnership, public engagement with science, the role of genetics in medicine, research and development, ethics, communication skills, teamwork, the structure and governance of the NHS and leadership.

24 For Healthcare Science Practitioner training programmes in some specialisms, particularly in clinical physiology, and for Healthcare Scientist training programmes, the generic curriculum will also include clinical skills, pathophysiology and differential diagnosis at the appropriate level.

Curriculum development for the principal training programmes

25 There are four principal development programmes for the HCS workforce:

- a modular learning and development framework with awards and qualifications and clearly defined outcomes of education and training for Healthcare Science Assistants and Associates
- a Practitioner Training Programme (PTP) normally comprising a three-year full-time Bachelor's degree in Healthcare Science, which integrates academic and workplace-based learning, with an extended academic year
- a Scientist Training Programme (STP), in which trainees follow a three-year workplace-based rotational training programme in a themed group of up to four HCS specialisms and with a specialist specific pathway, with an associated part time Master's degree in Clinical Science
- the Higher Specialist Scientist Training (HSST) Programme, which will be a workplace-based training programme in a particular specialty, with an associated doctoral level award/examination.

The curriculum development process

26 Robust arrangements have been set in place, led by MSC professional advisors, to develop national curricula to agreed and consistent standards, including the assessment of

achievement and competence. The starting point is the definition of learning outcomes that the programmes need to deliver to ensure high quality practice in a 21st century NHS. The development of curricula is being informed by reviews of a number of scientific services (see Chapter 6). Across the education and training programmes opportunities for blended learning approaches, including e-based learning, will be explored and developed.

The learning and development framework for Healthcare Science Associates and Assistants

- 27** There will be a learning and development framework for Healthcare Science Assistants at Career Framework levels one to three, and Healthcare Science Associates at Career Framework level four. Through this new 'professionalism' we hope to better recognise and value their contribution.
- 28** For Healthcare Science Assistants there will be a credit-bearing modular national curriculum. For Healthcare Science Associates there will be Foundation degrees, which can enable progression with exemptions onto the integrated Bachelor's degree programmes in Healthcare Science for those who wish to do so.
- 29** These curricula will be developed jointly with Skills for Health and MSC professional advisors, working with key stakeholders including representatives of the HCS workforce, Trades Unions, further education and, where appropriate (e.g. for Foundation degrees), with colleagues in higher education. There will be clearly defined expected outcomes of training to enable the establishment of national standards and transferable roles.
- 30** It will be important that all learning is accredited so that staff who wish to progress do not have to repeat their prior learning. Work on the new learning and development framework will be completed by March 2011. Curricula for Healthcare Science Assistants and Associates will be developed and phased in across the range of specialisms. Routes into these Assistant and Associate posts will include the new 14–19 diplomas and apprenticeships as they develop in the health sector.

Scientist and Practitioner Training Programme curricula

- 31** Work is being prioritised in the first instance on the two largest of the three formal training programmes which will replace current arrangements:
- the STP, comprising workplace-based training and relevant supporting Master's degrees in Clinical Science, and
 - the new full time Bachelor's degree in Healthcare Science, supporting the new themed pathways, which integrates academic and workplace-based training for the PTP.
- 32** Curricula and training manuals for the genetics programme PTP and STP were developed during 2009 with the involvement of professional bodies and colleagues from the service. They will be reviewed, on an ongoing basis, as MSC is taken forward, informed by evaluation of the initial programme.
- 33** For the majority of other specialisms, a series of intensive curriculum workshops were held in June and July 2009, involving professionals from the service and professional bodies. From the learning outcomes identified then, or as part of ongoing dialogue and from further workshops also involving clinical service colleagues and representatives from professional bodies, indicative academic curricula and learning outcomes have been, or are currently being, defined for the Bachelor's and Master's programmes. This partnership approach to curriculum development applies across all specialisms and all training programmes and will continue throughout the financial year 2010/11 until the work is completed.
- 34** Indicative academic curricula will be available for review by the MEE HCS Programme Board's Education and Training Working Group in spring 2010 for:
- life sciences (blood sciences, infection sciences, cellular sciences)
 - cardiovascular-respiratory and sleep sciences
 - medical physics
 - clinical engineering.
- 35** The indicative curricula and learning outcomes will then be made available to Strategic Health Authorities (SHAs) and HEIs to inform new Bachelor's degrees in themed areas with specialist pathways from September 2010. SHAs will then be able to commission Master's programmes in Clinical Science in themed areas with specialist pathways, to support the STP (e.g. MSc Clinical Science (Blood Sciences)).
- 36** Working groups have been established to develop indicative workplace-based curricula by June 2010.
- 37** The PTP/BSc and STP/MSc curricula for neurosensory sciences (audiology, vision and neurophysiology) will be available in 2011. There is further work to do in defining training pathways and curricula for other specialisms, including gastrointestinal physiology, urodynamics, critical care technology, maxillofacial prosthetics and clinical photography. Training pathways for these remaining specialisms are expected to be defined by September 2010, and curricula developed as outlined above are expected to be available in 2011.
- 38** The internet will be used extensively in the delivery of the curriculum, assessment of trainees, and records of their learning and progress. This work is being taken forward by a working group of educational experts and professionals from the service which was established in December 2009 to assist with the genetics programme and will be developed further during 2010 for the other training programmes. Details of all curricula will be made available in an electronic database of modules held by the HCS ETB when it is fully established.
- 39** Online portfolios in which trainees will record their learning, and online assessment tools are currently being piloted in the genetics programme, and will be refined further as the wider MSC programme is implemented.
- 40** Initial work on the new HSST Programme has started in some specialisms. Substantive

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curriculum development for HSST will start in summer 2010, following discussions with Medical Royal Colleges, professional bodies and the NHS about specialisms or subspecialisms for which HSST may be required. Working groups will develop the HSST curricula and exit qualifications thereafter and by spring 2011. Stakeholders will be asked to identify those specialisms and subspecialisms for which Accredited Specialist Expertise (ASE) may also be required.

- 41** An MSC Operational Guide will be produced to support the implementation of the new education and training programmes, and to support trainees, education institutions and those providing workplace-based training in the NHS in 2011.

Local progression pathways

- 42** A key change outlined in *Modernising Scientific Careers: The UK Way Forward* was the introduction of local progression pathways. Working with early adopter organisations (see Chapter 6), and with the support of NHS Employers and Trades Unions, we will develop further guidance for employers on operating the local progression pathways.

Healthcare Science Education and Training Board

- 43** The establishment of a new HCS ETB to be set up in shadow form by autumn 2010 will be fully explored with all four UK countries. It is intended to be fully functioning by autumn 2011. This will bring together all existing arrangements to deliver consistency, coherence and clarity for individuals, the educational sector and the service. The proposed board will continually review curricula for use in the NHS, training environments and assessments against national standards. It will establish a kite-marking and accreditation function for undergraduate and postgraduate degrees for NHS use, linked to the *Life Sciences Blueprint* biosciences degree accreditation processes as they evolve.

- 44** It is expected that the HCS ETB will confirm that individuals seeking statutory regulation or a mark on any professional register to indicate ASE have provided evidence of achievement of the necessary standards of proficiency as required. It is intended that the board will also assess equivalence of achievement of training programme entry requirements, exit qualifications and intermediate learning outcomes within training programmes. The potential role of such a board in the education and training and non-statutory regulation/licensing of assistants and some associates will be considered. An advisory group for the establishment of the board has been established, with extensive stakeholder involvement from across the UK to ensure a well-planned transition.

