

Modernising Scientific Careers Practitioner Training Programme BSc (Hons) Healthcare Science

Anatomical Pathology Technology 2016/17



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CONTENTS

SECTION 1: INTRODUCTION TO THE PROGRAMME	5
READERSHIP	6
1.1 Healthcare Science and the MSC Education and Training Programme	7
1.2 Introduction to the Practitioner Training Programme (PTP)	7
1.3 Practitioner Training Programme Outcomes	9
1.4 Purpose of the BSc (Hons) PTP Curriculum	11
1.5 Programme Delivery	12
1.6 Introduction to Work-based Learning	14
1.7 Employing and Training Departments	15
1.8 Assessment	17
1.9 On-programme (work-based) Assessment	19
1.10 Work-based/employer based Competency Log	22
1.11 End Point Assessment for apprenticeships	22
1.12 Learner Support and Mentoring	23
1.13 Annual Monitoring of Progress and Equality and Diversity	24
1.14 Critical Reflection and Learning	24
1.15 Relationships and Partnerships	25
1.16 Programme Outcomes	26
1.17 Transferable Skills	27
SECTION 2: BSc (Hons) IN ANATOMICAL PATHOLOGY TECHNOLOGY	29
2.1 Details of the PTP Curriculum in Anatomical Pathology	30
2.2 Year 1 BSc (Hons) Programme:	32
2.3 Underpinning Principles of Integrated APT Education and Training Programme	32
2.4 Timescale	33
2.5 List of Modules	35
SECTION 3: GENERIC GOOD SCIENTIFIC PRACTICE SYLLABUS	36
Domain 1: Professional Practice	39
Domain 2: Scientific Practice	42
Domain 3: Clinical Practice	44
Domain 4: Research, Development and Innovation	46
Domain 5: Clinical Leadership	48
SECTION 4: GENERIC PROFESSIONAL, SCIENTIFIC AND TECHNICAL MODULES	50
GM(i): Professional Practice (Years 1, 2 and 3)	52
GM(ii): Scientific Basis of Healthcare Science (Year 1)	55
GM(iii): Research Methods (Year 2)	57
GM(iv): Research Project (Year 3)	58
SECTION 5: ANATOMICAL PATHOLOGY SYLLABUS	60
SECTION 5.1: Attitudes, Behaviours and Values	61
SECTION 5.2: Year 1 BSc (Hons) Programme: Royal Society for Public Health	63
Specialist Module APT 4.1: Common Human Pathology for Anatomical Pathology Technologists	63
Specialist Module APT 4.2: Mortuary Governance	66
Specialist Module APT 4.3: Quality Management in the Mortuary	69
Specialist Module APT 4.4: Advanced Mortuary Practice	71
Specialist Module APT 4.5: Health and Safety in the Mortuary	74
Specialist Module APT 4.6: Management of Mortuary Function	77

Specialist Module APT 4.7: Management of the Deceased in the Mortuary	81
Specialist Module APT 4.8: Bereavement Support	86
Specialist Module APT 4.9: Specialist Practical Mortuary Skills	89
Specialist Module APT 4.10: Deliver and Evaluate Training in Anatomical Pathology Technology	93
APT (i): Work-based Training	96
SECTION 5.3: Years 2 and 3	98
Specialist Modules for Year 2 Anatomical Pathology Technology	98
APT (ii): Cultural, Ethical and Legal Aspects of Mortuary Practice	99
APT (iii): Biological Markers of Death and Decomposition	101
APT (iv): Systemic Pathology	103
APT (v): Forensic Pathology	105
APT (vi): Tissue Retrieval	107
APT (vii): Mortuary Governance	109
APT (viii): Neuropathology	111
APT (ix): Paediatric and Perinatal Pathology	113
APT (x): Managing a Mortuary Service	115
SECTION 5.4: Indicative Content: Knowledge	117
Generic Professional Practice, Technical and Scientific Modules	117
GM (i): Professional Practice	117
GM(ii): Scientific Basis of Healthcare Science (Year 1)	124
GM(iii): Research Methods (Year 2)	127
GM(iv): Research Project (Year 3)	130
Year 1: Anatomical Pathology Modules	130
Work-based Training	130
Year 2: Anatomical Pathology Modules	131
APT (ii): Cultural, Ethical and Legal Aspects of Mortuary Practice	131
APT (iii): Biological Markers of Death and Decomposition	132
APT (iv): Systemic Pathology	133
APT (v): Forensic Pathology	133
APT (vi): Tissue Retrieval	134
APT (iv): Mortuary Governance	134
APT (viii): Neuropathology	135
Year 3: Anatomical Pathology Modules	136
APT (ix): Paediatric and Perinatal Pathology	136
APT (x): Managing a Mortuary Service	136
SECTION 5.5: GENERIC WORK-BASED SYLLABUS: ANATOMICAL PATHOLOGY	138
Generic Introduction to Work-based Learning	139
SECTION 5.6: WORK-BASED LEARNING: YEAR 1	143
Management of Mortuary Function	144
Bereavement Support	152
Specialist Practical Mortuary Skills	156
Deliver and Evaluate Training in Anatomical Pathology Technology	161
SECTION 5.7: WORK-BASED LEARNING: YEAR 2	166
Cultural, Ethical and Legal Aspects of Mortuary Practice	167
Biological Markers of Death and Decomposition	172
Systemic Pathology	176
Forensic Pathology	180
Tissue Retrieval	184

SECTION 5.8: WORK-BASED LEARNING: YEAR 3	188
Mortuary Governance	189
Neuropathology	193
Paediatric and Perinatal Pathology	197
Managing a Mortuary Service	202
SECTION 6: APPENDICES	207
Appendix 1: Contributor List	208
Appendix 2: BSc (Hons) Healthcare Science Amendments	209
Appendix 3: Abbreviations	210
Appendix 3: Abbreviations	212
Appendix 4: Glossary	213
Appendix 5: Assessment Proformas	215
A5.1: Direct Observation of Practical/Procedural Skills Template	215
A5.2: Case-based Discussion Template	218
A5.3: Observed Clinical Event Template	221
Appendix 6: Further Information	223
Appendix 7: RSPH Assessment Guidance	225

SECTION 1: INTRODUCTION TO THE PROGRAMME

READERSHIP

The Practitioner Training Programme (PTP) is an integrated academic and work-based undergraduate BSc (Hons) degree which may be undertaken through an on-site academic programme or through an apprenticeship. This document provides the curriculum (both academic and work-based) for the PTP and will be of interest to:

- academic and administrative staff, including external examiners within Higher Education Institutions (HEIs) which are accountable for the delivery of the curriculum;
- employers who may wish to support apprentices or employees in undertaking the PTP degree programme;
- learners, host departments and managers of services that employ healthcare science (HCS) staff;
- work-based trainers, including all those involved in supervising, mentoring, co-ordinating, assessing and delivering PTP education and training;
- Health Education England (HEE) Local Education and Training Boards (LETBs) and all HCS education and training commissioning organisations in the UK;
- National School of Healthcare Science (NSHCS);
- Academy for Healthcare Science (AHCS);
- patients and the public.

A list of abbreviations and glossary of terms used is provided in the appendices.

Introduction to Modernising Scientific Careers (MSC) and the Practitioner Training Programme (PTP)

1.1 Healthcare Science and the MSC Education and Training Programme

1. The HCS workforce plays a central role in safe and effective patient care across all pathways of care from health and wellbeing to end of life. There are approximately 55,000 employees in the HCS workforce in the NHS in the UK, and approximately 80% of all diagnoses can be attributed to their work.
2. Healthcare science involves the application of science, technology and engineering to health. *Good Scientific Practice (GSP)*¹ sets out the principles and values on which good practice within healthcare science is founded. It makes explicit the professional standards of behaviour and practice that must be achieved and maintained by all those who work in healthcare science. GSP and the Academy for Healthcare Science's (AHCS) Standards of Proficiency² and Standards of Education and Training³ form the basis for all MSC training curricula that contextualise the Standards of Proficiency set down by the Health and Care Professions Council (HCPC) in a way that is accessible to the profession and the public.
3. The HCS workforce and services are grouped into four broad areas called divisions, namely: Life Sciences, Physical Sciences, Physiological Sciences and Clinical Bioinformatics. Within each division there are a number of HCS specialisms. With advances in scientific technology, changes to the delivery of healthcare scientific services and the development of MSC, the boundaries between these divisions have been shifting. MSC recognises this important change and to date has identified seven PTP themes (groupings of specialisms within a HCS division), which define training across a total of 19 HCS specialisms.

1.2 Introduction to the Practitioner Training Programme(PTP)

4. The HCS Practitioner Training Programme (HCS PTP) is a degree programme that has 2 routes of delivery:
 - i. *On-site academic route*: an academic degree programme in which the learner⁴ undertakes work-based placements but is not employed
 - ii. *Apprenticeship route*: an in-service degree where the apprentice is employed whilst undertaking the PTP
5. The PTP typically will take a minimum of 3 years (but may be longer depending on the learner and the requirements of the employer and/or HEI to complete. It leads to a BSc Honours degree qualification that is contextualised for workplace occupational competency as a Healthcare Science Practitioner (HCSP) who provides HCS scientific and technical services within the HCS divisions and specialisms of Life Science, Physiological Science, or Physical Science.

¹ <http://ahcs.flinthosts.co.uk/wordpress/wp-content/uploads/2013/09/AHCS-Good-Scientific-Practice.pdf>

² http://www.ahcs.ac.uk/wordpress/wp-content/uploads/2014/07/AHCS_StandardsOfProficiency.pdf

³ http://www.ahcs.ac.uk/wordpress/wp-content/uploads/2014/08/AHCS_PTPStandardsOfEducationAndTraining.pdf

⁴ the term *learner* is generally used to include both students undertaking the PTP through the on-site academic route and the apprenticeship route, except where reference to apprentices is specifically required.

6. The BSc (Hons) PTP is designed to provide the HCSP with a strong science-based, patient-centred education and training in a specialist area of HCS. The overall aim of this HCSP education and training programme is to prepare the learner to fulfil the function of a HCSP working in a clinical HCS setting. The programme combines and integrates both academic and work-based learning and has a strong patient and technical scientific focus. Within the first year learners will experience of number of short placements or ‘tasters’ within the chosen PTP theme and gain some exposure to other aspects of the patient pathways, for example through clinics, patient education programmes, medical records and other area in which HCS contributes to patient care. This will give the learner a wide appreciation of the many related specialisms within HCS and a more holistic view of the areas that contribute to high-quality patient-centred care.
7. The diagram below depicts the broad framework and credit structure around which all PTP BSc (Hons) degree programmes in HCS are structured. The divisions within the MSC Programme (Life Sciences, Physical Sciences, Physiological Sciences and Clinical Bioinformatics)⁵ have interpreted and adapted this framework to fit the range of HCS specialisms within the division/theme. Further refinement has been undertaken by each HEI to develop and deliver BSc (Hons) programmes that enable learners to meet the learning outcomes of the course. There is a strong generic programme that emphasises professional practice, research and the scientific basis of HCS.

High-level framework for the integrated BSc (Hons) in Healthcare Science

Year 3 Application to Practice	Professional Practice	Scientific Basis of Healthcare Science Specialism		Research Project	Work-based Training 25 weeks	*46 wks
	[10]	[60]		[30]	[20]	
	Generic	Specialist				
Year 2 Techniques and Methods	Professional Practice	Research Methods	Scientific Basis of Healthcare Science	Principles of Scientific Measurement	Work-based Training 15 weeks	*40 wks
	[10]	[10]	[50]	[30]	[10]	
	Generic		Division-theme		Specialist	
Year 1 Scientific Basics	Professional Practice	Scientific Basis of Healthcare Science <small>integrated module across body systems will usually include informatics, maths and statistics</small>		Scientific Basis of Healthcare Science	Work-based Training	*36 wks
	[10]	[60]		[50]	10 weeks	
	Generic			Division-theme		

[XX] = number of credits

*Extended Academic Year

	Generic modules: Common to all divisions of Healthcare Science
	Division-theme modules: Life Sciences; Physical Sciences (Clinical Engineering OR Medical Physics); Physiological Sciences (Cardiovascular, Respiratory and Sleep Sciences OR Neurosensory Sciences)
	Specialist modules: Specific to a Healthcare Science specialism

⁵ Although at the current time there is no PTP in Clinical Bioinformatics.

8. Once employed as a HCSP a range of career development options will be available, including structured in-post programmes of continuous personal and professional development (CPPD), provided through Accredited Scientific Practice programmes.⁶
9. PTP degrees can be delivered either as an on-site academic programme with clinical placements, or through an apprenticeship⁷, in which the learner is employed whilst the degree is undertaken. HEIs offering the degree apprenticeship must join the Skills Funding Agency's (SFA) Register of Apprenticeship Training Providers (RoATP)⁸.
10. HEIs can choose to deliver the degree apprenticeship inclusive of the mandatory end-point synoptic assessment (EPA)⁹ through an "integrated" degree, or may choose to only deliver the academic component of the apprenticeship and without including the EPA in its assessment programme – a "non-integrated" degree. Where employers choose the non-integrated degree for an apprentice, they will be required to ensure that the apprentice undertakes the EPA once the degree is obtained through an appropriately accredited Assessment Organisation (AO) that is on the SFA Register of Apprenticeship Assessment Organisations (RoAAO), in order that the apprenticeship is completed.¹⁰ Whichever options are chosen, the PTP will develop the technical, scientific, interpersonal and behavioural skills and knowledge of learners so that they can operate effectively in HCS as a HCSP.

1.3 Practitioner Training Programme Outcomes

11. Graduates of the BSc (Hons) will possess the essential knowledge, skills, experience values, behaviours and attitudes required of a newly qualified HCSP. They will have the necessary expertise in applied scientific techniques underpinned by theoretical knowledge within a division or related specialism and will work in a range of healthcare settings. Many will work directly with patients but all HCSPs will work in roles that will have an impact on patient care and outcomes. Learning, therefore, must be in the context of the patient and patient-centred care.
12. On successful completion of the BSc (Hons) (academic and work-based learning outcomes) all graduates should be able to demonstrate the outcomes of the AHCS's Standards of Proficiency for HCSPs,¹¹ which will enable them to register on its Professional Standards Authority (PSA) accredited register. In addition, Life Science graduates should also be able to demonstrate the outcomes of the HCPC Standards of Proficiency for Biomedical Scientists, which will enable them to register with the HCPC as Biomedical Scientists. Degree programmes must align to the Quality Assurance Agency's (QAA)¹² level 6, but which will have been extended and contextualised to the NHS job role for HCSP.
13. The AHCS Standards of Proficiency cover three key areas:
 - professional autonomy and accountability;

⁶ <http://hee.nhs.uk/2015/03/26/modernising-scientific-careers-accredited-scientific-practice-asp/>

⁷ Less commonly, some individuals will be employed by a trust and undertake the degree on a part-time basis.

⁸ <https://www.gov.uk/government/collections/register-of-apprenticeship-training-providers>

⁹ described more fully in Section 1.8

¹⁰ Of significance, it should be noted that the employer will be responsible for the costs attached to the EPA.

Employers and HEIs should be aware that the funding cap for this programme is fixed at £27,000. This may therefore require employers to fund the EPA outwith the apprenticeship levy and be an additional cost to the overall apprenticeship.

¹¹ http://www.ahcs.ac.uk/wordpress/wp-content/uploads/2014/07/AHCS_StandardsofProficiency.pdf

¹² <http://www.qaa.ac.uk/en>

- skills required for practice as a HCS Practitioner;
 - knowledge of healthcare science.
14. **Entry routes:** Entry into BSc (Hons) on-site academic HCS programmes is through the UCAS application process.¹³ Increasingly, employers and patients are expected to be part of and contribute to the selection process, with HEIs using values-based recruitment¹⁴ as an underpinning principle of their selection processes. Those seeking to undertake the PTP through an apprenticeship will be competitively appointed by employers who will involve their local HEIs in the appointment process.
 15. **Award titles and mode of delivery:** These degree programmes can be delivered either as on site academic programmes or as in-service apprenticeship programmes. The title of the degree programme should be consistent with current HCS terminology.¹⁵ See <http://www.nshcs.org.uk/for-trainees/accreditation/134-accreditation-for-heis> for further details.
 16. **Apprenticeship Standard:** where employers appoint apprentices to undertake the degree, the apprenticeship standard for HCSPs (Level 6)¹⁶, the PTP degree and the End-point Assessment (EPA) demonstrating achievement of the standard must be achieved, either through an integrated or non-integrated degree.¹⁷
 17. **Relevant Quality Assurance Agency (QAA) Code(s) of Practice:** HEIs must adhere to the current QAA Code of Practice for the Assurance of Academic Quality and Standards in Higher Education.
 18. **Accreditation:** A BSc (Hons) HCS programme must hold accreditation from HEE's NSHCS to confirm that it meets the Standards of Accreditation for the HCS BSc (Hons),¹⁸ reflecting the AHCS Standards of Education and Training and those of the HCPC¹⁹, where appropriate.
 19. **Accreditation of prior learning (APL):** A process of APL that conforms to the guidelines below must be defined by each HEI provider. This must clearly describe the minimum and maximum level of APL that will be awarded, the timing, costs and process, and align to statutory requirements for HCS. Good practice supports the view that such prior learning should only be used once; double counting is not recommended. This process will be of particular relevance for apprentices who have previously achieved the Level 4 Diploma in HCS.²⁰
 20. **Progression, compensation, condonation:** Should a clinical placement or the employer in the case of apprentices not deliver the environment/learning that supports a learner in achieving the required learning outcomes, the HEI and

¹³ <https://www.ucas.com>

¹⁴ <http://hee.nhs.uk/work-programmes/values-based-recruitment/>

¹⁵ In Scotland a 'full-time-equivalent' model is used to train clinical physiology practitioners who are NES employees, with their work-based learning being integral to the award. The programme timescale is identical to a full-time HEI learner (i.e. 4 years in Scotland).

¹⁶ At the time of publication of the 2016 PTP curricula the Level 6 apprenticeship standard was awaiting publication.

Once published it should be available via: <https://www.gov.uk/government/collections/apprenticeship-standards#healthcare-standards> (see Healthcare Science section)

¹⁷ which will involve an AO for the EPA in the case of a non-integrated degree

¹⁸ <http://nshcs.org.uk/images/Accreditation/Proforma-BSc-accreditation-standards-July2014.pdf>

¹⁹ <http://www.hpc-uk.org/aboutregistration/standards/sets/>

²⁰ <http://www.qaa.ac.uk/Publications/InformationAndGuidance/Pages/Higher-education-credit-framework-for-England-guidance-on-academic-credit-arrangements-in-higher-education-in-England-August.aspx>
<http://www.qaa.ac.uk/Publications/InformationAndGuidance/Pages/Guidelines-on-the-accreditation-of-prior-learning-September-2004.aspx>

employer will need to support the learner/apprentice appropriately. While it is recognised that HEIs are likely to have a wide portfolio of degree programmes that fall under a single set of regulations (ordinances), the following conditions are specific requirements of the PTP BSc (Hons) degree programme accreditation process, irrespective of the HEI's own academic regulations:

- all modules are mandatory;
- no condonation or compensation of marks between modules (although there is a measure of compensation within a module) or extended re-sits of modules marks is permitted;
- multiple assessment components in any single module cannot be aggregated to reach a final module mark;
- each assessment within a module should be mandatory and passed at the required level.

21. Where learners do not achieve the module requirements for progression they must follow a 'module retrieval plan', which supports them to recover the failed module(s) as soon as possible so that they can progress with minimum delay.
22. **Programme delivery and monitoring:** It is expected that all BSc (Hons) HCSP programmes should be an integral part of the faculty/school and that opportunities for interprofessional learning are maximised. There should be an appropriate balance between academic staff and visiting specialist staff to ensure teaching reflects current NHS practice, which must be evidenced as part of the programme accreditation by the NSHCS.

1.4 Purpose of the BSc (Hons) PTP Curriculum

23. There are three main purposes of this BSc (Hons) curriculum. It:
 - i. clearly sets out the expectations of graduates from the programme, including the academic skills, knowledge and understanding, and attitudes and behaviours that each learner will be expected to gain, develop and apply during work-based training;
 - ii. signals the importance to employers of the current structure, strategic direction and priorities of healthcare delivery in the UK, e.g. the *NHS Constitution* or equivalent frameworks across the UK, and the requirement to prioritise patients and their care, ensuring that the patient and service provided by HCS is at the centre of all learning, assessment and work-based practice;
 - iii. introduces learning in relation to new scientific and technological developments as these become available.
24. **Curriculum development and maintenance:** The first BSc (Hons) curricula in HCS were published in 2010. Recently the NSHCS and the Council for HCS Education in Higher Education and its PTP Special Interest Group, professional bodies and other stakeholders have contributed to updating the scientific and professional content of the curriculum²¹, resulting in this 2016 edition of the curricula. Led by the NSHCS, all MSC curricula will be subject to regular review, with all stakeholders given the opportunity to contribute to each review. Current and previous versions of the BSc (Hons) HCS programmes and work-based learning guides can be found on the NHS Networks website.²²

²¹ including taking into account external feedback on the curricula undertaken by the Institute of Education (IOE)

²² <http://www.networks.nhs.uk/nhs-networks/msc-framework-curricula> and <https://www.nshcs.hee.nhs.uk/>

25. BSc (Hons) HCS programmes leading to an academic award must be aligned to current NHS policy and strategy and equivalent policy documents for the devolved administrations and should be consistent with current professional body guidance. HEIs should ensure they keep abreast of future strategic direction and policy.

1.5 Programme Delivery

26. **Programme delivery:** HEIs and employers are expected to ensure that all teaching, learning and assessment is up-to-date and informed by research to ensure that at graduation HCSPs meet the Framework for Higher Education Qualifications (FHEQ) descriptor at level 6. By undertaking a research project learners should become aware of the major contribution the HCS workforce makes to research and innovation to benefit patients, patient outcomes and the delivery of healthcare.

27. Although HEIs will deliver the programme described in this curriculum according to their local requirements, the key principles of programme delivery that underpin the NSHCS accreditation process²³ involve:

- programmes must deliver all of the BSc (Hons) PTP learning outcomes (and will, de facto, deliver the outcomes required by the Level 6 HCSP apprenticeship standard which maps to the curricula) and indicative content, which the HEE Education and Training Scrutiny Group (ETSG) has advised meets the requirements of *Modernising Scientific Careers: The UK Way Forward* and the Academy for HCS's *Good Scientific Practice*;
- wherever possible, delivering the principles and knowledge underpinning practice should occur before the work-based learning;
- ensuring programmes meet current NHS education quality metrics and current AHCS and HCPC Standards of Education and Training;
- ensuring that employer host departments, patients and the public are involved in the design, implementation, delivery and review;
- the use of fair, valid, reliable, and clearly articulated assessment programmes for all modules, and the timing and content of which should consider and complement the work-based assessment programme;
- the provision of a robust learner support and mentoring system, together with clearly defined arrangements to identify and support learners in difficulty (including the support services in place) clearly defined;
- delivery of the programme within a high-quality teaching and learning environment with appropriate resources and facilities to support teaching and research;
- teaching staff who are research active with a track record of undertaking high-quality research of national and potentially international standing that is relevant to the practice of HCS and the NHS.

28. Good Scientific Practice (GSP) underpins the PTP and the Level 6 HCSP apprenticeship standard and spans both the academic and work-based programmes. Key professional practice learning outcomes are included in the BSc (Hons) programme through its GSP syllabus, thus embedding the standards of professionalism set out in GSP in all aspects of the delivery and assessment of the programme. Learners should be encouraged to develop a range of skills to support their professional life and CPPD spanning communication, leadership, personal

²³ In Scotland NES is responsible for accreditation of PTP programmes.

reflection, duty of care, duty of candour, critical reflection, giving and receiving feedback, career planning and commitment to lifelong learning, and show development and maturation in these areas through the degree programme.

29. HEIs should ensure that all staff involved in each BSc (Hons) programme have read and are aware of the requirements of *Good Scientific Practice* and the GSP syllabus in the PTP.
30. **Teaching and learning:** It is expected that a blended learning approach will be adopted, based on a model of learner-centred adult learning that balances and integrates face-to-face teaching, e-learning, etc., and considers the broader requirements of each BSc (Hons) programme. It is anticipated that a broad range of teaching and learning activities will be utilised, appropriate to the learning outcomes. Learners should be enabled to gain the skills necessary to manage their own learning, and to exercise initiative and personal and professional responsibility. The learning strategy matrix and proformas outlined in 'Liberating Learning'²⁴ describe a range of activities that may be appropriate to this BSc (Hons) programme. They are likely to include:
- Case study/discussions
 - Debate
 - Discussion forums
 - Expert briefings
 - Interactive lectures
 - Individual tutoring
 - Learner-led and tutor-led seminars
 - Library study
 - Personal critical reflection and action planning
 - Problem-based learning
 - Role play
 - Self-assessment
 - Self-directed learning activities
 - Simulation
 - Skills teaching
 - Team projects
 - Tutor-led small group learning
31. It is also expected that e-learning and, where possible, m-learning²⁵ opportunities will be available to enable to be active participants in a range of learning activities. Work-based learning will also contribute to the academic educational experience of the learner through, for example, seminars, journal clubs, local and national scientific and education meetings.
32. All academic and NHS staff leading or contributing to the BSc (Hons) programme should be appropriately qualified to teach and assess within the academic and/or work-based environment and have up-to-date knowledge of the requirements of the programme, GSP and the Standards of Proficiency for HCSPs. Further details can be found in the Accreditation Guidance from the NSHCS.²⁶

²⁴ Liberating Learning, The Report of the Conference of Postgraduate Medical Deans' ad hoc Working Group on the Educational Implications of the European Union Working Time Directive and the subsequent European Working Time Regulations: November 2002 (revised 2009).

²⁵ JISC TechDis: see <http://www.jisctechdis.ac.uk/technologymatters/mobilelearning> for further information with respect to mobile (m) learning.

²⁶ <http://www.nshcs.org.uk/for-trainees/accreditation/134-accreditation-for-heis>

33. **Interprofessional learning:** Opportunities to enable interprofessional and interdisciplinary learning, within and outside HCS, should be a fundamental part of each programme.
34. **Patient-centred care:** The delivery of high-quality, compassionate, patient-centred care should be an integral part of each degree programme, with the emphasis on the contribution of the HCS workforce to ensure that learners are aware that their actions have an impact on the patient and the patient's family. They should make clear and explicit links to new models of service delivery, care and patient pathways. The responsibility of all staff in the NHS to maximise quality, productivity and efficiency and to continually strive to improve services should be stressed. Equally important is the ability of graduates from the PTP to communicate with the general public with respect to HCS, leading to a better-educated public that is encouraged to take responsibility for its own health and wellbeing and have a greater understanding of the role that science plays in society.
35. **Patient and public involvement:** The HEI programme team must have mechanisms in place to ensure that there is meaningful patient and public involvement in the design, delivery, development and quality assurance of each programme. It is expected that patients will be represented on course committees at all levels and contribute to teaching, learning and assessment.
36. The participation of patients and the public in HCS in all aspects of education and training brings a number of benefits, including:
 - active, constructive lay involvement in the training of healthcare scientists;
 - assisting in the development, monitoring and evaluation of HCS training programmes and their outcomes;
 - operating as lay advisors to all professionals, academics, researchers and others involved in the teaching of healthcare scientist trainees (including the private and charity sector);
 - engaging with professionals, academics, researchers, patients/carers and the general public to promote education/publicity about the work and impact of healthcare scientists on the health of the community;
 - developing protocols and training opportunities that involve lay persons in the delivery, analysis and evaluation of training programmes;
 - initiating and supporting ideas/proposals/research questions about HCS and its impact on patients.

1.6 Introduction to Work-based Learning

37. The overall aim of the PTP is to prepare the learner to fulfil the function of a HCSP working in a clinical HCS setting. The programme combines and integrates both academic and work-based learning and has a strong patient and clinical focus. Within the first year it is expected that the experiential component will start broad with short 'tasters' across a theme, with some exposure to other aspects of patient pathways, for example a clinic, patient education programme, medical records, or other area of healthcare. This will give the learner a wide appreciation of the many specialisms and a more holistic view of the areas that contribute to high-quality care.

38. The work-based programme is divided into modules, all of which are focused on service need, patient/care and continuous service improvement. Each module follows a standard format. The aim and scope of each module is described followed by the:
- **Learning Outcomes** – high-level descriptors of the required work-based achievements for the module;
 - **Clinical Experiential Learning** – the learning activities that will facilitate learning and achievement of the stated outcomes;
 - **Competences** – further outcome-based statements for each learning outcome;
 - **Knowledge and Understanding** - as applied to appropriate competences.
39. Both the curricula and the apprenticeship standard are based on GSP²⁷ and HCPC Standards²⁸, resulting in a direct relationship between the two, ensuring that the curricula deliver the underpinning knowledge, skills and professionalism required by the standard. The learning outcomes of the curricula are clearly focused on employer and service requirements, reflecting patient care and clinical pathways and continuous improvement in a given area of HCS.
40. The work-based training for all learners has three components, which correspond to the academic programme, all of which are underpinned by the professional practice curriculum:
- induction;
 - theme training;
 - specialist training.
41. It is anticipated that all learners will have an induction period in each employer/host department at the beginning of the apprenticeship and/or of each placement. The duration and timing of work-based placements will vary, depending on the HEI in which the learner studies.

1.7 Employing and Training Departments

42. The training and work environment is vital for successful training in the BSc and in this context includes each of the employers, training departments and other healthcare settings facilitating work-based training. The success of the training and the learner experience requires the commitment and enthusiasm from employers and those in the work environment to provide high quality, well-supervised training, underpinned by work-based formative assessment and a close working relationship with the HEI.
43. Training departments and employers should therefore ensure that they are fully familiar with the components of the BSc (Hons) programme, including the work-based training programme, including the required learning outcomes, competences and assessment processes, and have been trained by the HEI in each work-based assessment method. Additionally, the responsibilities for mentoring and supervision, whilst the learner is on placement should be clear, including access to HEI learner support services.

²⁷ <https://www.ahcs.ac.uk/wordpress/wp-content/uploads/2013/09/AHCS-Good-Scientific-Practice.pdf>

²⁸ http://www.hcpc-uk.org/assets/documents/100004FDStandards_of_Proficiency_Biomedical_Scientists.pdf

44. **Induction:** At the start of the training programme learners should be provided with an induction programme by employers and training units. Initial work-based induction should include an overview of the:
- hospital/employer/healthcare setting and local policies, including health and safety, confidentiality, data protection, etc., relevant to the employment;
 - range of services provided by the department;
 - range of people who use the services provided by the department;
 - function, operation, and routine and corrective maintenance requirements of equipment appropriate to the section(s) of the department in which the trainee will be working;
 - host trust IT systems, including the library and knowledge service as required.
45. **Supervision:** At the core of successful work-based employer training is appropriate educational and clinical supervision, facilitation and feedback. It is recommended that each learner is allocated to a training officer²⁹ from within the host/employing department. Learners are advised to ensure that a planned schedule of meetings with their training officer is agreed early in training, commencing with a meeting during the first week.
46. BSc educational and clinical supervision should promote learning, reflective practice and action planning. It will need to ensure that the learner becomes proficient in the specific skills and competences required by the curriculum, helping them to develop self-sufficiency and self-awareness in the ongoing acquisition of skills and knowledge. At every stage, patient safety must be paramount.
47. The first supervision meeting should be set up during the first week of the training programme. At the first meeting the training officer should ensure that the learner is following the agreed induction programme. It is recommended that the following areas should be explored and agreement reached at the first meeting with respect to the:
- expectations of the training officer and learner;
 - responsibilities of the training officer and learner;
 - confidentiality;
 - boundaries between the training officer and learner;
 - frequency and duration of planned supervision meetings;
 - methods of communication and responsibility for arranging meetings;
 - level of support and arrangements for communications between meetings;
 - models of reflection and action planning;
 - record keeping;
 - content of the work-based training programme;
 - for apprentices, clarity between their employment responsibilities and their learning opportunities (i.e. formal training/learning time)
 - the approach to assessment;
 - sources of help and support.
48. The HEI and employers are responsible for ensuring that learners have access to training opportunities to enable the achievement of all the learning outcomes of the BSc (Hons) and where required, to meet the apprenticeship standard. In return learners are expected to take responsibility for:

²⁹ For the purposes of this document training officer has been used; however, the title may vary between departments and may be subject to a title change in England as part of developments for the whole of the professional healthcare workforce.

- ensuring that they fulfil their obligations to the HEI, to employers, to departments providing work base training and to patients (especially with regard to patient safety and confidentiality) as healthcare professionals;
- engaging as active adult learners by initiating work-based assessments; contributing to learning activities; taking into account feedback received from their trainers and assessors; and giving considered and constructive feedback on their experience of their training.

1.8 Assessment

49. **Purpose of assessment:** The purpose of assessment is to enable the learner to demonstrate that they have the requisite knowledge, skills, values, behaviours and attitudes to work as a HCSP and meet standards of education and training, professional skills, conduct performance and ethics to provide reassurance to the public and the appropriate regulatory bodies. Given the integrated nature of this academic and work-based degree, each HEI's assessment programme must address both academic and work-based assessment (see Section 1.11 below) and must support assessment for learners undertaking the programme through an on-site academic programme or through an apprenticeship.
50. The full BSc (Hons) HCS assessment programme should support both assessment *for* and assessment *of* learning, and in particular:³⁰
- help clarify what good performance is (goals, criteria, standards);
 - encourage 'time and effort' on challenging learning tasks;
 - deliver high-quality feedback information that helps learners to self-correct;
 - encourage positive motivational beliefs and self-esteem;
 - encourage interaction and dialogue around learning (peer and teacher–learner);
 - facilitate the development of self-assessment and reflection in learning;
 - involve learners in decision making about assessment policy and practice;
 - support the development of learning communities;
 - integrate and complement the work-based assessment programme;
 - help teachers adapt teaching to learner needs;
 - for apprentices, facilitate and ensure readiness for the synoptic EPA.
51. The HEI must have in place a clear, overarching strategic and systematic approach to assessment that fits with the curriculum and delivers assessment methods that are valid, reliable/generalisable, feasible, fair, acceptable and defensible, and is led by assessment experts. The approach to the assessment of the BSc (Hons) HCS should also be cognisant of and complement the work-based assessment programme, which is defined by the NSHCS and which is part of all NSHCS accredited BSc (Hons) programmes. In addition, where an integrated degree is offered, enabling those undertaking the degree through an apprenticeship route, the end-point assessment (EPA) must conform to Department for Education (DfE) requirements.³¹

³⁰ Nicol DJ (2007) Principles of good assessment and feedback. REAP International Online Conference. www.reap.ac.uk/public/Papers/Principles_of_good_assessment_and_feedback.pdf (accessed 2.12.09).

³¹ At the time of publication of the 2016 PTP curricula the Level 6 EPA was awaiting publication. Once published it should be available via: <https://www.gov.uk/government/collections/apprenticeship-standards#healthcare-standards> (see Healthcare Science section)

52. The assessment programme should be designed to enable the learner to obtain regular and constructive feedback on progress and achievement. It should encourage critical reflection and action planning, identifying both strengths and areas for development and improvement.
53. The approach to assessment should include and be overseen by a central co-ordinating leadership group or assessment-focused group in the HEI. The role of this group is to advise and scrutinise assessment across modules and years in order to build a consistent approach to assessment across the whole programme, involving module/programme leaders as appropriate. The HEI's overall assessment strategy should be documented in a clear and accessible manner with accountabilities clearly allocated. The strategy should also demonstrate how the approach is based on a sound understanding of the evidence base, academic literature and good practice in assessment.
54. Key areas that are required for NSHCS accreditation and which must be covered by an HEI's Assessment Strategy include:
- a clear statement of accountabilities, including the governance structure for assessment;
 - the balance between academic and work-based assessment;
 - the balance between formative and summative assessment;
 - clarity on the EPA programme for apprentices and preparation for it;
 - the assessment of each module, including the contribution of individual assessments and examinations within the module;
 - progression criteria;
 - the range of valid, reliable and appropriate assessment techniques that will be utilised across the programme and for each module;
 - the process for providing clear and timely information for learners;
 - how all examiners will be selected and trained (including refresher training) and the guidelines that will be given;
 - the mechanisms in place to ensure comparability of standards and to share good practice, including external examiners;
 - how standard setting is undertaken;
 - how opportunities for learner feedback will be maximised, including time lines and importance of developing learners-centred feedback;
 - the arrangements for assessment of learners with a disability, which should be consistent with the ability to undertake this modified practice in the workplace setting;
 - an assessment blueprint demonstrating the relationship between each assessment and the learning outcomes of the programme;
 - exemplar criteria and marking scheme, including critical reflective writing;
 - the process of appointing external examiners;
 - a defined role for external examiners that includes contributing to the review and development of assessment strategies and providing advice from an overarching perspective;
 - the role and contribution of patients and the public to the assessment programme.
55. The on-programme assessment of the degree modules will include a range of formative and summative assessment approaches, for example essays, reports, completion of practical tasks and work-based projects as well as formal summative examinations as the degree progresses. In addition, a programme of formative

work-based assessments will support progression through the degree, ensuring that for apprentices, there is adequate opportunity to practise scientific skills, and to gain feedback, as preparation for the EPA for apprentices.

56. For those undertaking the degree through an apprenticeship, the learner must achieve the award of the BSc (Hons) and pass the EPA. HEIs will be required to be on the SFA's RoATP and RoAAO. Where the EPA is not integrated as part of the degree programme, the EPA will be delivered following completion of the degree by an organisation on the RoAAO. In the event of failure to pass either the degree course or the EPA, completion of the apprenticeship cannot be achieved. Employers should be assured that HEIs have robust and well-established assessment and quality assurance processes, incorporating internal moderation and external examiners to ensure independence across the degree programme and consistency between HEIs and that these Honours degrees are all approved by the QAA.

