The Royal College of Pathologists
Pathology: the science behind the cure

Guidelines on staffing and workload for paediatric and perinatal pathology departments

To be used in conjunction with the College *Guidelines on staffing and workload for histopathology and cytopathology departments (3rd edition)*, April 2012

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Introduction

In May 2011, the College's Specialty Advisory Committee on Histopathology produced the discussion document, *Guidelines on staffing and workload for histopathology and cytopathology departments (3rd edition)* – hereafter referred to as the 3rd edition *Guidelines*. The *Guidelines* went to College members for consultation and were published in 2012 (www.rcpath.org/publications-media/publications),[1] but they specifically excluded the specialist workload of paediatric and perinatal pathologists.

This document seeks to fill that gap and offers guidance to paediatric and perinatal pathologists on the assessment of staffing and workload. It is based broadly on the 3rd edition *Guidelines* and draws extensively on them both for its philosophy and its methodology. There is much that is common to the practice of adult histopathology and paediatric pathology and it is not our intention to duplicate the entire work of the earlier committee; where the 3rd edition 'general histopathology' *Guidelines* suffice, they may be used as is. However, there are areas of work that are sufficiently different to merit separate and specific consideration and these are listed in this document.

The general purpose of the 3rd edition *Guidelines* is to ensure that individual workloads are reasonable, safe and practicable, to offer public assurance of appropriate allocation of resources, to enable the equitable distribution of work among pathologists and to facilitate planning both and the local and national levels. The model should be as flexible as possible to allow for different case mixes and working practices present in the UK.

In addition, since paediatric pathology is a separately recognised CCT, it was considered appropriate to develop a specific workload document. Specifically, its aims are to:

- support paediatric pathologists by providing metrics to assess workload, ensuring this is reasonable, safe and practicable but not excessive, recognising that it is in the public interest to minimise errors related to overload, whether sustained or over short periods
- assist paediatric pathologists in job planning and in the preparation of supporting documentation for appraisal
- facilitate workforce planning
- reassure the public that the appropriate workforce resources are devoted to the reporting of paediatric pathology specimens.

Previous versions of The Royal College of Pathologists' guidelines have measured workload in 'units', with a workload rate of 10 units per hour being considered appropriate. This therefore defines a 'unit' as 6 minutes. The most recent 2012 histopathology document, however, uses a slightly different system, to reflect any complexity issues. It appreciated that there will be some variability around this timing and the guidelines offer flexibility to accommodate more challenging cases.

The system used in this document is as follows:

- 1–5 minutes 1 point
- 6–10 minutes 2 points
- 11–20 minutes 3 points
- 21–30 minutes 5 points
- 31–50 minutes 8 points
- >50 minutes 12 points.

These scores do not directly take account of other time that may be required for conferring with colleagues, medical imaging review, literature review, clinical discussion outside the multidisciplinary team (MDT) setting, discussion with referring clinicians, reviewing previous

histology and seeking external expert opinions. Additional uplift units can be can be prospectively added on a per-specimen basis in accordance with the additional time required. Alternatively, direct clinical care (DCC) time for these essential quality-assurance activities may be included in job planning. A specimen workload score includes all aspects of pathologist specimen involvement, from prosection and microscopy though to dictating, checking and signing out reports (see general cellular pathology guidelines[1]). Consultants who routinely undertake administrative activities associated with report production (e.g. typing, data inputting, manual SNOMED entry) should assess the additional time load and adjust the final score accordingly). Each specimen received in a separate container should be scored separately, unless otherwise specified.

For job planning purposes, under the 2003 NHS Contract, consultants work in time periods of 4 hours (or 3 hours if in premium time), known as programmed activities (PAs). There are four types of PA:

- direct clinical care (DCC)
- supporting professional activities (SPA)
- additional NHS responsibilities
- external duties.

The workload referred to in this document is part of DCC.

In a 52-week year, there are 42 working weeks (the remaining 10 weeks are for annual leave, study leave, bank holidays and statutory days). Making further allowance for other leave categories (e.g. professional, special, compassionate, sickness, carer), the consultant working year should be regarded as 40 weeks. Individual job plans will vary and by locally agreed. As per general histopathology guidelines, it is estimated that, for planning purposes, most pathologists should be able to achieve 36 points for each DCC PA assigned to reporting, averaged over a working week.

It is recognised that some pathologists work faster than others and indeed no pathologist can work at a consistently high intensity throughout the day. Periods of intense concentration must be separated by breaks or less intense types of work, such as dealing with correspondence. The physical strain of microscopy must also be taken into account. Neck problems can afflict pathologists and this can be mitigated by interspersing microscopy with other activities. The reality of a consultant's life is that there are rarely long periods of uninterrupted reporting. There is an unavoidable 'overhead' of a myriad of tiny activities during a DCC PA.