Academic training and career pathways

- 45** The NHS of the future needs a workforce which will generate new knowledge, seek out new solutions to problems, innovate and apply new knowledge for the benefit of patients. Professionally trained educators are also critical to the design and effective implementation of high quality education and training programmes that will support the development of students and trainees to reach their maximum potential.
- 46** Academic capacity and capability in healthcare science needs to be increased to support the development of a full range of new education and training programmes in higher education including, for some specialisms, at senior levels for the first time. The development and integration of healthcare science within translational and applied health research and development programmes and resources also needs leadership and support.

47 In England, a strategic approach to the development of academic training and career pathways for healthcare science began in 2009 as part of the work of the MEE HCS Programme Board. Working with partners in the higher education sector, the aim is to ensure an adequate supply of the researchers, innovators and educators in healthcare science needed for the future NHS.

48 The Academic Career Pathways Working Group of the MEE HCS Programme Board will report in spring 2010 on the issues, opportunities and obstacles that an academic career strategy for healthcare science needs to address, in the context of the new healthcare science professional career and how people might access training opportunities.

49 The Department of Health is in discussion with university vice chancellors about the establishment of an Advisory Group on Healthcare Science in Higher Education. One task of this group will be to develop a joint approach to the design and implementation of clear academic training and career pathways in research, innovation and education across higher education and the NHS, which dovetail with the new healthcare science professional career pathways. There needs to be scope for career movement between the two sectors in order to provide attractive academic healthcare science careers in the future.

50 There have been two rounds, in 2008 and 2009, of the new CSO Healthcare Scientists Research Fellowships competition, supported by the National Institute for Health Research (NIHR). Their purpose is to encourage development of a career trajectory to Principal Investigator, by building on the early research experience of healthcare scientists. This scheme will be further developed to include a suite of research career opportunities. Work with the NIHR and the Research Councils will continue to ensure that the HCS workforce is aware of the full range of research and research training opportunities open to them.

The next chapter describes what we will do to strengthen the planning and development of the HCS workforce.

Chapter 5: Planning and developing the healthcare science workforce



This chapter describes:

- roles and responsibilities in the system for planning and developing the workforce
- improvements to workforce planning and the development of products to support local delivery
- improvements to recruitment, retention and workforce deployment
- next steps in regulation
- improvements in commissioning education and assuring quality delivery
- the establishment of workplace-based training infrastructure in each SHA
- arrangements for training workplace-based trainers
- arrangements for recruitment to training posts
- improvements in funding arrangements.

The system for planning and developing the workforce

- 1 The national system for workforce planning and development has been improved to make it more streamlined and effective. Roles and responsibilities in the new framework are summarised in Figure 2 overleaf, which serves to illustrate the context in which Modernising Scientific Careers (MSC) is being developed and implemented. Guidance is now available in *Planning and Developing the NHS Workforce: The National Framework* (March 2010) on how different systems in the national workforce development planning framework work together, clarifying roles and responsibilities for ensuring future workforce requirements to best support local needs. A healthcare science (HCS) iteration of this system will be produced with key stakeholders to provide clarity for MSC implementation purposes.

Planning the workforce

A strategic approach

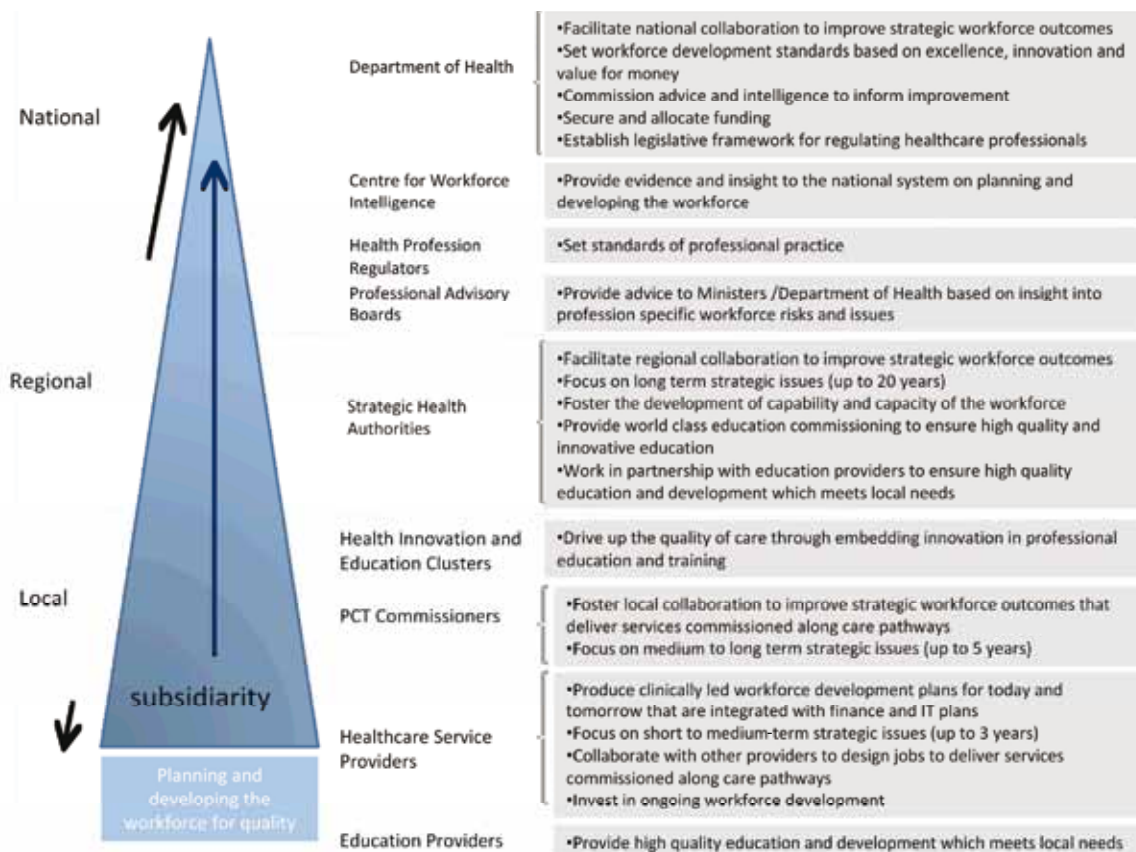
2 The Medical Education England Healthcare Science (MEE HCS) Programme Board Working Group for Workforce Planning has been tasked with developing a set of recommendations for forward planning the HCS workforce. This will set out the requirements for improving the system of workforce planning for healthcare science, ensuring that the planning is fully integrated into a whole-system approach covering all staff groups. It has considered the areas for improvement in the system such as:

- the need for better integration of HCS workforce planning with that for other professionals that might have complementary and overlapping roles or drive an increased demand for services
- better planning for small specialisms and very senior scientist roles

- filling gaps in baseline workforce data as a result of historic occupational coding inaccuracies
- improving horizon scanning for the key drivers impacting on the HCS workforce.