1.9 On-programme (work-based) Assessment

57. **Formative assessment** is used to support learners in the workplace by ensuring regular, structured checks on developing competence. The formative assessment tools detailed in Table 1 are used by all workplaces to capture evidence of the skills, knowledge, behaviours, attitudes and values required by the apprentice in the workplace, in their enactment of their practitioner role and in their interactions with colleagues, peers, patients and the public (where and as appropriate). Formative assessment helps to uncover performance issues or concerns and the HEI and employer will be able to support the learner and provide extra guidance where such issues might arise to ensure that the learner is fully supported in meeting the outcomes of the degree and the apprenticeship for those required to do so. The delivery of that support is likely to differ across HEIs and workplaces.
58. For apprentices, completion of the formative assessment programme is essential preparation for the synoptic EPA near the end of the programme that is designed to capture evidence of the apprentice's mastery of the skills, knowledge, behaviours and values defined in the standard (see section below for more detail). Table 1 also sets out the arrangements for the summative work based employer assessment competency log that encapsulates the performance of the HCSP learner in the demonstration of competences that have been achieved.
59. The high level learning outcomes and clinical experiential learning required in each of the areas of HCS are set out in the PTP curricula for HCSPs.³² These detail the work-based learning outcomes that form an integral part of the degree programme for HCSPs should be used to guide the selection of formative assessments. The curricula also provide the templates for each of the work-based assessment tools to ensure assessment standardisation across the work-based programme (see appendices).
60. This formative work-based assessment programme should find a balance between what is realistic and achievable for employers and learners and what provides sufficient evidence of progress/competence. It is therefore recommended that learners, in consultation with their clinical supervisor, undertake work-based assessments as set out in the table below:

Recommended number of assessments per academic year

Year 1	Year 2	Year 3
2 DOPs 1 CBD Competence	4 DOPs 1 CPD 1 OCE Competence	4 DOPs 2 CBDs 2 OCEs Competence

³² and in the Institute of Biomedical Science's (b) Registration Portfolio for those undertaking this degree programme

Table 1 Summary of On-Programme (work-based) formative assessment methods and the Employer based Competency Log³³

Assessment tool	Direct Observation of Practical skills (DOPs)	Observed Clinical Event (OCE)	Case-based Discussion (CbD)	Work-based/employer based Competency Log
Purpose	Assessment of a practical skill or procedure, including, where relevant, interaction with a patient through direct observation. Learner and assessor feedback is generated, learning needs identified and an action plan agreed	Observation and assessment of a clinical encounter or interaction with colleagues with respect to an aspect of patient care. The format and approach is similar to DOPs but takes place with a patient present or when the learner is working with clinical colleagues	A clinical case is used as the basis for a discussion to assess the learners application of knowledge and understanding of an aspect of an activity they have been part of, e.g. professional practice, communication, leadership, science, the role of healthcare science in patient care	A record of attainment which demonstrates achievement of each work-based competence and clinical experiential learning (CEL) activity, reflecting the performance of the learner, including the demonstration of achievement of aspects of the apprenticeship standard where this is appropriate
Method	The assessor observes a practical activity and facilitates learner- centred feedback either during or immediately following the observation. The learner generates an action plan and agrees this with the assessor.	The assessor observes a clinical activity and facilitates learner-centred feedback either during or immediately following the observation. The learner generates an action plan and agrees this with the assessor.	A discussion between the learner and assessor with respect to any aspect of a case, including professional practice/ <i>Good Scientific Practice</i>	An assessor reviews the evidence provided by the learner to support achievement of each competence and CEL. The expectation is that as the learner progresses the competency log will demonstrate an evidential base of achievement/progression.

³³ Whilst each individual assessment is formative review of the log as a whole forms part of the summative assessment of the degree and of the EPA.

1.10 Work-based/employer based Competency Log

61. All learners will also be required to provide evidence to demonstrate that they have successfully achieved the competences set out in the curriculum and for apprentices, those competences specifically reflected in the apprenticeship standard, through success in the EPA. The learner is expected to provide evidence to demonstrate achievement of each competence, which should then be reviewed and signed off by the trainer in the competency log. Learners will gain competence at their own pace, but in line with the overall delivery of the relevant modules. Each competence will link directly to a specific work-based learning outcome in the curriculum and some competences may be linked to more than one learning outcome. Successful completion of the curriculum and, for an apprentice the standard, cannot therefore be achieved until achievement of *all* work-based learning outcomes have been demonstrated.
62. On-going completion of a competency log (the high level requirements are set out in Table 1 above) is therefore essential for progression within the programme and as a requirement for achievement of the degree and completion of the apprenticeship. The expectation is that as the learner progresses the competency log will demonstrate an evidence base of their achievement. The achievement of each competence and a record of all on-programme work-based assessments must be recorded using a written log, or the HEI's own electronic system. For those in HCS programmes this should be presented within a Portfolio of Evidence that is accumulated by the learner to demonstrate learning, competence and insight into practice and professionalism.³⁴

1.11 End Point Assessment for apprenticeships

63. All apprentices will have to pass the EPA that is designed as a final check on the apprentice's workplace competence and ability to integrate their learning across all elements of the PTP.
64. Where the EPA has been integrated into the degree programme, the degree obtained will provide verification that both the academic part of the standard and the required synoptic assessment have been met and graded. As described above, some HEIs may choose to deliver a non-integrated degree, which will not include the EPA. If an employer chooses to use such a non-integrated degree programme for an apprenticeship, then it will be required to ensure that the synoptic assessment described below is delivered by an appropriately accredited organisation that is on the SFA's RoAAO. In addition the employer will be responsible for the costs attached to the EPA which is delivered by the AO. Although a funding cap for this degree apprenticeship standard has not yet been allocated, employers and HEIs should be aware that if the full amount is used for the delivery of the degree programme, employers will be required to fund the EPA outwith the apprenticeship levy which will be an additional cost to the

³⁴ For those learners studying to become healthcare science practitioners through biomedical science degrees, the IBMS Registration Portfolio provides the framework for education and training. This Portfolio enables biomedical science learners to demonstrate their fitness to practice through evidence of competence that can be independently verified against the HCPC Standards of Proficiency. This supports the biomedical science graduate in registering with the HCPC. A combined portfolio reflecting this Registration Portfolio and the HCS Portfolio of Evidence for those undertaking the PTP programme in the Life Sciences is currently under development.

overall apprenticeship. For integrated degrees, HEIs are likely to have to pay a small fee to the AHCS to help support and maintain standardisation of the EPA assessment tools (Situational Judgment Test; Professional Discussion and Research evaluation templates).

65. The formative work-based assessment programme described above supports apprentices in acquiring and building the skills, knowledge, behaviours and values defined in the apprenticeship standard. Underpinned by the academic learning and summative assessment provided by the HEI, this will ensure that the learner is prepared and ready to understanding the synoptic assessment, demonstrating these.
66. All apprentices will therefore have to pass the EPA that is designed as a final check on the apprentice's workplace competence and ability to integrate their learning across all elements of the PTP. In integrated degrees, the EPA is delivered towards the end of the three-year programme; in non-integrated degrees, the EPA is undertaken after the degree is achieved and is administered by a registered AO.
67. The EPA is conducted with an independent assessor towards the end of the degree programme and takes approximately two hours. It consists of the following three components, each of which must be passed independently:
 - i. one hour written Situational Judgment Test (SJT) set by the HEI;
 - ii. face-to-face Professional Discussion, taking approximately 40 minutes, between the apprentice and the trained independent assessor (who has not been involved in the education or training of the apprentice) and based on questions arising from the assessor's scrutiny of the apprentice's portfolio of workplace-based assessments, experiences and critical reflection;
 - iii. a presentation of up to 10 minutes to the assessor, in which the apprentice describes the research project undertaken as part of their degree programme. The presentation is followed by a 15 minute question and answer session with the independent assessor on issues raised by the research.

The link to the full version of the Level 6 HCSP Apprenticeship EPA was not available at the time of publication of the 2016 curricula but should be available via: <https://www.gov.uk/government/collections/apprenticeship-standards#healthcare-standards>

1.12 Learner Support and Mentoring

68. The learner supervision, support and mentoring systems will span the academic and work/employer-based elements of the programme, and the relationship between the two systems must be clear to learners, employers work-based staff and HEI staff. The learner supervision, support and mentoring system must be designed to encourage safe and effective practice, independent adult learning, appropriate professional conduct of the learner, the safety of the patient and quality assurance of all work activities of each learner. Those undertaking the role of supervisor or mentor must have relevant qualifications and experience and have undertaken appropriate and up-to-date training. The HEI will be expected to have an academic supervisory, support and mentoring scheme in place and to provide access to learner support services.

69. **Fitness to practise:** The HEI must have a clear policy with respect to fitness to practice (FtP), which must clearly articulate how staff and learners are made aware of the policy and how the policy is implemented. The HEI's FtP policy should reflect and be aligned to the FtP policy of the AHCS and the HCPC (for Life Sciences). Alongside this must be a clear policy on how learner whistleblowers are supported. Breaches of professional practice and behaviour identified by the HEI or during HEI activities must be reported and investigated in accordance with this FtP policy and accurate records maintained within the HEI.

1.13 Annual Monitoring of Progress and Equality and Diversity

70. **Annual monitoring of progress:** All on-site academic learners will usually be expected to complete the requirements for the BSc (Hons) HCS award within three years after initial registration, in accordance with the regulations of each HEI. For those undertaking the degree through an apprenticeship, employers and the HEI should ensure that good progress is made, although through agreement between the employer, the apprentice and the HEI, the duration of the degree may take longer than 3 years.
71. Programme governance must include annual monitoring of progress that considers the outcome of the review of each module (including learner and patient evaluation) and the handling and consideration of the external examiner's report. This process should enable the programme leaders to identify and propose changes to the programme in response to feedback.
72. **Equality and diversity:** HEE, the AHCS, HEI's, scientific professional bodies and employers are committed to the principle of equality and diversity in employment, membership, academic activities, assessment, examinations and training.
73. As part of this ethos these groups are committed to inspire and support all those who work, train and provide training in HCS to operate in a fair, open and honest manner. The approach taken is a comprehensive one and reflects all areas of diversity, recognising the value of each individual. This means that no one is treated less favourably than another on the grounds of ethnic origin, nationality, age, disability, gender, sexual orientation, race, or religion, in accordance with the Equality Act 2010³⁵. This reflects not only the letter but also the spirit of equality legislation, taking into account current equality legislation and good practice.

1.14 Critical Reflection and Learning

74. **Critical reflection:** Critical reflection on progress and performance is an integral part of both the BSc and of being a professional. Learners should therefore be taught the theoretical models underpinning reflection and required to regularly critically reflect on their progress and performance, enabling them to develop skills in self-evaluation and action planning.
75. This should be used to support the learner as they learn from experiences gained in the workplace. Reflection should help the learner to understand and learn from work-based situations/experience, bridging the gap between theory

³⁵ Equality Act 2010. <http://www.legislation.gov.uk/ukpga/2010/15/contents>

and practice. Each learner should be taught about the underpinning evidence for the use of reflection and encouraged to reflect regularly on their progress and performance, developing their skills in self-assessment and action planning.

76. Learners should be encouraged to think about what they are doing as they do it (Reflection *in* Action) and retrospectively to reflect on practice (Reflection *on* Action). The reflective practitioner should describe and analyse experience, considering how the situation might have been handled differently and what other knowledge would have been helpful. When critically reflecting on an experience, learners should use a recognised model of reflection.

1.15 Relationships and Partnerships

77. **The National School of Healthcare Science:** The NSHCS is hosted by HEE, West Midlands Local Team. The NSHCS provides a national co-ordinating and oversight function to support the delivery of work-based training for HCS training and education programmes. With respect to the PTPs it is responsible for:
- holding HEIs to account for the quality, integration, co-ordination and delivery of both the academic programme and work-based training through the accreditation process, ;
 - identification of programme issues that may need to be addressed and resolved and reporting these as part of agreed governance arrangements;
 - liaising with LETBs on local issues and problems and their resolution;
 - providing advice and support to accredited PTP programmes as necessary;
 - overarching review to ensure common standards of delivery and content and recommending ongoing training activities to support the CPD of work-based trainers.

The School can be contacted at www.nshcs.org.uk

78. **The Academy for Healthcare Science:** The AHCS provides the professional voice for the HCS workforce and quality assurance of HCS training and education.³⁶ Included in its functions are to:
- act as a strong and coherent professional voice;
 - be able to influence and inform a range of stakeholders on all matters relating to HCS and scientific services;
 - act as the overarching body for professional issues related to education, training and development in the UK health system, including the provision of UK-wide quality assurance across education and training arrangements³⁷;
 - provide the infrastructure to support the professional regulation/registration of the HCS workforce, including:
 - a system of professional accreditation of education and training programmes for the regulation/registration of the HCS workforce;
 - setting the professional standards for the delivery of accredited registers as required by the PSA's for Health and Social Care to ensure consistency and coherence across all HCS education and training programmes;

³⁶ <http://www.ahcs.ac.uk/wordpress/wp-content/uploads/2014/08/18th-Feb-2016-AHCSQA-Framework-pdf.pdf>

³⁷ The Institute of Biomedical Science (IBMS) also has a role in approving laboratories for training and accrediting healthcare science degrees in the Life Sciences.

- taking the central role in the sponsorship of the registers to achieve ‘accredited’ status as set out by the PSA;
- being a HCPC education provider for the statutory regulation of Clinical Scientists;
- offering a system for equivalence across the HCS workforce to enable those who can demonstrate evidence of training, experience and qualifications equivalent to the required outcomes of HCS training programmes to support entry on to the PSA accredited ACHS register www.academyforhealthcarescience.co.uk/

1.16 Programme Outcomes

79. On completion of the BSc (Hons) all graduates should be able to demonstrate the following outcomes that align to QAA level 6, extended and contextualised to the NHS job role for HCSP.

Professional Practice

- i. Professional practice that meets the professional standards of conduct, performance and ethics defined by *Good Scientific Practice*³⁸ and is safe, lawful and effective, and within the scope of practice for the role undertaken, while maintaining fitness to practice.
- ii. Personal qualities that encompass communication skills, self-management, self-awareness, acting with integrity and the ability to take some responsibility for self-directed learning, maintaining their own health and wellbeing, critical reflection and action planning to maintain and improve performance.
- iii. The ability to be an independent self-directed learner acting autonomously in a non-discriminatory manner when planning and implementing tasks at a professional level.
- iv. The ability to work, where appropriate, in partnership with other professionals, often as part of a multidisciplinary team (MDT), supporting staff, service users and their relatives and carers while maintaining confidentiality.
- v. The ability to work with the public, service users, patients and their carers as partners in their care, embracing and valuing diversity.
- vi. A range of transferable generic academic skills and capabilities to the exercise of initiative and personal responsibility, decision making in complex and unpredictable contexts spanning study skills, independent learning, reflective practice, communication, team working, research and leadership skills.
- vii. A conceptual understanding that enables the learner to devise and sustain arguments and/or to solve problems, using ideas and techniques, some of which are at the forefront of a specialism of HCS.
- viii. The ability to apply problem-solving skills, evaluate evidence, arguments and assumptions, to reach sound judgements and to communicate information, ideas, problems and solutions to both specialist and non-specialist audiences.

³⁸ and the HCPC in the Life Sciences

Scientific and Clinical Practice

- ix. An understanding of a complex body of knowledge, some of it at the current boundaries of an academic discipline, and the ability to apply the scientific principles, method and knowledge to HCS.
- x. The ability to apply scientific method and approaches to analytical techniques, HCS research, development and innovation.
- xi. The ability to perform technical investigations/skills and technical reporting of quality assured tests, investigations and interventions on patients/samples safely and skillfully, adhering to applicable legislation and in compliance with local, national and international guidelines.
- xii. The ability to provide therapeutic interventions, some of which may be specialist, in a number of specialisms.
- xiii. A systematic understanding of key aspects of their field of study, including acquisition of coherent and detailed knowledge, at least some of which is at, or informed by, the forefront of defined aspects of HCS.
- xiv. High-quality clinical and scientific practice that applies core scientific knowledge, skills and experience in a healthcare setting, places the patient/public at the centre of care, prioritising patient safety and dignity and reflecting NHS/health service values and the NHS Constitution.

Research, Development and Innovation

- xv. An appreciation of the uncertainty, ambiguity and limits of knowledge, the ability to manage their own learning, and to make use of scholarly reviews and primary sources (for example refereed research articles and/or original materials appropriate to HCS).
- xvi. To apply the methods and techniques that they have learned to review, consolidate, extend and apply their knowledge and understanding, and to initiate and carry out projects.
- xvii. An understanding of the strengths, weaknesses and opportunities for further development of healthcare and HCS as applicable to their own clinical practice, research, audit, innovation and service development, which either directly or indirectly leads to improvements in patient experience, clinical outcomes and scientific practice.

Clinical Leadership

- xviii. Scientific and clinical leadership appropriate to the HSCP job role based on the continual advancement of their knowledge, skills and understanding through the independent learning required for CPPD.

1.17 Transferable Skills

80. It is expected that all BSc (Hons) HCS programmes will meet the descriptors for a higher education qualification at level 6 (Bachelor's degree with honours) outlined by the Framework for Higher Education Qualifications in England, Wales and Northern Ireland (FHEQ) and the Scottish Credit and Qualifications Framework (SCQF) Level 10. On graduation all will have gained a range of transferable generic academic skills and capabilities, including study skills, independent learning, problem solving, reflective practice, communication skills, team working, research, innovation and leadership skills. These transferable

skills should be embedded in the curriculum developed by each HEI. For those undertaking the apprenticeship programme, employers will be further assured that apprentices have gained the transferable skills required, given the successful completion of the EPA as part of or in addition to the degree programme.

SECTION 2: BSc (Hons) IN ANATOMICAL PATHOLOGY TECHNOLOGY

2.1 Details of the PTP Curriculum in Anatomical Pathology

Introduction

Anatomical pathology technologists play a vital role in the mortuary setting in the preparation of the deceased, assisting with post-mortem examination and in the harvesting of organs for transplantation. They require high-level interpersonal skills to communicate with bereaved relatives, the legal authorities, etc. Their training has traditionally been workplace based with certification by the Royal Society for Public Health (RSPH) at two levels (Certificate and Diploma). A service review in May 2009 highlighted the need for formal education availability at least up to Bachelor's level in order to meet the developing needs of the NHS mortuary services.

The education and training needs of the Anatomical Pathology Technology (APT) workforce are summarised in the diagram below. This model of training recognises the current employment and progression routes required by the APT workforce and positions those within the MSC career framework at Assistant (Level 3) and Associate (Level 4) practitioner. The Level 3 and 4 curriculum of the RSPH has recently been reviewed and amended by a working group representing:

- Royal Society for Public Health
- Association of Anatomical Pathology Technology
- Royal College of Pathologists
- NHS Blood and Transplant
- Home Office Forensic Science Regulation Unit
- Department of Health Modernising Scientific Career Team.

The agreed integrated career pathway with a route to BSc (Hons) is shown in the diagram overleaf.

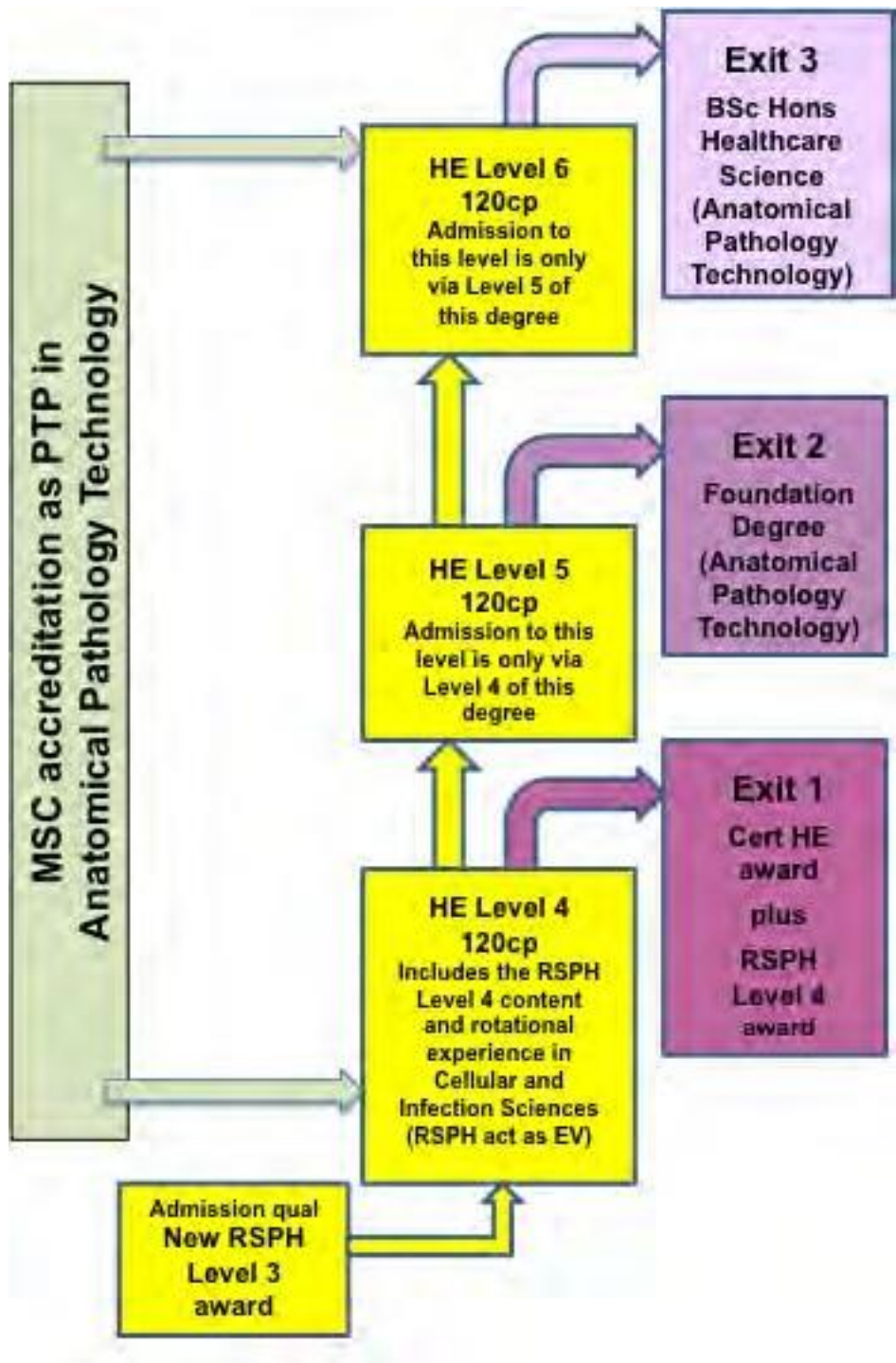


Diagram showing the integrated career pathway for anatomical pathology technology

2.2 Year 1 BSc (Hons) Programme:

Royal Society of Public Health Level 4

Background

The BSc (Hons) in Healthcare Science for the PTP will begin with an induction programme provided by the academic provider. The curriculum for Year 1 of the BSc (Hons) Healthcare Science (Anatomical Pathology Technology) incorporates the curriculum of the RSPH Level 4 Diploma spanning the academic and work-based learning (defined in the work-based learning guide). In addition, the curriculum for Year 1 of the BSc (Hons) Healthcare Science (Anatomical Pathology Technology) includes three modules that are found in all BSc (Hons) Healthcare Science programmes:

- Professional Practice (10 credits in each year)
- The Scientific Basis of Healthcare Science (10 credits)
- Work-based Training (0 credits).

Some of the Learning Outcomes of the MSC generic module 'The Scientific Basis of Healthcare Science' will be achieved by following the RSPH Level 4 curriculum. However, as not all of the Learning Outcomes from this module will be met, in order to align to MSC programmes for the PTP achievement of some additional learning outcomes is required. It is expected that all students studying the RSPH Level 4 Diploma will be introduced to the wider profession of healthcare science and the role of the profession in terms of patient-centred care in the Clinical Experiential Learning within the work-based learning programme. Some of these Learning Outcomes may be completed during the second year of the BSc.

2.3 Underpinning Principles of Integrated APT Education and Training Programme

- New entrants to APT will commence training by completing the RSPH Level 3 Diploma in Anatomical Pathology Technology.
- Successful completion of the RSPH Level 3 award is a pre-requisite for entry into the BSc (Hons) Healthcare Science in Anatomical Pathology Technology.
- Successful completion of the first year of the BSc (Hons) Healthcare Science in Anatomical Pathology Technology will also lead to completion of the RSPH Level 4 Diploma in Anatomical Pathology Technology under an agreement with RSPH. A proportion of students will exit the BSc programme at this point with a Foundation Diploma in Anatomical Pathology Technology.
- Successful completion of the first year of the BSc (Hons) Healthcare Science in Anatomical Pathology Technology is a pre-requisite for entry to Level 5, aligned to QAA level 4.
- Students who enter the second year of the BSc (Hons) Healthcare Science in Anatomical Pathology Technology will normally progress into the third year of the programme (Level 6 aligned to QAA level 5) and exit with the full BSc (Hons) qualification. However, it will be possible for some students to exit at the end of the second year with a Foundation Degree in Anatomical Pathology Technology.

- There will not be the situation of a student exiting the HEI system with an award title 'BSc Healthcare Science' unless they have also been awarded RSPH Level 4 Diploma.

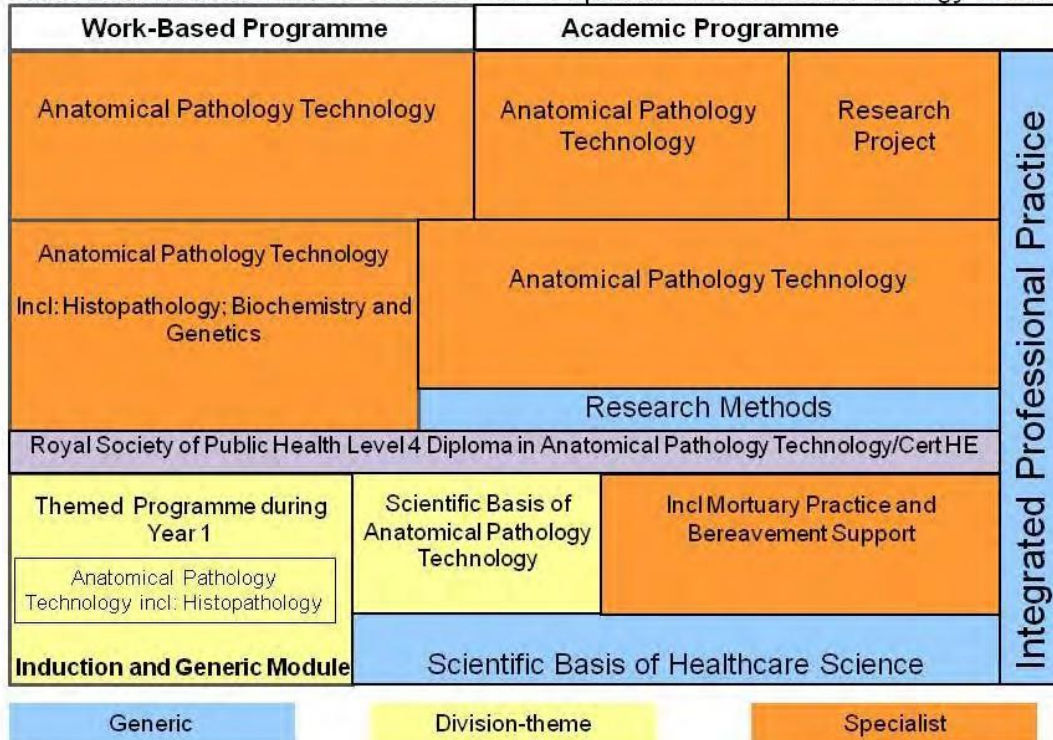
2.4 Timescale

The curriculum for the BSc (Hons) Healthcare Science (Anatomical Pathology Technology) is presented in the standard BSc (Hons) Healthcare Science format, which is based on a three-year full-time programme. APT students will be in employment with secondment to the BSc programme by their employer. Therefore, the programme will normally be completed on a part-time basis. As a result the HEI delivering the programme is likely to spread each year of the curriculum over 24 months.

The diagram and table overleaf summarise the framework for the programme for Anatomical Pathology Technology.

**Modernising Scientific Careers: Practitioner Training Programme (PTP):
Diagrammatic representation of a part-time (flexible, up to 6 years), pre-
registration, integrated academic and work-based BSc (Hons) in Healthcare
Science undertaken through employment**

ANATOMICAL PATHOLOGY TECHNOLOGY: Specialism: Anatomical Pathology Technology



2.5 List of Modules

Year	Module Title	Credits
Professional Practice and specific Learning Outcomes from the Scientific Basis of Healthcare Science will be integrated across Year 1		
YEAR 1		
1	Professional Practice	10
1	Common Human Pathology for Anatomical Pathology Technologists	15
1	Mortuary Governance	10
1	Quality Management in the Mortuary	10
1	Advanced Mortuary Practice	15
1	Health and Safety in the Mortuary	10
1	Management of Mortuary Function	10
1	Management of the Deceased in the Mortuary	10
1	Bereavement Support	10
1	Specialist Practical Mortuary Skills	15
1	Deliver and Evaluate Training in Anatomical Pathology Technology	10
1	Work-based training acquired through completion of the work-based component of specialist modules, including wider experience of other Life Sciences specialisms	0
1/2	Scientific Basis of Healthcare Science	10
YEAR 2		
2	Professional Practice	10
2	Research Methods	10
2	Cultural, Ethical and Legal Aspects of Mortuary Practice	20
2	Biological Markers of Death and Decomposition	20
2	Systemic Pathology	20
2	Forensic Pathology	20
2	Tissue Retrieval	20
2	Work-based training	10
YEAR 3		
3	Work-based training	10
3	Professional Practice	10
3	Mortuary Governance	20
3	Managing a Mortuary Service	20
3	Neuropathology	20
3	Paediatric and Perinatal Pathology	20
3	Work-based training	20
3	Research Project in Anatomical Pathology Technology	30

SECTION 3: GENERIC GOOD SCIENTIFIC PRACTICE SYLLABUS

Introduction

The Academy for Healthcare Science (AHCS) has set out the principles, values and the standards of behaviour and practice for the healthcare science workforce in the document *Good Scientific Practice* (GSP). These standards and values must be achieved and maintained in the delivery of work activities, the provision of care and personal conduct. In addition, the AHCS holds a Professional Standards Authority accredited register for Healthcare Science Practitioners (HCSP) not covered by statutory regulation.³⁹ The Health and Care Professions Council (HCPC) sets out the Standards of Proficiency, which must be achieved for statutory registration as a Biomedical Scientist on completion of the Life Sciences Practitioner Training Programme (PTP).

Key professional practice learning outcomes are included in the BSc (Hons) programme through its GSP syllabus, thus embedding the standards of professionalism set out in GSP in all aspects of the delivery and assessment of the programme. The GSP syllabus is a common component of all PTP curricula and must be followed throughout the whole training period, with engagement at the appropriate level, depending on the stage of training.

The syllabus is divided into five domains. These align with the five domains of GSP:

- Domain 1: Professional Practice
- Domain 2: Scientific Practice
- Domain 3: Clinical Practice
- Domain 4: Research, Development and Innovation
- Domain 5: Clinical Leadership

Each domain contains an overall learning objective, which is described by a number of competence statements. These are presented as:

- knowledge to be acquired and applied;
- practical skills to be demonstrated;
- attitudes and behaviours to be consistently displayed.

³⁹ Practitioners who have completed an HCPC-approved PTP course in Life Sciences are eligible to apply for Statutory Regulation as Biomedical Scientists.

As students progress through the three-year programme they are expected to critically reflect on their performance as they build on and extend the depth and complexity of the knowledge, skills and experience (spiral learning) that underpins professional practice as a HCSP.

Domain 1: Professional Practice

Topic	Professional Practice	GSP reference
Learning objective	By the end of the course the student will be able to practise as an autonomous professional, usually within the context of the multidisciplinary team, applying their knowledge appropriately, exercising their own professional judgement, practising within the legal and ethical boundaries of the role of a HCSP and critically reflecting on and developing their professional practice.	
High-level learning outcome(s)	<p>By the end of the course, the student will be able to:</p> <ul style="list-style-type: none"> • Demonstrate verbally, in written form and in practice, the knowledge and understanding of the professional requirements of a HCSP in the provision of patient-centred care and health care service(s) as described in GSP. 	
Knowledge	<p>By the end of the course students will know, comprehend and apply their knowledge and will be able to:</p> <ol style="list-style-type: none"> 1. Discuss the standards of proficiency of the AHCS and the HCPC and the role of regulation for healthcare professions. 2. Explain the importance of placing the patient at the centre of care and consider services from a user's point of view. 3. Explain the importance of keeping professional knowledge and skills up to date, working within the limits of personal competence. 4. Analyse the ethical, legal and governance requirements arising from working as a HCSP across a range of situations. 5. Summarise and evaluate the evidence to support the high levels of probity required when working at the level of HCSP. 6. Justify the importance of personal health and wellbeing in order to ensure that personal performance and judgement are not affected by their own health. 7. Analyse NHS organisation, policy, values and practice as it affects the provision of healthcare, healthcare science and the patients and populations it serves. 8. Discuss theories of teaching and learning to underpin the role of the HCS workforce in education as a learner, teacher or trainer, according to the best contemporary clinical and educational standards. 	<p>1.1.1 1.1.4 1.1.5 1.1.6 1.1.7 1.2 1.2.5 1.4.1 1.4.2 2.3.2</p>

Topic	Professional Practice	GSP reference
	9. Explain a range of strategies to ensure that the voice of patients and the public is embedded in all aspects of healthcare, healthcare science and healthcare science education in the academic and work-based setting. 10. Understand the need, where appropriate, to hold indemnity insurance.	
Technical procedures and clinical skills	<p>By the end of the course, the student will be expected to apply in practice a range of professional, technical and clinical skills, and critically reflect on and develop their performance, working within the Standards of Proficiency set by the AHCS and for Biomedical Scientists, the HCPC. They will be able to:</p> <ol style="list-style-type: none"> 1. Work within their agreed scope of practice. 2. Apply their understanding of professional practice with conduct that places the patient at the centre of care in a manner that promotes patient wellbeing and self-care in all academic and work-based activities. 3. Apply their understanding of the role and importance of Continuing Personal and Professional Development (CPPD) to ensure that their professional knowledge and skills are kept up to date. 4. Respond to the ethical, legal and governance requirements arising from working at the level of a HCSP, applying and accruing knowledge and evidence. 5. Work in a manner that demonstrates probity in every aspect of professional practice at all times. 6. Make appropriate judgements to ensure they limit their work or stop practising if their performance or judgement is affected by their health and raise any concerns about the performance of colleagues with their supervisor. 7. Maintain records accurately, comprehensively and comprehensibly in accordance with applicable legislation, protocols and guidelines 8. Raise concerns through appropriate channels if they have evidence to believe that the practice or judgements of colleagues are impaired and are a matter of concern in relation to patient safety. 9. Work in accordance with relevant current NHS policy, guidelines and practice. 	1.1.1 1.1.2 1.1.3 1.1.4 1.1.5 1.1.6 1.1.7 1.1.8 1.1.10 1.2.2 2.2.3 2.2.6 2.2.7 2.3.2 3.2.2 4.1.2
Attitudes, values and behaviours	<p>By the end of the course, the student will be expected to demonstrate the attitudes, values and behaviours of a HCSP and will be able to:</p> <ol style="list-style-type: none"> 1. Apply evidence-based personal and team professional practice that places the patient at the centre 	1.1.1– 1.1.10 1.2

Topic	Professional Practice	GSP reference
	<p>of care.</p> <ol style="list-style-type: none"> 2. Apply knowledge, experience and critical reflection to identify personal development needs using a range of tools, and develop and update action plans to ensure that they keep skills and knowledge up to date. 3. Display a professional commitment to ethical practice, consistently operating within national and local ethical, legal and governance requirements. 4. Apply the principles of GSP and its professional standards, performing to the highest standards of personal behaviour in all aspects of professional practice. 5. Consistently operate in accordance with relevant current NHS policy and practice. 6. Operate consistently within a sphere of personal capability and level of authority, managing personal workload and objectives to achieve quality of care. 	<p>1.3.1 2.2.3 2.2.6 2.2.7 2.2.8 4.1.2 4.1.6</p>

Domain 2: Scientific Practice

Topic	Scientific Practice	GSP reference
Learning objective	By the end of the course, the student will establish and maintain a safe environment in which healthcare science is delivered, drawing on the knowledge, skills, attitudes and behaviours required for safe and effective practice. They will be able to deliver high-quality scientific services in a safe and secure working environment. They will also be able to reflect on their performance or situations and record their action plans as they continually evaluate, review and improve their practice.	
High-level learning outcome(s)	By the end of the course, the student will be able to: <ul style="list-style-type: none"> • Explain and apply the knowledge, skills, values and behaviours required of a HCSP in the delivery of high-quality, evidence-based and patient-centred services in a safe and secure working environment to which they effectively contribute. 	
Knowledge	By the end of the course, the student will know, comprehend and apply the key concepts of the knowledge base relevant to HCS and will be able to: <ol style="list-style-type: none"> 1. Describe information and communication technologies appropriate to the HCS specialism. 2. Explain the principles and practice of quality control, external quality assessment and quality management as applied to relevant areas of healthcare science. 3. Explain the role of audit and the audit cycle and how it is used as a tool to facilitate continuous quality improvement. 4. Discuss and justify relevant health and safety legislation and guidance for the workplace. 	1.4.5 2.2.2 2.2.7 2.2.9 2.3.1- 2.3.4 3.1.17 3.2.1 4.1.2
Technical procedures and clinical skills	By the end of the course, the student will be expected to apply in practice a range of professional, technical and clinical skills and critically reflect on and develop their performance, working within the Standards of Proficiency set by the AHCS and for Biomedical Scientists, the HCPC. They will be able to: <ol style="list-style-type: none"> 1. Apply evidence-based practice, both current and new/emerging, in determining the use of scientific investigations and methods. 	1.1.5 1.4.5 2.1.2 2.1.3 2.2.2 2.2.3

Topic	Scientific Practice	GSP reference
	<ol style="list-style-type: none"> 2. Apply the appropriate HCS knowledge and skills required for safe and effective practice. 3. Perform a range of routine technical and clinical skills relevant to the HCS division and theme in which they are training. 4. Master the use of ICT in relevant areas of healthcare science. 5. Apply and maintain quality standards and related quality control, assessment and management techniques to assure the validity of scientific and technical investigations routinely and assure the quality of personal practice. 6. Participate in scientific and technical audit to determine that investigations and methods are fit for purpose. 7. Practise and promote the importance of health and safety standards in the workplace, prioritising patient safety and the safety of all those working in or accessing the specialism, and identify actions that will improve health and safety, including reducing the risk of infection. 	<p>2.2.4 2.2.6 2.2.7 2.2.8 2.2.9 2.3 3.1.5 3.2.1 4.1.2 4.1.6</p>
Attitudes, values and behaviours	<p>By the end of the course, the student will be able to:</p> <ol style="list-style-type: none"> 1. Consistently practise in accordance with the values described in <i>Good Scientific Practice</i> and the NHS Constitution to ensure high level, safe, effective and compassionate patient-centred care. 	<p>1.1.1- 1.1.11 1.2</p>

Domain 3: Clinical Practice

Topic	Clinical Practice	GSP reference
Learning objective	By the end of the course, the student will be able to deliver high-quality, effective and safe technical clinical services, performing a range of clinical and/or laboratory skills consistent with the required roles, responsibilities and values of a HCSP within their scope of practice.	
High-level learning outcome(s)	<p>By the end of the course, the student will be able to:</p> <ul style="list-style-type: none"> • Explain and demonstrate the need for and the ability to deliver high-quality technical and clinical services in the investigation and management of patients as part of a multidisciplinary team. • Apply and demonstrate those skills, attitudes, values and behaviours, in a variety of settings and with regard to a variety of political, social, technical, economic, organisational and professional contexts, required of a HCSP delivering consistently high-quality technical and clinical services that are targeted to meet the needs of the individual and group needs of patients. 	
Knowledge	<p>By the end of the course, the student will know, comprehend and apply their knowledge and be able to:</p> <ol style="list-style-type: none"> 1. Describe the pathophysiology of common diseases that result in a referral to HCS services in a specific area of practice. 2. Evaluate the contribution of the multidisciplinary team (MDT) to patient care, patient safety and quality outcomes and consider barriers to effective MDT working. 3. Describe the key roles of the healthcare professions that contribute to the MDT in their area of practice. 4. Discuss their role within the MDT and evaluate the clinical effectiveness of the team, reflecting and suggesting as appropriate areas for improvement. 5. Describe typical behaviours of team members and evaluate the clinical effectiveness of the team and suggest areas for improvement as appropriate. 6. Discuss and evaluate the principles and practice of clinical audit as a tool to evaluate the effectiveness of services. 	<p>1.1.4 1.1.5 1.3.2 1.3.6 2.2.2 2.3.4 4.1.2 4.1.10</p>
Technical	By the end of the course, the student will be expected to apply in practice a range of professional,	1.3.2