In departments with research programmes, there may be specific dissection and reporting protocols for research projects that take extra time compared with that for normal specimen handling. It is recommend that the extra time taken is classified as research and that appropriate SPA time is allocated in the job plan.

The amount of work that a department can achieve in the time available also depends on supporting resources. The number and expertise of secretarial and laboratory staff, IT facilities, accessibility of journals and up-to-date text books, design of laboratory and offices, quality of microscopes, dictation system, etc. all affect productivity. Departments should continually seek to improve the efficiency of reporting specimens, whilst adhering to The Royal College of Pathologists' *Guidelines on staffing and workload*.

Academic and other duties

A paediatric pathologist employed by an academic institution may have a reduced number of sessions available for DCC. The precise number available would be a matter for agreement between the individual consultant, the academic institution and the local NHS Trust (or other employer) and would need to be clearly identified within the consultant's job plan. A reasonable sessional workload commitment can be derived from these guidelines so that consultants employed by an academic institution can apply them directly to their individual job plan and better plan overall staffing levels to provide the level of service required. The PA commitment to DCC

would also be affected by a consultant taking on additional duties such as being the head of a department or section, clinical governance lead or educational supervisor. The precise PA commitment allocated to each of these activities would need to be agreed between an individual consultant and their employer.

Expert opinions

Some paediatric pathologists provide a referral service, which accounts for additional workload over and above the internal service. If this is an agreed part of the consultant's DCC activity, then the case should be broadly scored according to these guidelines with appropriate recognition in job plans or uplift if required.

Post-mortem examinations

It is assumed that a hospital post-mortem examination will be carried out to the standards recommended by the College and that many examinations will also be used as an opportunity to train junior doctors. The contractual arrangements for Coronial autopsies are variable. In some cases, they are partly or wholly accepted into the NHS remit for a regional specialised service, and individual contractual arrangements should be addressed in the job plan.

Paediatric and perinatal autopsies, by their nature, require specialist expertise and are likely to be more involved and time intensive than standard adult autopsies. A variety of special techniques may be required and samples may need special preparation and preservation. The time requirement will depend on the complexity of dissection, the extent of findings to be recorded as well as the requirements for sampling and photography. Autopsies are often valuable teaching sessions, usually greatly extending the time requirement that may need to be accounted for in SPA time.

Autopsy workload can be separated into macroscopic and microscopic procedures if required for specific cases, although general guidelines are provided below. The macroscopic component includes researching and collating background history, performing the autopsy with specialist dissections, organ examination, description, sampling, photography, producing and checking the report. The microscopic slide work can be considered separately and scored according to the matrix. An overall score can be derived from the summated macroscopic and microscopic input.

Workload guidelines

The following tables indicate the recommended points to be allocated for microscopy (micro) and macroscopy (macro) in relation to specific types of specimen encountered in paediatric pathology practice. No macroscopic score is given for specimens requiring only transfer from container to cassette. These supplement the points given in the 3rd edition *Guidelines,* and are intended for use in conjunction with them, to cover specimen types and post-mortem examinations not adequately covered by the above general histopathology guidelines.

The values suggested include a 'usual' case of each specific type reported according to published tissue/specimen specific guidelines, including routine special stains or other investigations. It is recognised that some cases may take more time, and some less time, than these figures, with the aim that over a longer period these will average out. For particularly complex or unusual cases, additional units may be prospectively awarded in line with departmental standard operating procedures.

1. Surgical pathology

Breast

Specimen type	Micro	Macro
Gynaecomastia	1	2

Cardiorespiratory

Specimen type	Micro	Macro
Heart and great vessels		
Cardiac valve	2	1
Biopsy aorta or large vessels	2	2
Native endomyocardial biopsy	8	–
Transplant endomyocardial biopsy	5	–
Cardiac mass (excision)	3	2
Explanted heart	8	8
Coarctation (excision)	2	1
Heart biopsy (open)	3	1
Lungs and airways		
Bronchial/transbronchial biopsy	3	–
Lung needle biopsy	3	–
VATS/open biopsy	5	1
Biopsy for interstitial lung disease	5	1
Biopsy for assessment of pulmonary vasculature	5	1
Benign resection	5	3
Malignant resection of lung	8	8
Malignant resection of lung and chest wall	8	12
Pleura		
Needle biopsy	3	–
Thoracoscopic/open biopsy	3	1
Pleurectomy for neoplasm	8	3
Thymus		
Mediastinum (including thymus)		
As incidental specimen with other organ	2	1
Diagnostic biopsy	5	–
Excision for primary disease	5	3