3 The MEE HCS Programme Board Working Group has a role in raising the profile and building capacity and capability in planning for the HCS workforce. It makes its recommendations in spring 2010 to support the main MEE Board and the HCS Programme Board in its role of providing advice on the required shape and numbers of the HCS workforce. It will also inform the new Centre for Workforce Intelligence (see Annex 1) of the requirements needed to effectively plan for this workforce. The MEE HCS Programme Board Workforce Planning Working Group will also explore an horizon scanning approach over the next year, to understand how new technology and service delivery models and

Figure 2: The common elements of the system at a national, regional and local level (taken from *Planning and Developing the NHS Workforce: The National Framework*, March 2010)



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changing demographics will impact on the HCS workforce.

Workforce planning tool

4 The vision for improving HCS workforce planning will be supported by the development of an integrated workforce planning tool. The tool will synthesise the available intelligence on future demand for the scientific workforce, integrate all the factors that influence supply and demand and assess the implications for workforce development to provide a credible model for workforce planning and commissioning trainees for MSC programmes. A prototype has been developed and tested and is now in a further phase of refinement. The completed tool will be ready for SHAs to use by summer 2010 to inform commissioning plans from 2011/12.

Workforce planning information

5 Work with SHAs to collate workforce planning information on the HCS workforce is already under way and will produce a national picture to help inform education commissioning from 2010/11 onwards. The work with Strategic Health Authorities (SHAs) and NHS service providers will allow the Department of Health to:

- understand better the current workforce profile
- describe the future workforce profile
- understand the potential impact of the drivers for change for the HCS workforce.

Occupational codes

6 Work has begun with SHAs and with representatives of the NHS Information Centre to update coding guidance to ensure greater consistency of coding by NHS trusts and where necessary to develop additional codes and guidance to ensure data accurately reflects the future HCS workforce.

7 In collaboration with representatives of the HCS workforce, the NHS Information Centre and the Workforce Review Team, guidance notes have been redrafted and the job titles list improved

to take account of local variation, as an interim measure before codes are finally changed. Work with the NHS Information Centre will continue to review and develop occupation codes for new healthcare science roles as they emerge. Efforts will be made with a range of stakeholders, through NHS Employers to develop standardised job titles.

Recruitment, retention and workforce deployment

- 8** While there have been service-driven increases in recruitment in some areas of this workforce, it has not been true across all specialisms and recruitment and retention issues in key service areas of patient care have been identified. Recruitment and retention of the HCS workforce needs to be a key component of all local human resource strategies. Work will be undertaken with NHS Employers and others to develop supporting material such as new and improved careers literature and materials to raise the profile of healthcare science and the HCS workforce.
- 9** A Career Intentions survey has been completed in order to understand what future potential entrants into healthcare science need to know about opportunities and new training and career pathways. This will be used to inform marketing of promotion of careers in healthcare science work with NHS Careers and others.

Regulation

10 The newly established UK Healthcare Science Regulation Liaison Group will consider further the regulation of the HCS workforce including that of groups who have already been recommended to Secretary of State for regulation. Working with stakeholders, it will make recommendations to the four UK Health Departments to inform advice to ministers on the content of a future draft Section 60 Order and associated public consultation document. Issues to be addressed will include parts of the register, protected titles, and transitional arrangements. The Group will reflect the fact that decisions about the regulation of new groups of staff are devolved to the

Scottish Parliament and Northern Ireland Administrations.

- 11** The Group will also receive the outcome of research into the requirements for regulation (statutory or non-statutory) of assistants and associates and at the exit point from higher specialist training.

Education commissioning

Improving the commissioning system

- 12** SHAs are accountable for education commissioning and assuring the quality of the education they commission. This includes not only quality assurance of satisfactory delivery to a defined standard but also ensuring that education commissioning provides equality of access, value for money, continuous improvement, fitness for purpose for employers and a high quality training experience.

- 13** Where education commissioning for healthcare science programmes already exists there are currently:

- no lead arrangements, although only small numbers of trainees might be required across the country
- issues over the viability of some training programmes as the numbers are so small
- unnecessary transaction costs across SHAs
- complex placement capacity and geographical issues to overcome.

- 14** SHAs will commission the appropriate education and training provision to deliver the new MSC programmes to the timetables outlined earlier and work will continue with SHAs to address the issues outlined above. We will work with SHA education commissioners to describe the commissioning relationships for the different MSC programmes and develop lead commissioning arrangements to:

- increase the value for money of the Multi-Professional Education and Training (MPET) budget investment by reducing transaction costs and enabling economies of scale in commissioning
- reduce the risk of under or over supply of trainees and graduates from programmes by making it easier to engage with national workforce planning infrastructures and enabling the connection between local and national workforce planning
- add leverage regarding quality of provision from higher education institutions (HEIs)
- allow for the development of expertise in commissioning smaller specialisms and complex healthcare science programmes.

A focus on quality

- 15** Guidance has been published that sets out a complete education commissioning system for SHAs.⁸ SHAs will be expected to use this together with the levers at their disposal to ensure education provision is of a high quality and meets the needs of the HCS workforce and those in education and training. This will include the use of a system for managing the performance of education contracts for MSC programmes which will drive up value for money, promote innovation and ensure that qualifiers are fit to deliver high quality care in organisations providing NHS-commissioned services. We will explore, in conjunction with SHAs, the development of appropriate quality indicators for measuring outcomes from education and training. Achieving quality outcomes in education and training and a greater focus on improving the experience of trainees will be a key part of the MSC Operational Guide.

Co-ordinating and supporting learners in practice

- 16** The MSC programme team will work with SHAs to ensure delivery of the following functions to support learners in practice:

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- ensuring workplace-based training elements of MSC programmes and rotations are co-ordinated and managed appropriately
- workplace-based training is of the highest quality and trainees are appropriately supervised and mentored.

17 The design of the training infrastructure for MSC will be informed by the experience in West Midlands SHA, where a National School for Healthcare Science/Genetics has already been established.

18 The roles and responsibilities of service providers in providing workplace-based training are outlined in *Planning and Developing the NHS Workforce: The National Framework*, March 2010.

Training the workplace-based educators

19 Drawing on current evidence and best practice in the development of workplace-based trainers, arrangements will be put in place, working with stakeholders, to train workplace-based educators. This will ensure that workplace-based trainers work to national standards approved by the proposed Healthcare Science Education and Training Board (HCS ETB) and that they provide the best possible training support for trainees.

Recruitment to training posts

20 Recruitment to each level of training programme will be governed by:

- employment law and best practice in recruitment and selection
- where appropriate, the requirements of the regulator
- defined entry requirements
- equity of access
- transparent competitive selection processes
- recognition of equivalence of prior experience and learning.

21 Selection for entry to Higher Education Funding Council for England (HEFCE)-funded higher education programmes is the responsibility of higher education institutions. The NHS normally plays some part in setting the criteria for the selection of those recruited to healthcare related programmes. This will be the subject of further discussion during 2010/11. The integrated Bachelor's programme for practitioner training will require close working arrangements with NHS service providers to match placement capacity and capability with higher education throughput.

22 With SHAs and HEIs, the MSC programme will explore options for the best form of recruitment to each type of training programme in the Career Framework, again informed by the experience of the genetics programme. However, it is envisaged that assistant and associate posts will be advertised and recruited locally by NHS service providers.