Topic	Clinical Practice	GSP reference
procedures and clinical skills	<p>technical and clinical skills and critically reflect on and develop their performance, working within the Standards of Proficiency set by the AHCS and for Biomedical Scientists, the HCPC. They will be able to:</p> <ol style="list-style-type: none"> 1. Deliver high-quality technical clinical procedures in the investigation and management of patients. 2. Apply in practice consistently high standards in the technical skills required in the investigation and management of patients and critically reflect on their performance. 3. Assist and where appropriate, perform a range of equipment management skills, e.g. preventative maintenance, fault finding and calibration. 4. Attend and, if appropriate, actively participate in MDT meetings. 5. Assist in the design, data collection, data analysis and reporting within the clinical audit cycle. 	<p>1.3.6 2.1.3 2.1.4 2.1.5 2.1.6 2.2.1- 2.2.4 2.2.6- 2.2.9 4.1.10</p>
Attitudes, values and behaviours	<p>By the end of the course, the student would be expected to demonstrate the attitudes and behaviours necessary for the role of a HCSP and will be able to:</p> <ol style="list-style-type: none"> 1. Commit to the provision of high standards of technical clinical services, taking account of the political, social, technical, economic, organisational and professional environment, and act as a positive role model. 2. Promote the importance of active participation of HCSPs in MDT meetings. 3. Advocate clinical audit as a tool to evaluate and optimise clinical services and communicate ideas and aspirations. 	<p>1.1.4 1.1.5 1.1.6 1.1.11 1.2.5 1.3.2 2.3 4.1.10</p>

Domain 4: Research, Development and Innovation

Topic	Research, Development and Innovation	GSP reference
Learning objective	By the end of the course, the student will be able to justify the need for evidence-based practice, audit and innovation to support the development and improvement of patient services and patient safety and will demonstrate the necessary knowledge, skills, attitudes, values and behaviours in relation to research, development and innovation in the pursuit of improved patient safety and care.	
High-level learning outcome(s)	<p>By the end of the course, the student will be able to:</p> <ul style="list-style-type: none"> • Explain the need for evidence-based practice, audit and innovation, within appropriate governance and ethical frameworks, in the delivery, development and improvement of patient-centred services. • Undertake or participate in personal or collaborative research, audit, development (professional or service) and innovation, applying the knowledge, skills, attitudes, values and behaviours required of a HCSP. 	
Knowledge	<p>By the end of the course, the student will know, comprehend and apply their knowledge and be able to:</p> <ol style="list-style-type: none"> 1. Know the principles and applications of scientific enquiry, including the evaluation of treatment efficacy, the research process and research methodologies. 2. Know the value of research to the critical evaluation of practice research. 3. Describe and justify how and why research and development is undertaken within governance and ethical frameworks. 4. Explain ways in which the individual HCSP can support the wider healthcare team in the spread and adoption of innovative technologies and practice. 	<p>1.1.5 4.1.1 4.1.2 4.1.3 4.1.6 4.1.7 4.1.8 4.1.9 4.1.10</p>
Technical procedures and clinical skills and procedures	<p>By the end of the course, the student will be expected to apply in practice a range of professional, technical and clinical skills and critically reflect on and develop their performance, working within the Standards of Proficiency set by the AHCS and for Biomedical Scientists, the HCPC. They will be able to:</p> <ol style="list-style-type: none"> 1. Apply research methods and techniques to initiate and complete a research project, development or innovation project. 2. Evaluate research and other evidence to inform own practice. 	<p>4.1.3 4.1.6 4.1.8 4.1.9</p>

Topic	Research, Development and Innovation	GSP reference
Attitudes, values and behaviours	<p>By the end of the course, the student would be expected to demonstrate the attitudes and behaviours necessary for the role of a HCSP and will:</p> <ol style="list-style-type: none"> 1. Work with appropriate research and development governance, legal and ethical frameworks. 2. Promote the need for evidence-based practice to support the provision of high-quality care. 3. Be flexible and adaptable to the introduction of new scientific, technical, diagnostic, monitoring, treatment and therapeutic procedures into routine practice. 4. Keep up to date as part of a commitment to CPPD. 	<p>1.1.4 1.1.5 4.1.1 4.1.2 4.1.4 4.1.6</p>

Domain 5: Clinical Leadership

Topic	Clinical Leadership	GSP reference
Learning objective	The NHS Leadership Academy states that: ' <i>The Healthcare Leadership Model is to help those who work in health and care to become better leaders. It is useful for everyone – whether you have formal leadership responsibility or not, if you work in a clinical or other service setting, and if you work with a team of five people or 5,000.</i> ' By the end of this course the student should therefore begin to develop an understanding of the key concepts of leadership; the skills, qualities and abilities of effective leaders and how their personal qualities affects the experiences of patients and service users, the organisation, the quality of care provided and the reputation of the organisation itself. They will be introduced to assessment tools to measure their personal qualities and critically reflect on performance to identify their own personal qualities, including values, principles and assumptions, developing action plans to adapt personal behaviour as necessary.	
High-level learning outcome(s)	By the end of the course, the student will: <ul style="list-style-type: none"> Understand the principles underpinning the current NHS clinical leadership frameworks⁴⁰ and the associated personal qualities and the impact of personal qualities on the culture and climate within which the student, their colleagues and teams work. 	
Knowledge	By the end of the course, the student will know, comprehend and apply their knowledge and be able to: <ol style="list-style-type: none"> Explain the difference between leadership and management. Discuss the skills, qualities and abilities of effective leaders. Describe the impact of personal qualities on the culture and climate in which the student, their colleagues and teams work. Discuss how what the student does and how they behave affects the experiences of patients/service users, the organisation, the quality of care provided, and the reputation of the organisation itself. 	5.1.1- 5.1.6 5.1.10 5.1.12
Technical	By the end of the course, the student will be expected to apply in practice a range of professional,	

⁴⁰ http://www.leadershipacademy.nhs.uk/wp-content/uploads/dlm_uploads/2014/10/NHSLeadership-LeadershipModel-colour.pdf

Topic	Clinical Leadership	GSP reference
procedures and clinical skills	<p>technical and clinical skills and critically reflect on and develop their performance, working within the Standards of Proficiency set by the AHCS and for Biomedical Scientists, the HCPC. They will be able to:</p> <ol style="list-style-type: none"> 1. Identify and develop skills in listening, observing and using feedback. 2. Identify conflict style and develop skills in negotiating and mediating conflicts. 	
Attitudes, values and behaviours	<p>By the end of the course, the student would be expected to demonstrate the personal qualities that underpin the practice of a HCSP, namely self-awareness, e.g. self-confidence; self-control; self-knowledge; personal reflection; resilience and determination. Students should be aware of their strengths and limitations in these areas and how these will have a direct effect on how they behave and interact with others. Students will be expected to critically reflect on performance to identify their own personal qualities, including values, principles and assumptions, developing action plans to adapt personal behaviour as necessary.</p>	<p>1.3.1 1.3.2 1.3.3 1.3.4 1.3.5 1.3.6</p>

SECTION 4: GENERIC PROFESSIONAL, SCIENTIFIC AND TECHNICAL MODULES

This section covers the three generic modules that will be studied by all students undertaking an MSC accredited BSc (Hons) Healthcare Science integrated degree.

- Year 1–3: Professional Practice [10 credits per year developing learning at Level 4, Level 5 and Level 6]
- Year 1: Scientific Basis of Healthcare Science [60 credits]: Level 4
- Year 2: Research Methods [10 credits]: Level 5
- Year 3: Research Project [30 credits]: Level 6

GM(i): Professional Practice (Years 1, 2 and 3)

Topic	Professional Practice [10 credits per year]	GSP reference
Learning objective	<p>The overall aim of this module is to ensure that the student has the underpinning knowledge, understanding and skills and consistently demonstrates the values, attitudes and behaviours to perform a range of technical and clinical skills working within the Standards of Proficiency set by the AHCS and for Biomedical Scientists, the HCPC</p> <p>Professional practice should be embedded in every aspect of the three-year programme to enable the student to develop and build their professional practice as they progress through the programme. In line with the concept of a spiral curriculum, students will encounter the same subject in different parts of the curriculum, but across the three-year programme the complexity will increase and the student will reinforce previous learning, gradually increasing their knowledge, skills and confidence.</p>	
Knowledge	<p>On successful completion of this programme the student will:</p> <p>Professional practice</p> <ol style="list-style-type: none"> 1. Describe the values and principles that underpin the shared UK NHS and Social Care services culture, including the HEE five key workforce characteristics and the NHS Constitution, especially the values relating to compassion, transparency, candour, openness and leadership.^{41,42} 2. Describe the role of the HCSP and how HCSPs contribute to the delivery of high-quality healthcare. 3. Explain the importance of placing the patient at the centre of care and discuss how this translates into practice. 4. Discuss the impact of culture, equality and diversity on practice. 5. Discuss how HCS services can work in partnership with patients and service users to ensure the 	<p>1.1 1.2 1.3 2.3.4 4.1.1 5.1.2 5.1.4</p>

⁴¹ Investing in People – Workforce Plan for England

⁴² Maps to Francis Report, Recommendation 2 – also to The Speaking Up Charter

Topic	Professional Practice [10 credits per year]	GSP reference
	<p>views of patients are central to delivering, develop and maintaining high-quality, safe services.</p> <p>Legal and ethical boundaries of practice</p> <ol style="list-style-type: none"> 6. Analyse the ethical, legal and governance requirements arising from working at the level of a HCSP across a range of situations. 7. Discuss the principles, guidance and law with respect to medical ethics, patient confidentiality (the limits of the concept of confidentiality), informed consent, equality and diversity, safeguarding, use of chaperones. 8. Summarise the procedures to follow if cautioned, charged with a criminal offence, suspended, or have restrictions placed on personal scientific, clinical or professional practice. 9. Justify the importance of personal health and wellbeing to ensure personal performance and judgement is not affected by their own health. <p>Patient safety and quality</p> <ol style="list-style-type: none"> 10. Explain the importance of protecting patients from risk or harm presented by another person's conduct, performance or health, and what to do when concerns are identified or raised. 11. Discuss how to how to share information appropriately with patients, carers, colleagues and other services to support the quality of care. 12. Explain the common causes of error and understand the critical incident reporting process, recognising the importance of promoting a no-blame culture. 13. Explain approaches to procedures for identifying and reporting critical incidents and receiving and responding to complaints. 14. Explain current national and local policy issues as they affect the service provided by HCSPs and the HCS workforce. 15. Discuss their role in healthcare science and its contribution to the delivery of high-quality healthcare. 16. Explain why it is important that the HCS workforce takes reasonable care of health and safety at 	

Topic	Professional Practice [10 credits per year]	GSP reference
	<p>work for themselves, members of their team and others.</p> <p>Communication skills</p> <p>17. Explain the principles that underpin effective verbal and written communication within their role, including those who do not have English as a first language and communication with people with sensory and cognitive impairments.</p> <p>Leadership</p> <p>18. Explain the concept of shared leadership and the associated personal qualities and behaviours that promote shared leadership and apply this knowledge within the work-base.</p> <p>Continuing personal and professional development</p> <p>19. Explain the importance of keeping professional knowledge and skills up to date and working within the limits of their personal competence.</p> <p>20. Justify the rationale for engaging in continuing personal and professional development (CPPD) and critical reflective practice, and evaluate methods for recording, learning, developing and evaluating action plans.</p>	
Technical skills and procedures	By the end of the course, the student will be expected to apply in practice a range of professional, technical and clinical skills and critically reflect on and develop their performance, working within the Standards of Proficiency set by the AHCS and for Biomedical Scientists, the HCPC.	1.1 1.2 1.3

GM(ii): Scientific Basis of Healthcare Science (Year 1)

This module contains the specific learning outcomes from the 60-credit module in all other MSC BSc programmes that APT students may not cover in the RSPH Level 4 programme.

The overall aim of this module within the APT programme is to ensure that the student has the underpinning of knowledge of key aspects of healthcare science that will not be covered in the RSPH Level 4 curriculum. Some additional learning outcomes from this module will also be covered at the beginning of Year 2 for those students progressing to the Foundation degree.

Topic	Scientific Basis of Healthcare Science [10 credits]	GSP reference
Learning objective	<p>The overall aim of this introductory module is to provide all students with a broad knowledge and understanding of clinical science and scientific knowledge, contextualised to the practice of healthcare science and the services provided by their HCS division/specialism. Central to this is the contribution of healthcare science to patient care, patient safety, service delivery, research and innovation, often at the cutting edge of science, for example genomics, personalised medicine and clinical bioinformatics. All members of the HCS workforce must understand the impact of their work on patients and patient care and remember that their work has a direct or indirect impact on patient care.</p> <p>As an introductory module it will provide an overview and reinforcement of key concepts with respect to the organisation, structure and function of the body, and important areas such as the psychosocial aspects of health and disease, clinical pharmacology and therapeutics, genomics, personalised/precision medicine and clinical bioinformatics. Achievement of each learning outcome provides the building blocks for the division- and specialism-specific learning to follow, ensuring a common starting point for all students.</p> <p>This module is designed to provide students with broad scientific knowledge to underpin their future practice to provide the foundations for study in any area of healthcare science.</p>	
Knowledge	<p>On successful completion of this module the student will:</p> <ol style="list-style-type: none"> 1. Explain the principles and core concepts of clinical genetics, genomics and personalised/precision medicine and discuss in the context of patients referred to HCS services. 	<p>1.1.4 1.1.5 1.1.6</p>

Topic	Scientific Basis of Healthcare Science [10 credits]	GSP reference
	<ol style="list-style-type: none"> 2. Explain the basis of epidemiology, public health, health prevention and health protection, and discuss in relation to the role of the public health function and HCS services. 3. Explain the principles of clinical pharmacology and therapeutics and discuss in relation to patients referred to HCS services. 4. Explain the principles and core concepts of the sociology of health and illness and discuss those relevant to patients typically referred to HCS services. 5. Explain the basic principles of physics and clinical engineering that underpin healthcare science and discuss in relation to patients referred to HCS services. 6. Explain the principles of clinical bioinformatics and health informatics and discuss their impact on healthcare, health and HCS services. 7. Explain a range of mathematical and statistical techniques that underpin the practice of healthcare science. 8. Keep up to date with developments in healthcare and healthcare science, identifying new and innovative scientific and technical developments and their application in healthcare science. 	2.1.6
Technical skills and procedures	<p>By the end of this module the student will be expected to apply in practice a range of technical and clinical skills and critically reflect on and develop their performance, working within the Standards of Proficiency set by the AHCS and for Biomedical Scientists, the HCPC.</p> <p>Students will be expected to apply and develop their knowledge as they progress through the programme in their academic and work-based learning. They will also be expected to develop a range of study skills, including time management, organisational skills, using the library, search engines, self-directed learning, critical analysis and avoiding plagiarism.</p>	1.1.4 1.1.5 1.1.6 2.2.4

GM(iii): Research Methods (Year 2)

Topic	Research Methods [10 credits]	GSP reference
Learning objective	<p>The overall aim of this module is to ensure that the student has the knowledge, skills and experience of the place of research, development and innovation in the NHS in improving patient care, including prevention, diagnostics, treatment and service delivery. On completion of this module and the research project, students should be able to generate ideas; assess, plan, conduct, evaluate, interpret and report research and innovation projects, which includes original research; and disseminate the findings and, where appropriate, the adoption of the findings.</p> <p>Students will extend their knowledge and application of mathematics, statistics and data presentation techniques gained in Year 1. This module will provide the underpinning knowledge to support the final year research project.</p>	
Knowledge	<p>On successful completion of this module the student will:</p> <ol style="list-style-type: none"> 1. Explain and justify the process and importance of research, innovation and audit to the NHS and healthcare science. 2. Explain the current UK ethical, legal and governance frameworks within which human and animal research can be conducted. 3. Explain the principles of evidence-based medicine, literature and systematic review, and the development of clinical guidelines. 4. Describe a range of study designs and discuss the appropriate use of each method. 5. Describe and justify the use of statistical techniques to analyse data and a range of dissemination methods to share research findings. 	<p>4.1.1 4.1.7</p>

GM(iv): Research Project (Year 3)

Topic	Research Project [30 credits]	GSP reference
Learning objective	<p>The overall aim of this module, building on the Research Methods module, is for the student to apply the methods and techniques that they have learned to review, consolidate, extend and apply their knowledge and understanding as they initiate and complete a research project. The research project may span scientific or clinical research, translational research, operational and policy research, clinical education research, innovation, service development, service improvement, or supporting professional service users.</p> <p>Research projects should be designed to take into account the current research programmes of the academic and/or work-based departments in which the research is to be conducted.</p>	
Knowledge	<p>By the end of this module the student will:</p> <ol style="list-style-type: none"> 1. Discuss the range of research undertaken in health and healthcare science and how these are applied in the specialism in which the student is based. 2. Describe the ethical and governance approval processes required to undertake the planned research project. 	<p>1.1.4 1.1.5 4.1.1 4.1.2</p>
Technical skills and procedures	<p>On successful completion of this module and working within legal and ethical frameworks the student will be able to:</p> <ol style="list-style-type: none"> 1. Work with a supervisor to design, plan and undertake a research project to test a hypothesis from conception to completion/archiving in accordance with ethical and research governance regulations, drawing on expert advice where necessary and involving patients and service users. 2. Analyse the data using appropriate methods and statistical techniques and interpret, critically discuss and draw conclusions from the data. 3. Prepare a project report that describes and critically evaluates the research project, clearly identifying the strengths and weaknesses. 4. Present a summary of the research project, responding to questions appropriately. 5. Prepare a summary of the research project suitable for non-specialist and lay audiences. 	<p>4.1.1 4.1.2 4.1.3 4.1.6 4.1.8 4.1.9</p>
Technical	<p>On successful completion of this module and working within legal and ethical frameworks the student</p>	<p>2.1.6</p>

Topic	Research Project [30 credits]	GSP reference
skills and procedures	<p>will be able to:</p> <ol style="list-style-type: none"> 1. Undertake an evidence-based literature review, critically appraise the output, draw appropriate conclusions and prepare a written report the findings, and, where appropriate, use the findings to inform the 3rd year research project. 2. Present the outcome of the literature review to a non-scientific and scientific audience. 	<p>2.2.4 4.1.1 4.1.2 4.1.7 4.1.9</p>

SECTION 5: ANATOMICAL PATHOLOGY SYLLABUS

SECTION 5.1: Attitudes, Behaviours and Values

The trainee will be expected to critically reflect on their professional practice and consistently demonstrate the professional attributes and insights required of a HCSP.

The following learning outcomes should be achieved, as appropriate to the modules within the APT syllabus:

- Work within the Standards of Conduct, Performance and Ethics set by the AHCS in *Good Scientific Practice*.
- Show respect and behave in accordance with *Good Scientific Practice*.
- Bring the highest levels of knowledge and skill at times of basic human need when care and compassion are what matters most.
- Recognise the sensitivity required when working with the parents and other relatives of a deceased child, being respectful and tactful when discussing the process of post-mortem examination, viewing of the body and funeral arrangements.
- Use sensitive language with parents whose baby has died. For example, always using the word baby rather than fetus for a baby born dead before 24 completed weeks, and always using the baby's name where one has been given.
- Appreciate the impact of anatomical pathology services on the patient pathway and outcome.
- Act in a calm, controlled and reassuring manner.
- Behave in a professional manner in matters of attendance and appearance.
- Recognise the limits of professional competence, seeking help and support and referring to colleagues appropriately.
- Maintain confidentiality of patient information and data.
- Value social diversity and its relationship to service provision in healthcare.
- Work effectively within a multidisciplinary team developing and maintaining professional relationships.
- Develop a balance between reflective practice and active exploration in personal learning and take responsibility for personal learning.
- Develop, maintain and improve personal knowledge and skills.
- Take responsibility for personal learning.
- Behave in a professional manner in matters relating to cultural, ethical and legal diversity.
- Respect and understand individuals' beliefs and ways of coping with bereavement.
- Value social diversity and its relationship to service provision in APT.
- Present complex ideas in simple terms in both oral and written formats.

- Actively seek accurate and validated information from all available sources.
- Evaluate a wide range of data to assist with judgements and decision making.
- Contribute to and cooperate with work of multidisciplinary teams.
- Consistently operate within sphere of personal competence and level of authority.
- Manage personal workload and objectives to achieve quality of care.
- Consistently work safely, demonstrating being precise and paying attention to detail.
- Communicate effectively within the healthcare environment and clinical team, adapting communication to meet varying needs and overcoming barriers to understanding.
- Communicate scientific information at a level appropriate to the audience, including the public.
- Use correct terminology appropriate to healthcare, healthcare science, APT and the specialist areas where work placements are undertaken.
- Listen and extract relevant information.
- Encourage feedback from the relatives, the public and staff, welcome it and use it to improve services.
- Establish and influence the culture of health and safety in the workplace.
- Recognise, where necessary, the urgency of a situation and seek help and advice.
- Show a positive attitude to lifelong learning and professional development.

The PTP syllabus for Anatomical Pathology Technology follows:-

SECTION 5.2: Year 1 BSc (Hons) Programme: Royal Society for Public Health

Level 4

Anatomical Pathology Technology

Year 1

Specialist Module APT 4.1: Common Human Pathology for Anatomical Pathology Technologists [15 credits]

This module addresses the common human pathology that will be encountered by the APT during their assistance at post-mortem examination. The trainee will understand how the correct external and internal examination of the body and the specimens collected during post-mortem examination can assist in determining the cause of death.

Summary of Learning Outcomes

To achieve this qualification a candidate must:

- 1 Understand how external observation of the human body and organs during post-mortem examination can help to determine the cause of death, by being able to meet the following assessment criteria (GSP Mapping: 2.1.1, 2.1.3–2.1.6):**
 - 1.1 Describe the common pathological signs of disease and trauma that can be observed externally on the human body during post-mortem examination.
 - 1.2 Describe the common pathological signs of disease and trauma that can be observed prior to dissection on organs of the human body during post-mortem examination.
 - 1.3 Explain how the common pathological signs of disease and trauma that can be observed externally on the human body during post-mortem examination can help to determine the cause of death.
 - 1.4 Explain how the common pathological signs of disease and trauma that can be observed externally on organs of the human body during post-mortem examination can help to determine the cause of death.

- 2 Understand how observation of the dissected human body and organs during post-mortem examination can help to determine the cause of death, by being able to meet the following assessment criteria (GSP Mapping: 3.2.1,3.2.2):**
 - 2.1 Describe the common pathological signs of disease and trauma that can be observed on the dissected human body and its organs during post-mortem examination.
 - 2.2 Explain how the common pathological signs of disease and trauma that can be observed on the dissected human body during post-mortem examination can help to determine the cause of death.
 - 2.3 Explain how the common pathological signs of disease and trauma that can be observed on dissected organs of the human

body during post-mortem examination can help to determine the cause of death.

3 Understand how the use of laboratory analysis of material obtained during post-mortem examinations can help determine the cause of death, by being able to meet the following assessment criteria (GSP Mapping: 3.1.13–3.1.15, 1.3.1):

- 3.1 Describe common laboratory analytical techniques that are used in post-mortem examinations to help determine the cause of death.
- 3.2 Explain how common laboratory analytical techniques that are used during post-mortem examinations help determine the cause of death.

Indicative Content

1 External observation of the human body and organs at post-mortem

- 1.1 *Common pathological signs of disease and trauma on the human body:* macroscopic evidence of disease, trauma, abnormalities and surgical evidence; differentiation between recent and historical evidence.
- 1.2 *Common pathological signs of disease and trauma on organs of the human body:* visible external signs of disease, trauma and abnormalities of organs.
- 1.3 *How the common pathological signs of disease and trauma that can be observed externally on the human body during post-mortem examination can help to determine the cause of death:* link between possible cause of death and external evidence of disease and/or trauma on the body; indicative signs of common diseases and trauma likely to be the cause of death.
- 1.4 *How the common pathological signs of disease and trauma that can be observed externally on organs of the human body during post-mortem examination can help to determine the cause of death:* link between possible cause of death and external evidence of disease and/or trauma on organs; indicative signs of common diseases and trauma likely to be the cause of death.

2 Observation of the dissected human body and organs during post-mortem examination

- 2.1 *The common pathological signs of disease and trauma that can be observed on the dissected human body during post-mortem examination:* common pathological signs of disease and trauma that can be observed on the dissected human body and its organs during post-mortem examination, including respiratory, cardiac, renal and gastrointestinal disease; pneumonia, cardiac tamponade, ischaemic bowel; ischaemia, cancer and raised intracranial pressure.
- 2.2 *How the common pathological signs of disease and trauma that can be observed on the dissected human body during*

post-mortem examination can help to determine the cause of death: common pathological signs of disease and trauma that can be observed during post-mortem examination, which can either give a definitive cause of death or give direction to a trauma or disease that can be confirmed by further examination either by histological examination or other laboratory tests.

2.3 *How the common pathological signs of disease and trauma that can be observed on dissected organs of the human body during post-mortem examination can help to determine the cause of death: common pathological signs of disease and trauma that can be observed on dissected organs, including pneumonia, myocardial infarction, pulmonary embolus.*

3 Use of laboratory analysis of material obtained during post-mortem examinations

3.1 *Common laboratory analytical techniques that are used during post-mortem examinations to help determine the cause of death: description of techniques such as preparation and sectioning of tissue samples, different staining techniques; immunohistochemistry; preparation and mounting of liquid samples such as blood and urine; isolation and identification of bacteria and viruses; toxicological techniques that can be applied to tissue samples and body fluids.*

3.2 *How common laboratory analytical techniques that are used during post-mortem examinations help determine the cause of death: how analytical techniques used in histology, immunology, microbiology and toxicology can detect presence of pathogens, changes in microscopic structure of organs and raised levels of biochemicals associated with disease and trauma; examples of expected laboratory findings associated with specific diseases.*

Assessment

This module may be assessed by one or more of the following:

- course work
- task-based controlled assessment
- written examination.

Anatomical Pathology Technology

Year 1

Specialist Module APT 4.2: Mortuary Governance

[10 credits]

This module addresses the legal and management requirements relating to the operation of a mortuary. The trainee will also understand how to prepare for incidents that will impact on mortuary function.

Summary of Learning Outcomes

To achieve this qualification a candidate must:

- 1 Understand the legal requirements relating to the operation of a mortuary, by being able to meet the following assessment criteria** (GSP Mapping: 3.1.1–3.1.5):
 - 1.1 Outline the legislative requirements relevant to the licensing of a mortuary.
 - 1.2 Explain the legislative requirements relating to the care and disposal of the deceased.
 - 1.3 Explain the legislative requirements for consent, donation and retrieval of human tissues and organs.
- 2 Understand requirements for the management of a mortuary, by being able to meet the following assessment criteria** (GSP Mapping: 2.3.1, 2.3.2, 4.1.2, 3.1.1–3.1.8):
 - 2.1 Explain how to develop and implement service-level agreements with relevant organisations.
 - 2.2 Outline record-keeping and administration requirements of the mortuary.
 - 2.3 Outline procedures for resource management.
- 3 Know how to prepare for incidents, by being able to meet the following assessment criteria:** (GSP Mapping: 1.1.10, 1.1.2, 1.1.4, 1.1.6)
 - 3.1 Identify four different situations that may require special procedures for the management of deceased individuals or of their organs/body parts.
 - 3.2 Explain procedures for the management of deceased individuals or of their organs/body parts resulting from the incidents identified above.

Indicative Content

- 1 The legal requirements relating to the operation of a mortuary**

- 1.1 *Legislative requirements relevant to the licensing of a mortuary:* outline of current legislative requirements for the licensing of a mortuary; differences in licensing requirements between the four countries.
- 1.2 *Legislative requirements relating to the care and disposal of the deceased:* current legislative requirements for the care and disposal of the deceased, requirements of the Human Tissue Authority (HTA) or successor organisations.
- 1.3 *Legislative requirements for consent, donation and retrieval of human tissues and organs:* current legislative requirements for consent, donation and retrieval of human tissues and organs.

2 Requirements for the management of a mortuary

- 2.1 *How to develop and implement service-level agreements with relevant organisations:* types of service-level agreements; main requirements of service-level agreements; involvement of staff; liaison with relevant organisation; developmental procedures; use of safeguards and guarantees; gaining authorisation and cooperation; implementation stages; compliance with in-house procedures.
- 2.2 *Record-keeping and administration requirements of the mortuary:* legislative and departmental record-keeping and administration requirements; identification of staff members' authority and competence with regard to record keeping and administration.
- 2.3 *Procedures for resource management:* resource management requirements within the mortuary; types of resources, to include staff, equipment and consumables; procedures for ensuring resources are used efficiently and effectively.

3 How to prepare for incidents

- 3.1 *Situations that may require special procedures for the management of deceased individuals or of their organs/body parts:* situations such as pandemics, high levels of fatality, deaths caused by highly virulent pathogens, deaths that may elicit a high level of media interest, deaths requiring high levels of containment.
- 3.2 *Procedures for the management of deceased individuals or of their organs/body parts resulting from the incidents identified above:* special procedures for management of deceased individuals or of their organs/body parts explained, such as use of emergency or temporary mortuaries, liaison with external agencies, high-level containment procedures and quarantine procedures.

Assessment

This module may be assessed by one or more of the following:

- course work
- task-based controlled assessment

- written examination.

Anatomical Pathology Technology

Year 1

Specialist Module APT 4.3: Quality Management in the Mortuary

[10 credits]

This module introduces the trainee to the principles of quality management and the ways in which these principles should be applied to achieve quality standards in the mortuary. The trainee will also understand the importance of demonstrating good practice in mortuary function.

Summary of Learning Outcomes

To achieve this qualification a candidate must:

- 1 Understand the principles of quality management, by being able to meet the following assessment criteria (GSP Mapping: 2.3.1–2.3.4):**
 - 1.1 Describe the principles of quality management.
 - 1.2 Explain the benefits of quality management in a mortuary setting.
- 2 Understand the quality management systems that are applicable to mortuaries, by being able to meet the following assessment criteria (GSP Mapping: 2.3.1–2.3.4):**
 - 2.1 Identify the quality management systems, statements and protocols that are applicable to the mortuary.
 - 2.2 Explain how the quality management systems and protocols are applied in the mortuary.
 - 2.3 Explain how the quality management systems and protocols are monitored.
- 3 Know how to identify and promote good practice in the mortuary, by being able to meet the following assessment criteria (GSP Mapping: 2.1.1, 2.1.6, 2.2.1, 2.2.2, 2.2.5, 2.3.1):**
 - 3.1 Explain how good practice in the mortuary can be identified.
 - 3.2 Outline methods for promoting good practice in the mortuary.
 - 3.3 Describe methods for the audit and review of quality management systems and protocols.

Indicative Content

1 The principles of quality management

- 1.1 *Principles of quality management:* quality management principles are a set of comprehensive and fundamental rules for

leading and operating an organisation aimed at continually improving performance over the long term by focusing on clients and service provision while addressing the needs of all other stakeholders, including employees.

- 1.2 *Benefits of quality management in a mortuary setting:* customer focus, leadership, involvement of people, process approach, system approach to management, continual improvement, factual approach to decision making, mutually beneficial supplier relationships.

2 Quality management systems that are applicable to mortuaries

- 2.1 *Quality management systems, statements and protocols that are applicable to the mortuary:* quality management systems, statements and protocols applicable to the mortuary are identified.
- 2.2 *How the quality management systems and protocols are applied in the mortuary:* application of the quality management systems and protocols with reference to named examples.
- 2.3 *How the quality management systems and protocols are monitored:* monitoring arrangements and procedures for the quality management systems and protocols to include staff involvement and reporting, methodologies.

3 How to identify and promote good practice in the mortuary

- 3.1 *How good practice in the mortuary can be identified:* methods for identifying good practice, such as obtaining feedback, observation in the workplace, use of auditors and external consultants.
- 3.2 *Methods for promoting good practice in the mortuary:* methods such as staff meetings, focus groups, staff training.
- 3.3 *Methods for the audit and review of quality management systems and protocols:* audit and review periods; documentation; methodology; staff involvement; reporting procedures; implementing recommendations.

Assessment

This unit may be assessed by one or more of the following:

- course work
- task-based controlled assessment
- written examination.

Anatomical Pathology Technology

Year 1

Specialist Module APT 4.4: Advanced Mortuary Practice

[15 credits]

This module addresses advanced mortuary practice. The trainee will understand the role of imaging in mortuary practice; the importance of providing support to the bereaved; and how to prepare for non-standard post-mortem examination.

Summary of Learning Outcomes

To achieve this qualification a candidate must:

- 1 Understand the role of imaging in mortuary practice, by being able to meet the following assessment criteria (GSP Mapping: 1.3.1, 1.3.2, 3.1.7, 3.2.):**
 - 1.1 Identify imaging techniques that are relevant to current mortuary practice.
 - 1.2 Explain how the identified imaging techniques can be applied to mortuary practice.
 - 1.3 Outline operational procedures for the use of the identified imaging techniques.

- 2 Understand how to provide support to the bereaved, by being able to meet the following assessment criteria (GSP Mapping: 1.1.1–1.1.3, 1.1.9, 1.1.10, 1.2.1):**
 - 2.1 Describe the facilities required in a mortuary for formal identification and viewing of the deceased by the bereaved.
 - 2.2 Explain how religion and culture affect arrangements for caring for, identifying and viewing the deceased.
 - 2.3 Explain the role of a bereavement service in providing support to the bereaved.
 - 2.4 Identify guidance and legislation applicable to bereavement support in the mortuary.

- 3 Understand the requirements of specialised post-mortem examinations, by being able to meet the following assessment criteria (GSP Mapping: 1.1.6–1.1.11, 1.2.3, 3.1.6–3.1.8, 2.2.4):**
 - 3.1 Explain the procedures for forensic post-mortem examinations.
 - 3.2 Explain procedures for paediatric/perinatal post-mortem examinations.
 - 3.3 Explain procedures for neuropathological post-mortem examinations.
 - 3.4 Explain procedures for danger of infection (high-risk) post-mortem examinations.

Indicative Content

1 The role of imaging in mortuary practice

- 1.1 *Imaging techniques that are relevant to current mortuary practice:* techniques such as X-ray, computed tomography (CT) scans, magnetic resonance imaging (MRI) scans, fluoroscopy, photography.
- 1.2 *How the identified imaging techniques can be applied to mortuary practice:* how the above techniques can be used to identify injuries and trauma within the body, such as fractures, skeletal anomalies, soft tissue injuries, artery occlusions, tumours; identification and location of foreign bodies such as bullets, lead shot, shrapnel, implants; identification of lines, stents and pacemakers.
- 1.3 *Operational procedures for the use of the identified imaging techniques:* operational procedures for the use of imaging techniques in mortuary practice.

2 How to provide support to the bereaved

- 2.1 *Facilities required in a mortuary for formal identification and viewing of the deceased by the bereaved:* facilities required for formal identification and viewing of the deceased, to include facilities for viewing of infants and individuals whose death was sudden or violent.
- 2.2 *How religion and culture affect arrangements for caring for, identifying and viewing the deceased:* how religion and culture affect treatment of the deceased and bereaved, to include requirements of the major religions.
- 2.3 *Role of a bereavement service in providing support to the bereaved:* function and role of bereavement services, role of the APT in facilitating contact with bereavement services; provision of expert advice and counselling.
- 2.4 *Guidance and legislation applicable to bereavement support in the mortuary:* current guidance and legislation affecting bereavement support in the mortuary.

3 Requirements of specialised post-mortem examinations

- 3.1 *Procedures for forensic post-mortem examinations:* legal requirements; DNA sampling; scene contamination; role of the forensic pathologist and the APT; identification of the deceased by dental and fingerprint evidence; role of scene of crime officers post-mortem and at the post-mortem examination; evidence chain and corroboration.
- 3.2 *Procedures for paediatric/perinatal post-mortem examinations:* genetic anomalies and syndromes; development of the embryo, stages of development of the fetus/unborn baby; specialist reconstruction techniques; requirement for samples and their significance.
- 3.3 *Procedures for neuropathological post-mortem examinations:* brain anatomy, cranial nerves, spinal cord and major nerves, dissection of the nervous system; common neurological disorders; requirement for samples and their significance.
- 3.4 *Procedures for danger of infection (high-risk) post-mortem examinations:* categories of infection; safe systems of work required for category 3 infections; use of personal protective equipment and other appropriate equipment; decontamination

and disinfection procedures.

Assessment

This unit may be assessed by one or more of the following:

- course work
- task-based controlled assessment
- written examination.

Anatomical Pathology Technology

Year 1

Specialist Module APT 4.5: Health and Safety in the Mortuary

[10 credits]

This module addresses the important topic of health and safety in the mortuary. The trainee will understand the process and procedures for establishing safe practice, and the importance of infection control and audit as means of assuring safe practice.

Summary of Learning Outcomes

To achieve this qualification a candidate must:

- 1 Understand the process by which health and safety is managed in a mortuary, by being able to meet the following assessment criteria** (GSP Mapping: 1.1.6, 1.4.1, 1.4.5, 2.2.7, 5.1.3):
 - 1.1 Explain the role of health and safety policies in managing health and safety.
 - 1.2 Explain the role of risk assessments and safe systems of work in the management of health and safety.
 - 1.3 Describe management procedures and documentation used to maintain and improve health and safety standards in the mortuary.
 - 1.4 Outline sources of information and instructions on health and safety and where they are found.

- 2 Understand procedures for developing and implementing safe systems of work in a mortuary, by being able to meet the following assessment criteria** (GSP Mapping: 1.3.3, 1.4.1, 2.3.1):
 - 2.1 Outline procedure for the development, implementation and recording of safe systems of work.
 - 2.2 Construct a safe system of work for four tasks and procedures specific to a mortuary, to include tasks involving biological, chemical and physical hazards.

- 3 Know how to manage infection control procedures in the mortuary, by being able to meet the following assessment criteria** (GSP Mapping: 2.1.2, 2.2.1):
 - 3.1 State how biological agents are categorised in terms of their risk to health.
 - 3.2 Explain the main requirements of current relevant guidance as it relates to infection control.
 - 3.3 Outline procedures for infection control in the mortuary.

- 4 Know how to carry out a review of health and safety in a mortuary, by being able to meet the following assessment**

criteria (GSP Mapping: 2.3.1–2.3.4):

- 4.1 Explain procedures for reviewing the mortuary's practices and policies with regard to health and safety.
- 4.2 Explain the principles of a health and safety audit.
- 4.3 State how changes can be implemented following a review of risk assessments, safe systems of work and incidents.