Dermatopathology

Specimen type	Micro	Macro
Small samples		
Punch/incision/curettage biopsy of benign lesions	1	–
Inflammatory skin biopsy	3	–
Cutaneous lymphoproliferative disorder (diagnostic biopsy)	5	1
Biopsy for metabolic disorder (EM)	5	1
Hair	2	1
Excision specimens		
Simple excision for benign lesion (non-inflammatory)	1	1
Excision of congenital/Spitz naevus	2	1
Excision of melanoma	5	1
Excision of non-melanocytic tumour	3	1
Excision of vascular lesion	3	1

Endocrine pathology

Specimen type	Micro	Macro
Adrenal gland		
Core biopsy for presumed neoplasm	3	–
Resection of neuroblastoma	5	3
Resection for non-neuroblastic tumour	5	3
Parathyroid		
Resection of one gland	1	1
Resection of tumour	3	1
Thyroid		
Resection lymph node (with thyroid)	3	1
Open or core biopsy	3	–
Thyroidectomy (non-neoplastic)	3	3
Thyroidectomy – neoplastic	5	3
Thyroglossal duct	2	1

Female genital tract

Specimen type	Micro	Macro
Vulva/vagina		
Small biopsy	2	–
Excision for tumour	5	5
Cervix		
Biopsy	2	–
Polyp	1	1
Uterus		
Resection – benign	3	2
Resection – neoplastic	8	8
Ovary and Fallopian tubes		
Biopsy	2	1
Resection – malignant	8	5*
Streak gonad	2	1
Omentectomy	2	2
Peritoneal biopsy	2	–

* When benign uterus +/- other ovary are attached, allocate 8 points for macroscopic examination.

Oral

Specimen type	Micro	Macro
Mucosal biopsy (polyps and cysts)	1	–
Tooth	3	1
Salivary gland tumour	3	2
Odontogenic tumour	5	2
Cancer resection – soft tissue	8	5
Cancer resection – involving bone	8	8

ENT

Specimen type	Micro	Macro
Biospy larynx, nasopharynx, oropharynx		
Branchial cyst	1	1
Nasal polyps (per side)	1	1
Benign tonsils (per side)	1	1
Neck – major cancer resection	8	8

Gastro-intestinal

Specimen type	Micro	Macro
GI		
Mucosal biopsy, one pot	1	–
Mucosal biopsy, 2–5 pots (or 1 multiwell cassette)	3	–
Mucosal biopsy, more than 5 pots (or 2 multiwell cassettes)	5	–
Colon series only	3	–
Gall bladder	1	1
Anastomotic ‘doughnut’	1	1
Polyp, fistula, sinus	1	1
Appendix	1	1
Omentum or peritoneal specimen	2	–
Endoscopic mucosal resection of tumour	3	2
Resection of small bowel for volvulus	3	3
Bowel resection for necrotising enterocolitis	3	3
Resection of small bowel for intussusception	3	3
Small bowel resection for malignancy	8	8
Oesophageal stricture resection	1	–
Oesophagectomy for malignancy	8	8
Rectal suction biopsy for Hirschsprung disease	5	2
Colectomy for Hirschsprung disease	8	4
Open biopsy for assessment of pseudo-obstruction	5	2
Colectomy for other benign disease	3	3
Liver		
Liver biopsy – malignant	3	–
Liver biopsy – inflammatory or transplant	8	–
Liver resection for metastasis	5	5
Liver resection primary tumour	8	5
Explant liver resections	8	5
Pancreas		
Pancreas diagnostic biopsy	3	–
Pancreatic or bile duct resection for benign disease	3	1
Pancreatectomy for hyperinsulinaemic hyperinsulinism of infancy	5	2
Partial pancreatic or bile duct resection for malignancy	5	8
Whipple’s pacreatico-duodenectomy	8	8

Lymphoreticular and haematopathology

Specimen type	Micro	Macro
Lymph node		
Needle biopsy for suspected metastatic tumour	3	–
Needle biopsy for suspected TB or other infection	3	1
Biopsy suspected lymphoma	8	–
Excision biopsy	5	–
Bone marrow trephine		
Bone marrow trephine for haematological condition	8 (+5)[#]	–
For metastatic tumour eg neuroblastoma	3	–
Spleen		
Spleen (haematological)	8 (+5)[#]	2
Splenectomy for trauma	3	1
Splenectomy other diagnosis, e.g. cyst	3	1

[#] Supplementary reports from other modalities and/or incorporation of molecular studies/flow cytometry, etc.