23 It is anticipated that the primary entry route into PTP programmes will be direct entry through existing application systems to an approved degree at an HEI, not via an NHS employment route. However, employers will be able, should they wish, to support training of their staff through local progression pathways for the duration of the training programme. NHS staff will not be required to resign a substantive post to undertake training if their employer supports them through a secondment, agreed study leave or a training position. This arrangement will apply across all levels of the Career Framework.

24 Recruitment to STP programmes is likely to benefit from a national system of recruitment and selection to training posts or through regional collaboration to attract the best candidates and to enable rotations through geographically scattered specialisms. This will be developed in conjunction with key stakeholders in 2010/11.

25 On successful completion of their training programme, trainees will be able to apply and compete for vacant positions appropriate to the new skills they will have acquired.

Education funding

26 There are three sources of funding for the current education and training programmes for the HCS workforce: MPET, the HEFCE block grant to HEIs and employers. A large proportion of current funding is allocated to a complex mix of employment based training programmes.

27 The costs of the new MSC programmes have been modelled, using baseline activity and cost data provided by SHAs and information on potential tuition, salary support and infrastructure costs. The model has been reviewed by SHA education commissioning and finance leads and shared with all SHAs to help them understand the cost structure of their plans for the phasing-in of MSC programmes. This model will be used to work towards a common commissioning and funding framework across SHAs.

28 It is anticipated that trainees on some MSC programmes will make a contribution to service as they progress through their training. We will work with SHAs to determine what, if any, the contribution to service is likely to be for the various MSC programmes. The degree of support from MPET will reflect the balance between the cost to the employer of having trainees and the contribution to service made by the trainees under the proposed arrangements across the NHS to introduce a tariff-based system where funding follows the student or trainee.

29 A number of HEIs, with the support of their SHAs, have been successful in obtaining HEFCE Additional Student Numbers for 2010/11 to support the introduction of the new integrated BSc programme. SHAs will continue to work in partnership with their local HEIs to explore how these Additional Student Numbers, as well as existing resource, can be used most effectively to support introduction of the new integrated Bachelors programmes to deliver graduates who are ready for employment in the new Healthcare Science Practitioner roles.

30 The MSC programme will continue to work with SHAs to model future costs, including the costs of the workplace-based elements of MSC, and plan the phased implementation of MSC to support the reprofiling of the workforce. As described in Chapter 4, the adoption of the new MSC programmes will start to gather speed from 2010/11 through to 2013/14. The pace of change will depend on local SHA priorities in managing the transition.

31 Guidance will be provided for SHAs about commissioning and funding the new MSC programmes to support the development of their commissioning plans from 2011/12 onwards.

The next chapter describes how we will support implementation, working with early adopter sites and new programmes.

Chapter 6: Supporting implementation



This chapter describes:

- our aims and role nationally in supporting change
- transitional arrangements
- the role of early adopter sites
- the role of new programmes
- service reviews in specialised areas.

The role of the Department of Health in supporting delivery

1 The Modernising Scientific Careers (MSC) programme will work closely with key stakeholders to support delivery of MSC, adding value by ensuring a consistent and sustainable approach across England. Overall we will continue to support or lead:

- a new comprehensive communications strategy to share innovation and developments in science and technology with the healthcare science (HCS) workforce in the NHS and with professional bodies to engender knowledge sharing and the diffusion of innovation for the benefit of patients and the public, including through a programme of events
- the development of MSC communication materials for local use and an enhanced set of bulletins
- enhanced stakeholder engagement at all levels
- improvements in social partnership working with Trades Unions
- assessment of the pace of change, linking national and local priorities, and continuing to model future education and training costs and to help plan phased implementation and well managed transitions

- development of guidance on education commissioning and funding new programmes
- the further development of role and function definitions and job profiles, working with the NHS Staff Council through NHS Employers, within the new national Career Framework, enabling a more relevant skill mix, matched to new opportunities for improvements in quality and productivity
- horizon scanning for newly emerging roles as innovation in science and technology develops further and new opportunities in service delivery emerge
- the role of the senior scientist and development of leadership and management roles
- the development of new roles, including the supply and administration of medicines
- regulation where this is needed to enhance safety
- the development of national education and training curricula and new education and training and assessment products
- the establishment of a Healthcare Science Education and Training Board
- the improvements in education commissioning and in education and training infrastructures, improved training for workplace-based trainers and improvements in education funding arrangements
- the improvements in workforce planning, including horizon scanning, better planning data and a new workforce planning tool
- the capture and sharing of learning from early adopter sites, pilots and from service reviews (described below)
- the strategic oversight and co-ordination of implementation of MSC across England jointly with the NHS and the evaluation of progress, including equality impacts (described in Chapter 7).

Early adopters

- 2 Working with Strategic Health Authorities (SHAs), the aim is to have at least ten early adopter sites across England by spring 2010. The early adopter sites will work with SHAs, NHS Employers and Trades Unions to take forward different aspects of the implementation of MSC. The early adopters approach will ensure that tangible benefits for the service are delivered early on in implementation and these can be communicated widely. The pace of adoption and change will be locally driven.
- 3 Early adopters will collectively provide an expert reference group of organisations to champion implementation in England. They will be able to:
 - articulate the benefits of MSC for patients, service and the HCS workforce
 - identify the contribution of healthcare science to the Quality, Innovation, Productivity and Prevention (QIPP) Challenge
 - demonstrate how reprofiling the workforce can be achieved using the new MSC Career Framework and how this affects value for money and cash releasing savings
 - test out the new integrated workforce planning model
 - explore employment issues and representative professional scientific leadership and social partnership arrangements
 - develop demonstrator site skill mix and productivity gains from new roles, ways of working and training
 - determine the extent to which the existing workforce need to be supported and further developed
 - develop new assistant and associate roles, including apprenticeships and other workplace-based training qualifications.

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- 4 Early adopter sites will also support a range of more practical MSC activities. This includes detailed modelling of the costs to employers of the new work based training balanced by the service contribution of trainees. They will provide work based training placements for some of the first wave of trainees at BSc and MSc levels. They will test the 'train the workplace-based trainers' programmes, new methods of assessment and tools, and help to map relationships between SHAs and new infrastructure to support learners in practice, trainers and employers.
- 5 The early adopter sites will also support the development of new job descriptions that can be mapped by the national Job Evaluation Group to give an indication of provisional pay bandings. These bandings would then be reviewed at an employer level once the posts had been in place for six months in line with Agenda for Change. They will test out how to assimilate the current workforce onto the new Career Framework and how the equivalence process will operate with the proposed new Healthcare Science Education and Training Board (HCS ETB). They will plan the employment of new graduates from the first Practitioner Training Programme (PTP) BSc degrees and Scientist Training Programme (STP) programmes in new and different roles. In addition, they will support the development of improved Electronic Staff Record (ESR) occupational coding for healthcare scientists to support workforce planning and will test out the new employment titles.
- 6 An Early Adopter Steering Group will support and oversee progress. Membership will comprise Trades Unions representatives and other key stakeholders and partner organisations. Each site will also be represented on the Steering Group; locally within sites, project groups will also mirror these arrangements. They will be supported by a small national project team which will provide expertise and guidance and will draw out lessons to inform implementation guidance and national sharing events.