Indicative Content

1 The process by which health and safety is managed in a mortuary

- 1.1 *Role of health and safety policies in managing health and safety:* health and safety policies of relevance to mortuary practice, such as moving and handling, infection control, violence and aggression; purpose and role of these policies in protecting the health and safety of staff and visitors to the mortuary.
- 1.2 *Role of risk assessments and safe systems of work in the management of health and safety:* purpose and role of risk assessments and safe systems of work; different types of risk assessment; examples of the application of risk assessments and safe systems of work.
- 1.3 *Management procedures and documentation used to maintain and improve health and safety standards in the mortuary:* management procedures such as maintaining an awareness of health and safety issues and legislation; health and safety committees; review of accidents and near-miss incidents; observation of staff; staff training and refresher training.
- 1.4 *Sources of information and instructions on health and safety and where they are found:* sources such as Health and Safety Executive (HSE), Health Protection Agency (HPA) and manufacturers' safety data sheets.

2 Procedures for developing and implementing safe systems of work in a mortuary

- 2.1 *Procedure for the development, implementation and recording of safe systems of work:* standard procedures for the development, implementation and recording of safe systems of work; guidance on procedures such as that from HSE and other national agencies.
- 2.2 *Construct a safe system of work:* safe systems of work constructed to conform to best practice requirements of HSE, HPA, HTA, or other national and local agencies as applicable.

3 How to manage infection control procedures in the mortuary

- 3.1 *How biological agents are categorised in terms of their risk to health:* the Approved List of biological agents as set out by the Advisory Committee on Dangerous Pathogens under Section 15 of the Health and Safety at Work etc Act. 1974.
- 3.2 *Main requirements of current relevant guidance as it relates to infection control:* requirements of current guidance such as use of PPE, 'sharps' policy, containment, disposal, cleaning and disinfection procedures.
- 3.3 *Procedures for infection control in the mortuary:* categories of infection; safe systems of work required for category 3

infections; use of personal protective equipment and other appropriate equipment; decontamination and disinfection procedures.

4 How to carry out a review of health and safety in a mortuary

- 4.1 *Procedures for reviewing the mortuary's practices and policies with regard to health and safety:* procedures for reviewing the mortuary's practices and policies with regard to health and safety to include internal and external audit, review of safe systems of work and audit of reportable incidents.
- 4.2 *Principles of a health and safety audit:* importance of specificity of audit to individual place of work; what should be included in the audit, such as assessment of risks, accident and near-miss reporting, consideration of the environment and work area, key performance indicators; key staff involved in the audit; audit procedures and documentation.
- 4.3 *How changes can be implemented following a review of risk assessments, safe systems of work and incidents:* how change is implemented following a review of risk assessments, safe systems of work and incidents; Plan-Deliver-Monitor-Review; importance of involving staff and communicating changes to staff; staff training as a result of a change to a safe system of work; monitoring implementation of and compliance with new safe systems of work.

Assessment

This unit may be assessed by one or more of the following:

- course work
- task-based controlled assessment
- written examination.

Anatomical Pathology Technology

Year 1

Specialist Module APT 4.6: Management of Mortuary Function

[10 credits]

This module addresses the management of mortuary function. The trainee will understand the importance of management of the mortuary and how the correct management of data, resources and records contributes to a high-quality mortuary service.

Summary of Learning Outcomes

To achieve this qualification a candidate must:

- 1 Be able to carry out data management, by being able to meet the following assessment criteria (GSP Mapping: 2.1.5, 3.1.8):**
 - 1.1 Identify data management requirements.
 - 1.2 Verify sources of data used in the mortuary.
 - 1.3 Analyse data with the use of standard tools and techniques.
 - 1.4 Comply with procedural requirements regarding the storage and release of data.

- 2. Be able to manage mortuary resources, by being able to meet the following assessment criteria (GSP Mapping: 4.1.5):**
 - 2.1 Ensure procedures are complied with regarding storage and maintenance of resources.
 - 2.2 Maintain adequate stocks of consumables to ensure the mortuary operates efficiently.
 - 2.3 Monitor the use of resources.
 - 2.4 Conduct stock taking of resources as required by mortuary management.
 - 2.5 Review the resource requirements of the mortuary.
 - 2.6 Justify requests for additional resources and equipment.

- 3 Be able to develop and maintain mortuary records, by being able to meet the following assessment criteria (GSP Mapping: 2.1.5, 2.1.6, 2.2.9):**
 - 3.1 Identify the record-keeping requirements of the mortuary.
 - 3.2 Store, maintain and retrieve records appropriately.
 - 3.3 Ensure required information is recorded at receipt of deceased persons, during post-mortems and at disposal of body.
 - 3.4 Ensure that confidentiality of records is maintained.

3.5 Ensure that arrangements for record keeping comply with legislative and regulatory requirements.

4 Be able to maintain the quality of mortuary services, by being able to meet the following assessment criteria (GSP

Mapping: 1.1.11, 2.3.1–2.3.4, 5.1.11):

4.1 Monitor the standard of performance in the mortuary against the quality management systems, statements and protocols that are applicable to the mortuary.

4.2 Identify areas of underperformance in the mortuary against accepted quality standards.

4.3 Develop action plans to address any area of underperformance.

4.4 Identify any additional resources required by the mortuary to achieve or maintain the quality standard.

5 Understand why the mortuary should be managed, by being able to meet the following assessment criteria (GSP

Mapping: 1.1.10, 1.2.1, 1.2.3):

5.1 State why data relevant to the work of the mortuary needs to be managed.

5.2 Outline requirements for resource management within the mortuary.

5.3 Outline requirements for record keeping in the mortuary.

5.4 State why the standard of mortuary services needs to be maintained or improved.

Indicative Content

1 Be able to carry out data management

1.1 *Identify data management requirements:* requirements for data management identified, including data that are needed to comply with legislative requirements and data that are needed for compliance with internal policies and to assist with the efficient operation of mortuary.

1.2 *Verify sources of data used in the mortuary:* data are checked for authenticity and accuracy and to confirm that the data are from a reliable source.

1.3 *Analyse data with the use of standard tools and techniques:* data are analysed in accordance with operational and legislative requirements.

1.4 *Procedural requirements regarding the storage and release of data:* legislative and departmental procedural requirements for the storage and release of data are complied with.

2 Be able to manage mortuary resources

2.1 *Ensure procedures are complied with:* procedures relating to the storage and maintenance of resources are complied with, including any requirements to maintain resources at a particular level and to adhere to programmed maintenance of

equipment.

- 2.2 *Maintain adequate stocks of consumables:* adequate stocks of consumables are maintained; stocks are sufficient for routine operations and for any additional short-term upsurge that the mortuary has the capacity to deal with.
- 2.3 *Monitor the use of resources:* resources are monitored by accurate estimates of their use over time and with reference to anticipated work flow in the mortuary.
- 2.4 *Conduct stock taking of resources:* stock taking of resources is carried out to meet the operational requirements of the mortuary and complies with management needs.
- 2.5 *Review the resource requirements:* resource requirements are reviewed on a regular basis; use of new materials and suppliers is investigated as appropriate; resource requirements are matched to budgetary consideration.
- 2.6 *Justify requests for additional resources and equipment:* requests for additional resources and equipment are justified in terms of improvement in quality of service, efficiency and cost.

3 Be able to develop and maintain mortuary records

- 3.1 *Record-keeping requirements:* legislative and in-house record-keeping requirements identified.
- 3.2 *Store, maintain and retrieve records appropriately:* records are stored, maintained and retrieved appropriately; storage of particular records is consistent with the likelihood of having to retrieve the record.
- 3.3 *Ensure required information is recorded:* required information is recorded; legislative requirements are complied with.
- 3.4 *Ensure that confidentiality of records is maintained:* legislative and departmental requirements for maintaining confidentiality of records is complied with.
- 3.5 *Ensure that arrangements for record keeping comply with legislative and regulatory requirements:* all legislative and regulatory requirements for record keeping are complied with.

4 Be able to maintain the quality of mortuary services

- 4.1 *Monitor the standard of performance in the mortuary:* standard of performance in the mortuary monitored in compliance with legislative and management requirements.
- 4.2 *Identify areas of underperformance in the mortuary:* any areas of underperformance identified; extent and possible reasons for underperformance identified.
- 4.3 *Develop action plans to address any area of underperformance:* action plans that will address the area(s) of underperformance are developed.
- 4.4 *Identify any additional resources required by the mortuary:* additional resource requirement identified and justified.

5 Understand why the mortuary should be managed

- 5.1 *Why data relevant to the work of the mortuary needs to be managed:* legal requirements for data collection; verification of data; need for data analysis; procedural requirements.
- 5.2 *Requirements for resource management within the mortuary:* need for appropriate storage and maintenance of resources; stock control; monitoring of use; resources required within the mortuary.
- 5.3 *Requirements for record keeping in the mortuary:* record-keeping requirements; storage, maintenance and retrieval systems for records; recording of information; legislative regulatory and confidentiality requirements of records.
- 5.4 *Why the standard of mortuary services needs to be maintained or improved:* need to adhere to or attain standards set by best practice review.

Assessment

This is a competency unit. Evidence for attainment of the Learning Outcomes must come from assessment in the work environment during the learner's normal work activity. Evidence obtained by simulation is not permitted.

Suitable evidence for attainment of the learning outcomes could include:

- observation in the workplace
- witness statements
- professional discussion
- work journals or diaries.

Evidence for attainment of the knowledge and understanding associated with this unit should come from oral questioning of the learner at the time of assessment of the competence of the learner.

The assessment strategy of Skills for Health applies to this unit.

Anatomical Pathology Technology

Year 1

Specialist Module APT 4.7: Management of the Deceased in the Mortuary

[10 credits]

This module addresses the management of the deceased in the mortuary. The trainee will understand and undertake the procedures for registration, storage and disposal of the deceased. They will also understand and undertake procedures to identify and release tissues from the body.

Summary of Learning Outcomes

To achieve this qualification a candidate must:

- 1 **Be able to carry out procedures for the registration of deceased persons in the mortuary, by being able to meet the following assessment criteria** (GSP Mapping: 1.2.4, 1.4.5, 2.1.6):
 - 1.1 Confirm the identity of the deceased person.
 - 1.2 Follow procedures for the registration of deceased persons in the mortuary.
 - 1.3 Check that all legal requirements relating to registration of deceased persons are complied with.
 - 1.4 Ensure valuables and property belonging to deceased persons are correctly recorded and stored

- 2 **Be able to carry out procedures for the storage of deceased persons in the mortuary, by being able to meet the following assessment criteria** (GSP Mapping: 1.1.1, 2.2.7, 2.2.8):
 - 2.1 Prepare deceased persons for storage.
 - 2.2 Follow procedures for the transport of deceased persons to and from appropriate storage facilities.
 - 2.3 Ensure requirements for the labelling of deceased bodies in storage are fully complied with.
 - 2.4 Ensure that religious and cultural beliefs are taken into account when preparing deceased persons for storage.

- 3 **Be able to carry out procedures for the disposal of deceased persons in the mortuary, by being able to meet the following assessment criteria** (GSP Mapping: 1.1.1, 1.1.2):
 - 3.1 Follow procedures for the release of the deceased prior to disposal.
 - 3.2 Confirm the identity of individuals who will be receiving the body of the deceased individual.

3.3 Ensure that all legal and regulatory requirements for the disposal of bodies for burial or cremation are complied with.

4 Be able to carry out procedures for the identification of tissues, by being able to meet the following assessment criteria (GSP Mapping:1.1.4 1.2.5 2.2.8):

4.1 Identify tissues that are subject to regulatory requirements.

4.2 Comply with regulatory requirements for the control of tissue samples.

4.3 Ensure requirements for the labelling and identification of tissue are fully complied with.

4.4 Ensure that tissues are appropriately stored until released.

5 Be able to carry out procedures for the release of tissues, by being able to meet the following assessment criteria (GSP Mapping:1.1.4, 1.2.5, 2.2.8):

5.1 Follow procedures for the identification of tissues before the tissue is released.

5.2 Confirm the identity of individuals who will be receiving the tissue.

5.3 Ensure that all legal, regulatory and other requirements for the release of tissues are complied with.

6 Understand procedures for the management of the deceased in the mortuary, by being able to meet the following assessment criteria (GSP Mapping: 1.1.1, 1.1.2, 1.2.1):

6.1 Outline why procedures for the registration of the deceased are required.

6.2 State the purpose of procedures for the storage and disposal of deceased persons in the mortuary.

6.3 State the purpose of procedures for the identification and release of tissues.

Indicative Content

1 Be able to carry out procedures for the registration of deceased persons in the mortuary

1.1 *Confirm the identity of the deceased person:* confirm the identity of the deceased person using reliable means. Labelling of the deceased using a waterproof tag firmly attached to the deceased or individual body parts, for example limbs amputated either surgically or by trauma. Use of DNA or dental records for unidentified remains.

1.2 *Follow procedures for the registration of deceased persons in the mortuary:* departmental and legislative procedures are followed for the registration of deceased persons in the mortuary.

1.3 *Check that all legal requirements relating to registration of deceased persons are complied with:* legal requirements are

complied with in the registration of deceased persons.

- 1.4 *Ensure valuables and property belonging to deceased persons are correctly recorded and stored:* accurate recording and secure storage of valuables and property belonging to deceased; tracking of movement of valuables and property by at least two signatories.

2 Be able to carry out procedures for the storage of deceased persons in the mortuary

- 2.1 *Prepare deceased persons for storage:* ensure that life has been pronounced extinct by a qualified person and identification has been confirmed or a unique identifier assigned to the deceased; selection of appropriate storage facility; specific procedures for bariatric, paediatric or high-risk storage are complied with; management of any radioactive, chemical or biological hazards; use of body bags and the different types available.
- 2.2 *Follow procedures for the transport of deceased persons to and from appropriate storage facilities:* ensure relatives are made aware if a deceased is to be moved to another site; manual handling equipment is adequate and used correctly; deceased individuals are transported in a dignified manner by approved personnel; transfers are documented.
- 2.3 *Ensure requirements for the labelling of deceased bodies in storage are fully complied with:* requirements for labelling of bodies is complied with; labelling of body is checked against confirmed identity or unique identifier of body.
- 2.4 *Ensure that religious and cultural beliefs are taken into account when preparing deceased persons for storage:* religious or cultural issues are complied with, or reasons given if this is not possible.

3 Be able to carry out procedures for the disposal of deceased persons in the mortuary

- 3.1 *Follow procedures for the release of the deceased prior to disposal:* departmental and legislative procedures are followed and complied with regarding the release of the deceased prior to disposal.
- 3.2 *Confirm the identity of individuals:* departmental and legislative procedures are followed in order to confirm the identity of individuals who will receive the body of the deceased.
- 3.3 *Ensure that all legal and regulatory requirements for the disposal of bodies for burial or cremation are complied with:* legal and regulatory requirements are complied with for the disposal of bodies for burial or cremation, such as those contained in cremation law, requirements relating to the Medical Certificate of Cause of Death and coroner or procurator fiscal release documents.

4 Be able to carry out procedures for the identification of tissues

- 4.1 *Identify tissues that are subject to regulatory requirements:* tissues subject to regulatory requirements are correctly identified; regulatory requirements include HTA codes of practice and relevant Human Tissue Acts.

- 4.2 *Comply with regulatory requirements for the control of tissue samples:* regulatory requirements for the control of tissue samples are complied with, including those of the transplant regulations, the register of retained tissues and ethical guidelines.
- 4.3 *Ensure requirements for the labelling and identification of tissue are fully complied with:* requirements for the labelling and identification of tissue are complied with, including relevant codes of practice within the NHS and public sector.
- 4.4 *Ensure that tissues are appropriately stored until released:* tissues are appropriately stored with regard to storage method, conditions and preservation requirements.

5 Be able to carry out procedures for the release of tissues

- 5.1 *Follow procedures for the identification of tissues before the tissue is released:* departmental procedures and legislative requirements are followed regarding identification of tissues before their release.
- 5.2 *Confirm the identity of individuals who will be receiving the tissue:* departmental procedures and legislative requirements are followed in order to confirm the identity of individuals who will be receiving released tissue.
- 5.3 *Ensure that all legal, regulatory and other requirements for the release of tissues are complied with:* legal, regulatory and other requirements are complied with for the release of tissues, including those of the pathologist, coroner/procurator fiscal and HTA and requirements relating to health and safety.

6 Understand procedures for the management of the deceased in the mortuary

- 6.1 *Why procedures for the registration of the deceased are required:* legislative requirements for registration of deceased persons.
- 6.2 *Purpose of procedures for the storage and disposal of deceased persons in the mortuary:* need to ensure condition of the deceased is maintained prior to post-mortem examination and disposal; legislative requirements for release and disposal of the deceased.
- 6.3 *Purpose of procedures for the identification and release of tissues:* regulatory and legislative requirements regarding identification, storage and release of human tissues; record-keeping requirements.

Assessment

This is a competency unit. Evidence for attainment of the Learning Outcomes must come from assessment in the work environment during the learner's normal work activity. Evidence obtained by simulation is not permitted.

Suitable evidence for attainment of the learning outcomes could include:

- observation in the workplace
- witness statements
- professional discussion
- work journals or diaries.

Evidence for attainment of the knowledge and understanding associated with this unit should come from oral questioning of the learner at the time of assessment of the competence of the learner.

The assessment strategy of Skills for Health applies to this unit.

Anatomical Pathology Technology

Year 1

Specialist Module APT 4.8: Bereavement Support

[10 credits]

This module addresses bereavement support. The trainee will understand how to manage the viewing process of the deceased. They will also understand the importance of support for the bereaved, including during special circumstances.

Summary of Learning Outcomes

To achieve this qualification a candidate must (GSP Mapping for this module: 1.1.1, 1.1.2, 1.1.9, 1.1.10, 2.2.7, 2.2.9):

- 1 Be able to manage the viewing process for a deceased person under circumstances in which viewing is restricted, by being able to meet the following assessment criteria:**
 - 1.1 Confirm the restrictions on the viewing of the deceased by relatives, friends and carers.
 - 1.2 Ensure that preparation of the deceased for viewing is compatible with the restrictions.
 - 1.3 Communicate sensitively with relatives, friends and carers prior to and during the viewing of the deceased.
 - 1.4 Take appropriate protective measures when preparing the deceased for viewing and during the viewing process.

- 2 Be able to provide support to the bereaved in circumstances of:**
 - sudden death
 - death of children
 - organ and tissue transplantation

by being able to meet the following assessment criteria:

 - 2.1 Communicate appropriate information to the bereaved in a sensitive manner.
 - 2.2 Monitor the bereaved's wellbeing during their visit to the mortuary, including during formal identification/viewing of the deceased.
 - 2.3 Advise relatives, friends and carers sensitively with regard to any legal requirements and procedures for post-mortem examinations and/or removal of tissues and organs.
 - 2.4 Refer relatives, friends and carers to additional sources of support and guidance as required.

- 3 Understand the need for bereavement support, by being able to meet the following assessment criteria:**

- 3.1 Outline reasons why there may be restrictions on the viewing of the deceased by relatives, friends and carers.
- 3.2 State why communications with relatives, friends and carers of the deceased should be conducted in a sensitive manner.
- 3.3 List sources of support and guidance that can be made available to the bereaved.

Indicative Content

1 Be able to manage the viewing process for a deceased person

- 1.1 *Confirm the restrictions on the viewing of the deceased by relatives, friends and carers:* any restrictions on viewing of the deceased, such as may be imposed by next of kin or for legal reasons, are confirmed prior to allowing viewing to take place.
- 1.2 *Ensure that preparation of the deceased for viewing is compatible with the restrictions:* preparations may include determining degree of supervision required, confirming identity of those allowed to view the deceased; positioning of partitions if contact is not permitted.
- 1.3 *Communicate sensitively with relatives, friends and carers prior to and during the viewing of the deceased:* communication with relatives, friends and carers is conducted in a sensitive and supportive manner.
- 1.4 *Take appropriate protective measures when preparing the deceased for viewing and during the viewing process:* appropriate protective measures are determined and complied with; viewers of the deceased are given guidance concerning the hazards and risks involved; personal protective equipment, hand washing and sanitising facilities are made available to viewers of the deceased and relevant instruction in their use provided.

2 Be able to provide support to the bereaved

- 2.1 *Communicate appropriate information to the bereaved in a sensitive manner:* appropriate information is communicated sensitively; allowances are made for the ability of the recently bereaved to comprehend information provided.
- 2.2 *Monitor the bereaved's wellbeing during their visit to the mortuary, including during formal identification/viewing of the deceased:* attention is given to the wellbeing of the bereaved in the mortuary; specifically with regard to observing signs of shock in the bereaved; action taken to ensure wellbeing.
- 2.3 *Advise relatives, friends and carers sensitively with regard to any legal requirements and procedures for post-mortem examinations and/or removal of tissues and organs:* relatives, friends and carers advised of legal requirements and procedures sensitively; non-specialist language is used during communications; relatives, friends and carers advised of any legal rights regarding post-mortem examination and removal of tissues and organs.
- 2.4 *Refer relatives, friends and carers to additional sources of support and guidance as required:* relatives, friends and carers referred to additional sources of support and guidance, such as bereavement support services.

3 Understand the need for bereavement support

- 3.1 *Outline reasons why there may be restrictions on the viewing of the deceased by relatives, friends and carers:* reasons such as high risk, disfigurement, state of decomposition of the deceased.
- 3.2 *State why communications with relatives, friends and carers of the deceased should be conducted in a sensitive manner:* sense of shock and loss at bereavement; the grieving process, including the nature and the possible effects of grief and how these may affect people's responses and their ability to listen, understand and make decisions.
- 3.3 *List sources of support and guidance that can be made available to the bereaved:* sources of support and guidance available locally and nationally.

Assessment

This is a competency unit. Evidence for attainment of the Learning Outcomes must come from assessment in the work environment during the learner's normal work activity. Evidence obtained by simulation is not permitted.

Suitable evidence for attainment of the learning outcomes could include:

- observation in the workplace
- witness statements
- professional discussion
- work journals or diaries.

Evidence for attainment of the knowledge and understanding associated with this unit should come from oral questioning of the learner at the time of assessment of the competence of the learner.

The assessment strategy of Skills for Health applies to this unit.

Anatomical Pathology Technology

Year 1

Specialist Module APT 4.9: Specialist Practical Mortuary Skills

[15 credits]

This module addresses the specialist practical mortuary skills required by the APT. The trainee will understand and assist with specialised autopsies, evisceration, tissue retrieval, and tissue and body reconstruction.

Summary of Learning Outcomes

To achieve this qualification a candidate must:

1 Be able to carry out specialised post-mortem examinations, by being able to meet the following assessment criteria (GSP Mapping: 2.1.3, 2.1.4, 2.2.4, 2.2.7, 3.1.4–3.1.6 applies to all this section):

1.1 Follow procedures relevant to post-mortem examinations and associated activities on the following categories of deceased person:

- forensic
- paediatric/perinatal
- neuropathological
- danger of infection (high risk).

1.2 Assist with a post-mortem examination under the direction of a pathologist on the following categories of deceased person:

- forensic
- paediatric
- neuropathological
- danger of infection (high risk).

1.3 Follow procedures for recording and documenting observations and results during post-mortem examinations.

2 Be able to carry out specialised evisceration techniques, by being able to meet the following assessment criteria:

2.1 Remove the following organs and structures from the deceased during post-mortem examination:

- middle ear
- femoral head/femur

- spinal cord
 - eyes.
- 2.2 Follow standard operating procedures for the storage of organs and structures following specialist evisceration.
- 3 Be able to carry out specialist body and tissue reconstruction following post-mortem examination, by being able to meet the following assessment criteria:**
- 3.1 Reconstruct features of the deceased person that have undergone significant trauma.
- 3.2 Reconstruct the body of a deceased person that has undergone decomposition.
- 3.3 Reconstruction of paediatric/perinatal cases.
- 4 Be able to carry out tissue retrieval from a deceased person, by being able to meet the following assessment criteria:**
- 4.1 Retrieve the following organs and tissues from a deceased person for the purpose of donation or research:
- cornea
 - heart valves.
- 4.2 Retrieve organs and tissues from a deceased person for the purpose of research.
- 4.3 Follow standard operating procedures and legislative/regulatory requirements during the retrieval of tissue.
- 5 Understand the purpose of specialist practical mortuary skills, by being able to meet the following assessment criteria:**
- 5.1 State the need for specialised post-mortem examination for the following categories of deceased person:
- forensic
 - paediatric/perinatal
 - neuropathological
 - danger of infection (high risk).
- 5.2 Outline procedures for specialised evisceration techniques and tissue retrieval.
- 5.3 State why specialist reconstruction techniques may be necessary.

Indicative Content

1 Be able to carry out specialised post-mortem examinations

- 1.1 *Follow procedures relevant to post-mortem examinations and associated activities:* departmental procedures and guidelines followed correctly for each of the different categories of deceased person.

- 1.2 *Assist with a post-mortem under the direction of a pathologist: evidence of:*
- post-mortem examination experience in a forensic mortuary;
 - post-mortem examination experience in a paediatric mortuary;
 - *post-mortem* examination experience with a specialist neuropathologist;
 - post-mortem examination experience in Category 3 post-mortem work. Health and safety issues in, for example, tuberculosis, hepatitis viruses and transmissible spongiform encephalopathies.
- 1.3 *Follow procedures for recording and documenting observations and results during post-mortem examinations: standard operating procedures followed for recording and documenting observations and results as required for local and national compliance.*
- 2 Be able to carry out specialised evisceration techniques**
- 2.1 *Remove specified organs and structures from the deceased during post-mortem examination: evidence of experience of carrying out specialist techniques to include: exposure of the middle ear, removal of long bones, removal of the spinal cord and enucleation of eyes.*
- 2.2 *Follow standard operating procedures for the storage of organs and structures following specialist evisceration: appropriate storage of organs and structures following specialist evisceration, fixatives that may be used and compliance with appropriate disposal if applicable.*
- 3 Be able to carry out specialist body and tissue reconstruction following post-mortem examination**
- 3.1 *Reconstruct features of the deceased person that have undergone significant trauma: application of reconstruction techniques, including sewing, specialist sewing, gluing and stapling. The use of prosthetics, plaster of Paris and packing to reshape the deceased to a natural form.*
- 3.2 *Reconstruct the body of a deceased person that has undergone decomposition: evidence of ability to reconstruct the body of a decomposed person.*
- 3.3 *Reconstruction of paediatric/perinatal cases: application of sewing and gluing techniques for paediatric/perinatal cases.*
- 4 Be able to carry out tissue retrieval from a deceased person**
- 4.1 *Retrieve specified organs and tissues from a deceased person for the purpose of donation: enucleation to the standards set by the eye banks; retrieval of heart valves as set out by NHS Blood and Transplant (NHSBT) or any successor organisation.*
- 4.2 *Retrieve organs and tissues from a deceased person for the purpose of research: retrieve organs and tissues in*

accordance with legislation and guidance set out by research establishments or tissue banks. For example, Parkinson's Disease Brain Bank.

- 4.3 *Follow standard operating procedures and legislative/regulatory requirements during the retrieval of tissue:* standard operating procedures and legislative and regulatory requirements followed during the retrieval of tissue. HTA compliance issues and existence of service level agreements between agencies and the mortuary.

5 Understand the purpose of specialist practical mortuary skills

- 5.1 *State the need for specialised post-mortem examination for specific categories of deceased person:* reasons why some categories of deceased person require specialised post-mortem examinations, such as the need to obtain and preserve evidence or the hazardous nature of the body.
- 5.2 *Outline procedures for specialised evisceration techniques and tissue retrieval:* outline of procedures for specialised evisceration techniques and tissue retrieval; requirement for specialised procedures.
- 5.3 *State why specialist reconstruction techniques may be necessary:* need to make the deceased presentable for viewing; sensitive nature of reconstruction, such as for paediatric/perinatal cases.

Assessment

This is a competency unit. Evidence for attainment of the Learning Outcomes must come from assessment in the work environment during the learner's normal work activity. Evidence obtained by simulation is not permitted.

Suitable evidence for attainment of the learning outcomes could include:

- observation in the workplace
- witness statements
- professional discussion
- work journals or diaries.

Evidence for attainment of the knowledge and understanding associated with this unit should come from oral questioning of the learner at the time of assessment of the competence of the learner.

The assessment strategy of Skills for Health applies to this unit.

Anatomical Pathology Technology

Year 1

Specialist Module APT 4.10: Deliver and Evaluate Training in Anatomical Pathology Technology

[10 credits]

This module enables the trainee to prepare for, deliver and evaluate the effectiveness of training other healthcare professionals in APT.

Summary of Learning Outcomes

To achieve this qualification a candidate must:

- 1 Be able to prepare to deliver training programmes for APT, by being able to meet the following assessment criteria** (GSP Mapping: 1.4.1–1.4.6):
 - 1.1 Select training methods appropriate to the learning outcomes required, stage of the training cycle and for a range of learning styles.
 - 1.2 Plan the delivery of the training programme, to include appropriate time allocation and identification of resources and facilities.
 - 1.3 Ensure resources and facilities appropriate to the training programme are available.
 - 1.4 Identify potential problems that might occur during the training programme and make suitable provision for these.
 - 1.5 Ensure training methods selected comply with all relevant standards and regulations.

- 2 Be able to deliver training programmes for APT, by being able to meet the following assessment criteria** (GSP Mapping: 1.4.1–1.4.6):
 - 2.1 Carry out the training programme effectively in accordance with the plan.
 - 2.2 Use three different techniques to monitor the progress of the trainees.
 - 2.3 Adapt the delivery of the training programme to take account of differences in learning styles and progress of the trainees or as a result of problems encountered.
 - 2.4 Provide appropriate feedback and encouragement to trainees during the training programme.
 - 2.5 Ensure the training programme is carried out in a manner and environment that encourages interaction between trainer and trainees and promotes learning and understanding.
 - 2.6 Ensure delivery of the training programme complies with all relevant standards and regulations.

3 Be able to evaluate the effectiveness of delivery of the training programme, by being able to meet the following assessment criteria (GSP Mapping: 1.4.1–1.4.6, 4.1.1–4.1.2):

- 3.1 Use three different techniques to determine the extent to which the trainees have met the learning outcomes of the training programme.
- 3.2 Obtain feedback from trainees on the effectiveness of the training methods adopted.
- 3.3 Identify, with the use of appropriate evidence, aspects of the delivery of the training programme that performed well and aspects that performed less well.
- 3.4 Revise the delivery of the training programme to take account of the feedback and evaluation.

Indicative Content

1 Be able to prepare to deliver training programmes for APT

- 1.1 *Select training methods:* range of training methods considered, justification for training method selected regarding its suitability for the required learning outcomes; outline of the training cycle; consideration of different learning styles and how appropriate training methods can enhance these.
- 1.2 *Plan delivery of training programme:* timetable of events; mapping of events to learning outcomes and assessment criteria of training programme; identification of resources required to include staff, rooms and equipment; costing and budgeting for delivery of the programme.
- 1.3 *Ensure availability of appropriate resources and facilities:* all necessary equipment is booked, equipment is checked to ensure it is operational and meets the requirements of the training; room/venue is of an appropriate size, well lit and ventilated, with disabled access if required.
- 1.4 *Identify potential problems:* plausible problems identified; appropriate contingency plans in place.
- 1.5 *Compliance of training methods:* training methods checked to ensure meet all regulatory requirements such as health and safety and equal opportunities; methods checked to ensure compliance with any 'in-house' requirements.

2 Be able to deliver training programmes for APT

- 2.1 *Carry out the training programme:* training programme is carried out to plan; range of activities used during the training.
- 2.2 *Monitor progress of trainees:* range of monitoring methods used, such as checklists, observation, questioning, review and revision of lessons learnt.
- 2.3 *Adapt delivery:* delivery of training appropriately varied or modified to ensure trainee progression.
- 2.4 *Provide feedback and encouragement:* positive feedback provided to trainees.

- 2.5 *Encourage interaction and promote learning and understanding*: range of techniques used to encourage interaction and promote learning and understanding.
- 2.6 *Delivery complies with relevant standards and regulations*: delivery of training conforms to regulatory requirements, such as health and safety and equal opportunities; 'in-house' requirements for training met.
- 3 Be able to evaluate the effectiveness of delivery of the training programme**
- 3.1 *Determine extent to which learning outcomes are met*: range of assessment methods used, such as oral questioning, observation and completion of tasks.
- 3.2 *Obtain feedback*: use of questionnaires, group discussion, etc., to obtain feedback from trainees on effectiveness of specific training methods.
- 3.3 *Identify aspects of the delivery of the training programme that performed well and aspects that performed less well*: suitable evidence used, such as attainment of learning outcomes and trainee feedback to identify good and poor performance of different aspects of the training programme.
- 3.4 *Revise delivery*: appropriate revisions made to plan according to evidence from feedback and evaluation.

Assessment

This is a competency unit. Evidence for attainment of the Learning Outcomes must come from assessment in the work environment during the learner's normal work activity. Evidence obtained by simulation is not permitted.

Suitable evidence for attainment of the learning outcomes could include:

- observation in the workplace
- witness statements
- professional discussion
- work journals or diaries.

The assessment strategy of Skills for Health applies to this unit.

Year 1
APT (i): Work-based Training
[0 credits]

Topic	Work-based Training [0 credits]	GSP reference
Learning objective	<p>The overall aim of the work-based placements within Year 1 is to provide students with a broad appreciation of the range of work undertaken within healthcare science. Students will begin the process of the development of the skills and attitudes relevant to the HCSP, building on learning in the academic environment, including practical sessions, clinical skills sessions, reflection on development, etc.</p> <p>This module will provide a foundation from which students will build their knowledge, skills, experience and attitudes throughout the three-year programme of study and enable them to transfer these skills to employment in healthcare science. It is expected that this period of initial work base training will provide the opportunity to begin to integrate and embed many of the professional practice learning outcomes and enable students to practise safely in the work base.</p> <p>Students in anatomical pathology technology will be expected to complete the outcomes of this module by gaining experience of:</p> <ul style="list-style-type: none"> • extensive practical work in the mortuary setting, as required by specialist APT modules; • team working with other healthcare professionals who link to the work of the mortuary; • visits to other departments that are used by pathologists and mortuary staff as part of providing a quality mortuary service (e.g. microbiology, histopathology). <p>Students will be expected to begin to maintain a portfolio of evidence and complete relevant sections of the Learning Guide.</p>	
Knowledge	<p>On successful completion of this module the student will understand the:</p> <ol style="list-style-type: none"> 1. Roles undertaken by a healthcare science practitioner relevant to APT. 2. Range of technologies and procedures relevant to APT. 3. Work of the HCS workforce and how it contributes to patient pathways. 4. Need to ensure that the needs and wishes of the patient are central to their care. 5. Importance of developing and maintaining the patient–professional partnership. 6. Impact of adverse critical incidents and procedures and need for evaluation of adverse incidents. 7. Standards of professional behaviour expected of a HCSP, including the dress code policy. 	<p>1.1.1 1.1.2 1.1.4 1.1.5 4.1.1</p>

Topic	Work-based Training [0 credits]	GSP reference
	8. Shared responsibility for infection control. 9. Organisation and inter-relationship of services in their placement.	
Technical and clinical skills	<p>By the end of this module, the student will be expected to apply in practice a range of technical and clinical skills and critically reflect on and develop their performance, working within the Standards of Proficiency set by the AHCS and will be able to:</p> <ol style="list-style-type: none"> 1. Perform a range of generic skills, including health and safety, infection control, communication, and behaves in a professional manner in accordance with <i>Good Scientific Practice</i>. 2. Perform, under direct supervision, basic investigations in accordance with local health and safety regulations, including preparation for post-mortem examination; assistance with post-mortem examination; storage and disposal of the deceased; collection of tissue specimens; data logging and management; record keeping and support for the bereaved. 	1.1 1.2 1.3 1.4.5 2.2.1 2.2.6 2.2.7 2.2.8 2.2.9 2.3.3 3.1.2 5.1.2

SECTION 5.3: Years 2 and 3

Specialist Modules for Year 2 Anatomical Pathology Technology

Interpretation of the high-level framework for Anatomical Pathology Technology

	Module Title						
Year 3	Professional Practice [10]	Mortuary Governance [20]	Managing a Mortuary Service [20]	Neuropathology [20]	Paediatric and Perinatal Pathology [20]	Research Project [30]	
	Generic	Specialist					
Year 2	Professional Practice [10]	Research Methods [10]	Cultural, Ethical, Legal [20]	Biological Markers [20]	Systemic Pathology [20]	Forensic Pathology [20]	Tissue Retrieval [20]
	Generic	Specialist					
Year 1	Professional Practice [10]	Scientific Basis of Healthcare [10]		Work-based Training [0]		Specialist Modules APT4.1–4.10 [115]	
	Generic			Division-theme		Specialist	

[xx] = credits



Generic modules: common to all divisions of healthcare science

Division-theme modules: Shared by a group of specialisms, usually within a Healthcare Science division

Specialist modules: specific to a specialism

Year 2

APT (ii): Cultural, Ethical and Legal Aspects of Mortuary Practice

[20 credits]

Topic	Cultural, Ethical and Legal Aspects of Mortuary Practice [20 credits]	GSP reference
Learning objective	This module addresses the cultural, ethical and legal aspects of mortuary practice. The student will explore the variety of contemporary funeral practices associated with different cultural and religious traditions, and will become familiar with ethical and legal issues associated with post-mortem examination, including consent, confidentiality and the donation of the body for teaching and research purposes.	
Knowledge	<p>By the end of this module the student will be able to:</p> <ol style="list-style-type: none"> 1. Describe the legal and ethical requirements associated with the period immediately following death, including post-mortem examination and the disposal of the dead. 2. Explain the procedures to be followed when dealing with sensitive legal and ethical issues. 3. Critically discuss issues associated with the period after death, including post-mortem examination and disposal of the body, and the likely impact on the family and friends of the deceased. 4. Discuss ethical issues important and relevant to the role of an APT, in particular those associated with post-mortem examination and body and organ/tissue donation. 5. Describe the funeral practices and requirements associated with defined religions and non-religious traditions. 6. Evaluate different professional practices in the light of health and safety legislation. 	<p>1.1.4 1.1.5 4.1.1</p>
Technical and clinical skills	<p>By the end of this module, the student will be expected to apply in practice a range of technical and clinical skills and critically reflect on and develop their performance, working within the Standards of Proficiency set by the AHCS and will be able to:</p> <ol style="list-style-type: none"> 1. Assist at post-mortem examinations of people from different religious and cultural backgrounds, including, as appropriate: discussion with relatives; preparation of the body; evisceration; tissue retrieval; reconstruction; viewing of the deceased; and funeral arrangements. 2. Adhere to appropriate standards of professional practice as defined in <i>Good Scientific Practice</i> in this work-based module. 	<p>1.1 1.2 1.3 1.4.5 1.3.1 1.3.2 1.3.3 1.3.4 1.3.5 2.2.1 2.2.6</p>

Topic	Cultural, Ethical and Legal Aspects of Mortuary Practice [20 credits]	GSP reference
		2.2.7 2.2.8 2.2.9 2.3.3 3.1.2 5.1.2

Year 2

APT (iii): Biological Markers of Death and Decomposition

[20 credits]