Osteoarticular

Specimen type	Micro	Macro
Bone		
Trephine, open biopsy, curettings (any suspected diagnosis)	3	–
Synovial biopsy	3	–
Bone resection for benign disease	3	3
Large bone resection for metastatic disease	3	5
Large bone resection for primary malignancy	8	12
Amputation	8	12
Soft tissue		
Core or open biopsy for benign disease	3	1
Core or open biopsy for suspected malignancy	8	1
Excision benign (e.g. lipoma, ganglion cyst)	1	1
Excision for malignancy	8**	5
Sacrococcygeal tumour	8	5

** Generating a synthesised report (when done by the pathologist) to include results from other modalities (e.g. cytogenetics) should add 5 points to the micro score. This might necessitate retrospective adjustment.

Uropathology

Specimen type	Micro	Macro
Kidney		
Nephrectomy – nephroblastoma	8	8
Nephrectomy other malignancy	8	8
Nephrectomy, non-neoplastic	3	2
Renal biopsy – medical	12	1
Renal biopsy – tumour	5	–
Renal pelvis/ureter, non-neoplastic	2	2
Renal pelvis/ureterectomy, neoplastic	5	3
Bladder and ureter		
Biopsy	2	–
Cystectomy – non-neoplastic	3	3
Cystectomy, neoplastic	8	8
Penis		
Foreskin	1	1
Testis, epididymis and appendages		
Non-neoplastic epididymis, testicular appendages, vasa deferentia	1	1
Testicular biopsy, including streak gonad	3	1
Orchidectomy, non-neoplastic	2	2
Orchidectomy neoplastic	8	3

Placenta

Specimen type	Micro	Macro
Singleton placenta	3	3
Singleton IUD placenta only	5	3
Twin placenta DCDA	5	3
Twin placenta MCDA/MCMA	8	4
Triplet or higher birth order placenta	8	7

Cytopathology

Specimen type	Micro	Macro
Bronchoalveolar lavage	2	–

CSF	2	–
Synovial fluid	2	–
Fluid, pleural, ascitic, pericardial	3	–
FNA	3	–
Urine	2	–

Neuromuscular

See College's *Guidelines on staffing and workload for neuropathology departments.*[2]

Frozen sections

Specimen types	**Micro**	**Macro**
Large bowel/rectal biopsies for Hirschsprung's disease (per sample)	5	2
Intraoperative seromuscular biopsies (per sample)	3	2
Intraoperative tumour biopsies (per sample)	3	2

Paediatric tumours (NOS)

Specimen types	**Micro**	**Macro**
Needle core biopsy	5	2
Includes separating specimen for cytogenetics, molecular studies etc*		

* Other needle core biopsies may also require macroscopic handling by a consultant according to circumstances since the diagnosis of tumour may not yet be known

Interpretation of genetic/molecular findings

Specimen types	**Micro**	**Macro**
Surgical specimen	3	–
Autopsy specimen	5	–

Interpretation of electron microscopy

Specimen types	**Micro**	**Macro**
EM report	5	–

2. Paediatric post-mortems

The following workload allocations are recommended for perinatal/paediatric post-mortem cases. The time allocation will include the entire autopsy process from receiving (or obtaining, where this is local practice) the consent or request to perform the autopsy to authorising the final report, including any histology or toxicology, but excluding attendance at inquests.

Group	Macro	Micro	No of units
Postmortem placental examination only	Low	Low	12
Early second trimester miscarriage or IUD <20/40	Intermediate	Low	36
External examination + imaging and placenta	Intermediate	Low	36
Limited examination or less invasive + imaging and placenta	Intermediate	Intermediate	48
Congenital malformation, any age	High	Intermediate	60
Antepartum stillbirth Neonatal death, hospital PM	High	High	60
Neonatal death, hospital PM, limited	Intermediate	Intermediate	48
Post-operative paediatric death Premature newborn infants Paediatric intensive care patients	Very high	Very high	84
Sudden death in infancy or coronial PM	Very high	Very high	84
Paediatric forensic death	Very high	Very high	120

Note: Limited/less invasive post-mortem examinations require similar clinical review, clinical correlation, external examination and reporting but with less extensive dissection and sampling. Since the extent to which a post-mortem examination is limited can vary significantly, these should be allocated on a case-by-case basis, based on the above guidelines.

References

1. The Royal College of Pathologists. *Guidelines on staffing and workload for histopathology and cytopathology departments (3rd edition)*, 2012. www.rcpath.org/publications-media/publications

2. The Royal College of Pathologists. *Guidelines on staffing and workload for neuropathology departments*, 2014. (Annex to general 2012 *Guidelines* above). www.rcpath.org/publications-media/publications