New programmes

- 7 A new training programme scheme in genetics is currently under way, funded by the Department of Health's Genetics Unit. The scheme is fundamentally different from existing training programmes. It is a response to the demand for genetics that has increased significantly in the last few years as scientific discoveries have created new opportunities to diagnose and predict disease.
- 8 Two new training programmes with academic and workplace training components have been developed:
 - for practitioners – with a strong emphasis on delivering new and emerging technologies
 - for scientists – with a focus on care pathways and clinical applications of genetics in medicine and incorporating a Masters level qualification.
- 9 Currently 33 trainees are participating in the PTP and STP in genetics, based in NHS genetics departments throughout England. All future trainees in genetics in England will follow these new programmes and a further cohort of both PTP and STP trainees is planned for autumn 2010. The majority of NHS genetics departments are now involved in the new programme.
- 10 Training manuals were developed by a range of genetics professionals and with the support of the professional bodies and they will form the future modernised curricula for genetics within MSC and will replace any of the previous scientist and technologist training programmes in genetics. A national recruitment process will take place again in 2010 for this year's new cohort.
- 11 The National Healthcare Science School for Genetics (based in NHS West Midlands for the first two cohorts) is managing the infrastructure for the new programmes. The school co-ordinates the national programme, runs national learning events, provides pastoral care for the trainees, and supports the delivery of, and quality assurance of the work-based curriculum to agreed standards, ensuring the

trainers and supervisors are adequately prepared to undertake the assessment process to national requirements. All the trainees on these new programmes also meet together for additional training, events and virtual networking under the aegis of the National Healthcare Science School for Genetics.

- 12** In addition, the school supported the competitive tender process for the STP Master's in Clinical Science (Genetics) and its award to the University of Nottingham.
- 13** A National Genetics School Board oversees the implementation of the programme. Its membership includes representatives of the MSC Programme team, the Department of Health (Genetics Unit), NHS West Midlands, Genetics professional bodies, the University of Nottingham and lay representation. The Board will ensure learning from the programme feeds into the overall MSC programme.
- 14** The genetics programme is being externally evaluated by the University of Warwick. Lessons learnt as the programme progresses will be considered to inform the implementation of MSC more widely. The aims of the evaluation are summarised in Annex 4.
- 15** Within radiotherapy physics a PTP in dosimetry is planned for spring 2010, funded by the National Cancer Action Team and hosted by NHS London. Participating NHS service providers have been identified and the aim is for the trainees to begin in summer 2010.
- 16** The genetics and dosimetry programmes deliver only the workplace-based elements of the PTP. These will form the basis of the placements within the Bachelor's degrees of the future. The learning from both programmes will provide information for universities and NHS departments about the organisation of workplace-based placements.

Service reviews

- 17** A number of reviews were commissioned into the needs of some of the smaller services provided by healthcare scientists which were considered likely to change in response to the drivers for change identified in Chapter 2.
- 18** The services considered were:
- anatomical pathology, critical care technology, gastrointestinal physiology, urodynamics, vascular science, vision science and medical illustration, renal technology, maxillofacial prosthetics
 - phlebotomy and nuclear medicine services are currently under review.

These reviews have helped inform the MSC programme in a number of ways:

- understanding how the changing roles within healthcare science correspond to the development of new models of service delivery
 - how the workforce delivering the services corresponds to the new MSC Career Framework
 - what the design content and alignment of new education and training curricula should be like.
- 19** The reviews will be shared with SHAs to inform planning, commissioning and improving the quality of these services in future as well as the planning of the workforce which delivers them.
- 20** The next chapter describes how we will evaluate successful delivery of Modernising Scientific Careers.

Chapter 7: How we will evaluate progress



This chapter describes:

- the criteria to be used to evaluate and measure success
- how the equality impact of Modernising Scientific Careers will be monitored.

Success criteria and measuring delivery

- 1 Successful delivery of the programme will be evaluated using the following success criteria:
 - a workforce able to respond quickly to service needs better trained staff with the skills to deliver high quality care
 - better value for money (workforce, training and education costs) while maintaining or improving quality of patient care
 - more motivated staff delivering better quality care and reduced risk of workforce or skills shortages or oversupply
 - an improved training experience and better outcomes for trainees.
- 2 We will develop appropriate measures to monitor benefits realisation, working with the Medical Education England Healthcare Science

(MEE HCS) (Professional Advisory) Programme Board and others. Work to improve workforce data will support improved monitoring and we will capture and act upon lessons from early adopter sites.

Monitoring equality impacts

- 3 An Equality Impact Assessment has been published which sets out how the impact of Modernising Scientific Careers (MSC) will be monitored under the six strands of diversity: race, gender (including transgender issues), disability, age, religion and belief, and sexual orientation.
- 4 Strategic Health Authorities (SHAs) and higher education institutions (HEIs) will need to carry out their own equality impact assessments and monitor progress against the six strands. They will need to consider the human rights based approaches to empowerment, dignity, respect and autonomy in taking forward delivery of change.
- 5 Commissioning the new education and training will specifically include diversity. A new MSC Equality and Diversity Reference Group will be established to help monitor progress against the six strands of equality and diversity, as well as human rights.

Chapter 8: Conclusion



- 1** Patterns of service delivery are changing, not least because of the new opportunities being opened up by advances in science and technology, bringing new benefits to patients and the public. Modernising Scientific Careers (MSC) provides the opportunity to enhance the role of healthcare science in the delivery of care at every level, from the key role of assistants and associates to the most senior healthcare scientist posts. A strong relationship of practice to research and development is essential to ensure that innovations are brought quickly and safely into care settings.
- 2** This Action Plan has set out the background and context for developing the role of healthcare science in 21st century care and the programme of work to deliver the MSC programme. The changes that Strategic Health Authorities (SHAs) will now implement with the support of the MSC programme and stakeholders will:
 - transform education and training pathways to create a flexible, responsive, sustainable scientific and technical workforce through a comprehensive education and training strategy
 - align the workforce to service needs as work is undertaken safely and competently at the right levels and within a clear Career Framework
 - ensure scientific advances are adopted quickly to enhance the quality of care for people and encourage innovation and economic regeneration
 - achieve gains in efficiency and effectiveness and the delivery of high quality value for money services.
 - improve the education and training experience of future healthcare scientists to develop motivated individuals who want to work in the NHS.
- 3** The table at Annex 5 summarises the planned key actions, who is responsible for their delivery and the planned timetable. Some actions are UK wide, while for others responsibility is devolved to Northern Ireland, Scotland and Wales. The MSC programme will work closely towards the goals of Modernising Scientific Careers with the Devolved Administrations, respecting their responsibilities and administrative structures.

Annex 1: Key partners in delivery of Modernising Scientific Careers



The **Centre for Workforce Intelligence** will provide advice and information to the NHS on the planning of workforce development. It supports long term and strategic planning for the healthcare workforce based on tangible evidence, knowledge, horizon scanning and capability building. The Department of Health (DH) will work with the centre to ensure planning for the healthcare science (HCS) workforce is informed by the best available data.

Strategic Health Authorities (SHAs) will be encouraged to develop strategic partnership arrangements with *Further Education* colleagues to develop structured training programmes for assistants and associates.