Topic	Biological Markers of Death and Decomposition [20 credits]	GSP reference
Learning objective	This module provides a focused study of applied microbiology and investigation. It aims to equip students with the knowledge and skills necessary to understand not only the effects of microorganisms on the human body and how they can be used as markers of death and decomposition, but also the importance of safe working practices and control of microorganisms in the workplace.	
Knowledge	<p>By the end of this module the student will be able to:</p> <ol style="list-style-type: none"> 1. Relate the general properties of the most commonly encountered microorganisms to their importance in APT. 2. Discuss the indigenous microflora of the human body. 3. Explain the roles of microbes in tissue degradation and necrosis. 4. Explain and justify why and how microbes must be contained within the workplace. 5. Discuss the utilisation of forensic examination and biomarkers in investigations of death. 	<p>1.1.4 1.1.5 4.1.1</p>
Technical and clinical skills	<p>By the end of this module, the student will be expected to apply in practice a range of technical and clinical skills and critically reflect on and develop their performance, working within the Standards of Proficiency set by the AHCS and will be able to:</p> <ol style="list-style-type: none"> 1. Assist at post-mortem examinations where the use of biomarkers of death and decomposition are requested in order to help determine the time of death, and collect and document specimens. 2. Observe and assist with investigations to establish time of death, including tissue sampling and collection of entomology specimens at post-mortem examination. 3. Adhere to appropriate standards of professional practice as defined in <i>Good Scientific Practice</i> in this work-based module. 	<p>1.1 1.2 1.3 1.4.5 1.3.1 1.3.2 1.3.3 1.3.4 1.3.5 2.2.1 2.2.6 2.2.7 2.2.8 2.2.9 2.3.3</p>

Topic	Biological Markers of Death and Decomposition [20 credits]	GSP reference
		3.1.2 5.1.2

Year 2
 APT (iv): Systemic Pathology
 [20 credits]

Topic	Systemic Pathology [20 credits]	GSP reference
Learning objective	The overall aim of this module is to provide an overview of systemic anatomy and pathology with special emphasis on the changes to body tissues with death and manner of death. The student will develop an understanding of the methods of pathological investigation and their limitations, as well as pre- and post-mortem artefacts.	
Knowledge	<p>By the end of this module the student will be able to:</p> <ol style="list-style-type: none"> 1. Discuss common surgical procedures and their relationship to the collection and processing of histopathology specimens. 2. Describe the processing of histological specimens and their use in commonly performed methods. Explain the quality assessment steps that are involved. 3. Discuss and critically evaluate the interactions between major organs in health and disease. 4. Discuss the basic principles regarding the alteration of the structure and function of tissues and organs in disease. 5. Discuss the essential characteristics of autolysis, hydrolysis, fermentation and putrefaction in the chemistry of decomposition. 6. Describe the composition of embalming fluids (arterial, cavity and accessory) and their respective functions. 7. Explain the impact of disease states and physical and chemical changes on the embalming process. 	<p>1.1.4 1.1.5 4.1.1</p>
Technical and clinical skills	<p>By the end of this module, the student will be expected to apply in practice a range of technical and clinical skills and critically reflect on and develop their performance, working within the Standards of Proficiency set by the AHCS and will be able to:</p> <ol style="list-style-type: none"> 1. Assist with the collection of specimens for histology, microbiology, genetic and biochemical analysis during post-mortem examinations. 2. Adhere to appropriate standards of professional practice as defined in <i>Good Scientific Practice</i> in this work-based module. 	<p>1.1 1.2 1.3 1.4.5 1.3.1 1.3.2 1.3.3 1.3.4 1.3.5 2.2.1</p>

Topic	Systemic Pathology [20 credits]	GSP reference
		2.2.6 2.2.7 2.2.8 2.2.9 2.3.3 3.1.2 5.1.2

Year 2
 APT (v): Forensic Pathology
 [20 credits]

Topic	Forensic Pathology [20 credits]	GSP reference
Learning objective	Post-mortem examination and the optimal use of the mortuary are key components of forensic pathology. The aim of this module is to ensure the student gains and applies their knowledge and understanding of the reasons for and the examinations performed during forensic post-mortem examination. The module focuses on the legal and procedural requirements of performing forensic post-mortem examination. The work-based learning supports the application of knowledge and the development of a range of personal and professional skills that enable the APT to support forensic post-mortem examination to the required high standards.	
Knowledge	<p>By the end of this module the student will be able to:</p> <ol style="list-style-type: none"> 1. Discuss the legal requirements associated with forensic post-mortem examination in each of the four countries of the United Kingdom. 2. Describe the legislation that applies to obtaining, examining and reporting results from human tissue as part of forensic post-mortem examination. 3. Discuss the role of the police, coroner and procurator fiscal in requesting and receiving reports from forensic post-mortem examination. 4. Discuss and justify the importance of establishing 'chain of custody' and describe how this is achieved during forensic post-mortem examination. 5. Discuss the importance of statement writing and documentation in ensuring admissible evidence from forensic post-mortem examination. 6. Discuss the special methods and procedures that are applied in forensic post-mortem examination. 	<p>1.1.4 1.1.5 4.1.1</p>
Technical and clinical skills	<p>By the end of this module, the student will be expected to apply in practice a range of technical and clinical skills and critically reflect on and develop their performance, working within the Standards of Proficiency set by the AHCS and will be able to:</p> <ol style="list-style-type: none"> 1. Observe and where possible assist in the performance of forensic post-mortem examinations and the use of imaging and/or other relevant specialist techniques, including the requirement for careful documentation and the need to maintain the chain of custody. 2. Adhere to appropriate standards of professional practice as defined in <i>Good Scientific Practice</i> in 	<p>1.1 1.2 1.3 1.4.5 1.3.1 1.3.2 1.3.3 1.3.4</p>

Topic	Forensic Pathology [20 credits]	GSP reference
	this work-based module.	1.3.5 2.2.1 2.2.6 2.2.7 2.2.8 2.2.9 2.3.3 3.1.2 5.1.2

Year 2
 APT (vi): Tissue Retrieval
 [20 credits]

Topic	Tissue Retrieval [20 credits]	GSP reference
Learning objective	Tissue retrieved from recently deceased individuals can be used to the benefit of patients who are afflicted with a range of disorders. The aim of this module is to ensure the student gains knowledge and understanding of the tissues that may be retrieved and the purposes for which they will be used. The student will also understand the legislative and regulatory framework for tissue retrieval and the requirement for working in partnership with specialist organisations. The work-based learning supports the application of knowledge and the development of the skills required to retrieve relevant tissues within this legislative and regulatory framework, including those that may only be processed at specialist centres.	
Knowledge	<p>By the end of this module the student will be able to:</p> <ol style="list-style-type: none"> 1. Describe the process and purpose of organ donation, the ways in which tissues are used and the resulting clinical outcomes. 2. Discuss the tissues that currently may be retrieved from deceased individuals and potential future developments. 3. Describe the methodology used for the effective and efficient retrieval and transport of a range of tissue samples. 4. Describe the legislation and codes of practice that apply to the retrieval of tissues from deceased individuals. 5. Describe the ethical and practical issues associated with tissue donation and discuss these from the national perspective and also the perspective of a relative of the deceased. 6. Describe the role of NHSBT, Tissue Banks and the HTA in overseeing the standards and training required for successful tissue retrieval. 7. Discuss the role of the APT as part of the team involved in arranging for the retrieval and transport of tissue that may be used for therapeutic or research purposes. 	<p>1.1.4 1.1.5 4.1.1</p>
Technical and clinical skills	By the end of this module, the student will be expected to apply in practice a range of technical and clinical skills and critically reflect on and develop their performance, working within the Standards of Proficiency set by the AHCS and will be able to:	<p>1.1 1.2 1.3 2.2.1</p>

Topic	Tissue Retrieval [20 credits]	GSP reference
	<ol style="list-style-type: none"> 1. Gain an approved certificate in ocular enucleation and perform the technique in the work base to remove eyes for retrieval of cornea. 2. Assist and/or observe with the retrieval of heart valves and at least one of the following: skin; bone and tendons; blood vessels, ensuring that the tissue is stored and transported in line with the agreed practice with the third-party Tissue Bank. 3. Adhere to appropriate standards of professional practice as defined in <i>Good Scientific Practice</i> in this work-based module. 	<p>2.2.6 2.2.7 2.2.8 2.2.9 2.3.3 3.1.2 3.1.8 5.1.2</p>

Year 3

APT (vii): Mortuary Governance

[20 credits]

Topic	Mortuary Governance [20 credits]	GSP reference
Learning objective	Mortuaries, both NHS and local authority, perform work of high clinical and scientific significance. Working with the deceased rather than living patients also generates a degree of sensitivity that is not seen elsewhere in healthcare. Therefore, it is essential that mortuaries operate to the highest standards of practice. The aim of this module is to ensure the student gains knowledge and understanding of the governance requirements of the mortuary service within the wider local organisation and the NHS. The module focuses on key areas of legislation, regulation, accreditation, audit and accountability. The work-based learning supports the application of knowledge and the development of a range of skills that assures high standards of practice.	
Knowledge	<p>By the end of this module the student will be able to:</p> <ol style="list-style-type: none"> 1. Describe and critically evaluate the legislative requirements for: <ul style="list-style-type: none"> • licensing mortuaries • regulation of mortuaries • care and disposal of the deceased • consent, donation and retrieval of human tissue. 2. Describe and justify the lines of accountability for NHS and local authority mortuaries. 3. Compare and contrast the similarities and differences, in the context of national legislation and codes of practice and local guidelines. 4. Evaluate the quality standards that apply to the operation of both NHS and local authority mortuaries and the role of the APT in preparing the mortuary for external inspection and/or accreditation against those standards. 5. Critically appraise the role of audit as a tool to deliver continuous quality improvement. Describe those areas of mortuary function that require regular audit and discuss how each of them may be addressed. 6. Discuss the procedures and documentation that is required in the event of a complaint being submitted against the quality of standards provided by the mortuary service. 7. Describe in detail the process for planning for a major incident. 8. Evaluate the role of the mortuary and the APT in the preparation and implementation of the major 	<p>1.1.4 1.1.5 4.1.1</p>

Topic	Mortuary Governance [20 credits]	GSP reference
	incident plan.	
Technical and clinical skills	<p>By the end of this module, the student will be expected to apply in practice a range of technical and clinical skills and critically reflect on and develop their performance, working within the Standards of Proficiency set by the AHCS and will be able to:</p> <ol style="list-style-type: none"> 1. Participate as an active member of the team that ensures quality standards are met and prepares the local mortuary for external accreditation inspection or equivalent review. 2. Perform a clinical audit of performance against the quality standards, analyse the results and present the results in written and oral form and agree an action plan. 3. Contribute expertise on mortuary operation and governance to the preparation, at hospital or wider level, of a major incident plan. 4. Adhere to appropriate standards of professional practice as defined in <i>Good Scientific Practice</i> in this work-based module. 	<p>1.1 1.2 1.3 2.2.1 2.2.6 2.2.7 2.2.8 2.2.9 2.3.3 3.1.2 3.1.8 4.1.2 5.1.2</p>

Year 3
 APT (viii): Neuropathology
 [20 credits]

Topic	Neuropathology [20 credits]	GSP reference
Learning objective	Specialist knowledge and skills are required to undertake post-mortem examination of the brain, spinal cord and nervous system. The aim of the module is to ensure the student gains knowledge and understanding of the functions of these organs and the situations in which they may be assessed during post-mortem examination. The module focuses on equipping the student to recognise the need for and role of post-mortem examination in neuropathological referrals and to be able to support research and method development. The work-based module provides the student with the opportunity to apply their learning and facilitates the development of the specialist skills required to support neuropathological post-mortem examination.	
Knowledge	By the end of this module the student will be able to: 1. Apply anatomical and pathological knowledge to the identification of common brain, spinal cord and nervous system pathologies. 2. Discuss the major neuropathology disorders and causes of death that may necessitate post-mortem examination. 3. Describe and critically evaluate the national legislation and local guidelines as they apply to the organisation and performance of neuropathological post-mortem examination. 4. Evaluate the special methods and procedures, to include imaging, that are applied in neuropathological post-mortem examination.	1.1.4 1.1.5 4.1.1
Technical and clinical skills	By the end of this module, the student will be expected to apply in practice a range of technical and clinical skills and critically reflect on and develop their performance, working within the Standards of Proficiency set by the AHCS and will be able to: 1. Observe and if possible assist in the performance of neuropathological post-mortem examinations and the particular skills associated with preparation, dissection and tissue retrieval. 2. Attend and actively participate in team meetings to review the findings from neuropathological post-mortems and evaluate the importance of specialised methods and procedures. 3. Adhere to appropriate standards of professional practice as defined in <i>Good Scientific Practice</i>	1.1 1.2 1.3 1.4.5 1.3.1 1.3.2 1.3.3 1.3.4 1.3.5 2.2.1

Topic	Neuropathology [20 credits]	GSP reference
	in this work-based module.	2.2.6 2.2.7 2.2.8 2.2.9 2.3.3 3.1.2 3.1.8 5.1.2

Year 3
APT (ix): Paediatric and Perinatal Pathology
 [20 credits]

Topic	Paediatric and Perinatal Pathology [20 credits]	GSP reference
Learning objective	Specialist knowledge and skills are required to undertake paediatric post-mortem examination and students must recognise that it is extremely important to make sure that parents know that their baby will be kept absolutely safe and looked after carefully while they are in the mortuary. The aim of the module is to ensure the student gains knowledge and understanding of normal paediatric physiology and pathology and the causes of infant and childhood death. The module focuses on equipping the student to recognise the need for and role of post-mortem examination in paediatric referrals and to be able to support parents and other relatives of the deceased child, understanding the importance to parents of how their baby is cared for in the mortuary. The work-based learning facilitates the development of the specialist skills required to support paediatric post-mortem examination.	
Knowledge	By the end of this module the student will be able to: <ol style="list-style-type: none"> 1. Explain the psychosocial impact on the parents and other relatives arising from the death of a child, recognising the importance to parents of how their baby is cared for in the mortuary. 2. Describe the main features of normal paediatric anatomy. 3. Describe the main features of embryology as they relate to fetal development. 4. Describe the fundamentals of genetics and genomics as applied to common congenital abnormalities. 5. Discuss the causes of death in infants and childhood and the requirements for post-mortem examination. 6. Evaluate the current national legislation and local guidelines as they apply to the organisation and performance of paediatric post-mortem examination. 7. Discuss the special methods and procedures that are applied in paediatric post-mortem examination. 	1.1.4 1.1.5 4.1.1
Technical and clinical skills	By the end of this module, the student will be expected to apply in practice a range of technical and clinical skills and critically reflect on and develop their performance, working within the Standards of Proficiency set by the AHCS and will be able to:	1.1 1.2 1.3 1.4.5 2.2.1

Topic	Paediatric and Perinatal Pathology [20 credits]	GSP reference
	<ol style="list-style-type: none"> 1. Prepare the viewing area for the viewing of a baby or child. 2. Observe and if possible assist with paediatric post-mortem examination, including the particular skills of preparation of the body, evisceration, tissue removal, reconstruction and storage. 3. Assess the role of imaging and other specialist techniques in facilitating paediatric post-mortem examination using the literature and best practice reports. 4. Adhere to appropriate standards of professional practice as defined in <i>Good Scientific Practice</i> in this work-based module. 	<p>2.2.6 2.2.7 2.2.8 2.2.9 2.3.3 2.3.4 3.1.2 3.1.8 5.1.2</p>

Year 3

APT (x): Managing a Mortuary Service

[20 credits]

Topic	Managing a Mortuary Service [20 credits]	GSP reference
Learning objective	Modern healthcare is complex and rapidly changing, as new medical knowledge and techniques develop, along with new models of finance, organisation and service delivery, and the emphasis on providing high-quality, patient-centred care within a financial envelope. The aim of the module is to ensure the student gains knowledge and understanding of the principles, structure and functions of the mortuary service within the wider local organisation and the NHS. The module focuses on key areas of human resource management, finance and budgeting, and the use of information to plan services to meet the needs of service delivery. The work-based learning supports the application of knowledge and the development of a range of personal skills that managers need to become an effective manager and leader.	
Knowledge	<p>By the end of this module the student will be able to:</p> <ol style="list-style-type: none"> 1. Discuss the principles, structure and functions of the mortuary service and wider health systems, including their human resource management, financial, organisational, commissioning, quality, research and innovation, and ethics and policy-making processes. 2. Describe and evaluate the key concepts in human resource management and their application in the management of a mortuary service. 3. Identify and analyse common human resource management issues arising in the provision of a mortuary service and critically reflect on the range of approaches that may be used to resolve issues. 4. Identify a range of methods to manage and potentially resolve issues that arise in managing people and service, including conflict and stress. 5. Evaluate the strengths and weaknesses of each method and the underpinning evidence base. 6. Utilise research to develop appropriate and sustainable arguments with respect to the issues that arise in managing a mortuary service. 7. Analyse and interpret department budgets. 	<p>1.1.4 1.1.5 3.1.9 4.1.1</p>
Technical and clinical skills	By the end of this module, the student will be expected to apply in practice a range of technical and clinical skills and critically reflect on and develop their performance, working within the	<p>1.1 1.2</p>

Topic	Managing a Mortuary Service [20 credits]	GSP reference
	<p>Standards of Proficiency set by the AHCS and will be able to:</p> <ol style="list-style-type: none"> 1. Write a person specification and job description as part of the recruitment of a new member of staff or review of a current role. 2. Perform a range of activities to support the staff appraisal and development programme in the department. 3. Contribute to the management of the departmental budget using financial information to analyse and interpret budget reports, prioritising competing requests, writing case of need statements for areas such as new staff, equipment, etc. 4. Use a range of personal skills as part of the day-to-day management of a mortuary service. 5. Adhere to appropriate standards of professional practice as defined in <i>Good Scientific Practice</i> in this work-based module. 	<p>4.1.10 5.1.2 5.1.11</p>

SECTION 5.4: Indicative Content: Knowledge

Generic Professional Practice, Technical and Scientific Modules

GM (i): Professional Practice

Indicative Content

KNOWLEDGE

Professional Practice

- The role of regulation
- Regulation of the HCS workforce by the AHCS and HCPC
- NHS Constitution
- HEE five key workforce characteristics
- Values relating to compassion, transparency, candour, openness and leadership
- Current national NHS policies and practice, including policy relevant to the area of practice
- How service delivery aligns to current NHS policy and practice
- The HCS workforce
 - structure into four divisions and specialisms within each division
 - education and training programmes
 - leadership of the HCS profession (e.g. the role of the Chief Scientific Officer)
 - Modernising Scientific Careers (MSC)
 - the contribution of the HCS workforce to health and healthcare services
- The role of the HCSP
- Patient–professional partnerships, with the patient at the centre of care
- Patient and carer perspectives and the diversity of the patient experience
- Use of chaperones
- Current safeguarding regulations relevant to practice as a HCSP
- Culture, equality and diversity and how this can affect practice
- Disability, including learning disabilities

- Mental health
- Patient wellbeing and self-care, including how to support self-care
- How to work in partnership with patients and service users to ensure that the views of patients are central to delivering, developing and maintaining high-quality, safe services
- The role of patient support groups
- The importance of the patient voice in education and training for the HCS workforce, including the structures within each BSc programme to promote the patient voice

Legal and Ethical Boundaries of Practice

- Sharing of information and advice between peers in order to encourage a consistent approach to the implementation of NHS policy
- Ethical, legal and governance requirements arising from working at the level of HCSP
- Principles, guidance and law with respect to medical ethics
- Principles, guidance and law with respect to patient confidentiality
- Principles, guidance and law with respect to informed consent and how to gain informed consent
- The limits of the concept of confidentiality
- The importance of introducing yourself and explaining your role to every patient
- Principles, guidance and law with respect to equality and diversity
- Principles, guidance and law with respect to safeguarding, including the use of chaperones
- The procedures to follow if cautioned, charged with a criminal offence, suspended, or have restrictions placed on personal scientific, clinical or professional practice
- The importance of personal health and wellbeing to ensure personal performance and judgement is not affected by their own health
- Information governance and be aware of the safe and effective use of health and social care information
- The need to manage records and all other information in accordance with applicable legislation, protocols and guidelines

Patient Safety and Quality

- NHS Constitution
- The wider context of safety in the NHS, including the culture of an organisation
- How effective communication underpins high-quality and safe patient services/patient care, including shared decision making
- The role of national organisations, e.g. NHS England; NHS Improving Quality

- Definition of terms
 - Quality management
 - Quality control
 - Quality assurance
 - Quality improvement
 - Quality methodologies
 - Quality processes and procedures
- Principles of Quality Management Systems (QMS):
 - Quality management; quality assurance; quality control
 - The role of the United Kingdom Accreditation Service
 - Current HCS accreditation programmes, e.g. Improving Quality in Physiology Sciences
- British, European and International standards that govern and affect pathology laboratory practice
- Safety – prioritisation of patient safety in practice
- Safety – team working and patient safety
- Safety – equipment management
- Calibration, action levels
- Infection control
- Equipment life cycle, including specification, procurement commissioning, preventative maintenance, fault finding and repair, calibration, safety testing and decommissioning for equipment relevant to the specialism
- Strategies to improve patient safety
- Critical incident reporting, review and action
- ‘Never’ events and strategies to reduce them
- Improving quality of life
- Improving quality of the patient experience of healthcare
- Processes for the distribution of documentation, e.g. Department of Health (DH), Central Alerting System (CAS), Medical Device Alerts (MDA)
- Quality, risk and audit
- Regulatory frameworks such as EU directives and MHRA requirements
- Standard operating procedures, guidelines and protocols
- The contribution to the delivery of high-quality healthcare of the:
 - HCS workforce

- HCS student
- HCSP
- Why it is important to monitor and evaluate the quality of practice and the value of contributing to the generation of data for quality assurance and improvement programmes

Communication Skills

- Principles of effective verbal communication
- Principles of effective written communication
- Communication with those who do not have English as a first language
- Communication with people with sensory and cognitive impairments
- When and how to adapt communication methods
- Communication with patients across the age spectrum
- Use of patient leaflets and other appropriate media methods to engage with patients, donors, carers and the public

Leadership

- The concept of leadership and its application to practice
- The NHS Leadership Framework
- Leadership within the NHS, healthcare science, HCS teams and the multiprofessional team

Teaching and Learning

Students should be introduced to key theories of teaching and learning, including teaching and learning practical skills to begin to support their personal development and provide a base for their future career.

Continuing Personal and Professional Development (CPPD)

- The role and importance of CPPD to ensure that their professional knowledge and skills are being kept up to date

ATTITUDES, BEHAVIOURS AND SKILLS

Professional Practice

- Develop and maintain appropriate professional and patient–professional relationships in practice
- Treat patients with compassion and promoting patient wellbeing and self-care
- Work with colleagues, patients and carers in a respectful and non-discriminatory manner
- Provide safe, high-quality care at all times and in all settings
- Consistently bring the highest levels of knowledge and skill at times of basic human need when care and compassion are what matters most
- Create and justify open and non-discriminatory professional working relationships with colleagues, using critical reflection to review personal behaviour and responses to challenging issues
- Develop and maintain appropriate coping mechanisms for a range of potential issues, including stress, and seek help if appropriate and evaluate the impact of an intervention
- Support and contribute to a culture in which innovation and developments are identified, discussed, evaluated and potentially introduced to improve service delivery
- Recognise and exploit learning opportunities in the workplace
- Act in accordance with the principles and practice of patient-centred care, regularly reflecting on their personal practice and revising judgements and changing behaviour in the light of new evidence
- Practise as an autonomous professional, applying knowledge appropriately and exercising their own professional judgement within their scope of practice and with support from the team
- Promote professional attitudes and values at all times
- Recognise the need to be truthful and to admit to and learn from errors
- Seek advice in the event of ethical dilemmas, including disclosure and confidentiality
- Accept and comply with the requirements for professional regulation.

Legal and Ethical Boundaries of Practice

- Consistently operate in accordance with relevant current NHS policy and practice and recognise the limits of their own competence and scope of practice in order to make safe, informed and reasonable decisions about their practice
- Respond to the ethical, legal and governance requirements arising from working at the level of a HCSP, applying accrued knowledge and evidence
- Recognise the factors influencing ethical decision making, including religion, personal and moral beliefs, cultural practices, and make informed decisions, taking these into account

- Share information in accordance with the regulations, encouraging such behaviour in other members of the healthcare team and taking action where breaches of the guidelines may occur
- Ensure confidentiality is maintained, e.g. removal of patient names where appropriate, reviewing and analysing published literature, and considering the impact of such measures on the clinical service
- Recognise the problems posed by disclosure without consent of the patient, in the public interest
- Ensure patients, relatives and carers are aware of the need for appropriate information distribution within members of the immediate healthcare team
- Use appropriate methods of ethical reasoning to justify a decision where complex and conflicting issues are involved, calling on the support of others where needed
- Act in a manner that demonstrates probity in all aspects of professional practice
- Act in accordance with GSP at all times so that their conduct justifies the trust of patients and colleagues and maintains public trust in healthcare science
- Ensure that personal practice is always provided in line with the legal framework, acting with integrity at all times
- Apply appropriately the principles, guidance and laws regarding medical ethics and confidentiality and demonstrating the ability to gain informed consent
- Complete any/all documentation honestly and accurately and sign appropriately
- Apply honesty and accuracy about personal qualifications, experience and position in the scientific community
- Act honestly with respect to written and verbal information provided to any formal or legal enquiry, including recognition of the limits of scientific knowledge and experience
- Keep records in accordance with current best practice requirements, including accuracy of information recording within-patient records and the framework that underpins data security practice in the NHS

Patient Safety and Quality

- Respond in an open, constructive and timely manner to critical incidents or complaints about their own or team performance, influencing the response, and using self-reflection to review personal behaviour and response to challenging issues
- Take appropriate action if it is suspected that they or a colleague may not be fit to practise, always putting patient safety at the forefront of practice
- Practise within the Standards of Proficiency set by the AHCS and for Biomedical Scientists, the HCPC
- Make appropriate judgements to ensure they limit work or stop practising if performance or judgement is affected by their health

- Recognise when personal health takes priority over work pressures, seeking appropriate advice and support, and taking appropriate action
- Co-operate with employers to ensure compliance with health and safety requirements

Leadership

- Recognise the importance of leading by example in setting high standards of personal behaviour, and in acting with openness, candour, fairness and integrity, listening and respecting the views of others

Continuing Personal and Professional Development (CPPD)

- Contribute to a culture that values CPPD in recognising strengths and identifying areas for improvement and supporting others to do the same
- Continue to develop their own learning and reflective practice by maintaining personal records of CPPD, providing evidence of critical reflection, including action planning, with respect to technical and clinical practice and professional development in a form suitable for audit by a professional body or regulator, and demonstrate continuing fitness to practise
- Apply knowledge, experience and critical reflection to identify personal development needs using a range of tools, and develop and update action plans
- Act as a self-motivated professional HCSP, being willing to learn from self-reflection and others, responding positively to constructive and meaningful feedback
- Record critically reflective notes demonstrating how participation in CPPD has contributed to learning and led to improvements in personal and service performance
- Monitor their own performance by a variety of methods
- Respond constructively to feedback and provide feedback when asked to support personal development and the development of others
- Prioritise and organise academic and work-based tasks in order to optimise their own work and the work of the department

Communication Skills

- Effective verbal communication
- Effective written communication
- Frameworks underpinning communication

- Adapting communication skills
- Giving and receiving feedback, including feedback frameworks

Teaching and Learning

- Introduction to how people learn
- Teaching and learning practical skills
- Transforming experience into knowledge and skills by reflection and action and linking this to the skills of feedback (see above) and work-based learning

GM(ii): Scientific Basis of Healthcare Science (Year 1)

Students should be introduced to every subject area described by each learning outcome and associated indicative content to provide a broad foundation of scientific and healthcare science knowledge on which to build their knowledge, skills and professional practice.

Following the broad overview learning should then be developed in the context of individual BSc (Hons) Healthcare Science programme providing the flexibility to study specific areas in more depth.

1. Introduction to clinical genetics, genomics and personalised medicine

- Meiosis and Mendelian inheritance
- Nucleic acid structure and function
- Chromosome structure and function
- Nomenclature used to describe the human genome
- Common genetic disorders
- Impact of genetic disorders on the patient and their families
- Genomic technology and role of the genome in the development and treatment of disease
- The role of genomic counselling

2. Introduction to epidemiology and public health

- Local, national and international role of the public health function, e.g. Public Health England and related UK organisations
- Infectious disease services
- International partnership working for control of infection
- Principles of epidemiology

- Basis of health protection
 - Principles of surveillance
 - Infectious disease control and emergency planning
- Screening
 - Screening programmes: purpose, design, outcomes
 - Screening programmes: typical screening programmes in healthcare science
- Using epidemiological data to plan health services
- Factors affecting the health of the population
- Strategies and methods to improve health
- Factors affecting health and their contribution to inequalities in health between populations
- Changes in population demographics including ageing

3. Introduction to clinical pharmacology and therapeutics

- Difference between pharmacology, clinical pharmacology, therapeutics and prescribing, and medicine management
- Principles of pharmacology, pharmacokinetics and therapeutics
 - Drug names
 - Classifications
 - Definitions of terms and basic mechanisms
- Role of the pharmacist in primary and secondary care

4. Sociology of health and illness

- Patients' responses to illness and treatment
 - The impact of psychological and social factors, including culture, age, ethnicity, gender, socioeconomic status and spiritual or religious beliefs, on health and health-related behaviour
- Health belief models
- Diversity of the patient experience
- Disability, including learning disabilities
- Mental health
- Potential health inequalities
- Self-care
- Impact of life-threatening and critical conditions
- Patient involvement in decisions regarding their healthcare

This topic area should include the underpinning theoretical foundations and models e.g. Health Belief Model, World Health Organization (WHO) model of activity limitation (disability)

5. Introduction to medical physics and clinical engineering

- Large biological datasets
- Integration of bioinformatic tools and resources and genetic information to interpret and report of test results
- Contribution of clinical bioinformatics and health informatics science to:
 - patient safety
 - patient care
 - healthcare
 - healthcare science
- Governance and ethical frameworks
- Clinical coding/terminology
- Storage and sharing of images, Digital Imaging and Communications in Medicine (DICOM)
- Picture Archiving and Communications Systems (PACS)
- Clinical information systems and applications, e.g. Health Level 7 (HL7)
- Healthcare computer systems
- Database management
- Direct patient access to test results

6. Introduction to clinical bioinformatics and health informatics

Clinical bioinformatics brings together the disciplines of computer science, mathematics, statistics and physics/engineering to influence, analyse and inform clinical and biological practice, so helping to maintain patient safety and the integrity and security of data. Students should be introduced to the three specialisms of clinical bioinformatics within healthcare science (Genomics, Health Informatics Science, and Physical Sciences) in the context of (i) innovation, translation and interpretation of complex genomic data, optimising the benefits this brings to patient care, including personalised medicine; (ii) the development and adoption of technology solutions and biomedically motivated methods for the collection, management, movement, analysis and use of health information in line with government legislation to improve the quality and safety of health care practice and delivery; and (iii) devices that may have therapeutic, diagnostic or patient monitoring functions and they generate ever-increasing amounts of data that contribute to patient management.

Teaching should be tailored to the student group using examples relevant to health and healthcare science.

- Contribution of clinical bioinformatics genomics, health informatics sciences and physical sciences to:
 - patient safety
 - patient care
 - healthcare
 - healthcare science
- Governance and ethical frameworks
- Storage and sharing of images, Digital Imaging and Communications in Medicine (DICOM)
- Picture Archiving and Communications Systems (PACS)
- Clinical information systems and applications
- Clinical information systems and applications, e.g. Health Level 7 (HL7)
- Database management
- Direct patient access to test results

7. Introduction to mathematical and statistical techniques

- Data interpretation, including the variability of biological data and application of statistics
- Generation of reference ranges and their limitations

8. Introduction to innovation in health and healthcare science

- Identifying, reading and evaluating the literature
- Innovation in the NHS
- Using innovation to improve services
- Scientific and technical developments and their application in healthcare science
- The role of the HCS workforce in innovation

GM(iii): Research Methods (Year 2)

1. Research, innovation and audit

- Process and importance of research, innovation and audit to the NHS and healthcare science
- Role of healthcare science in research, innovation and audit
- NHS Research and Innovation Strategy
- Difference between research, audit and service improvement

- User/patient involvement
- Peer review
- Role of statutory, advisory regulatory bodies and funding bodies, including:
 - National Institute for Health and Care Excellence (NICE)
 - National Institute for Health Research (NIHR)
- Evidence-based practice
- Clinical guideline development
- Quality assurance frameworks
 - Quality improvement
 - Patient care
 - Patient safety
 - Improved treatments
- The role of the HCS workforce in undertaking research and innovation and applying findings
- Use of research and audit to interpret and apply new knowledge in the NHS and healthcare science

2. **Current ethical and legal frameworks**

- Good Clinical Practice (GCP)
- Health and safety
- Risk assessment
- Human research
- Animal research
- Innovation
- Audit
- Ethical frameworks, including informed consent
- Legal frameworks
- Confidentiality
- Archiving
- Research governance framework for health and social care research
- Data Protection Act
- Intellectual property regulations

- Informed consent
- Roles and responsibilities of the research team

3. Principles of literature searching

- Evidence-based practice
- Principles of a literature search
- Process of literature searching
- Critical review of literature
- Systematic review
- Publication Impact Factor
- Reference manager systems

4. Introduction to study design

- Cohort studies
- Qualitative
- Quantitative
- Case control
- Systematic review
- Meta-analysis
- Sampling techniques
- Clinical trials (pre-clinical to translational)
- Epidemiological studies
- Hypothesis generation and testing
- Clinical trials

5. Data analysis, statistical techniques and dissemination

- Data validity, reliability and appropriateness
- Application and interpretation of statistical techniques
 - Parametric
 - Non-parametric
- Power calculations/Sample size

- Methods to disseminate research output
- Impact factor
- Scientific poster design
- Writing for scientific journals
- Writing scientific abstracts
- Preparing research presentations for time limited scientific meetings

GM(iv): Research Project (Year 3)

1. Research in health and healthcare science including:

- Scientific or clinical research
- Translational research
- Operational and policy research
- Clinical education research
- Innovation, service development
- Service improvement
- Supporting professional service users

2. Ethical and governance approval process

- The student must know the ethical approval and governance process required to undertake the proposed project, including initial approval, monitoring, reporting, data storage and archiving

Year 1: Anatomical Pathology Modules

Work-based Training

[0 credits]

- Observe the work of a range of HCS departments, technologies and procedures
- Gain an understanding of the skills required to work safely in the clinical/laboratory/workshop/radiation environment
- Record keeping, data protection, confidentiality

- Gain an appreciation of how the NHS is structured
- Team working and the role of MDT meetings
- Meaning and role of professionalism and professions in healthcare
- Roles of different professional groupings in healthcare science
- Human and social diversity and its implications for relationships, behaviours and service provision in healthcare
- Types of effective communication in the context of healthcare.
- Barriers to effective communication and strategies to overcome them
- Interpersonal skills related to dealing with patients, carers and healthcare professionals
- The skills needed to work as part of a team
- Management and evaluation of adverse incidents
- Data management (paper and electronic)
- Infection control
- Reflective practice and its application
- Roles undertaken by a HCSP relevant to each area of the placements
- Range of technologies and procedures relevant to the placements
- How the work of the HCS workforce contributes to the patient pathways and screening programmes relevant to the placements
- The need to ensure that the needs and wishes of deceased and relatives/friends are central to their care
- The impact of adverse incidents and the procedures and need for evaluation of adverse incidents
- Dress code policy
- The standards of professional behaviour expected of a healthcare practitioner
- Shared responsibility for infection control

Year 2: Anatomical Pathology Modules

APT (ii): Cultural, Ethical and Legal Aspects of Mortuary Practice [20 credits]

- Funeral customs and practices associated with different religious, non-religious and cultural traditions, including:
 - Christianity
 - Judaism

- Islam
- Sikhism
- Buddhism
- Hinduism
- Ethical and practical issues associated with accommodating the dead prior to their disposal
- Health and safety legislation
- The Human Tissues Act (2004) or subsequent legislation
- The Tissue Act (Scotland 2006) or subsequent legislation
- Legal and ethical considerations associated with the need for post-mortem examination, including consent and confidentiality
- Ethical and practical issues surrounding body donation for teaching and research purposes
- Practical and ethical concerns pertaining to organ/tissue donation, autopsied bodies, removal of medical implants and preparing bodies for cremation or funerals

Year 2

APT (iii): Biological Markers of Death and Decomposition [20 credits]

- Common terminology used in microbiology
- General properties (i.e. structure, nutrition and growth) of microorganisms
- Indigenous microflora of the human body
- Microbial degradation and tissue necrosis
- Contamination issues in the workplace
- Safe working practices and control of microorganisms in the workplace
- Forensic examination in cases of suspicious death
- Biomarkers in estimation of time of death
- Indicative entomology

Year 2

APT (iv): Systemic Pathology

[20 credits]

- Response of the body to injurious agents: natural defence mechanisms
- Vascular and cellular responses of living tissue to injury
- Pathogenesis – biochemical, cellular, tissue and organ events that result in the formation of lesions
- Necrosis and apoptosis
- Systemic pathology – the diseases of the organ systems of the body, such as the respiratory system, digestive system and nervous system
- Analytical techniques applicable to assessing the extent of chemical change following death
- Histological and biochemical techniques, including immunological methods, cytology, cytogenetics, light microscopy and histometry. To include the quality assessment methodology used for each technique
- The composition and mode of action of embalming fluids
- Case studies of specific diseases and the post-mortem conditions of human remains in relation to disease
- Potential effects of disease conditions on the post-mortem preparation of the deceased

Year 2

APT (v): Forensic Pathology

[20 credits]

- Legislation governing forensic post-mortem examination in each of the four countries of the UK
- The Human Tissues Act (2004) or subsequent legislation
- The Tissue Act (Scotland 2006) or subsequent legislation
- The role of the police, coroner and procurator fiscal in forensic post-mortem examination
- Requirements for assuring chain of custody
- Procedures for statement writing in forensic post-mortem examination
- Documentation required in forensic post-mortem examination
- Methods used in forensic post-mortem examination
- Methodological developments in forensic post-mortem examination

Year 2

APT (vi): Tissue Retrieval

[20 credits]

- The Human Tissues Act (2004) or subsequent legislation
- The Tissue Act (Scotland 2006) or subsequent legislation
- The European Tissues and Cells Directive
- The role of the Human Tissue Authority (HTA)
- The role of Tissue Banks
- HTA Codes of Practice relating to tissue retrieval
- Network of mortuary services approved for tissue retrieval
- Ethical and practical issues for individual tissue donors and for relatives of the deceased
- Procedure for obtaining consent for tissue retrieval
- Procedure for making arrangements for tissue retrieval
- Procedure for transport of retrieved tissue
- Record keeping
- Health and safety issues associated with tissue retrieval
- Quality assurance procedures associated with tissue retrieval

Year 2

APT (iv): Mortuary Governance

[20 credits]

- The Human Tissues Act (2004) or subsequent legislation
- The Tissue Act (Scotland 2006) or subsequent legislation
- The role of the Human Tissue Authority (HTA)
- HTA Codes of Practice relating to tissue retrieval
- Cremation regulations and the completion of cremation forms
- Registration and death certification.
- Home Office Forensic Science Regulation
- Clinical Pathology Accreditation UK Ltd Standards

- The assessment and evaluation of new equipment, methods and procedures prior to routine use
- Health and safety legislation
- Data Protection Act
- Caldicott Guardian
- Equality and diversity legislation
- Local governance and accountability arrangements
- Purpose and practice of audit
- Multidisciplinary team working
- Procedures for handling complaints
- *Good Scientific Practice*
- AHCS regulation
- Major incident planning

Year 3

APT (viii): Neuropathology

[20 credits]

- Normal anatomy of the brain, spinal cord and nervous system
- Common neuropathological disorders that may contribute to death
- Brain abnormalities seen during neuropathological post-mortem examination
- Spinal cord and nervous system abnormalities seen during neuropathological post-mortem examination
- Legislation applicable to neuropathological post-mortem examination
- Organisation of neuropathological post-mortem examination services
- Local guidelines for the performance of neuropathological post-mortem examination
- Methods used in neuropathological post-mortem examination
- Methodological developments in neuropathological post-mortem examination
- Research governance as applied to neuropathological post-mortem examination
- Record keeping and audit in neuropathological post-mortem examination

Year 3: Anatomical Pathology Modules

APT (ix): Paediatric and Perinatal Pathology

[20 credits]

- Basic genetics, including the structure of DNA, chromosomes, genes and the human genome
- Basic embryology, including stages of development of the normal fetus
- Control of normal infant and childhood growth and development
- Normal fetal, infant and childhood anatomy
- Causes of common congenital disorders that may lead to fetal, infant, or childhood death
- Presentation of common congenital disorders seen during paediatric post-mortem examination
- Common non-genetic causes of death in the fetus, infant, or child
- Legislation applicable to paediatric post-mortem
- Organisation of paediatric post-mortem services
- Local guidelines for the performance of paediatric post-mortem
- Methods used in paediatric post-mortem
- Methodological developments in paediatric post-mortem
- Research governance as applied to paediatric post-mortem
- Record keeping and audit in paediatric post-mortem
- Support for bereaved parents and relatives

Year 3

APT (x): Managing a Mortuary Service

[20 credits]

- The NHS – structure, organisation, systems, strategy (within generic Professional Practice)
- NHS clinical leadership framework (some within generic Professional Practice)

Key concepts in human resource management applied to the management of a mortuary service

- Writing job descriptions/person specifications

- Recruitment/selection
- Performance management/appraisal
- Staff motivation
- Developing yourself and others
- Managing conflict/stress/employment relationships in the workplace
- Change management
- Financial management – working with costs and budgets
- Information management
- Personal skills
 - Influencing
 - Decision making
 - Feedback
 - Communication
 - Team building, leading, etc.
 - Organising and delegating
 - Time management
- Managing effective meetings
- Managing health and safety
- Managing quality systems, including service users
- Service development, service redesign

Models and strategies to lead and manage change and innovation in service delivery

- Use of evidence to inform and evaluate practice of leadership and management in health
- Key factors influencing human behaviour in organisations at individual, group and organisational level
- Use of information to make well-informed decisions as a strategic manager

SECTION 5.5: GENERIC WORK-BASED SYLLABUS: ANATOMICAL PATHOLOGY

*This section describes the Learning Framework for the **Generic, Theme** and **Specialist** components of work-based learning covering the Learning Outcomes, Clinical Experiential Learning, Competence, and Applied Knowledge and Understanding.*

DIVISION	Life Sciences
THEME	Life Sciences
SPECIALISM	Anatomical Pathology Technology

MODULE	Generic Introduction to Work-based Learning	Component	Generic Year 1
AIM	The aim of this module is to introduce the student to the workplace and enable them to apply and contextualise the knowledge and skills they have gained in the module 'Scientific Basis of Healthcare Science' and the Year 1 modules in each healthcare science theme. Students will be expected to perform some routine skills and develop and build their professional practice in accordance with <i>Good Scientific Practice</i> .		
SCOPE	On completion of this module the student will be able to perform basic life support and infection control techniques and use effective communication skills in the context of patient-centred care, and recognise the role of the specialism in patient care. They will also be expected to adhere to health and safety procedures and work safely in the workplace adhering to the trust procedures and governance, including patient confidentiality and the Data Protection Act.		