DH will work with the **Higher Education Funding Council for England** (HEFCE) to consider new arrangements, similar to those for medical and dental training, to look at the volume and distribution of resources.

Higher Education Institutions (HEIs) in partnership with SHAs and service providers

will provide new programmes of education and training. Their collaboration and co-ordination across England will be encouraged through the creation of a relevant and appropriate Advisory Group on Healthcare Science in Higher Education in conjunction with the HE sector.

Medical Education England (MEE), the MEE Healthcare Science (HCS) Professional Advisory Programme Board and its four working groups, and regional advisory machinery, provide a strong professional voice on implementation of Modernising Scientific Careers. The MEE HCS Programme Board will:

- develop and support the implementation of a strategy for the HCS workforce
- ensure the interests of healthcare scientists are represented at MEE and that the strategic alignment of the content and structure of professional education and training and the quality of workforce planning reflect the requirements of healthcare scientists

- give advice and support to MEE about the shape and numbers of healthcare scientists required over the prescribed period of workforce planning.

Regional advisory machinery will provide multi-professional and clinical pathway advice on workforce planning at SHA level. DH will work with SHAs to ensure healthcare scientists are represented in the regional advisory machinery. The national professional advisory boards and regional advisory machinery will be supported by the Centre for Workforce Intelligence.

Medical Royal Colleges and the **Academy of Medical Royal Colleges** will provide an important focus for work on higher specialist training, the role of the Senior Scientists and the potential higher specialist register.

NHS Employers are the link between MSC and NHS providers of healthcare in England. They will enable effective communication and engagement with employers and Trades Unions and dissemination of policy and best practice; through the NHS Staff Council, discuss and agree issues with Trades Unions; assess the impact of Agenda for Change on MSC, including the Knowledge and Skills Framework (KSF), and work with the NHS Staff Council Job Evaluation Group to map new job descriptions to national profiles and support the development of representative networks; provide suitable implementation guidance, tools and workshops and specific guidance and advice on aspects of transition for the current workforce; support the development of leadership within HCS; update and develop careers information (print and electronic media) and promotion of careers in healthcare science; take forward key recommendations from the Career Intentions Project, supporting recruitment and retention strategies.

An important sounding board for implementation of planned changes, especially around leadership and education standards, will be provided by working closely with **Professional Bodies** through a refreshed Chief Scientific Officer (CSO) Professional Bodies group. Professional Bodies are also effective in the dissemination of good practice.

Work with **Regulatory Bodies** in each of the four countries will identify matters of detail required to support the regulatory implication arising out of the new regulatory framework proposed in Modernising Scientific Careers.

Work with **Skills for Health**, NHS Employers, SHAs, early adopter organisations and others will help describe new roles and their contribution in more detail to further inform the reprofiling of the workforce.

Strategic Health Authorities are the main organisations which will implement improvements in education commissioning and workforce planning, enabled by national guidance and products. SHA Directors of Workforce have an important leadership role to ensure delivery to the implementation timetable. Close working with the SHA MSC leads, education commissioners and workforce planners will continue.

SHAs will be encouraged to develop local strategic partnerships or use such existing mechanisms to work with **Trades Unions** and staff representatives to inform local implementation plans, ensure equity of opportunity to participate in training and education schemes.

Trades Unions are key partners with providers of NHS services in the agreement of employment arrangements, the redesign of roles to reflect changing service needs, and the requirements for staff to undertake education and training to undertake new roles.

Annex 2: Principles for Modernising Scientific Careers



- Continuity of service for patients must be guaranteed
- The current workforce will be actively engaged in the process and actively retained
- Timely communication with stakeholders as the programme is developed
- Where they apply, national terms and conditions of employment will be the vehicle of delivery
- Current local employment policies will be respected
- Existing staff will be offered opportunities to develop through additional training, supported by education and training funding arrangements
- Equality of opportunity for further development of the existing healthcare science workforce will be available on a competitive basis
- No current trainees will be disadvantaged and all will be able to complete their current education and training programmes.

Annex 3:

Roles in healthcare science



Healthcare Science Assistant (HCSA): Healthcare Science Assistants will undertake a range of clearly defined task and protocol-based roles, supervised by Healthcare Science Associates at Career Framework four, or by Healthcare Science Practitioners at Career Framework five, depending on the needs of the service. Experienced assistants would be able to progress to associate posts. They will have opportunities to attain vocational training qualifications.

Healthcare Science Associate: Healthcare Science Associates at Career Framework Stage four will undertake more advanced and complex investigative tasks and treatment procedures than assistants, with appropriate supervision, either by a Healthcare Science Practitioner at Career Framework levels five or six, or a Healthcare Scientist at Career Framework level six and above. This will depend on the needs of the service and on the scope for technology to automate or standardise certain tasks and procedures and the ability to define protocols and activities. Associates

may be regulated, based on the principle of proportionate risk.

Healthcare Science Practitioner (HCSP): Healthcare Science Practitioners will work in a range of healthcare settings, with a clearly defined technologically based role in the delivery and technical reporting of quality assured tests, investigations and interventions for patients, on samples or equipment. Newly qualified Healthcare Science Practitioners with BSc (Hons) and the requisite certificate of achievement of practice-based learning outcomes may be regulated at Career Framework five. There will be scope to progress to Senior Healthcare Science Practitioner roles at Career Framework six within a defined area of practice, including key quality assurance roles. There will also be scope to progress into management or academic training and career pathways.

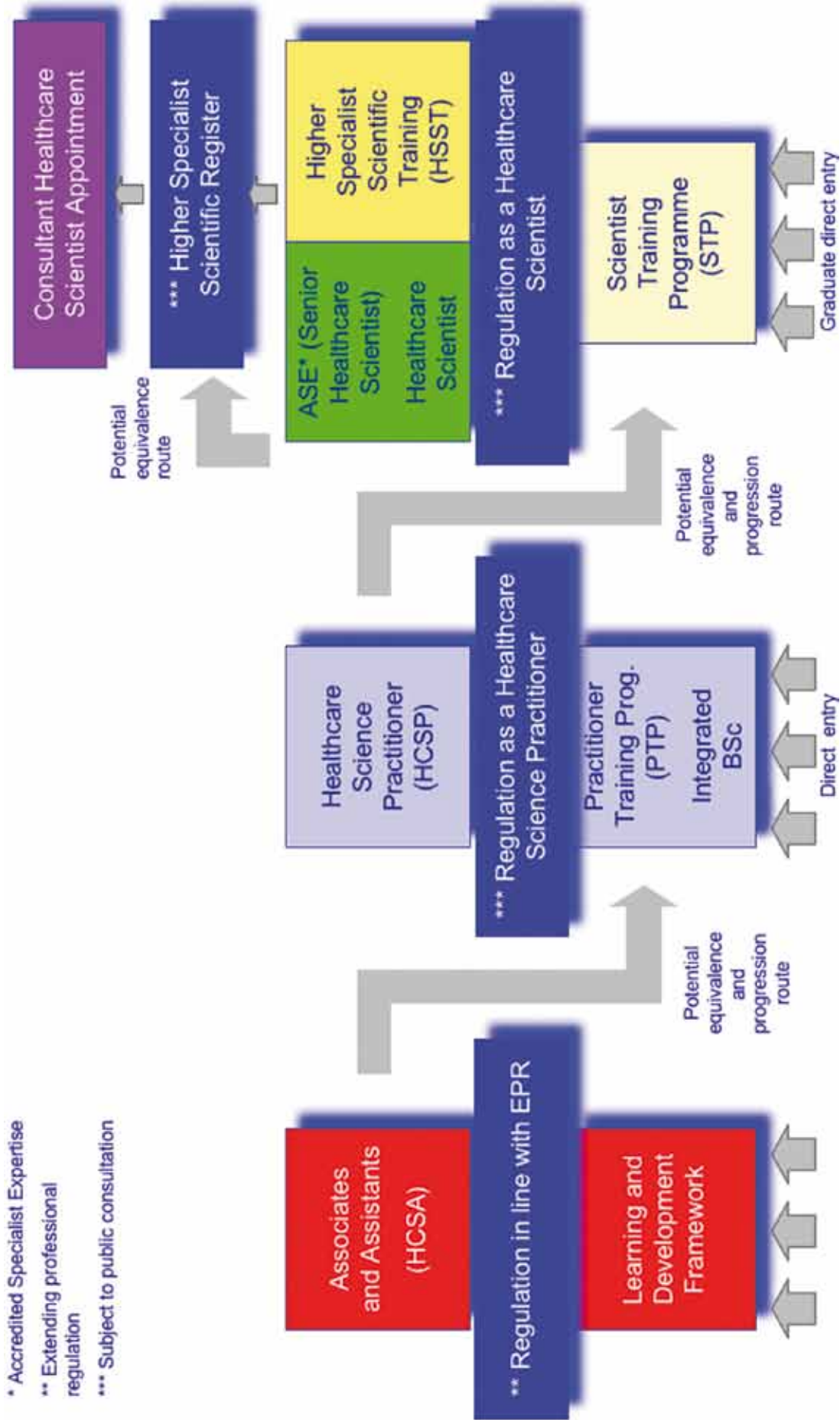
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Healthcare Scientist (HCS): Healthcare Scientists will have clinical and specialist expertise in a specific clinical discipline, underpinned by broader knowledge and experience within a healthcare science theme. They will undertake complex scientific and clinical roles, defining and choosing investigative and clinical options, and making key judgements about complex facts and clinical situations. Many will work directly with patients. They will be involved, often in lead roles, in innovation and improvement, research and development and education and training. Some will pursue explicit academic career pathways, which combine clinical practice and academic activity in research, innovation and education. They may be regulated following award of an approved Master's qualification (MSc) and completion of workplace-based training. Those Healthcare Scientists who complete Higher Specialist Science Training (HSST) will be eligible to compete for Consultant Healthcare Scientist posts, as they become available. This will also include Senior Scientists who, through prior experience, knowledge and expertise (usually supported by employers through local progression pathways) are able to demonstrate they have met all of the outcomes of the HSST.

Senior Healthcare Scientist: a healthcare scientist who has progressed competitively following qualification to a specialist post. They will undertake highly complex roles within a defined field, with a role in research and development and in education. They may also have management responsibilities and they may be regulated. They will be able to compete for entry to the HSST Programme.

Consultant Healthcare Scientist: a consultant healthcare scientist will provide clinical and scientific expertise and leadership; provide consultant level advice within the context of direct patient care; give strategic direction, innovate and provide highly developed and specialised skills for service development and provision; initiate or lead formal research activities, innovation and improvement; lead education and training activities.

Figure 1: Modernising Scientific Careers: Career and Training Pathways Framework



Annex 4: Genetics programme evaluation



The evaluation of the genetics programme is designed to:

- inform the evolution of the Modernising Scientific Careers (MSC) programme in general and the genetics training in particular, including:
 - marketing
 - recruitment
 - the relationship between work based and academic training process
 - workforce and development issues for genetics and for the training programme as a whole
- show how the trainees emerging from the genetics programme meet the needs of the service and patient care
- determine if the programme provides sufficient flexibility for the needs of employers and for the future needs of the service
- identify and evaluate issues for the higher education institution(s) involved in delivering the MSc in Clinical Science – Genetics, which Scientist Training Programme (STP) trainees will undertake
- identify whether the required competencies of the genetics programme meet the expectations and needs of the trainees
- provide information that will be used to further refine the MSC model to promote the establishment of robust national, quality-assured training programmes for the healthcare science (HCS) workforce and to make recommendations for implementation of the remainder of the MSC programme
- review the assessment approaches and electronic portfolio and make recommendations
- inform the evolution of the curriculum for genetics and the wider MSC programme

- review the supporting delivery systems for the Practitioner Training Programme and STP, including:
 - recruitment
 - part-time working
 - work based training/placements
- identify service issues for genetics and future workforce issues that arise from implementation of the new training programmes and incorporate lessons into the main programme.

Annex 5: Summary of key actions



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Lead	Chapter 3	Chapter 4	Chapter 5	Chapters 6 & 7
Department of Health	<ul style="list-style-type: none"> ● Establish a strategic forum with higher education to focus on healthcare science in 2010 ● Explore with HEFCE how healthcare science can be addressed within existing DH/HEFCE strategic alliance ● Discuss implementation plans with each SHA by spring 2010 ● Establish SHA senior scientific leads in 2010 ● Develop a communications and stakeholder management strategy including communications toolkits by spring 2010 ● Established a joint DH/NHS England Implementation Board, Feb 2010 ● Establish new national advisory groups for employment and training issues with Trades Unions and Skills for Health by spring 2010 	<ul style="list-style-type: none"> ● Develop national curricula to agreed and consistent standards including assessment of achievement and competence throughout 2010/11 ● Provide indicative curricula and learning outcomes for SHAs and HEIs for new BSc programmes from September 2010 ● Provide indicative workplace-based curricula for BSc programmes by 2010 ● Define further web based tools for curricula, assessment and trainee records in 2010 ● Work with key stakeholders to establish HCS Education and Training Board in shadow form by autumn 2010 ● Start curricula development for HSST in summer 2010 and exit qualifications by spring 2011 ● Agree consistent definition of Consultant Healthcare Scientist posts, the process for their appointment and the role of assessors, working with professional bodies, NHS Employers and Trades Unions ● Work with the National Leadership Council on opportunities to develop leadership capacity and capability informed by the work of MEE ● Further develop current scheme and continue to ensure that the HCS workforce is aware of the full range of research and training opportunities working with National Institute for Health Research and the Research Councils ● Explore the scope for a greater role in supply and administration of medicines ● Develop MSC Operational Guide March 2011 ● Update the Functional Guide to reflect the impact of modernised training programmes by 2011 ● Establish an Advisory Group on Healthcare Science in Higher Education 	<ul style="list-style-type: none"> ● Work with the NHS Information Centre to update the occupational codes for healthcare scientists ● Roll out the new integrated workforce planning tool for healthcare science to SHAs by summer 2010 ● Work with SHAs to deliver functions to support learners in practice, autumn 2010 ● Work with stakeholders to develop curricula for training the workplace-based trainers, March 2011 ● Develop guidance on commissioning and funding the new MSC programmes by autumn 2010 ● Explore with SHAs and HEIs options for recruitment to training programmes ● Established UK HCS Regulation Liaison Group ● Explore options to develop national system for recruitment and selection into STP and higher programmes during 2010/11 ● Explore with SHAs the development of quality indicators for measuring outcomes from MSC education and training programmes 	<ul style="list-style-type: none"> ● Establish a new MSC Equality and Diversity Reference Group to monitor progress against the six strands of equality and diversity and human rights standards ● Share the outcome of service reviews. summer 2010 ● Develop appropriate measures to identify benefits realisation ● Capture and share learning from early adopters, new programmes and service reviews ● Establish an Early Adopter Steering Group.