LEARNING OUTCOMES

On successful completion of this module the student will:

1. Perform a range of generic skills, including infection control, basic life support, communication and team working, adhering to health and safety regulations, and behaving in a professional manner in accordance with *Good Scientific Practice*.

CLINICAL EXPERIENTIAL LEARNING

The clinical experiential learning for this module is:

- Observe how staff in the workplace communicate with patients and reflect on the importance of effective communication in the workplace with respect to patient-centred, compassionate care.
- Shadow a qualified healthcare science practitioner and discuss the role of the practitioner in Life Sciences and their contribution to healthcare and multiprofessional teams.

All of these experiences should be recorded in your e-portfolio.

The following section details the competence and knowledge and understanding each trainee must gain. Each competence is linked to the relevant learning outcomes and trainees must demonstrate achievement of each competence for each linked learning outcome.

KEY LEARNING OUTCOMES	COMPETENCES	KNOWLEDGE AND UNDERSTANDING
1	Control infection risks in accordance with departmental protocols, always washing hands in accordance with the six-stage hand-washing technique when necessary.	<ul style="list-style-type: none"> • Protocols and requirements for hygiene and infection control related to the relevant range of investigations, including preparation, conduct and completion of investigation. • Protocol for hand washing and how effective hand washing contributes to control of infection and local trust requirements.
1	Perform basic life support in accordance with current Resuscitation Council (UK) guidelines.	<ul style="list-style-type: none"> • Current Resuscitation Council (UK) guidelines.
1	Use effective communication skills within the healthcare environment.	<ul style="list-style-type: none"> • The principles of effective communication, including written and electronic, verbal and non-verbal. • The importance of introducing yourself and your role as a student healthcare science practitioner as part of the process of introduction and consent. • Patient-centred care and the importance of informed consent and involving patients in decisions about their healthcare. • The importance of ensuring the patient is aware of the role of the member of the HCS workforce. • The importance of introducing oneself and explaining one's role to the patient. • The way effective communication can assist in identifying problems accurately, increase patient satisfaction, enhance treatment adherence, and reduce patient distress and anxiety. • The importance of some key ideas, for example signposting, listening, language, non-verbal behaviour, ideas, beliefs, concerns, expectations and summarising in communication.
1	Adhere to safe working practice in the workplace.	<ul style="list-style-type: none"> • The relevant health and safety regulations specific to the workplace and investigations undertaken, the potential hazards and risks and the actions to be

KEY LEARNING OUTCOMES	COMPETENCES	KNOWLEDGE AND UNDERSTANDING
		taken to minimise these.
1	Work professionally in the workplace at all times.	<ul style="list-style-type: none"> • <i>Good Scientific Practice.</i>

SECTION 5.6: WORK-BASED LEARNING: YEAR 1

ANATOMICAL PATHOLOGY TECHNOLOGY

Royal Society of Public Health Diploma

This section should be read in conjunction with the RSPH Guidance for Assessment in the Workplace, which can be found in the Appendices.

MODULE	Management of Mortuary Function (RSPH Unit APT4.6)	Component	Specialist Year 1
AIM	The aim of this work base module is to ensure that the student gains a range of skills that underpin the management of the mortuary. The student will be expected to apply their knowledge and integrate and embed the professional practice learning outcomes, and practise safely in the workplace.		
SCOPE	Students will be expected to carry out a range of data management tasks, manage mortuary resources, and develop and maintain mortuary records. They will also be expected to maintain the quality of the mortuary services. They will be expected to spend time in a histology department and observe sample receipt, sample preparation, a range of basic laboratory equipment used, and the reporting and interpretation of the results. Students will also be expected to apply their knowledge and develop and build their professional practice safely and in accordance with <i>Good Clinical Practice</i> .		

LEARNING OUTCOMES

On successful completion of this module the student will be able to:

1. Carry out data management.
2. Manage mortuary resources.
3. Develop and maintain mortuary records.
4. Maintain the quality of mortuary services.

CLINICAL EXPERIENTIAL LEARNING

The clinical experiential learning for this module is:

- Follow the journey of a person who has died in the hospital and undergoes a non-forensic post-mortem examination, observing each stage of the journey and reflecting on key aspects of the process that will inform your future practice as an anatomical pathology technologist.

All of these experiences should be recorded in your e-portfolio.

The following section details the competence and knowledge and understanding each student must gain. Each competence is linked to the relevant learning outcomes and trainees must demonstrate achievement of each competence for each linked learning outcome.

KEY LEARNING OUTCOMES	COMPETENCES	KNOWLEDGE AND UNDERSTANDING
1	Identify data management requirements.	<ul style="list-style-type: none"> • Why data relevant to the work of the mortuary needs to be managed. • Requirements for resource management within the mortuary. • Requirements for record keeping in the mortuary. • Why the standard of mortuary services needs to be maintained or improved.
1	Verify sources of data used in the mortuary.	
1	Analyse data with the use of standard tools and techniques.	
1	Comply with procedural requirements regarding the storage and release of data.	
2	Ensure procedures are complied with regarding storage and maintenance of resources.	
2	Maintain adequate stocks of consumables to ensure the mortuary operates efficiently.	
2	Monitor the use of resources.	
2	Conduct stock taking of resources as required by mortuary management.	
2	Review the resource requirements of the mortuary.	
2	Justify requests for additional resources and equipment.	
3	Identify the record-keeping requirements of the mortuary.	
3	Store, maintain and retrieve records appropriately.	
3	Ensure required information is	

KEY LEARNING OUTCOMES	COMPETENCES	KNOWLEDGE AND UNDERSTANDING
	recorded at receipt of deceased persons, during post-mortems and at disposal of body.	
3	Ensure that confidentiality of records is maintained.	
3	Ensure that arrangements for record keeping comply with legislative and regulatory requirements.	
4	Monitor the standard of performance in the mortuary against the quality management systems, statements and protocols that are applicable to the mortuary.	
4	Identify areas of underperformance in the mortuary against accepted quality standards.	
4	Develop action plans to address any area of underperformance.	
4	Identify any additional resources required by the mortuary to achieve or maintain the quality standard.	

MODULE	Management of the Deceased in the Mortuary (RSPH Unit APT4.7)	Component	Specialist Year 1
AIM	This module addresses the management of the deceased in the mortuary. The student will understand and undertake the procedures for registration, storage and disposal of the deceased. They will also understand and undertake procedures to identify and release tissues from the body.		
SCOPE	This module will enable the student to apply their understanding and gain practical experience of the registration, storage and disposal of deceased persons in the mortuary and the identification and release of tissues. Students will also be expected to apply their knowledge and develop and build their professional practice safely and in accordance with <i>Good Clinical Practice</i> .		

LEARNING OUTCOMES

On successful completion of this module the student will be able to carry out procedures for the:

1. Registration of deceased persons in the mortuary.
2. Storage of deceased persons in the mortuary.
3. Disposal of deceased persons in the mortuary.
4. Identification of tissues.
5. Release of tissues.

CLINICAL EXPERIENTIAL LEARNING

The clinical experiential learning for this module is:

- Follow the journey of a number of deceased persons who arrive in the mortuary, observing each stage of their admission and stay in the mortuary through to release, reflecting on key aspects of the process that will inform your future practice as an anatomical pathology technologist.

All of these experiences should be recorded in your e-portfolio.

The following section details the competence and knowledge and understanding each student must gain. Each competence is linked to the relevant learning outcomes and trainees must demonstrate achievement of each competence for each linked learning outcome.

KEY LEARNING OUTCOMES	COMPETENCES	KNOWLEDGE AND UNDERSTANDING
1	Confirm the identity of the deceased person.	<ul style="list-style-type: none"> • Why procedures for the registration of the deceased are required. • The purpose of procedures for the storage and disposal of deceased persons in the mortuary. • The purpose of procedures for the identification and release of tissues.
1	Follow procedures for the registration of deceased persons in the mortuary.	
1	Check that all legal requirements relating to registration of deceased persons are complied with.	
1	Ensure valuables and property belonging to deceased persons is correctly recorded and stored.	
2	Prepare deceased persons for storage.	
2	Follow procedures for the transport of deceased persons to and from appropriate storage facilities.	
2	Ensure requirements for the labelling of deceased bodies in storage are fully complied with.	
2	Ensure that religious and cultural beliefs are taken into account when preparing deceased persons for storage.	
3	Follow procedures for the release of the deceased prior to disposal.	
3	Confirm the identity of individuals who will be receiving the body of the deceased individual.	
3	Ensure that all legal and regulatory	

KEY LEARNING OUTCOMES	COMPETENCES	KNOWLEDGE AND UNDERSTANDING
	requirements for the disposal of bodies for burial or cremation are complied with.	
4	Identify tissues that are subject to regulatory requirements.	
4	Comply with regulatory requirements for the control of tissue samples.	
4	Ensure requirements for the labelling and identification of tissue are fully complied with.	
5	Follow procedures for the identification of tissues before the tissue is released.	
5	Confirm the identity of individuals who will be receiving the tissue.	
5	Ensure that all legal, regulatory and other requirements for the release of tissues are complied with.	

MODULE	Bereavement Support (RSPH Unit APT4.8)	Component	Specialist Year 1
AIM	This module addresses bereavement support. The student will understand how to manage the viewing process of the deceased. They will also understand the importance of support for the bereaved, including during special circumstances.		
SCOPE	In this module the student will be expected to be able to manage the viewing process under circumstances in which the viewing is restricted and provide support to the bereaved in a range of situations. Students will also be expected to apply their knowledge and develop and build their professional practice safely and in accordance with <i>Good Clinical Practice</i> .		

LEARNING OUTCOMES

On successful completion of this module the student will be able to:

1. Manage the viewing process for a deceased person under circumstances in which viewing is restricted.
2. Provide support to the bereaved in circumstances of sudden death, death of children, and organ and tissue transplantation.

CLINICAL EXPERIENTIAL LEARNING

The clinical experiential learning for this module is:

- Observe how people with different religious beliefs and people from different cultures react to death and discuss your observations with your training officer, considering how you will use the experience as you learn how to interact with the bereaved.
- Interact with different groups of bereaved people and gain an understanding of how grief may affect people in different ways and how that can relate to the mode of death, and reflect on your experience and how you will apply your learning in your future practice.

All of these experiences should be recorded in your e-portfolio.

The following section details the competence and knowledge and understanding each student must gain. Each competence is linked to the relevant learning outcomes and trainees must demonstrate achievement of each competence for each linked learning outcome.

KEY LEARNING OUTCOMES	COMPETENCES	KNOWLEDGE AND UNDERSTANDING
1	Confirm the restrictions on the viewing of the deceased by relatives, friends and carers.	<ul style="list-style-type: none"> • Reasons why there may be restrictions on the viewing of the deceased by relatives, friends and carers. • Why communications with relatives, friends and carers of the deceased should be conducted in a sensitive manner. • Sources of support and guidance that can be made available to the bereaved.
1	Ensure that preparation of the deceased for viewing is compatible with the restrictions.	
1	Communicate sensitively with relatives, friends and carers prior to and during the viewing of the deceased.	
1	Take appropriate protective measures when preparing the deceased for viewing and during the viewing process.	
2	Communicate appropriate information to the bereaved in a sensitive manner.	
2	Monitor the bereaved's wellbeing during their visit to the mortuary, including during formal identification/viewing of the deceased.	
2	Advise relatives, friends and carers sensitively with regard to any legal requirements and procedures for post-mortem examinations and/or removal of tissues and organs.	
2	Refer relatives, friends and carers to additional sources of support and	

KEY LEARNING OUTCOMES	COMPETENCES	KNOWLEDGE AND UNDERSTANDING
	guidance as required.	

MODULE	Specialist Practical Mortuary Skills (RSPH Unit APT4.9)	Component	Specialist Year 1
AIM	This module addresses the specialist practical mortuary skills required by the APT. The student will understand and assist with specialised post-mortem examinations, evisceration, tissue retrieval, and tissue and body reconstruction.		
SCOPE	In this module students will gain experience of specialist post-mortem examinations, evisceration techniques, body and tissue reconstruction. They will also be expected to perform tissue retrieval from a deceased person. Students will be expected to apply their knowledge and develop and build their professional practice safely and in accordance with <i>Good Clinical Practice</i> .		

LEARNING OUTCOMES

On successful completion of this module the student will be able to carry out:

1. Specialised post-mortem examinations.
2. Specialised evisceration techniques.
3. Specialist body and tissue reconstruction following post-mortem examination.
4. Tissue retrieval from a deceased person.

CLINICAL EXPERIENTIAL LEARNING

The clinical experiential learning for this module is:

- Visit a hospital histology department and observe sample receipt, sample preparation, a range of basic laboratory equipment used, and the reporting and interpretation of the results.

All of these experiences should be recorded in your e-portfolio.

The following section details the competence and knowledge and understanding each student must gain. Each competence is linked to the relevant learning outcomes and trainees must demonstrate achievement of each competence for each linked learning outcome.

KEY LEARNING OUTCOMES	COMPETENCES	KNOWLEDGE AND UNDERSTANDING
1	Follow procedures relevant to forensic post-mortem examinations and associated activities.	<ul style="list-style-type: none"> • The need for specialised post-mortem examination for the following categories of deceased person: forensic, paediatric/perinatal, neuropathological and danger of infection (high risk). • Procedures for specialised evisceration techniques and tissue retrieval. • Why specialist reconstruction techniques may be necessary.
1	Follow procedures relevant to paediatric/perinatal post-mortem examinations and associated activities.	
1	Follow procedures relevant to neuropathological post-mortem examinations and associated activities.	
1	Follow procedures relevant to post-mortem examinations and associated activities where there is a danger of infection (high risk).	
1	Assist with a forensic post-mortem examination under the direction of a pathologist.	
1	Assist with a paediatric/perinatal post-mortem examination under the direction of a pathologist.	
1	Assist with a neuropathological post-mortem examination under the direction of a pathologist.	
1	Assist with a post-mortem examination under the direction of a pathologist where there is a danger of infection (high risk).	
1	Follow procedures for recording and	

KEY LEARNING OUTCOMES	COMPETENCES	KNOWLEDGE AND UNDERSTANDING
	documenting observations and results during post-mortem examinations.	
2	Remove the following organs and structures from the deceased during post-mortem examination: <ul style="list-style-type: none"> • middle ear • femoral head/femur • spinal cord • eyes. 	
2	Follow standard operating procedures for the storage of organs and structures following specialist evisceration.	
3	Reconstruct features of the deceased person that have undergone significant trauma.	
3	Reconstruct the body of a deceased person that has undergone decomposition.	
3	Reconstruction of paediatric/perinatal cases.	
4	Retrieve the following organs and tissues from a deceased person for the purpose of donation: <ul style="list-style-type: none"> • cornea • heart valves. 	
4	Retrieve organs and tissues from a	

KEY LEARNING OUTCOMES	COMPETENCES	KNOWLEDGE AND UNDERSTANDING
	deceased person for the purpose of research.	
4	Follow standard operating procedures and legislative/regulatory requirements during the retrieval of tissue.	

MODULE	Deliver and Evaluate Training in Anatomical Pathology Technology (RSPH Unit APT4.10)	Component	Specialist Year 1
AIM	This module addresses the management of the deceased in the mortuary. The student will understand and undertake the procedures for registration, storage and disposal of the deceased. They will also understand and undertake procedures to identify and release tissues from the body.		
SCOPE	This module will enable the student to manage the viewing process for a deceased person, adapting the viewing room appropriately and communicating in a sensitive manner with the relatives. They will also be expected to manage viewings with restrictions. Students will also be expected to apply their knowledge and develop and build their professional practice safely and in accordance with <i>Good Clinical Practice</i> .		

LEARNING OUTCOMES

On successful completion of this module the student will be able to:

1. Prepare to deliver training programmes for APT.
2. Deliver training programmes for APT.
3. Evaluate the effectiveness of delivery of the training programme.

CLINICAL EXPERIENTIAL LEARNING

The clinical experiential learning for this module is:

- Review a range of teaching sessions in which you have been the learner, identify areas of good practice and those that could be improved, and develop an action plan to use this learning to adjust your own teaching.

All of these experiences should be recorded in your e-portfolio.

The following section details the competence and knowledge and understanding each student must gain. Each competence is linked to the relevant learning outcomes and trainees must demonstrate achievement of each competence for each linked learning outcome.

KEY LEARNING OUTCOMES	COMPETENCES	KNOWLEDGE AND UNDERSTANDING
1	Select training methods appropriate to the learning outcomes required, stage of the training cycle and for a range of learning styles.	<ul style="list-style-type: none"> • Evidence base underpinning teaching methods. • Learning styles and how to determine individual learning styles. • Range of training methods considered. • Justification for training method selected regarding its suitability for the required learning outcomes to promote student-centred, adult, active learning. • Outline of the training cycle. • Consideration of different learning styles and how appropriate training methods can enhance these. • Regulatory requirements for training anatomical pathology technologists, including health and safety and equal opportunities, and any 'in-house' requirements.
1	Plan the delivery of the training programme, to include appropriate time allocation and identification of resources and facilities.	
1	Ensure resources and facilities appropriate to the training programme are available.	
1	Identify potential problems that might occur during the training programme and make suitable provision for these.	
1	Ensure training methods selected comply with all relevant standards and regulations.	
2	Carry out the training programme effectively in accordance with the plan.	<ul style="list-style-type: none"> • Methods to monitor progress. • How to adapt delivery to take account of a range of learning styles. • Principles of supervision and mentoring.
2	Use three different techniques to monitor the progress of the trainees.	
2	Adapt the delivery of the training programme to take account of differences in learning styles and progress of the trainees or as a result of problems encountered.	
2	Provide appropriate feedback and	<ul style="list-style-type: none"> • The evidence base underpinning the use of feedback in teaching.

KEY LEARNING OUTCOMES	COMPETENCES	KNOWLEDGE AND UNDERSTANDING
	encouragement to trainees during the training programme.	<ul style="list-style-type: none"> • Feedback models, including the advantages and disadvantages. • Range of techniques used to encourage interaction and promote student-centred active, adult learning and understanding. • Use of questionnaires, group discussion, etc., to obtain feedback from trainees on effectiveness of specific training methods.
2	Ensure the training programme is carried out in a manner and environment that encourages interaction between trainer and trainees and promotes learning and understanding.	<ul style="list-style-type: none"> • How to ensure the training programme is carried out in a manner and environment that encourages interaction between trainer and trainees and promotes learning and understanding. • How to ensure delivery of the training programme complies with all relevant standards and regulations.
2	Ensure delivery of the training programme complies with all relevant standards and regulations.	
3	Use three different techniques to determine the extent to which the trainees have met the learning outcomes of the training programme.	<ul style="list-style-type: none"> • Suitable evidence used, such as attainment of learning outcomes and trainee feedback to identify good and poor performance of different aspects of the training programme. • Assessment methods – valid, fair, reliable, consistent, etc. • Student feedback. • Peer review of teaching.
3	Obtain feedback from trainees on the effectiveness of the training methods adopted.	
3	Identify, with the use of appropriate evidence, aspects of the delivery of the training programme that performed well and aspects that performed less well.	
3	Revise the delivery of the training programme to take account of the	

KEY LEARNING OUTCOMES	COMPETENCES	KNOWLEDGE AND UNDERSTANDING
	feedback and evaluation.	

SECTION 5.7: WORK-BASED LEARNING: YEAR 2
ANATOMICAL PATHOLOGY TECHNOLOGY

MODULE	Cultural, Ethical and Legal Aspects of Mortuary Practice	Component	Specialist Year 2
AIM	This module addresses the cultural, ethical and legal aspects of mortuary practice. The student will apply their knowledge of the variety of contemporary funeral practices associated with different cultural and religious traditions in practice, and will become familiar with the ethical and legal issues associated with post-mortem examination, including consent, confidentiality and the donation of the body for teaching and research purposes, and work within these guidelines.		
SCOPE	During this module the student will continue to assist with post-mortem examinations under the direction of a pathologist, spanning different religious and cultural backgrounds and including discussions with relatives, preparation of the body, evisceration, tissue retrieval, reconstruction, viewing of the deceased and funeral arrangements. Students will be expected to apply their knowledge and develop and build their professional practice safely and in accordance with <i>Good Clinical Practice</i> .		

LEARNING OUTCOMES

On successful completion of this module the student will:

1. Assist at post-mortem examinations of people from different religious and cultural backgrounds, including, as appropriate: discussion with relatives; preparation of the body; evisceration; tissue retrieval; reconstruction; viewing of the deceased; and funeral arrangements.
2. Adhere to appropriate standards of professional practice as defined in *Good Scientific Practice* in this work-based module.

CLINICAL EXPERIENTIAL LEARNING

The clinical experiential learning for this module is:

- Visit funeral directors' premises and observe the process of receiving the deceased person through to the funeral, and critically reflect on the specific arrangements needed to meet cultural requirements.
- Participate in a range of internal and/or external meetings and maintain a reflective practice diary of each activity and your plans to address identified personal learning needs.

All of these experiences should be recorded in your e-portfolio.

The following section details the competence and knowledge and understanding each student must gain. Each competence is linked to the relevant learning outcomes and trainees must demonstrate achievement of each competence for each linked learning outcome.

KEY LEARNING OUTCOMES	COMPETENCES	KNOWLEDGE AND UNDERSTANDING
1	Use effective communication skills within the healthcare environment, adapting communication style and language to meet the needs of the listener.	<ul style="list-style-type: none"> • The principles of effective communication, including written and electronic, verbal and non-verbal. • The way effective communication can assist in identifying problems accurately, increase patient satisfaction, enhance treatment adherence, and reduce distress and anxiety. • The importance of some key ideas, for example signposting, listening, language, non-verbal behaviour, ideas, beliefs, concerns, expectations and summarising in communication.
1	Minimise risks and hazards in compliance with health and safety policies.	<ul style="list-style-type: none"> • The relevant health and safety regulations specific to the working environment, the potential hazards and risks, and the actions to be taken to minimise these.
1	Control infection risks in accordance with departmental protocols.	<ul style="list-style-type: none"> • How biological agents are categorised in terms of their risk to health, including the Approved List of biological agents as set out by the Advisory Committee on Dangerous Pathogens under Section 15 of the Health and Safety at Work etc Act 1974. • The main requirements of current relevant guidance as it relates to infection control, including requirements of current guidance, such as use of PPE, 'sharps' policy, containment, disposal, cleaning and disinfection procedures. • Protocols and requirements for hygiene and infection control. • Protocol for hand washing and how effective hand washing contributes to control of infection and local trust requirements.
1	Prepare the body for post-mortem, ensuring all legal and ethical requirements have been met.	<ul style="list-style-type: none"> • Issues associated with the period after death, including post-mortem examination and disposal of the body, and the likely impact on the family and friends of the deceased.
1	Assist at post-mortems of people from different religious and cultural backgrounds.	<ul style="list-style-type: none"> • Legal and ethical requirements associated with the period immediately following death, including post-mortem examination and the disposal of

KEY LEARNING OUTCOMES	COMPETENCES	KNOWLEDGE AND UNDERSTANDING
1	Perform evisceration procedures in accordance with the protocol.	<p>the dead.</p> <ul style="list-style-type: none"> • Procedures to be followed when dealing with sensitive legal and ethical issues. • Important and ethical issues relevant to the role of an APT, in particular those associated with post-mortem examination and body and organ/tissue donation.
1	Reconstruct the features of the deceased person as necessary.	<ul style="list-style-type: none"> • Application of reconstruction techniques, including sewing, specialist sewing, glueing and stapling. The use of prosthetics, plaster of Paris and packing to reshape the deceased to a natural form.
1	Perform the required tissue sampling.	<ul style="list-style-type: none"> • Local protocols. • HTA regulations/post-mortem examination standards.
1	Discuss the planned funeral arrangements with relatives.	<ul style="list-style-type: none"> • Legal requirements for disposal of deceased. • Funeral practices and requirements associated with defined religions and non-religious traditions.
1	Write reflective notes on cases from the workplace where the post-mortem examination has been influenced by cultural, ethical and/or legal issues, analysing your response and developing an action plan to identify and address further learning.	<ul style="list-style-type: none"> • Models of reflection. • Religious and cultural aspects of death.
1	Discuss your learning from your reflections with your supervisor.	
2	Reflect on your practice during this period of work-based training and generate a reflective diary that demonstrates how you take	<ul style="list-style-type: none"> • Personal values, principles and assumptions, emotions and prejudices, understanding how these may influence personal judgement and behaviour. • The role of critical reflection and reflective practice and the methods of

KEY LEARNING OUTCOMES	COMPETENCES	KNOWLEDGE AND UNDERSTANDING
	responsibility for your learning and utilise the skills required of an independent learner.	<p>reflection that can be used to maintain or improve knowledge, skills and attitudes.</p> <ul style="list-style-type: none"> • How continuous personal development can improve personal performance.
2	Work constructively and effectively as a member of a multidisciplinary team.	<ul style="list-style-type: none"> • The underpinning principles of effective teamwork and working within and across professional boundaries.

MODULE	Biological Markers of Death and Decomposition	Component	Specialist Year 2
AIM	This module provides a focused study of applied microbiology and investigation. It aims to equip students with the knowledge and skills necessary to understand the effects of the most commonly encountered microorganisms involved in death and decomposition of the human body and their use as markers. Additionally this module will reinforce the importance of safe working practices and control of microorganisms in the workplace.		
SCOPE	During this module the student will be expected to assist during post-mortem examinations where biomarkers are used to help determine the time of death. Students will be expected to collect and document a range of specimens and assist with biomarker investigations. Students will be expected to apply their knowledge and develop and build their professional practice safely and in accordance with <i>Good Clinical Practice</i> .		

LEARNING OUTCOMES

On successful completion of this module the student will:

1. Assist at post-mortem examinations where the use of biomarkers of death and decomposition are requested in order to help determine the time of death, and collect and document specimens.
2. Observe and assist with investigations to establish time of death, including tissue sampling and collection of entomology specimens at post-mortem examination.
3. Adhere to appropriate standards of professional practice as defined in *Good Scientific Practice* in this work-based module.

CLINICAL EXPERIENTIAL LEARNING

The clinical experiential learning for this module is:

- Present two different case studies to demonstrate the value of biomarkers of death and decomposition to your colleagues, responding to questions and identifying any additional personal learning needs.

All of these experiences should be recorded in your e-portfolio.

The following section details the competence and knowledge and understanding each student must gain. Each competence is linked to the relevant learning outcomes and trainees must demonstrate achievement of each competence for each linked learning outcome.

KEY LEARNING OUTCOMES	COMPETENCES	KNOWLEDGE AND UNDERSTANDING
1	Minimise risks and hazards in compliance with health and safety policies.	<ul style="list-style-type: none"> The relevant health and safety regulations specific to the module, the potential hazards and risks, and the actions to be taken to minimise these.
1	Control infection risks in accordance with departmental protocols.	<ul style="list-style-type: none"> Relevant infection control policies and procedures for post-mortem.
1	Control infection risks in accordance with departmental protocols.	<ul style="list-style-type: none"> How biological agents are categorised in terms of their risk to health, including the Approved List of biological agents as set out by the Advisory Committee on Dangerous Pathogens under Section 15 of the Health & Safety at Work etc Act 1974. The main requirements of current relevant guidance as it relates to infection control, including requirements of current guidance, such as use of PPE, 'sharps' policy, containment, disposal, cleaning and disinfection procedures. Procedures for infection control in the mortuary. Protocols and requirements for hygiene and infection control. Protocol for hand washing and how effective hand washing contributes to control of infection and local trust requirements.
1	Assist at post-mortem examinations where biomarkers of death and decomposition are required to help determine the time of death.	<ul style="list-style-type: none"> The normal flora of the human body. The roles of microorganisms in tissue degradation and necrosis. Why and how microorganisms must be contained within the workplace. The utilisation of forensic examination and biomarkers in investigations of death.
1	Collect and document specimens removed for specific measurement of biomarkers of death and decomposition.	<ul style="list-style-type: none"> Standard operating procedures. Characteristics of autolysis, fermentation and putrefaction in decomposition. Life cycle of insects commonly used as indicators of time of death.
2	Observe the investigations performed on the specimens for	<ul style="list-style-type: none"> Relevance and significance of each sample. The biomarkers assessed.

KEY LEARNING OUTCOMES	COMPETENCES	KNOWLEDGE AND UNDERSTANDING
	assessment of the biomarkers removed at post-mortem examinations.	
2	Observe and assist with the quality assessment of the procedure to collect biomarkers.	<ul style="list-style-type: none"> • Standard operating procedures.
3	Reflect on your practice during this period of work-based training and generate a reflective diary that demonstrates how you take responsibility for your learning and utilise the skills required of an independent learner.	<ul style="list-style-type: none"> • Personal values, principles and assumptions, emotions and prejudices, understanding how these may influence personal judgement and behaviour. • The role of critical reflection and reflective practice and the methods of reflection that can be used to maintain or improve knowledge, skills and attitudes. • How continuous personal development can improve personal performance.

MODULE	Systemic Pathology	Component	Specialist Year 2
AIM	The overall aim of this module is to provide an overview of systemic anatomy and pathology with special emphasis on the changes to body tissues with death and manner of death. The student will develop an understanding of the methods of pathological investigation and their limitations, as well as pre- and post-mortem artefacts.		
SCOPE	During this module the student will assist with the collection of specimens for histopathological and biochemical analysis, labelling and delivering specimens appropriately. They will also be expected to assist with the receipt, processing and reporting of a range of specimens collected during post-mortem. Students will be expected to apply their knowledge and develop and build their professional practice safely and in accordance with <i>Good Clinical Practice</i> .		

LEARNING OUTCOMES

On successful completion of this module the student will:

1. Assist with the collection of specimens for histology, microbiology, genetic and biochemical analysis during post-mortem examinations.
2. Adhere to appropriate standards of professional practice as defined in *Good Scientific Practice* in this work-based module.

CLINICAL EXPERIENTIAL LEARNING

The clinical experiential learning for this module is:

- Observe the process of embalming and the arrangements that are required for embalming to proceed, and discuss the composition of embalming fluids (arterial, cavity and accessory) and their respective functions with your supervisor.
- Undertake a literature review to identify the impact of disease states and physical and chemical changes on the embalming process and produce a written summary.
- Observe how a range of histological specimens collected during post-mortems are analysed in the laboratory and reported, and produce a short report explaining how the information assists in determining the cause of death or contributory factors.
- Observe how a range of biochemical specimens collected during post-mortems are analysed in the laboratory and reported, and produce a short report explaining how the information assists in determining the cause of death or contributory factors.
- Observe how genetic or microbiology specimens collected during post-mortems are analysed in the laboratory and reported, and produce a short report explaining how the information assists in determining the cause of death or contributory factors.

All of these experiences should be recorded in your e-portfolio.

The following section details the competence and knowledge and understanding each student must gain. Each competence is linked to the relevant learning outcomes and trainees must demonstrate achievement of each competence for each linked learning outcome.

KEY LEARNING OUTCOMES	COMPETENCES	KNOWLEDGE AND UNDERSTANDING
1	Minimise risks and hazards in compliance with health and safety policies.	<ul style="list-style-type: none"> • The relevant health and safety regulations specific to the module, the potential hazards and risks, and the actions to be taken to minimise these.
1	Control infection risks in accordance with departmental protocols.	<ul style="list-style-type: none"> • Relevant infection control policies and procedures for post-mortem.
	Assist with the collection of specimens for histopathological analysis.	<ul style="list-style-type: none"> • Histological and biochemical techniques, including immunological methods, cytology, genetics and microscopy. • Quality assessment methodology used for each technique. • Potential effects of disease on the preparation of the deceased. • Common surgical procedures and their relationship to the collection and processing of histopathology specimens. • Processing of histological specimens. • Processing of biochemical specimens. • Processing of genetic specimens. • Processing of microbiological specimens. • Quality assessment steps that are involved. • Interactions between major organs in health and disease. • Alteration of the structure and function of tissues and organs in disease. • Characteristics of autolysis, fermentation and putrefaction in decomposition. • Methods of pathological investigation and their limitations. • Pre- and post-mortem artefacts.
	Assist with the collection of specimens for microbiological analysis.	
1	Assist with the collection of specimens for genetic analysis.	
1	Assist with the collection of specimens for biochemical analysis.	
1	Label and deliver specimens for histological and/or biochemical analysis.	
2	Reflect on your practice during this period of work-based training and generate a reflective diary that	<ul style="list-style-type: none"> • Personal values, principles and assumptions, emotions and prejudices, understanding how these may influence personal judgement and behaviour.

KEY LEARNING OUTCOMES	COMPETENCES	KNOWLEDGE AND UNDERSTANDING
	demonstrates how you take responsibility for your learning and utilise the skills required of an independent learner.	<ul style="list-style-type: none"> • The role of critical reflection and reflective practice and the methods of reflection that can be used to maintain or improve knowledge, skills and attitudes. • How continuous personal development can improve personal performance.
2	Work constructively and effectively as a member of a multidisciplinary team.	<ul style="list-style-type: none"> • The underpinning principles of effective teamwork and working within and across professional boundaries.

MODULE	Forensic Pathology	Component	Specialist Year 2
AIM	Post-mortem examination and the optimal use of the mortuary are key components of forensic pathology. The aim of this module is to ensure the student gains and applies their knowledge and understanding of the reasons for and the examinations performed during forensic post-mortem examination. The module focuses on the legal and procedural requirements of performing forensic post-mortem examination. The work-based learning supports the application of knowledge and the development of a range of personal and professional skills that enable the APT to support forensic post-mortem examination to the required high standards.		
SCOPE	During this module the student will assist in the performance of forensic port-mortem examinations under the direction of a pathologist. They will become familiar with the use of imaging as part of the post-mortem process. Students will be expected to apply their knowledge and develop and build their professional practice safely and in accordance with <i>Good Clinical Practice</i> .		

LEARNING OUTCOMES

On successful completion of this module the student will:

1. Observe and where possible assist in the performance of forensic post-mortem examinations and the use of imaging and/or other relevant specialist techniques, including the requirement for careful documentation and the need to maintain the chain of custody.
2. Adhere to appropriate standards of professional practice as defined in *Good Scientific Practice* in this work-based module.

CLINICAL EXPERIENTIAL LEARNING

The clinical experiential learning for this module is:

- Undertake a literature review to establish how the practice of forensic post-mortem examination has embraced a new scientific method(s).

All of these experiences should be recorded in your e-portfolio.

The following section details the competence and knowledge and understanding each student must gain. Each competence is linked to the relevant learning outcomes and trainees must demonstrate achievement of each competence for each linked learning outcome.