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Lead	Chapter 3	Chapter 4	Chapter 5	Chapters 6 & 7
SHAs	<ul style="list-style-type: none"> ● Discuss SHA implementation plans with DH by spring 2010 ● Establish local arrangements with FE for Assistants and Associates supported by Skills for Health ● Ensure appropriate scientific representation on regional professional advisory machinery ● Phase in the new education and training programmes from autumn 2010 	<ul style="list-style-type: none"> ● Phase in new education and training programmes from autumn 2010 	<ul style="list-style-type: none"> ● Consider using the new integrated workforce planning tool for healthcare science from summer 2010 ● Explore with HEIs options for recruitment to training programmes ● Explore with HEIs how ASNs and other resources can be used most effectively to support the introduction of the new BSc programmes ● Develop lead commissioning arrangements where appropriate ● Work with MSC team to establish workplace-based training elements of MSC programmes during 2010/11 ● Ensure arrangements in place for training workplace-based trainers ● Commission MSC programmes in line with commissioning and funding guidance provided by the Department of Health ● Explore with MSC the development of quality indicators for measuring outcomes from MSC education and training programmes 	<ul style="list-style-type: none"> ● Identify at least ten early adopter organisations by spring 2010 ● Early adopter sites will work with SHAs, NHS Employers and Trades Unions to take forward different aspects of the implementation of MSC ● Start a radiotherapy physics programme in dosimetry in spring 2010 (NHS London) ● Carry out equality impact assessments and monitor progress against the six strands
Medical Education England HCS Programme Board	<ul style="list-style-type: none"> ● Advise on aspects of MSC implementation and undertake specific projects as required 	<ul style="list-style-type: none"> ● Review indicative academic curricula in spring 2010 ● Report on leadership and recommendations by spring 2010 ● Report on the issues, opportunities and obstacles to be addressed with an academic career strategy for healthcare science in spring 2010 	<ul style="list-style-type: none"> ● Report on strategy for planning the HCS workforce in spring 2010 ● Advise on SHA aggregated workforce plans ● Work with the Centre for Workforce Intelligence on horizon scanning for the HCS workforce ● Work with Centre for Workforce Intelligence on requirements to plan for HCS workforce 	

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Lead	Chapter 3	Chapter 4	Chapter 5	Chapters 6 & 7
Centre for Workforce Intelligence			<ul style="list-style-type: none"> ● Work with MEE on horizon scanning for the healthcare science workforce ● Work with MEE on requirement to plan for HCS workforce 	
Higher Education Institutions	<ul style="list-style-type: none"> ● Provide representation for new DH/HEFCE strategic forum for healthcare science ● Establish a strategic forum with HE to focus on healthcare science in 2010 	<ul style="list-style-type: none"> ● Develop new BSc and Masters programmes for PTP/STP to be completed by September 2010 using national curricula ● Phase in new education and training programmes from autumn 2010 	<ul style="list-style-type: none"> ● Explore with SHAs and HEIs options for recruitment to training programmes ● Explore with SHAs how ASNs and other resources can be used most effectively to support the introduction of the new BSc programmes ● Work in partnership with SHAs to deliver new MSC programmes from September 2010 ● Participate in UK HCS Regulation Liaison Group 	<ul style="list-style-type: none"> ● Carry out equality impact assessments and monitor progress against the six strands
Skills for Health	<ul style="list-style-type: none"> ● Provide representation for advisory group on education and training issues ● Establish with SHAs Local arrangements with FE for Assistants and Associates 	<ul style="list-style-type: none"> ● Facilitate the review of new and extended roles working with stakeholders including NHS Employers, SHAs and early adopter organisations. ● Promote the development of nationally transferable roles for HCS workforce ● Develop an awards and qualifications framework by March 2011 ● Develop a learning and development framework for Career Framework levels 1 to 4 by March 2011 ● Develop new curricula for HCS Assistants and Associates 		

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Lead	Chapter 3	Chapter 4	Chapter 5	Chapters 6 & 7
NHS Employers	<ul style="list-style-type: none"> ● Consider detailed employment issues with DH, SHAs and early adopter sites and Trades Unions ● Contribute to improvement of scientific leadership ● Update career information for healthcare science on the NHS Careers website 	<ul style="list-style-type: none"> ● Develop with Trades Unions and stakeholders model NHS Knowledge and Skills Framework outlines representative of the roles described in MSC ● Develop guidance on the appointment of HCS Consultants and the use of Assessors ● Review Agenda for Change profiles in partnership with Trades Unions 	<ul style="list-style-type: none"> ● Facilitate agreement to standardisation of job titles ● Facilitate recruitment and retention strategies ● Develop new and improved careers literature to promote healthcare science careers ● Participation in UK HCS Regulation Liaison Group 	<ul style="list-style-type: none"> ● Early adopter sites will work with SHAs, NHS Employers and Trades Unions to take forward different aspects of the implementation of MSC ● Facilitate the development of role and function definitions associated with job profiles in partnership with Trades Unions
Medical Royal Colleges and the Academy of Medical Royal Colleges		<ul style="list-style-type: none"> ● Academy to report on the role of the Consultant/Very Senior Scientists in clinical pathways in spring 2010 ● Discussions re HSST specialisms 		
Professional Bodies/ Representation	<ul style="list-style-type: none"> ● Provide professional advice through membership of MEE and the new CSO Professional Advisory Board 	<ul style="list-style-type: none"> ● Provide input into curriculum development ● Participate in the review of the Career Framework and role definition ● Participate in the establishment of HCS Education and Training Board 	<ul style="list-style-type: none"> ● Participate through representation of UK HCS Regulation Liaison Group 	
British Association of Medical Managers		<ul style="list-style-type: none"> ● Undertake a scoping study on management development needs and report in summer 2010 		

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Lead	Chapter 3	Chapter 4	Chapter 5	Chapters 6 & 7
Trades Unions	<ul style="list-style-type: none"> ● Provide advice through membership of MEE HCS Programme Board and working groups ● Participate in new national advisory groups for employment and training issues ● Consider detailed employment issues with DH, SHAs and early adopter sites 	<ul style="list-style-type: none"> ● Participate in the review of the Career Framework and role definition ● Participate in the establishment of the HCS Education and Training Board ● Review agenda for change job profiles in partnership with NHS Employers ● Agree consistent definition of Consultant Healthcare Scientist posts, the process for their appointment and the role of assessors, working with professional bodies and NHS Employers 	<ul style="list-style-type: none"> ● Participate in UK HCS Regulation Liaison Group 	<ul style="list-style-type: none"> ● Participate in the development of role and function definitions associated with job profiles in partnership with NHS Employers ● Early adopter sites will work with SHAs, NHS Employers and Trades Unions to take forward different aspects of the implementation of MSC ● Participate in Early Adopter Steering Group



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