KEY LEARNING OUTCOMES	COMPETENCES	KNOWLEDGE AND UNDERSTANDING
1, 2	Minimise risks and hazards in compliance with health and safety policies.	<ul style="list-style-type: none"> The relevant health and safety regulations specific to the module, the potential hazards and risks, and the actions to be taken to minimise these.
1, 2	Control infection risks in accordance with departmental protocols.	<ul style="list-style-type: none"> Relevant infection control policies and procedures for post-mortem.
1	Observe and where possible assist during the performance of forensic post-mortem examinations, including the need for chain of custody documentation.	<ul style="list-style-type: none"> Legal requirements associated with forensic post-mortem examination in each of the four countries of the UK. Legislation that applies to obtaining, examining and reporting results from human tissue as part of forensic post-mortem examination. The Human Tissues Act (2004) or subsequent legislation. The Tissue Act (Scotland 2006) or subsequent legislation.
1	Observe the use of imaging and/or other relevant specialist techniques as part of forensic post-mortem examinations.	<ul style="list-style-type: none"> The role of the police, coroner and procurator fiscal in forensic post-mortem examination. Role of the police, coroner and procurator fiscal in requesting and receiving reports from forensic post-mortem examination. The importance of establishing chain of custody and describe how this is achieved during forensic post-mortem examination. The importance of statement writing and documentation in ensuring admissible evidence from forensic post-mortem examination. Special methods and procedures that are applied in forensic post-mortem examination. Requirements for assuring chain of custody. Procedures for statement writing in forensic post-mortem examination. Documentation required in forensic post-mortem examination. Methods used in forensic post-mortem examination. Methodological developments in forensic post-mortem examination.
2	Reflect on your practice during this period of work-based training and	<ul style="list-style-type: none"> Personal values, principles and assumptions, emotions and prejudices, understanding how these may influence personal judgement and

KEY LEARNING OUTCOMES	COMPETENCES	KNOWLEDGE AND UNDERSTANDING
	generate a reflective diary that demonstrates how you take responsibility for your learning and utilise the skills required of an independent learner.	behaviour. <ul style="list-style-type: none"> • The role of critical reflection and reflective practice and the methods of reflection that can be used to maintain or improve knowledge, skills and attitudes. • How continuous personal development can improve personal performance.

MODULE	Tissue Retrieval	Component	Specialist Year 2
AIM	Tissue retrieved from recently deceased individuals can be used to the benefit of patients who are afflicted with a range of disorders. The aim of this module to ensure the student gains knowledge and understanding of the tissues that may be retrieved and the purposes for which they will be used. The student will also understand the legislative and regulatory framework for tissue retrieval and the requirement for working in partnership with specialist organisations. The work-based learning supports the application of knowledge and the development of the skills required to retrieve relevant tissues within this legislative and regulatory framework, including those that may only be processed at specialist centres.		
SCOPE	Students will be required to gain a certificate in ocular enucleation from a recognised eye bank, for example Manchester or Bristol, and perform the technique in the work base to remove eyes for retrieval of cornea. They will also be expected to assist with the retrieval of a range of tissues, including heart valves, and observe at least one, but preferably more, including skin, bone and tendon and blood vessels. They will be expected to ensure tissue is stored in accordance with NHSBT guidance. Students will be expected to apply their knowledge and develop and build their professional practice safely and in accordance with <i>Good Clinical Practice</i> .		

LEARNING OUTCOMES

On successful completion of this module the student will:

1. Gain a certificate in ocular enucleation from a recognised eye bank, for example Manchester or Bristol, and perform the technique in the work base to remove eyes for retrieval of cornea.
2. Assist and/or observe with the retrieval of heart valves and at least one of the following: skin, bone and tendons, blood vessels; ensuring that the tissue is stored and transported in line with the agreed practice with the third-party tissue bank.
3. Adhere to appropriate standards of professional practice as defined in *Good Scientific Practice* in this work-based module.

CLINICAL EXPERIENTIAL LEARNING

The clinical experiential learning for this module is:

- Undertake a literature review on the role of tissue banking and tissue banks in anatomical pathology and present it to colleagues.

All of these experiences should be recorded in your e-portfolio.

The following section details the competence and knowledge and understanding each student must gain. Each competence is linked to the relevant learning outcomes and trainees must demonstrate achievement of each competence for each linked learning outcome.

KEY LEARNING OUTCOMES	COMPETENCES	KNOWLEDGE AND UNDERSTANDING
1, 2	Minimise risks and hazards in compliance with health and safety policies.	<ul style="list-style-type: none"> • The relevant health and safety regulations specific to the module, the potential hazards and risks, and the actions to be taken to minimise these.
1, 2	Control infection risks in accordance with departmental protocols.	<ul style="list-style-type: none"> • Relevant infection control policies and procedures for post-mortem.
1	Gain a certificate in ocular enucleation from a recognised eye bank in line with the agreed practice with the third-party tissue bank.	<ul style="list-style-type: none"> • Process and purpose of organ donation, the ways in which tissues are used and the resulting clinical outcomes. • Tissues that currently may be retrieved from deceased individuals and potential future developments.
1	Perform ocular enucleation for retrieval of cornea.	<ul style="list-style-type: none"> • Methodology used for the effective and efficient retrieval and transport of a range of tissue samples.
2	Observe/assist with the retrieval of heart valves, ensuring that the tissue is stored and transported in line with NHSBT guidance.	<ul style="list-style-type: none"> • Legislation and codes of practice that apply to the retrieval of tissues from deceased individuals. • Ethical and practical issues associated with tissue donation from the national perspective and also the perspective of a relative of the deceased.
2	Assist with the retrieval of at least one of the following, ensuring that the tissue is stored and transported in line with NHSBT guidance: <ul style="list-style-type: none"> • skin • bone and tendons • blood vessels. 	<ul style="list-style-type: none"> • Role of the APT as part of the team involved in arranging for the retrieval and transport of tissue that may be used for therapeutic or research purposes. • Role of NHSBT and other tissue banks and the HTA in overseeing the standards and training required for successful tissue retrieval. <ul style="list-style-type: none"> ○ The Tissue Act (Scotland 2006) or subsequent legislation. ○ The European Tissues and Cells Directive. ○ The role of the HTA. ○ HTA codes of practice relating to tissue retrieval. ○ Network of mortuary services approved for tissue retrieval.
3	Identify the opportunity for tissue retrieval and make the arrangements for it to occur within an acceptable timescale.	<ul style="list-style-type: none"> ○ Procedure for obtaining consent for tissue retrieval. ○ Procedure for making arrangements for tissue retrieval.
3	Assist with the use of specialised techniques that facilitate	

KEY LEARNING OUTCOMES	COMPETENCES	KNOWLEDGE AND UNDERSTANDING
	tissue/organ perfusion and explain the benefits for the integrity of retrieved tissue.	<ul style="list-style-type: none"> ○ Procedure for transport of retrieved tissue. ○ Record keeping. ○ Health and safety issues associated with tissue retrieval. ○ Quality assurance procedures associated with tissue retrieval.
4	Reflect on your practice during this period of work-based training and generate a reflective diary that demonstrates how you take responsibility for your learning and utilise the skills required of an independent learner.	<ul style="list-style-type: none"> ● Personal values, principles and assumptions, emotions and prejudices, understanding how these may influence personal judgement and behaviour. ● The role of critical reflection and reflective practice and the methods of reflection that can be used to maintain or improve knowledge, skills and attitudes. ● How continuous personal development can improve personal performance.
4	Work constructively and effectively as a member of a multidisciplinary team.	<ul style="list-style-type: none"> ● The underpinning principles of effective teamwork and working within and across professional boundaries.

SECTION 5.8: WORK-BASED LEARNING: YEAR 3
ANATOMICAL PATHOLOGY TECHNOLOGY

MODULE	Mortuary Governance	Component	Specialist Year 3
AIM	Mortuaries, both NHS and local authority, perform work of high clinical and scientific significance. Working with the deceased rather than living patients also generates a degree of sensitivity that is not seen elsewhere in healthcare. Therefore, it is essential that mortuaries operate to the highest standards of practice. The aim of this module is to ensure the student gains knowledge and understanding of the governance requirements of the mortuary service within the wider local organisation and the NHS. The module focuses on key areas of legislation, regulation, accreditation, audit and accountability. The work-based learning supports the application of knowledge and the development of a range of skills that assures high standards of practice.		
SCOPE	By the third year of this programme students will be expected to be able to actively participate as members of the mortuary team that defines the quality standards that will apply to the local mortuary service and prepares the local mortuary for external accreditation inspection or equivalent review. Students will be expected to be able to identify and lead clinical audits, ensuring that the outcomes are fed into action planning to support service improvement. They will also be expected to be able to contribute to major incident planning. Students will be expected to apply their knowledge and develop and build their professional practice safely and in accordance with <i>Good Clinical Practice</i> .		

LEARNING OUTCOMES

On successful completion of this module the student will:

1. Participate as an active member of the team that ensures quality standards are met and prepares the local mortuary for external accreditation inspection or equivalent review.
2. Perform a clinical audit of performance against the quality standards, analyse the results and present the results in written and oral form and agree an action plan.
3. Contribute expertise on mortuary operation and governance to the preparation, at hospital or wider level, of a major incident plan.
4. Adhere to appropriate standards of professional practice as defined in *Good Scientific Practice* in this work-based module.

CLINICAL EXPERIENTIAL LEARNING

The clinical experiential learning for this module is:

- Critically appraise both internal quality control and external quality assurance performance within the mortuary and present a summary report to your supervisor and colleagues.

All of these experiences should be recorded in your e-portfolio.

The following section details the competence and knowledge and understanding each student must gain. Each competence is linked to the relevant learning outcomes and trainees must demonstrate achievement of each competence for each linked learning outcome.

KEY LEARNING OUTCOMES	COMPETENCES	KNOWLEDGE AND UNDERSTANDING
1	Benchmark the department's activity against the quality standards.	<ul style="list-style-type: none"> • Quality standards. • Legislative requirements for: <ul style="list-style-type: none"> ○ licensing mortuaries ○ regulation of mortuaries ○ care and disposal of the deceased ○ consent, donation and retrieval of human tissue. • Accountability for NHS and local authority mortuaries. • Similarities and differences, in the context of national legislation and codes of practice and local guidelines. • Quality standards that apply to the operation of both NHS and local authority mortuaries, and the role of the APT in preparing the mortuary for external inspection and/or accreditation against those standards. • The procedures and documentation that is required in the event of a complaint being submitted against the mortuary service. • The process for planning for a major incident. • The mortuary and the APT in the preparation and implementation of the major incident plan.
1	Analyse and present the benchmarking data to the lead of the group.	
1	Identify amendments needed in departmental benchmarking data in the light of the findings.	
2	Gain the necessary approval for clinical audits in accordance with local governance arrangements.	<ul style="list-style-type: none"> • Role of audit as a tool to deliver continuous quality improvement. • Audit cycle and action planning. • Areas of mortuary function that require regular audit and methods to address them.
2	Perform clinical audits of performance against the quality standards.	
2	Analyse the results from the audit using appropriate statistical and data analysis techniques.	<ul style="list-style-type: none"> • Data analysis techniques. • Use of spreadsheets and statistical software packages.
2	Present the results in written and	<ul style="list-style-type: none"> • Verbal and written communication skills.

KEY LEARNING OUTCOMES	COMPETENCES	KNOWLEDGE AND UNDERSTANDING
	oral form, and agree an action plan.	<ul style="list-style-type: none"> • PowerPoint. • Presentation methods. • Role of re-audit.
3	Critically review and summarise the major incident plan as it relates to the mortuary.	<ul style="list-style-type: none"> • The likely role of the mortuary and the mortuary staff in the event of the major incident. • Who to liaise with and when in the event of a major incident.
3	Assess the preparedness of the mortuary to comply with the major incident plan.	<ul style="list-style-type: none"> • Contingency planning for periods of excess death. • Reporting arrangements.
4	Uphold high standards of professional practice as defined in <i>Good Scientific Practice</i> .	<ul style="list-style-type: none"> • <i>Good Scientific Practice</i>. • BSc Professional Practice module.
4	Reflect on your practice during this period of work-based training and generate a reflective diary that demonstrates how you take responsibility for your learning and utilise the skills required of an independent learner.	<ul style="list-style-type: none"> • Personal values, principles and assumptions, emotions and prejudices, understanding how these may influence personal judgement and behaviour. • The role of critical reflection and reflective practice and the methods of reflection that can be used to maintain or improve knowledge, skills and attitudes. • How continuous personal development can improve personal performance.

MODULE	Neuropathology	Component	Specialist Year 3
AIM	Specialist knowledge and skills are required to undertake post-mortem examination of the brain, spinal cord and nervous system. The aim of the module is to ensure the student gains knowledge and understanding of the functions of these organs and the situations in which they may be assessed during post-mortem examination. The module focuses on equipping the student to recognise the need for and role of post-mortem examination in neuropathological referrals and to be able to support research and method development. The work-based module provides the student with the opportunity to apply their learning and facilitates the development of the specialist skills required to support neuropathological post-mortem examination.		
SCOPE	During this module the student will assist in the performance of neuropathological post-mortems and report on the particular skills associated with preparation, dissection and tissue retrieval. In Year 3 they will be expected to attend and actively participate in team meetings and in particular in this module in those concerning neuropathological post-mortem outcomes. Students will be expected to apply their knowledge and develop and build their professional practice safely and in accordance with <i>Good Clinical Practice</i> .		

LEARNING OUTCOMES

On successful completion of this module the student will:

1. Observe and if possible assist in the performance of neuropathological post-mortem examinations and the particular skills associated with preparation, dissection and tissue retrieval.
2. Attend and actively participate in team meetings to review the findings from neuropathological post-mortems and evaluate the importance of specialised methods and procedures.
3. Adhere to appropriate standards of professional practice as defined in *Good Scientific Practice* in this work-based module.

CLINICAL EXPERIENTIAL LEARNING

The clinical experiential learning for this module is:

- Use the literature and best practice reports to assess the role of imaging and/or other specialist techniques in facilitating the outcome of neuropathological post-mortem examination and formally present your findings.
- Review and discuss the significance and interpretation of results in two cases where the cause of death involved significant neuropathology.

All of these experiences should be recorded in your e-portfolio.

The following section details the competence and knowledge and understanding each student must gain. Each competence is linked to the relevant learning outcomes and trainees must demonstrate achievement of each competence for each linked learning outcome.

KEY LEARNING OUTCOMES	COMPETENCES	KNOWLEDGE AND UNDERSTANDING
1	Minimise risks and hazards in compliance with health and safety policies.	<ul style="list-style-type: none"> The relevant health and safety regulations specific to the module, the potential hazards and risks, and the actions to be taken to minimise these.
1	Control infection risks in accordance with departmental protocols.	<ul style="list-style-type: none"> Relevant infection control policies and procedures for post-mortem.
1	Observe and if possible assist in the performance of neuropathological post-mortems.	<ul style="list-style-type: none"> Main anatomical features of the brain, spinal cord and nervous system. Features seen in the more common causes of brain pathology, including trauma, encephaly, tumour and ischaemia.
1	Assist with the preparation, dissection and retrieval of tissue.	<ul style="list-style-type: none"> Features seen in the more common causes of spinal cord and nervous system pathology, including trauma and disease.
1	Ensure the tissue is prepared, stored and packaged correctly.	<ul style="list-style-type: none"> Major neuropathology disorders and causes of death that may necessitate post-mortem examination.
1	Ensure that tissue is sent to the relevant specialist.	<ul style="list-style-type: none"> National legislation and local guidelines as they apply to the organisation and performance of neuropathological post-mortem examination. Normal anatomy of the brain, spinal cord and nervous system. Common neuropathological disorders that may contribute to death. Brain abnormalities seen during neuropathological post-mortem examination. Spinal cord and nervous system abnormalities seen during neuropathological post-mortem examination. Organisation of neuropathological post-mortem examination services. Local guidelines for the performance of neuropathological post-mortem examination. Methods used in neuropathological post-mortem examination Methodological developments in neuropathological post-mortem examination. Research governance as applied to neuropathological post-mortem examination.

KEY LEARNING OUTCOMES	COMPETENCES	KNOWLEDGE AND UNDERSTANDING
		<ul style="list-style-type: none"> Record keeping and audit in neuropathological post-mortem examination.
2	Attend and actively participate in team meetings to review the findings from neuropathological post-mortems.	<ul style="list-style-type: none"> Special methods and procedures that are applied in neuropathological post-mortem examination.
2	Evaluate the importance of specialised methods and procedures in neuropathological post-mortems and write a report on the strengths and limitations of one of these procedures.	
3	Uphold high standards of professional practice as defined in <i>Good Scientific Practice</i> .	<ul style="list-style-type: none"> <i>Good Scientific Practice</i>. BSc Professional Practice module.
3	Reflect on your practice during this period of work-based training and generate a reflective diary that demonstrates how you take responsibility for your learning and utilise the skills required of an independent learner.	<ul style="list-style-type: none"> Personal values, principles and assumptions, emotions and prejudices, understanding how these may influence personal judgement and behaviour. The role of critical reflection and reflective practice and the methods of reflection that can be used to maintain or improve knowledge, skills and attitudes. How continuous personal development can improve personal performance.

MODULE	Paediatric and Perinatal Pathology	Component	Specialist Year 3
AIM	Specialist knowledge and skills are required to undertake paediatric and perinatal post-mortems. The aim of the module is to ensure the student gains knowledge and understanding of normal paediatric physiology and pathology and the causes of infant and childhood death. The module focuses on equipping the student to recognise the need for and role of post-mortem examination in paediatric referrals and to be able to support parents and other relatives of the deceased child. The work-based learning facilitates the development of the specialist skills required to support paediatric post-mortem examination.		
SCOPE	During this module the student will observe and if possible assist with paediatric and perinatal post-mortem examinations and report on the particular skills of preparation of the body, evisceration, tissue removal, reconstruction and storage. Students will also be expected to use their academic skills to assess the role of imaging and other specialist techniques in facilitating paediatric post-mortem examination, using the literature and best practice reports. Students will be expected to apply their knowledge and develop and build their professional practice safely and in accordance with Good Clinical Practice.		

LEARNING OUTCOMES

On successful completion of this module the student will:

1. Prepare the viewing area for the viewing of a baby or child.
2. Observe and if possible assist with paediatric post-mortem examination, including the particular skills of preparation of the body, evisceration, tissue removal, reconstruction and storage.
3. Assess the role of imaging and other specialist techniques in facilitating paediatric post-mortem examination using the literature and best practice reports.
4. Adhere to appropriate standards of professional practice as defined in *Good Scientific Practice* in this work-based module.

CLINICAL EXPERIENTIAL LEARNING

The clinical experiential learning for this module is:

- Communicate with parents and/or other relatives of the deceased child prior to and following post-mortem examination and critically reflect on the experience, identifying learning and action points to support your communication skills development.
- Discuss the current and future contribution of genomics and clinical bioinformatics to anatomical pathology with your training officer.

All of these experiences should be recorded in your e-portfolio.

The following section details the competence and knowledge and understanding each student must gain. Each competence is linked to the relevant learning outcomes and trainees must demonstrate achievement of each competence for each linked learning outcome.

KEY LEARNING OUTCOMES	COMPETENCES	KNOWLEDGE AND UNDERSTANDING
1	Communicate with parents whose baby has died, using language sensitively.	<ul style="list-style-type: none"> • The importance to parents of how their baby is cared for in the mortuary; thoughtful care, while it cannot make things better, can give parents some positive memories of this terrible time. Insensitive and thoughtless care by anyone with whom parents come into contact makes things much worse and leaves memories that can haunt parents for months and years to come. Parents will always remember and cherish kindness and thoughtfulness at this time. • The importance of always using the word baby rather than fetus for a baby born dead before 24 completed weeks. • The importance of always using the baby's name where one has been given.
1, 2	Minimise risks and hazards in compliance with health and safety policies.	<ul style="list-style-type: none"> • The relevant health and safety regulations specific to the module, the potential hazards and risks, and the actions to be taken to minimise these.
1, 2	Control infection risks in accordance with departmental protocols.	<ul style="list-style-type: none"> • Relevant infection control policies and procedures for post-mortem.
1	Prepare the viewing area appropriately for the viewing of a baby or child.	<ul style="list-style-type: none"> • What can be done to make the viewing room or area more appropriate for parents viewing their baby before or after a post-mortem. • Why it is important to prepare the viewing area thoughtfully to provide an indication to the parents that care and thought have been taken to make the baby and the family members comfortable. • The importance of ensuring that parents know that their baby will be kept absolutely safe and looked after carefully while they are in the mortuary.
1	Communicate sensitively and appropriately with the bereaved.	<ul style="list-style-type: none"> • How to adapt your language. • Use of language. • Non-verbal communication. • The psychosocial impact on the parents and other relatives arising from the death of a child.

KEY LEARNING OUTCOMES	COMPETENCES	KNOWLEDGE AND UNDERSTANDING
2	Observe and where possible assist with paediatric and perinatal post-mortem examinations.	<ul style="list-style-type: none"> • Main features of normal paediatric anatomy. • Main features of embryology as they relate to fetal development, including stages of development of the normal fetus.
2	Prepare the body and assist with the post-mortem examination.	<ul style="list-style-type: none"> • Fundamentals of genetics and genomics as applied to common congenital abnormalities, including the structure of DNA, chromosomes, genes and the human genome.
2	Perform the reconstruction.	<ul style="list-style-type: none"> • Causes of death in infants and childhood and the requirements for post-mortem examination. • Current national legislation and local guidelines as they apply to the organisation and performance of paediatric post-mortem examination. • Control of normal infant and childhood growth and development. • Normal fetal, infant and childhood anatomy. • Causes of common congenital disorders that may lead to fetal, infant, or childhood death. • Presentation of common congenital disorders seen during paediatric post-mortem examination. • Common non-genetic causes of death in the fetus, infant, or child. • Legislation applicable to paediatric post-mortem examination. • Organisation of paediatric post-mortem examination services. • Local guidelines for the performance of paediatric post-mortem examination. • Methods used in paediatric post-mortem examination. • Methodological developments in paediatric post-mortem examination. • Research governance as applied to paediatric post-mortem examination. • Record keeping and audit in paediatric post-mortem examination. • Support for bereaved parents and relatives.
3	Evaluate the role of imaging and other specialist techniques in	<ul style="list-style-type: none"> • Special methods and procedures that are applied in paediatric post-mortem examination.

KEY LEARNING OUTCOMES	COMPETENCES	KNOWLEDGE AND UNDERSTANDING
	facilitating paediatric post-mortem examination, using the literature and best practice reports.	
3	Communicate your findings by preparing and delivering an oral presentation to colleagues in the department.	<ul style="list-style-type: none"> • Oral presentation skills. • Features of a good presentation. • Use of PowerPoint and other visual aids. • Methods of self-evaluation, including the Kolb cycle. • Action planning and how to set specific, measurable, achievable, realistic and timely actions.
3	Self-evaluate your presentation and seek feedback from colleagues, analysing the feedback and developing an action plan to develop your oral communication skills.	
4	Uphold high standards of professional practice as defined in <i>Good Scientific Practice</i> .	<ul style="list-style-type: none"> • <i>Good Scientific Practice</i>. • BSc professional practice module.
4	Reflect on your practice during this period of work-based training and generate a reflective diary that demonstrates how you take responsibility for your learning and utilise the skills required of an independent learner.	<ul style="list-style-type: none"> • Personal values, principles and assumptions, emotions and prejudices, understanding how these may influence personal judgement and behaviour. • The role of critical reflection and reflective practice and the methods of reflection that can be used to maintain or improve knowledge, skills and attitudes. • How continuous personal development can improve personal performance.

MODULE	Managing a Mortuary Service	Component	Specialist Year 3
AIM	Modern healthcare is complex and rapidly changing, as new medical knowledge and techniques develop, along with new models of finance, organisation and service delivery, and the emphasis on providing high-quality, patient-centred care within a financial envelope. The aim of the module is to ensure the student gains knowledge and understanding of the principles, structure and functions of the mortuary service within the wider local organisation and the NHS.		
SCOPE	The module focuses on key areas of human resource management, finance and budgeting, and the use of information to plan services to meet the needs of service delivery. The work-based learning supports the application of knowledge and the development of a range of personal skills that are required to become an effective manager and leader.		

LEARNING OUTCOMES

On successful completion of this module the student will:

1. Write a person specification and job description as part of the recruitment of a new member of staff or review of a current role.
2. Perform a range of activities to support the staff appraisal and development programme in the department.
3. Contribute to the management of the departmental budget, using financial information to analyse and interpret budget reports, prioritising competing requests and writing case of need statements for areas such as new staff, equipment, etc.
4. Use a range of personal skills as part of the day-to-day management of a mortuary service.
5. Adhere to appropriate standards of professional practice as defined in *Good Scientific Practice* in this work-based module.

CLINICAL EXPERIENTIAL LEARNING

The clinical experiential learning for this module is:

- Review the organisational structure of the mortuary, identify key partners in managing the financial, procurement and human resource functions, and discuss the key barriers and potential solutions to the effective management of those services with your line manager.
- Discuss the need for robust business continuity plans with your line manager and reflect on your learning from this process and any specific personal learning needs that have arisen.

All of these experiences should be recorded in your e-portfolio.

The following section details the competence and knowledge and understanding each student must gain. Each competence is linked to the relevant learning outcomes and trainees must demonstrate achievement of each competence for each linked learning outcome.

KEY LEARNING OUTCOMES	COMPETENCES	KNOWLEDGE AND UNDERSTANDING
1	Write a person specification as part of the recruitment of a new member of staff or review of a current role using the template used in your organisation.	<ul style="list-style-type: none"> • NHS Clinical Leadership Framework. • Common ways of assessing applicants for jobs spanning knowledge, skills and attitudes, for example person specification, job specification, application form, supporting statement/cover letter, presentation about how they would do the job, simulation of part of the job, e.g. demonstrate this equipment, etc. • Assessing attitudes, including interview, informal discussion, references and scientific attempts at measuring the person – such as psychometrics. • Principles, structure and functions of the mortuary service and wider health systems, including their human resource management, financial, organisational, commissioning, quality, research and innovation, and ethics and policy-making processes. • Key concepts in human resource management and their application in the management of a mortuary service.
1	Write a job description as part of the recruitment of a new member of staff or review of a current role using the template used in your organisation.	
1	Discuss the person specification and job description with your line manager and use the feedback to produce a final version.	
2	Plan and perform a staff appraisal for a junior member of staff in your team with your line manager.	<ul style="list-style-type: none"> • NHS Clinical Leadership Framework. • Staff appraisal process in your hospital. • Goal setting/action planning. • How to identify development needs. • Professional body requirements for continuing professional developments. • Statutory requirements for continuing professional developments.
2	Discuss and agree a professional development plan for a junior member of staff in your team and work with your staff member to agree the time lines for achievement of the plan.	
3	Contribute to the management of the departmental budget, using financial information to analyse and interpret budget reports, prioritising competing requests.	<ul style="list-style-type: none"> • NHS Clinical Leadership Framework. • NHS financial structures. • Hospital and departmental structures and reporting systems.

KEY LEARNING OUTCOMES	COMPETENCES	KNOWLEDGE AND UNDERSTANDING
3	Write a case of need to support a new staff appointment, new item of equipment or similar.	<ul style="list-style-type: none"> • Local templates. • Evidence required.
3	Discuss the case of need with your line manager and use the feedback to produce a final version.	
4	Listen, observe and use feedback in a range of situations in the work base, using active listening techniques and feedback models.	<ul style="list-style-type: none"> • Communication skills. • Dealing with conflict. • Dealing with difficult situations. • Mentoring. • Methods of active listening. • Feedback models. • How to negotiate and influence people. • Models of reflection.
4	Use a range of communication skills to influence and address issues that arise in the mortuary.	
4	Obtain, analyse and act on feedback from a variety of sources.	
4	Identify your personal conflict style and develop skills in negotiating and mediating conflicts.	<ul style="list-style-type: none"> • Common human resource management issues arising in the provision of a mortuary service. • Range of approaches that may be used to resolve issues. • Range of methods to manage and potentially resolve issues that arise in managing people and service, including conflict and stress. • Strengths and weaknesses of each method and the underpinning evidence base.
4	Plan and prepare for chairing a meeting and discuss your plan with your supervisor, using the feedback to revise your plan.	<ul style="list-style-type: none"> • How to plan meetings, including the issues and topics. • How to prevent discussions wandering, prevent those without anything new to add repeating the same point, and being able to move on when a point is discussed as far as possible. • How to ensure that all those present have an equal opportunity to express their point of view.
4	Chair a meeting and evaluate your skills in chairing meetings	

KEY LEARNING OUTCOMES	COMPETENCES	KNOWLEDGE AND UNDERSTANDING
	effectively.	<ul style="list-style-type: none"> • Why showing respect for the views and actions of others is important. • How to encourage all those present to take equal responsibility for the meeting proceeding smoothly. • Why being impartial is important. • Summing up the points made in discussions.
4	Use a range of methods to manage your time at work, evaluating the effectiveness of each method and deciding and using a method that works for you.	<ul style="list-style-type: none"> • Setting goals. • To do lists, weekly activity lists. • Managing distractions and disruptions. • Managing emails. • Prioritising. • Evaluating progress.
5	Uphold high standards of professional practice as defined in <i>Good Scientific Practice</i> .	<ul style="list-style-type: none"> • <i>Good Scientific Practice</i>. • BSc Professional Practice module.
5	Reflect on your practice during this period of work-based training and generate a reflective diary that demonstrates how you take responsibility for your learning and utilise the skills required of an independent learner.	<ul style="list-style-type: none"> • Personal values, principles and assumptions, emotions and prejudices, understanding how these may influence personal judgement and behaviour. • The role of critical reflection and reflective practice, and the methods of reflection that can be used to maintain or improve knowledge, skills and attitudes. • How continuous personal development can improve personal performance.

SECTION 6: APPENDICES

Appendix 1: Contributor List

Development of this BSc Healthcare Science (Hons) for Anatomical Pathology Technology has been coordinated by the Modernising Scientific Careers team working with colleagues in the NHS and Higher Education sector, including the:

Association of Anatomical Pathology Technologists
Home Office
NHS Blood and Transplant
Royal College of Pathologists
Royal Society of Public Health

The professionals who have contributed to the development of this BSc (Hons) programme include:

Jeff Adams	Home Office Forensic Science Unit, Birmingham
Emyr Benbow	Royal College of Pathologists, London
Richard Burton	Royal Society of Public Health, London
Ishbel Gall	Mortuary Manager at NHS Grampian, Aberdeen
James Lowell	Association of Anatomical Pathology Technologists, London
Ian McDowall	University of Chester
Michael Osbourn	Royal College of Pathologists, London
Amanda Ranson	NHS Blood and Transplant, Colindale, and British Association for Tissue Banking, London
Christopher Suter	Royal Society of Public Health, London
Philip Wood	University of Chester

Individual patients and representatives of voluntary groups and bereavement services were invited to contribute to the development of this programme, including the Still Birth and Neonatal Death Charity, and their feedback has shaped this curriculum.

Modernising Scientific Careers Professional Advisors

Dr Graham Beastall
Ms Nicky Fleming

National School of Healthcare Science Professional Lead

Ms Nicky Fleming

Appendix 2: BSc (Hons) Healthcare Science Amendments

March 2016

Generic changes

The BSc (Hons) curriculum has been amended and is now presented in a single document which includes both the BSc syllabus and the work-based Learning Guide.

The Introduction (Section 1) has been updated and amended to reflect the totality of the curriculum and apprenticeships. A background to the Modernising Scientific Career (MSC) programme has been added and the importance of *Good Scientific Practice* (GSP) in setting the standards of practice in healthcare science has been emphasised. There has been additional information and emphasis in areas such as: entry routes, progression, patient and public involvement, accreditation through the National School of Healthcare Science, programme delivery and monitoring, student support and mentoring and clarity about a number of issues around programme delivery.

Key professional practice learning outcomes have been added through the GSP syllabus (Section 3), which embeds the standards of professionalism set out in GSP in all aspects of the delivery and assessment of the programme. The GSP syllabus is a common component of all PTP curricula and must be followed throughout the whole training period, with engagement at the appropriate level, depending on the stage of training.

The Professional, Scientific and Technical modules (Section 4) have been revised.

April 2017

The recommended number of assessments per year on p.19 was clarified and a table added to illustrate this. The new version of the curriculum is PTP APT Version 1.01 2016.

Anatomical Pathology Technology

There have been no changes to the specialist curriculum.

For any queries regarding this change please email: msc.hee@nhs.net

Appendix 3: Abbreviations

Generic abbreviations

AHCS	Academy for Healthcare Science
AO	Assessment Organisation
APL	Accreditation of Prior Learning
BSc	Bachelor of Science
CAS	Central Alerting System
CBD	Case Based Discussion
CEL	Clinical Experiential Learning
COSHH	Control of Substances Hazardous to Health
CPD	Continuing Professional Development
CPPD	Continuing Personal and Professional Development
CSO	Chief Scientific Officer
CT	Computer Tomography
DH	Department of Health
DICOM	Digital Image and Communications in Medicine
DfE	Department for Education
DOPs	Direct Observation of Practical skills
EPA	End-point Assessment
ETSG	Education and Training Scrutiny Group
ETWG	Education and Training Working Group
EU	European Union
FHEQ	Framework for Higher Education Qualifications
FtP	Fitness to Practise (FtP)
GCP	Good Clinical Practice
GM	Generic Module (Professional, Scientific and Technical)
GSP	Good Scientific Practice
HCPC	Health and Care Professions Council
HCS	Healthcare Science
HCSP	Healthcare Science Practitioner
HEE	Health Education England

HEI	Higher Education Institutions
HL7	Health Level 7
IBMS	Institute of Biomedical Science
ICT	Information and Communication Technologies
IOE	Institute of Education
IT	Information Technology
LETB	Local Education and Training Board
MDA	Medical Device Alerts
MDT	Multidisciplinary Team
MHRA	Medicines and Healthcare products Regulatory Agency
MRI	Magnetic Resonance Imaging
MSC	Modernising Scientific Careers
NES	NHS Education for Scotland
NICE	National Institute for Health and Care Excellence
NIHR	National Institute for Health Research
NHS	National Health Service
NSHCS	National School of Healthcare Science
OCE	Observed Clinical Event
OLAT	Online Assessment Tool
PACS	Picture Archiving and Communications Systems
PSA	Professional Standards Authority
PTP	Practitioner Training Programme
QA	Quality Assurance
QAA	Quality Assurance Agency
QC	Quality Control
QMS	Quality Management System
RoAAO	Register of Apprenticeship Assessment Organisations
RoATP	Register of Apprenticeship Training Providers
SCQF	Scottish Credit and Qualifications Framework
SFA	Skill Funding Agency
SJT	Situational Judgement Test
SPECT	Single Photon Emission Computed Tomography

UCAS The Universities and Colleges Admissions Service
UK United Kingdom

Appendix 3: Abbreviations

Programme Specific Abbreviations (Anatomical Pathology Technology)

APT	Anatomical Pathology Technology
DNA	Deoxyribonucleic Acid
HPA	Health Protection Agency
HSE	Health and Safety Executive
HTA	Human Tissue Authority
NHSBT	NHS Blood and Transplant
PPE	Personal and Protective Equipment
RSPH	Royal Society of Public Health

Appendix 4: Glossary

Term	Definition
Clinical experiential learning	The cyclical process linking concrete experience with abstract conceptualisation through reflection and planning.
Clinical experiential learning outcomes	The activities that the student will undertake to enable and facilitate their learning in the workplace.
Competence	The ability of an individual to perform a role consistently to required standards, combining knowledge, understanding, skills, attitudes, behaviour and values.
Competence statements	Active and outcome-based statements that provide a further breakdown of the work-based Learning Outcomes – reflecting what the student will be able to do in the workplace at the end of the programme. Each competence should be linked back to the numbered Learning Outcomes.
Component	An indication of the type of module within the curriculum, i.e. Generic, Theme or Specialist.
Curricula	An outline of the expected educational outcomes across a subject area. The learning that is expected to take place during the Practitioner Training Programme described in terms of knowledge, skills, attitudes, behaviours and values.
Division	A high-level description of an area of practice within healthcare science. There are four divisions: Life Sciences, Physical Sciences, Physiological Sciences and Clinical Bioinformatics.
Domains of learning	Cognitive (knowledge and intellectual skills), affective (feelings and attitudes), interpersonal (behaviour and relationships with others) and psychomotor (physical skills).
Feedback	Specific information about the comparison between a student's observed performance and a standard, given with the intent of improving the student's performance (van de Ridder JMM, Stokking KM, McGaghie WC and ten Cate OT. What is feedback in clinical education? <i>Medical Education</i> 2008; 42: 189–197).
Good Scientific Practice	Non-statutory guidance on the minimum requirements for good practice for the healthcare science workforce.
Job	A specific definition of the work activities, requirements and skills required to undertake work activities within a local context. This differs from a role – see below.
Key learning outcome	A defined learning outcome linked to relevant competence(s) within the work-based Learning Framework.
Learning framework	The specification for work-based learning contained within the work-based syllabus.
Learning outcome	A high-level, outcome-based statement that describes what a student will be able to do at the end of the

Term	Definition
	module.
Mentoring	Mentoring is a <i>process in which a trainer (mentor) is responsible for overseeing the career and development of the student</i> . The emphasis is therefore on the relationship (rather than the activity).
Module aim	The overall objective of a module – defining the intended learning achievements of the student. The aim works together with the ‘Scope’ statement to define the overall objectives and scope of the module.
Module scope	A statement within a module that defines the range/limits of the learning undertaken by the student in a module – patients/investigations/equipment/modalities, etc.
National Occupational Standards	Nationally recognised standards of expected workplace performance and level of competence for a role. The standards are outcome based, defining what the role holder should be able to do, as well as what they must know and understand to demonstrate competent work performance. National Occupational Standards are supported by nationally agreed frameworks of expected attitudes, behaviours and skills.
Practical skill	A cognitive, psychomotor, physical, or communicative ability that supports performance of the required role.
Programme	The package of learning, teaching assessment and quality assurance leading to an award.
Provider	An organisation that delivers required training and learning activities to specified quality assurance requirements.
Role	A collection of functions undertaken in the workplace that represent the main broad areas of work for all similar workers at national level. A role differs from a job, the latter being defined specifically for a local context.
Specialism	A focused area of practice within a division of healthcare science.
Trainer	A qualified individual who provides learning and development support for students.
Theme	A group of related specialisms usually within a division of healthcare science.
Work-based learning	Learning that takes place in a real work setting and involves the application of academic learning to real work activities.
Work performance	The requirements of satisfactory and consistent demonstration of competence in specified functions for a work role.
Workplace	A real work setting in which the student can apply learning.

Appendix 5: Assessment Proformas

A5.1: Direct Observation of Practical/Procedural Skills Template

Student identification data			
Procedure			
Clinical context	Insert module title	Insert module title	Insert module title

Assessor's name				
Assessor's position			Insert	Insert

Difficulty of the procedure	Low	Average	High
Number of times procedure performed by student	1–4	5–9	>10

Please grade the following areas using the scale below	Below expectations	Borderline	Meets expectations	Above expectations	Unable to comment¹
1. Understands scientific principles of procedure, including basic science underpinning it					

Please grade the following areas using the scale below	Below expectations	Borderline	Meets expectations	Above expectations	Unable to comment ¹
2. Has read, understands and follows the appropriate standard operating procedures, risk and COSHH assessments, and any other relevant health and safety documentation					
3. Understands and applies the appropriate internal and external quality control associated with the procedure					
4. Understands the risks associated with items of equipment and uses them appropriately					
5. Completes associated documentation accurately					
6. Output meets accepted laboratory/professional standards					
7. Carries out the procedure within the appropriate time frame					
8. Is aware of the limitations of the test					

Please grade the following areas using the scale below	Below expectations	Borderline	Meets expectations	Above expectations	Unable to comment ¹
9. Demonstrates awareness of the limits of responsibility and when to seek advice					
10. Professionalism					

¹Please mark this if you have not observed the behaviour.

FEEDBACK AND DOCUMENTATION OF LEARNING NEEDS	AGREED ACTION

Outcome	Satisfactory Unsatisfactory	Date of assessment	Time taken for assessment	
Signature of assessor	Signature of student		Time taken for feedback	

A5.2: Case-based Discussion Template

Student identification data			
Brief description of output and focus of scenario discussed			
Module	Insert title	Insert title	Insert title
Complexity of the scenario	Low	Average	High

Assessor's name	
Assessor's position	

Please grade the following areas using the scale below	Below expectations	Borderline	Meets expectations	Above expectations	Unable to comment¹
1. Understands clinical and/or scientific principles relevant to scenario					
2. Can discuss relevant health and safety issues					

Please grade the following areas using the scale below	Below expectations	Borderline	Meets expectations	Above expectations	Unable to comment ¹
3. Can discuss the procedures used to obtain the results					
4. Can discuss the quality control procedures to ensure the result is accurate					
5. Demonstrates a knowledge of relevant 'Best Practice' guidelines and other policies relevant to the scenario					
6. Can discuss the significance of routine patient results with reference to the reason for referral					
7. Is aware of, and can use as required, appropriate resources to aid in the interpretation of results					
8. Is aware of the importance of the audit trail and can complete the audit trail accurately					

Please grade the following areas using the scale below	Below expectations	Borderline	Meets expectations	Above expectations	Unable to comment ¹
9. Demonstrates awareness of the limits of responsibility and when to seek advice					
10. Professionalism					

¹Please mark this if you have not observed the behaviour.

FEEDBACK AND DOCUMENTATION OF LEARNING NEEDS	AGREED ACTION

Outcome	Satisfactory Unsatisfactory		Date of assessment	Time taken for assessment	
Signature of assessor		Signature of student		Time taken for feedback	

A5.3: Observed Clinical Event Template

Student identification data			
Brief description of output and focus of scenario discussed			
Module	Insert title	Insert title	Insert title
Complexity of the scenario	Low	Average	High

Assessor's name	
Assessor's position	

Please grade the following areas using the scale below	Below expectations	Borderline	Meets expectations	Above expectations	Unable to comment
1. History taking <i>Does the student obtain the information required prior to undertaking a procedure from the patient or a clinical colleague?</i>					
2. Communication skills <i>e.g. Does the student use language appropriate to the situation (verbal and/or body language) when explaining or discussing an aspect of clinical care (test results, diagnostic procedure, equipment repair at the bedside), do they check the understanding of the patient or their colleague?</i>					

Please grade the following areas using the scale below	Below expectations	Borderline	Meets expectations	Above expectations	Unable to comment ¹
3. Clinical examination skills <i>e.g. Does the student undertake a clinical skill, such as locating a vein for phlebotomy, performing a diagnostic test appropriately and accurately?</i>					
4. Clinical judgement <i>e.g. Is the procedure correct for the required outcome?</i>					
5. Scientific judgement <i>e.g. Was the choice of equipment appropriate for the required outcome, has it been correctly calibrated and any necessary settings correctly applied?</i>					
6. Professionalism <i>e.g. Did the student introduce themselves and their role or did they discuss the procedure/result with a colleague using appropriate language, considering any patient confidentiality or ethical issues?</i>					
7. Organisation and efficiency <i>e.g. Was the student well organised and efficient, ensuring all record keeping was appropriate and accurate; did they keep to time and ensure accurate recording of results; did they process the results in a timely fashion?</i>					
8. Overall clinical care <i>e.g. Did the student show respect, empathy and compassion for the patient and/or recognise the importance of the procedure/test within the care pathway for the patient or colleagues where the test contributes to a diagnosis, treatment or management?</i>					

For specific examples of opportunities where an OCE may be appropriate please visit the National School of Healthcare Science website (www.nshcs.org.uk).

Appendix 6: Further Information

NHS Networks

An open network to share curricula produced for the Modernising Scientific Careers (MSC) programme.

www.networks.nhs.uk/nhs-networks/msc-framework-curricula/

Details of the Practitioner Training Programme including curricula from 2010/11 to 2015/16 can be found at:

www.networks.nhs.uk/nhs-networks/msc-framework-curricula/ptp

[Details of](#) the Practitioner Training Programme including curricula from 2016 onwards can be found at:

<https://www.nshcs.hee.nhs.uk/>

National School of Healthcare Science (NSHCS)

As part of the Modernising Scientific Careers (MSC) programme, the National School of Healthcare Science (the School) was established in October 2011 to support the implementation and delivery of the new healthcare science education and training programmes and to comply with the structures within '[Liberating the NHS: Developing Healthcare Workforce - Policy 16977 \(January 2012\)](#)' acting on behalf of the Chief Scientific Officer (CSO) for England. It also provides some elements of support for the three other UK health departments.

On 1st April 2013, the School became part of Health Education England (HEE) and is hosted within the West Midlands.

The role of the NSHCS includes:

- Curricula management including assessment (new developments; review; fitness for purpose; version control etc);
- Coordination and monitoring of MSC Education and Training implementation;
- Quality management including accreditation of academic and work-based training environments;
- Monitoring and supporting the progress of trainees through the NSHCS themed boards (STP/HSST).

www.nshcs.org.uk

Chief Scientific Officer (CSO)

Source of information and news, including the CSO Bulletin, latest press releases, publications and consultations can be found at:

<https://www.england.nhs.uk/tag/chief-scientific-officer/>

Academy for Healthcare Science (AHCS)

The Academy for Healthcare Science (AHCS) brings together the UK's diverse and specialised scientific community who work across the health and care system including; NHS Trusts, NHS Blood and Transplant, Public Health England, independent healthcare organisations, and the academic sector across the UK.

The AHCS runs a Professional Standards Authority accredited Register for Healthcare Science Practitioners not covered by statutory regulation.

www.academyforhealthcarescience.co.uk/

Council of Healthcare Science in Higher Education (CHSHE)

The Council of Healthcare Science in Higher Education builds a unified identity of academic healthcare science by representing the interests of the sector. Working to improve and maintain quality in healthcare science education and training, the Council itself is made up of senior members of the academic healthcare science team. The work of the Council is also informed by two special interest groups made up of staff involved in the delivery and implementation of MSC programmes the PTP SIG and STP SIG.

www.councilofhealthcarescience.ac.uk/

Health and Care Professions Council (HCPC)

The Health and Care Professions Council is a regulator set up to protect the public. It keeps a register of health professionals who meet the HPC standards for their training, professional skills, behaviour and health.

www.hpc-uk.org/

Last Accessed 16th November 2016

Appendix 7: RSPH Assessment Guidance



RSPH Guidance for Assessment in the Workplace

Assessment

Assessment is the process of determining whether or not the candidates have achieved a specified level of performance or ability. This may involve formal examinations and assignments that are conducted to a specific timetable, but in the case of the assessment of competence in the workplace it may involve a range of activities designed to provide evidence that the candidates have achieved the required standard or criteria.

For regulated qualifications, candidates are required to pass units in order to obtain the qualification. The particular units that a candidate has to pass are specified by the awarding organisation that confers the qualification. Some qualifications may be obtained by passing just one unit, other qualifications may require 10 or more units to be achieved.

In order for a candidate to pass a unit, they must satisfy the awarding organisation that they have achieved the *learning outcomes* for that unit. Learning outcomes state what a candidate should know, understand, or be able to do. To achieve the learning outcome, candidates must meet the *assessment criteria* specified for that particular learning outcome. Assessment criteria specify the standard a candidate is expected to meet and make clear what the candidate needs to be able to demonstrate in order to achieve the learning outcome.

For example, if a learning outcome stated: *The learner is able to turn a motor vehicle 180° on a public road*, the assessment criteria might be:

- Check that it is safe to move the vehicle before starting manoeuvres.
- Use the vehicle's controls appropriately to manoeuvre the vehicle through 180°.
- Ensure the safety of pedestrians and other road users by monitoring the position of these in relation to the position of the vehicle.
- Maintain a speed while moving that is consistent with the road conditions and ensures the safety of the driver, other road users, pedestrians and the vehicle.

An assessment must provide candidates with the opportunity to demonstrate that they can meet some or all of the assessment criteria and learning outcomes for a unit. Depending on the requirements of the units in a qualification, an assessment might provide an opportunity for candidates to meet some or all of the learning outcomes and assessment criteria for more than one unit.

For vocationally related qualifications and units, the assessment of competence (the ability to carry out a job or task to the required standard) may be required. This usually requires assessment in the workplace, a workshop, or in a realistic working environment by methods such as:

- observation
- professional discussion
- witness statements

- questions
- personal statements.

A combination of these methods will enable the candidate to provide evidence that they meet the learning outcomes and assessment criteria for a unit. The assessor's role is to work with the candidate to determine what evidence might be valid (relevant to the assessment criteria) and how it can be obtained, and to then judge whether or not the evidence presented is authentic (relating to the candidate), current and sufficient. It is unlikely that a candidate would be able to demonstrate achievement of a learning outcome or unit on evidence obtained solely by one of these assessment methods. It is also important to note that a candidate must achieve all of the assessment criteria and learning outcomes of a unit to be awarded that unit.

Evidence of assessment

During assessment an assessor might use a tool such as a checklist and their judgement and experience to determine whether or not a candidate has met the assessment criteria. Although this will enable the assessor to satisfy themselves whether or not the candidate has achieved a particular learning outcome or unit, it will not be sufficient to satisfy an *external verifier* (EV) that the learning outcomes or units have been achieved.

The EV is appointed by the awarding organisation and is independent of the assessor. Their role is that of quality assurance, to scrutinise the judgements made by the assessor and confirm that the judgements made are appropriate. The assessor therefore has to provide the EV with *evidence of assessment*, which will demonstrate to the EV how the assessor reached their judgement on a particular candidate.

Evidence of assessment is unlikely to be provided by (for example) a checklist with a series of boxes ticked. The checklist should include a commentary to provide detail and explain why the assessor believes that the learning outcome or specific assessment criteria have been achieved. The EV would expect to receive a number of items of evidence of achievement for the same learning outcome (for example assessor observation combined with witness statements from line managers). Additional evidence could be provided by photographs, completed work products and digital recordings or transcripts of a professional discussion.

Portfolio of evidence

Evidence of achievement and evidence of assessment for all of the learning outcomes and units for a particular qualification need to be combined into a portfolio of evidence for submission to the EV. The construction of this portfolio, how the candidate can provide evidence that they have achieved the various learning outcomes and how the assessor can provide evidence that their judgements are correct all need careful planning by both the candidate and assessor. Evidence portfolios should provide evidence

of a balance of assessment methods, to include assessor observation of the candidate's work, questioning, witness statements, etc. The evidence presented should be cross-referenced to the specific assessment criteria and learning outcomes for the qualification units. For RSPH qualifications this can be achieved by use of the Candidate Assessment Summary Forms for the qualification obtainable from the Centre Resources area of the RSPH website.

Assessment Planning

Assessment of candidates in the workplace will normally require a range of activities in order to provide evidence of achievement for the candidate to present to the assessor, and evidence of assessment for the assessor to present to the external verifier.

The assessment process therefore has to be planned carefully to ensure that the candidate can achieve all of the learning outcomes of the units in the qualification being taken, and that the evidence provided is able to be verified.

It is important that the assessor discusses the requirements and options for workplace assessment with the candidates at an early stage in the process. This can be on a one-to-one basis or as a group discussion if part of the course leading to the qualification includes all of the candidates being brought together at the centre for tuition. Different methods of assessment, evidence requirements and how the candidates can provide evidence of meeting the learning outcomes and assessment criteria all need to be covered. Candidates will also need to be advised on how to put together their portfolio of evidence and any specific requirements for this.

Candidates need to know what evidence the assessor will be looking for in advance of any workplace visit, and the assessor will need to ensure that the candidate will be undertaking a particular activity or operation during the time of the visit if the assessor is to carry out an observation of the candidate working, and that workplace supervisors or other line managers will be available during the visit to provide evidence if required. If witness statements are to be used as evidence of achievement, the potential witnesses need to be notified of this in advance, their agreement obtained and also be informed of the requirements for the statement.

If workplace diaries are to be included in the portfolio of evidence (for example to demonstrate that a particular work activity has been carried out on a number of occasions) the assessor and candidate may need to discuss the level of detail that will be required in the diary. The diary on its own will only provide part of the evidence so the assessor will need to set aside time with the candidate and/or line managers to confirm this evidence by the use of questioning or witness statements.

A pro forma that can be used for assessment planning is shown below. Care should be taken to ensure that the assessment plan includes all of the assessment criteria for all of the learning outcomes of a unit.

Assessment Plan

Unit

Candidate Name

Evidence to be obtained	Learning Outcome / Assessment Criterion	Date / Visit Number

Observation

Observation by an assessor is a key piece of evidence. It is arguably the most valid and reliable form of evidence for assessment of competence (the ability to carry out a job or task to the required standard). Direct observation of the candidate carrying out a specific activity or task by an assessor will ensure that the evidence is current and authentic. For the assessment of work-related units, observations would normally occur in the workplace, but for some activities observation could be in a realistic work environment in order to avoid hazardous situations or the use of hazardous chemicals and equipment.

It is important that the assessor records what they see. No evidence of assessment is provided by a statement, such as 'I observed Fred carrying out his duties to the required standards'. The assessor should break the task down and record exactly what is seen to enable the EV to confirm the assessor's judgement concerning achievement of the assessment criteria.

The learning outcomes and assessment criteria for which the observation provides evidence of attainment should be recorded and linked to the account of the observation (e.g. in a margin provided for this purpose on the report form). This ensures that the learning outcomes and assessment criteria are related to what has been observed.

Ideally, observations should be holistic in nature, i.e. providing evidence for a number of learning outcomes and assessment criteria, and possibly from more than one unit for the qualification.

The context and objectives of an observation are important and should be noted at the beginning of the observation record. This will help the external verifier decide if the observation record provides relevant evidence of attainment.

Advance planning with the candidate is key to a successful observation. The work activities that the candidate will be carrying out during the assessor's time at the workplace must provide suitable opportunities for gathering evidence for the required learning outcomes and assessment criteria. Observations will often be combined with a professional discussion and questioning, plus discussions with writers of witness statements at the same visit, so planning will help to make the visit go smoothly and avoid any waste of time. Flexibility is also important; if situations that may provide assessment evidence arise outside of the plan they should be taken advantage of.

Questioning should be used during the observation to seek more in-depth understanding or clarification. After the observation any supplementary questions that are necessary to make sure that the candidate understands the operation they have been observed carrying out should be asked. Details of these questions and the candidate's responses must be recorded if they are to provide evidence of assessment.

The assessor should always make sure the candidate is given feedback and that any other assessment requirements are agreed, especially if a further observation is needed. Further observations may be necessary due to the assessment requirements of the

awarding organisation or SSC, because the observed activities did not provide enough evidence for all the learning outcomes/assessment criteria wanted or because on the occasion of the workplace visit the candidate did not meet the required standard.

If possible, any product created during the work activity observed should be included as evidence, or photos or video of the product could be taken during the observation.

Observation records should be produced in a template that has space for recording the learning outcomes and assessment criteria for which evidence is provided (and also units if the observation provides evidence across more than one unit) and an area for signatures of the assessor and candidate and any witnesses to the observation carried out, attesting to the authenticity of the observation. Any individuals referred to in the observation record (other than the candidate) should be identified in terms of their relationship to the candidate (e.g. supervisor, colleague).

Some records of observations are shown overleaf, one providing good evidence of assessment in terms of detail and one not. There should be sufficient detail in the record to enable the EV to determine that the assessment decisions are valid (NB detail need not mean length; one of the records provided is very long, but this may be because the observation provided evidence for a large number of assessment criteria). These records do not show links to learning outcomes and assessment criteria and neither of them are prefaced by an introduction that outlines the context and objectives of the observation. The records are taken from *SQA Understanding Standards* (www.understandingstandards.org.uk).

Observation 1

When I arrived to assess Ken today he was updating his Monitoring Form for the homeless unit using Excel. He explained that he needs to update this on a daily basis and it is used to provide information to Sue on the occupancy of the rooms. If rooms are unoccupied Ken needs to find out why and ensure they are back into use as quickly as possible. 95% occupancy is the rate Charity is looking to have. This is collated monthly and yearly and is used to judge the success of the project. Ken used the Daily Log kept by staff which shows who is currently registered to use the facilities here. If a resident is checked out he updates the Departures sheet. Some residents have passes so they can spend the night with friends or family but this is carefully logged as a client who is able to spend many nights away should not be classed as homeless and other people could make better use of the opportunity.

Ken showed me the Length of Stay, this is a very important part of the analysis as residents have access for a total of three months then they need to be moving on either into private housing or council housing. Some residents are family groups, others are couples but it is mainly single people who come to the project. Ken explained that all residents are supported by a keyworker and frequently have a social worker working with them to get them back onto the housing ladder. The data is organised by room and any unoccupied rooms, there were two last night, are easily spotted as they have no occupant against them.

Ken looked up the repairs book and saw that room A6 was waiting for an electrician to fix a socket – this has been arranged for today so the room should be available for tonight. He told me that A26 needed to be redecorated as the previous tenant had damaged the walls and soiled the carpet. Ken got an update from Tony who confirmed the plasterer had come yesterday and the painter was coming later this afternoon to repair the damage. Ken then spoke to Jenna who confirmed that the cleaner had managed to get the carpet cleaned and Ken told me that the room should be ready for re-occupation by tomorrow.

Room A29 was unoccupied last night as the previous resident left the project late on in the afternoon and there was not enough time to get the room checked ready for habitation last night. Ken told me a new resident has been allocated to this room and they are undergoing their orientation at the moment. He will report this information this afternoon to Sue during their briefing. Ken said that before the Repairs Book was introduced some minor repairs were going unreported and rooms were lying empty for days at a time because no one had reported the damage and arranged for repair. Ken said he inspects the Repair Book daily and this forms part of his meeting with Sue – she doesn't need to know the intricate details just what the problem is and when it will be resolved. Ken showed me the occupancy figures since the Repairs Book was introduced in October, the number of void rooms has reduced dramatically owing to small problems but major damage such as fire damage can still take a room out of use for a couple of weeks. Sue is pleased that this simple step has made such a difference to occupancy levels.

Ken showed me his cumulative Monitoring spreadsheet, this is split by month and has quarterly totals. It summarises the monthly totals and details which rooms were void and why. There was a period in September when referrals were down, this was noticed quickly and dealt with. He provided a sample of a month and a quarter as evidence. I also observed him updating his daily

monitoring information sheet. From the spreadsheet files it is obvious that Ken has been amassing this information over the past year and can provide information to Sue whenever she needs it regarding occupancy, reasons for void rooms, referrals, refusals of referrals and evictions. The results are unbiased as they are based on a very specific categorisation of each entry and exit to the project. Ken showed me the formulae he has used in his spreadsheet and explained he had tested this with easy-to-calculate test data when he was setting it up. He explained that initially this information was just used within the project but it is now sent weekly and monthly to the Council via email. The spreadsheet has grown as a result of requests for additional information but Ken was able to check the paper records and retrospectively include all the information required for the months prior to the additional data requested. He said the format of the spreadsheets had been developed over time but provides an accurate and detailed record of who has been referred and tracks them through their stay. It also details any specialist help that has been requested for that resident.

Additional evidence and clarification

Ken provided a copy of the daily monitoring form he updated today for current and departed residents, a copy of the monthly monitoring form for December 2011 and for the quarter October–December 2011. He also submitted the Information Sheet he uses to track residents and their status for the monthly stats.

Comments/feedback to candidate

Good observation today Ken, well done. This is good evidence for Unit XXXX and it is clear that your analysis of the information as it develops helps to ensure that the project runs smoothly with maximum occupancy.

Observation 2

Today I observed Ken agree with Sue the aims, objectives and deadline for the information search she had asked him to carry out.

Ken identified the sources of information he was asked to research. He checked for and obtained the information and checked it was suitable for this purpose.

Ken met his deadlines for completing the research and identified and selected relevant, valid and reliable data.

Ken recorded the data and stored it securely.

He made a record of the information sources he had used and obtained feedback from Sue on what he had researched.

Personal Statements

A personal statement can be thought of as a witness statement written by the candidate. This is often an account of how the candidate performed a particular task or sequence of tasks, but it is important that they are not used as a substitute for more objective/independent assessment methods.

The personal statement needs to be sufficiently detailed so that it can be used as evidence for specific learning outcomes and assessment criteria. Candidates should use the personal statements to justify why they carry out an operation in a particular way, and should explain why alternative approaches are not used. It is important to note that a personal statement only provides evidence of a particular situation or event. It is the assessor's role to determine if the statement provides evidence of achievement of a learning outcome or assessment criterion.

The assessor should discuss the statement with the candidate and use questioning to confirm that it is the candidate's own work and that it is an accurate account of how the task or series of tasks is undertaken by the candidate. A line manager or supervisor should also be asked to attest to the statement's accuracy.

Personal statements should be produced in a template that has space for the assessor to record the learning outcomes and assessment criteria for which the statement provides evidence (and also units if the statement provides evidence across more than one unit) and an area for signatures of the assessor and candidate, attesting to the authenticity of the statement (and also any line manager or supervisor of the candidate who is asked to verify the statement). The learning outcomes and assessment criteria for which the personal statement provides evidence should be agreed by the candidate and assessor.

An account of the questioning by the assessor to authenticate the personal statement should accompany the statement.

Without additional supporting evidence the personal statement will not provide suitable evidence of achievement. The personal statement **must** be accompanied by assessor questioning or a witness statement from a supervisor or line manager to authenticate any claims made by the candidate. The personal statement can, however, be an effective means of demonstrating knowledge and understanding.

Professional Discussion

A professional discussion is a two-way conversation between the assessor and candidate. It can be used to provide evidence for competency-based learning outcomes or to assess the knowledge and understanding of a candidate for a competency unit, but its effectiveness may be affected by the communication skills of the candidate and the ability of the assessor to 'draw out' the required information. Planning and preparation are essential for this, as time will need to be set aside if the professional discussion is to take place during a workplace visit (professional discussions could also take place during timetabled tutorials set aside for this purpose during formal tuition at the centre). The assessor should plan in advance which learning outcomes and assessment criteria will be covered but be prepared to widen the discussion if the opportunity arises.

If the candidate feels at ease, has agreed with the assessor in advance which learning outcomes and assessment criteria would be covered, and is well prepared for the discussion, then there is every chance the professional discussion will provide the evidence required.

A professional discussion, coupled with witness statements and/or direct observation in the workplace can provide sufficient evidence of achievement of a learning outcome or unit.

During a professional discussion the assessor should:

- encourage the candidate by actively listening – making eye contact, nodding, etc.
- remind the candidate to focus on the discussion if they start to deviate from the agreed topics – there is a difference between leading the discussion and leading the candidate
- gather evidence towards other learning outcomes or units if the opportunity arises
- provide feedback and agree the next steps (especially if additional evidence or assessment is required).

Professional discussions can be recorded by digital recorders, or an account of the discussion should be written either at the time of the discussion or as soon as possible afterwards. A transcript or log of any digital recording should be cross-referenced to the assessment criteria to facilitate internal and external verification. Transcripts should be countersigned by the candidate to confirm their authenticity.

Accounts or transcripts of professional discussions should be recorded in a template that has space for recording the learning outcomes and assessment criteria for which evidence is provided (and also units if the observation provides evidence across more than one unit) and an area for signatures of the assessor and candidate. The account of the discussion does not need to be long, but it does need to be sufficiently detailed to ensure that the external verifier can confirm the assessor's judgements. Any individuals referred to in the account (other than the candidate) should be identified in terms of their relationship to the candidate (e.g. supervisor, colleague).

Professional discussions may also arise from other assessment activities, for example questioning or observation could develop into a wider discussion that provides additional evidence of attainment.

An account of a workplace observation that developed into a professional discussion is shown below. This is taken from *SQA Understanding Standards* (www.understandingstandards.org.uk). Occasions on which discussion took place are highlighted. The account should have been prefaced with an introduction which explained the context and objectives of the discussion and cross-referenced to the specific assessment criteria and learning outcomes.

When I arrived at Ken's office today, I was escorted by Ken to his office from Reception. Ken made sure the security door was firmly closed behind us as we left Reception. When we arrived at Ken's desk I observed him log into his PC by typing in his password. **He explained** it is company practice to lock the screen of any computer when away from his desk for any length of time.

I asked why this is important. **Ken explained** that this ensures unauthorised people can't access information on the computer system and keeps the data secure. **He explained** that ensuring the security door is firmly closed is also company procedure and he would speak to Sue if he found the door lying ajar at any time. **I asked if he had ever had any concerns about security or confidentiality, he explained** that once he noticed his login was a term he didn't recognise so he notified Sue of this when he noticed it.

Ken explained he had just received a stationery order. **He told me** that to ensure there is sufficient stock available of common items, he and Sue have agreed a minimum stock to hold of each thing. The more expensive or less frequently used items are only ordered when they are required and **Ken explained** this means he is not spending money on an item to sit on a shelf. **He said** that his supplier usually gets his order to him on a next-day basis. Ken started off by showing me his stationery cupboard; he keeps this locked so he unlocked it and showed me that he has each shelf well laid out and items are labelled so he can see immediately if there are any items he has run out of. He has loaded the paper and other heavy items on the lower shelves and items such as scissors are placed with the blades facing towards the back of the cupboard, items are not stacked too high and where boxes are opened, the opened box is stored at the front of the shelf. **I asked if running out of items happens often,** he said that only occasionally does the last item get used, usually when he is on holiday. **Ken explained** that he tries to review his stationery weekly but only needs to make an order every fortnight or so. **He said** that he issues stationery to most staff but some staff have a key and help themselves.

Ken told me that most people are very good at letting him know when they have taken things and stocks are running low but some don't and that is when items run out. **Ken told me** he does a full stock take every six months and showed me the form he uses to do this. **He said** the stock-taking forms are kept and analysed along with the orders so Sue can see if the stationery budget is being kept to or if there are increases in usage of particular items; this is company procedure. Ken showed me the emails he had from colleagues requesting particular stock items, **he said** all staff know he orders stationery on a Tuesday and email him to let him know what they need. **He told me** that before he goes on holiday he emails all staff and asks for their stationery requirements so he can get this

organised beforehand. He explained that he looked at the cupboard yesterday and checked his email requests; he said that where there is sufficient stock already in the cupboard to meet the staff request he would not order additional stock.

He made his list of items then made out his online order to the suppliers, ensuring he had the correct part number and quantity and that the description matched what he was looking for. I observed Ken checking the contents of the order against the delivery note, where he agreed that the item tallied with the number delivered he ticked the line on the delivery note then carefully stored the item in the stationery cupboard. He noticed a problem, he had ordered red pens and the delivery note said red pens but the box contained blue pens. He marked a cross against this item and said he would phone the supplier once he had finished with the delivery. The rest of the order was checked and put away without any problems. I then observed Ken ring his account manager, he used Marie's direct number and explained the problem, giving the account number, the part number and description, and explaining that blue pens had been delivered instead of red pens and the delivery note stated red pens. Ken agreed to photocopy the delivery note and attach it to the box of blue pens and confirmed with Marie that the delivery driver would pick up the box of pens tomorrow when he delivered a replacement box of red pens. Ken confirmed with Marie that a restock note would be raised against this item and a replacement delivery note will be provided with the box of red pens. Marie gave Ken a reference number which he wrote on the delivery note.

He annotated the delivery note – 'blue pens delivered in error, replacement being delivered tomorrow' – then put this in the basket for the accounts department. I then observed Ken deal with the staff stationery requisitions. He started by looking at the emails from staff, he printed out the email then picked the relevant items from the stationery cupboard, passed the items to the relevant staff member and had them sign the email to confirm receipt, this is in accordance with Charity's procedures. He then brought the signed email back to his desk and filed this in his stationery folder. He moved the email into his stationery requests completed folder. He explained that the system is not foolproof as staff are able to access the cupboard in evenings and at weekends, but he has spoken to Sue about this and suggested a nominated person records any items removed from the cupboard and gets the recipient to sign for the item.

Additional evidence and clarification

Ken will submit copies of the delivery note, a copy of the online order and samples of paperwork showing stock take and confirming receipt of stationery by staff. I suggested he finds his email to Sue covering the changes to the stationery system he suggested or if he can't find this gets a witness testimony from Sue.

Comments/feedback to candidate

Thank you for the opportunity to observe you today Ken, this has provided good evidence against Units A101, B202 and C303, if Unit D404 was not already complete your call to Marie would have been further evidence for this unit too.

Questioning

Questions are used to:

- establish a candidate's Knowledge and Understanding
- clarify something
- find out how candidates would have dealt with an unexpected event

and form an important part of candidate observation and professional discussion.

Questions can be asked during a review of the candidate's evidence portfolio to fill in any gaps in the evidence requirements that are not covered by other assessment evidence, such as workplace observation or witness statements.

Questions can also be used to authenticate other evidence, such as personal statements or work diaries.

There are many types of questions:

Closed Yes/No responses

Open More than one-word answers. Responses to 'Why?', 'How?', 'Who?', etc.

Follow-up To seek more depth or to confirm competence

Hypothetical 'What ifs?'

Questioning should arise naturally during an observation or professional discussion. Appropriate questioning may result in an observation developing into a professional discussion. Simply providing candidates with a set of written questions covering the Knowledge and Understanding requirements of a competency unit may enable the candidate to prepare suitable (or 'required') answers, but will not enable the assessor to check that the candidate understands and knows the context of any operation that is being carried out.

Whenever questions are asked, whether as part of an observation, professional discussion, or in a general conversation about the candidate's work, the candidate's response (and the question asked) must be documented. Statements such as 'The candidate was asked questions relating to... and gave appropriate answers' will not provide evidence of assessment for the external verifier.

Records of questions asked and the candidate's responses should be produced in a template that has space for recording the learning outcomes and assessment criteria for which the questions and answers provide evidence (and also units if the observation provides evidence across more than one unit) and an area for signatures of the assessor and candidate attesting to the authenticity

of the record. If the questions and answers are part of an observation or professional discussion they should be recorded on the templates used for these.

Witness Statements

Witness statements can be used as evidence for achievement of an assessment criterion or learning outcome, but they should not form the only piece of evidence for a unit. The evidence portfolio should include additional evidence, such as workplace observation by the assessor, professional discussion, etc.

Witness statements can be completed by, for example, an employer, a practitioner, a work supervisor, or the candidate (these are personal statements). It can be someone who does not have direct knowledge of the qualification, unit, or evidence requirements as a whole, but who is able to make a professional judgement about the performance of the candidate in the given situation. A witness is someone who has seen a candidate's performance at work and can provide a statement that will help the assessor judge the candidate's competence.

It is important to note that a witness statement only provides evidence of a particular situation or event. It is the assessor's role to determine if the statement provides evidence of achievement of a learning outcome or assessment criterion.

Witness statements are written or oral accounts of a candidate's performance. Witnesses must only describe what they observed the candidate doing, they should not refer directly to assessment criteria or state that the candidate successfully achieved a learning outcome. This is an assessment decision that can only be made by the assessor, who will evaluate a number of different pieces of evidence to determine whether or not the candidate has met the assessment criteria for a learning outcome (see below).

Assessors should discuss the statement with the witness to ensure its authenticity and accuracy. Witness statements do not have to be written by the witness: they may be recorded by the assessor after discussion with the witness and confirmed as accurate by the witness.

Witness statements must include the following information:

- signature of the witness and date
- the relationship of the witness to the candidate
- the number of times the candidate was observed by the witness
- an indication of the standard at which the work was carried out.

They must be sufficiently detailed to enable the assessor to determine if there is evidence of achievement of a particular learning outcome or assessment criterion. Witness statements must only refer to what the witness has themselves observed, they must not refer to what the witness has been told by other members of staff. If necessary these members of staff should supply their own witness statements.

The witness statement does not confer an assessment decision. This is the role of the assessor who must:

- consider all the information in the witness statement
- note the relevant professional skills of the witness to make a judgement of performance (ideally the witness will provide a CV if their professional skills are not evident from the position that they hold)
- determine which learning outcomes/assessment criteria the statement provides evidence for
- consider the amount of involvement or supervision of the witness with the candidate
- review supporting evidence when making an assessment decision
- review the statement with the candidate to enable a greater degree of confidence in the evidence
- be convinced that the evidence presented by the witness statement is valid, sufficient and authentic.

The assessor will also need to take witness testimony, and the extent to which it provides the required evidence, into account when planning any further assessment of the candidate.

Witness statements should be produced in a template that has space for the assessor to record the learning outcomes and assessment criteria for which the statement provides evidence (and also units if the witness statement provides evidence across more than one unit) and an area for signatures of the assessor and witness, attesting to the authenticity of the statement.

Information relating to the witness, such as CVs etc., should be included in the candidate's evidence portfolio.

Examples of witness statements are shown overleaf.

Examples of witness statements

(from SQA Understanding Standards www.understandingstandards.org.uk)

I hereby confirm that I have observed Ken D Date over a period of time to witness his competence in delivering a presentation. **During this period he has consistently:**

- | | | |
|----|--|---|
| 1 | Choose equipment and plan how to use the equipment's features to best effect | ✓ |
| 2 | Develop contingency plans in case of equipment failure or other problems | ✓ |
| 3 | Practise and time the delivery of the presentation | ✓ |
| 4 | Obtain feedback on the presentation and make necessary adjustments | ✓ |
| 5 | Make sure the equipment and resources are in working order | ✓ |
| 6 | Make sure the audience receive presentation materials | ✓ |
| 7 | Introduce self to the audience and state the aims of the presentation | ✓ |
| 8 | Address the audience by speaking clearly and confidently, using language that is appropriate to the topic and the audience | ✓ |
| 9 | Use equipment, where appropriate, to enhance the presentation and deal with any problems that may occur | ✓ |
| 10 | Vary your voice tone, pace and volume to emphasise key points and maintain the audience's interest | ✓ |
| 11 | Use your body language in a way that reinforces your message | ✓ |
| 12 | Gauge audience reaction during the presentation and adapt accordingly | ✓ |
| 13 | Summarise the key points | ✓ |
| 14 | Provide the audience with the opportunity to ask questions | ✓ |
| 15 | Listen carefully to questions and respond in a way that meets the audience's needs | ✓ |
| 16 | Collect feedback on the presentation | ✓ |
| 17 | Reflect on own performance and identify learning points | ✓ |
| 18 | Evaluate the presentation and identify changes that will improve future presentations | ✓ |

The checklist above has been taken from the assessment criteria for the unit. It does not provide evidence of assessment that can be verified by the EV. In order to provide this evidence each of the points in the checklist should be accompanied by a short narrative which explains how the criterion was met, what was observed, what corroborating evidence there may be (for example, for point 6 a copy of the presentation materials could be provided), etc.

I confirm that Ken Date regularly analyses and reports data in a number of ways. Ken recently told me he was concerned with the stationery budget as we were spending ahead of schedule. I asked him to analyse this and report his findings to me by the end of the week. He analysed the breakdown of invoices and concluded that one branch office was vastly overspending compared to the other two, bigger offices. He suggested that an order approval system be implemented to control this. I was surprised by the discrepancy of spend related to areas and found Ken's reporting of the facts helpful. The result was unbiased and his conclusion has resulted in bringing in an order approval system so this situation cannot recur. He also discovered a number of invoices that had been wrongly coded. Ken discussed his findings with me. Ken presents his data to me well within timescales or explains why a timescale cannot be met – usually as a result of information being unavailable to complete his analysis. Ken uses a variety of analysis and evaluation techniques and is very good at setting up spreadsheets to efficiently organise information and manipulate and process it. He always ensures that the data he is using is reliable and current, getting information from staff members, our management information systems and the internet.

In this statement the witness is not attempting to state that learning outcomes have been achieved or assessment criteria met, but the information provided in the statement will enable the assessor to use it as evidence of achievement.

Work Diaries

Work diaries on their own will not provide sufficient evidence of achievement for an assessor to 'sign-off' a learning outcome or assessment criterion. They can, however, be used as evidence that the candidate has carried out particular tasks or activities over a period of time.

The entries in a work diary must be confirmed as accurate by a supervisor or line manager, who must also explain how they know that the diary is an accurate account. They can be used as part of a witness statement or personal statement or form the starting point of a professional discussion with the assessor.

The work diary can be an official document that is routinely used in the workplace (e.g. a workplace log that has to be completed and signed off every time that a particular activity is undertaken) or it could be something that the candidate is asked to complete in order to produce evidence for the assessor (such as a reflective journal).

In the latter case the format of the diary should be agreed between the assessor and the candidate. The entries can then be discussed during a workplace visit or time set aside specifically for the purpose during a teaching day at the centre. Questioning of the candidate will authenticate the diary entries and can be used to confirm knowledge and understanding requirements for a unit.

Reflective journals and work diaries can be used as forms of personal statements, but as always the key requirement is that there is sufficient detail in the account.

Competency Unit Candidate Assessment Evidence Form
Qualification Title

Unit

Candidate Name

Assessment Form Reference No.

Evidence type: (Tick whichever is / are applicable)

Observation Personal Statement Professional Discussion
 Witness Statement Questioning

Evidence	LO / AC

Additional supporting evidence	
Comments / Feedback	
Signatures Assessor	Date

Candidate	
Witness	Relationship of witness to candidate

How to complete this form

Qualification title	The name of the qualification to which this assessment relates should be entered here.
Unit	The name(s) of the unit(s) to which this assessment relates should be entered here.
Candidate name	The name of the candidate <i>as it will appear on any certificate issued by RSPH</i> should be entered here.
Assessment form reference no.	The number entered here should facilitate an audit trail of candidate evidence and should be entered into the Candidate Assessment Summary Form against the relevant learning outcome and assessment criteria.
Evidence type	Tick whichever type of evidence is provided by this form.
Evidence	This section of the form should contain a detailed account of the observations made, questions asked and their answers, or transcript of the professional discussion, witness statement, or personal statement, and should be prefaced by a short paragraph outlining the context and objectives of the evidence. If this evidence is available in another format, such as a video or audio recording, reference to this should be entered here.
LO / AC	The learning outcome(s) or assessment criteria that are covered by the evidence should be entered here, on the same line as the relevant section of the evidence.
Additional supporting evidence	Any additional supporting evidence mentioned in the evidence section should be referenced here, such as finished work product, supporting witness statement, log of work carried out, etc.
Comments/Feedback	The assessor should use this section to provide feedback to the candidate and indicate what evidence should be provided for any further visits. This will also provide additional evidence to the external verifier with respect to the standard of the work.
Signatures	This section must be signed and dated by the assessor and candidate to confirm that the evidence is a true and accurate account. If the evidence is a witness statement the witness should also sign here and enter their relationship to the candidate. Any witness who is used to verify the details of a personal statement should also sign this section.