



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

Guidelines on staffing and workload for histopathology and cytopathology departments (2nd edition)

June 2005

This document supersedes the first edition, published in July 2003, and the subsequent amended versions. It also supersedes the histopathology and cytopathology chapters of the 1999 College document, *Medical and Scientific Staffing of NHS Pathology Departments*.

In accordance with the College's publications policy, this edition was placed on the Fellows' and Members' area of the College website for consultation, from 10 February to 7 March 2005. Ten detailed items of feedback were received. The lead author, Dr Hugh Cochrane, and the specialty advisers considered the feedback and amended the document accordingly. Please email publications@rcpath.org if you wish to see Dr Cochrane's annotated responses to the feedback received.

It is emphasised that these are **guidelines**, offered as a tool for pathologists to use in local job planning, workload allocation and the assessment of staffing requirements. They are not designed to be prescriptive and may be subject to local variation where protocols dictate.

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PREFACE

Preface to the first edition

These guidelines have been drawn up by a working party set up by the Specialty Advisory Committee (SAC) on Histopathology of The Royal College of Pathologists. The working party comprised Dr Hugh Cochrane (lead), Dr Anthea Sherwood and Dr Paola Domizio. Input was received from members of the SAC, College advisors in the histopathology subspecialties and colleagues locally and nationally.

It is emphasised that these are **guidelines**, which are offered as a tool for pathologists to use in local job planning, workload allocation and assessment of staffing requirements. They are not designed to be prescriptive and may be subject to local variation where protocols dictate.

It is proposed to review the guidelines after one year following the date of issue. Pathologists are invited to contribute their experience and comments on the implementation of the guidelines via the Fellows and Members Area on the College website (www.rcpath.org)

Dr Hugh Cochrane
July 2003

Preface to the second edition

As stated in the preface to the first edition, the guidelines first published in July 2003 have been reviewed in the light of comments received from pathologists as a result of the consultation. The original working party was reconvened and considered all the comments in detail.

The second edition of this document has been updated to take account of the comments received. A significant proportion of the comments concerned workload unit allocation for cases with multiple specimens and cases where additional stains and other investigations were carried out. The issue of comparability between the specialty matrices also featured prominently in the responses received. The working party has attempted to address all these issues in this updated edition. However, given the variety of approach to the practice of histopathology and cytopathology, it is acknowledged that there may still be apparent discrepancies in the suggested workload scores for similar types of specimen in the various specialty matrices.

The new NHS consultant contract is now well established and the document has been updated to take account of this. The contents of this document remain equally relevant to those still on the previous NHS consultant contract or other (non-NHS) contracts.

Dr Hugh Cochrane
June 2005

MEMBERSHIP OF THE WORKING PARTY

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1 PURPOSE

- 1.1 These guidelines have been written to fulfil the following purposes.
- i) To support pathologists in providing a mechanism for ensuring that an individual's sessional workload is reasonable, safe and practicable but not excessive, recognising that it is in the public interest to reduce errors related to overload, whether sustained or over short periods.
 - ii) To reassure the public that the appropriate workforce resources are devoted to the reporting of pathology specimens.
 - iii) To enable the equitable distribution of work amongst pathologists within a department, having regard to the varying complexities of differing specimen types, as well as the administrative and managerial work of consultants both locally and in the wider interests of the NHS.
 - iv) To facilitate workforce planning.
 - v) To assist pathologists in job planning and in the preparation of supporting documentation for appraisal.
- 1.2 **The ultimate test of whether staffing levels are adequate is whether consultants have sufficient time to deliver a high quality service including the monitoring of its reliability by participation in audit and quality assurance schemes, and to participate in enough educational activities to maintain their own professional development.**
- 1.3 The guidelines are applicable both to consultants and other career grade staff.

2 INTRODUCTION

- 2.1 Guidelines on staffing and workload were issued by The Royal College of Pathologists in 1992 and updated guidelines were issued in 1999. These guidelines recommended annual workload maxima of 4000 surgical histopathology specimens or 6000 cytopathology specimens or 600 autopsies per whole-time equivalent district general hospital (DGH) consultant per year. For consultants working in teaching hospital departments, the maxima were 2000 surgical histopathology specimens or 3000 cytopathology specimens or 300 autopsies respectively.
- 2.2 Since these guidelines were first published, there have been several major changes in histopathology and cytopathology service provision. There has been an increasing trend towards specialisation, particularly within academic units, which mirrors the development of specialisation within clinical disciplines. Advances in medical science have yielded new treatment modalities for many conditions. In order to support clinical staff, pathologists are now required to provide more detailed information in their report on an individual specimen. Reporting on specimens from an increasing number of cancer sites requires completion of a minimum dataset (MDS), in the form of either a printed proforma or an electronic proforma. The multidisciplinary team approach to cancer care includes a pathologist as a core member of the team and there is now a requirement for pathologists to attend multidisciplinary team meetings (MDTM) over a range of cancer sites. These changes have taken place alongside the general increase in other activities such as clinical governance, continuing professional development (CPD) and appraisal.
- 2.3 Concern has been expressed from many quarters that the annual workload guidelines based on specimen numbers are unable to accurately reflect the variety of work and the variable complexity of different types of specimens reported on by individual consultants.

- 2.4 For the reasons outlined above, a working group has been established to review the guidelines and report to the SAC on Histopathology. The working group was asked to consider the points reproduced at Appendix 1.
- 2.5 The first edition of these was issued in July 2003.
- 2.6 This second edition follows consideration by the working group of the numerous responses received as a result of consultation.

3 CONSIDERATION OF THE GUIDELINES BY THE WORKING GROUP: A MOVE TO A RECOMMENDED SESSIONAL WORKLOAD

- 3.1 The SAC (at their meeting of 10 February 2002) agreed that the maximum workload should be expressed per programmed activity (PA) rather than per year. The working group endorses this view. It is assumed a consultant will have a contract with their employer that details the number of programmed activities (PAs). This will be divided into a fixed number of PAs for direct clinical care (DCC) and additional PAs for supporting professional activities (SPA), e.g. teaching, CPD clinical governance and research. Some consultants will work part time and some will contract for extra PAs, some of which may be working for other agencies.
- 3.2 In the context of a consultant pathologist, 'direct clinical care' is taken by the working group to include surgical histopathology reporting (including completion of MDS), cytopathology reporting, hospital (consent) autopsies, both preparation for and participation in MDTM, case reviews (including network referrals) and second opinions.
- 3.3 A pathologist employed by an academic institution has a reduced number of sessions available for 'direct clinical care'. The precise number available would be a matter for negotiation 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 move to sessional workload allocations within College guidelines would enable consultants employed by an academic institution to apply them directly to their individual job plan. This would also enable better planning of overall staffing levels necessary to provide the level of service required.
- 3.4 The PA commitment to 'direct clinical care' would also be affected by a consultant taking on additional duties such as head of a department or section, hospital-based screening coordinator, clinical governance lead or educational supervisor. The precise PA commitment allocated to each of these activities would need to be negotiated between an individual consultant and their employer, but each is likely to involve at least one PA per week per activity for an average DGH, rising to perhaps two or more for a large DGH or teaching hospital

4 CONSIDERATION OF THE GUIDELINES BY THE WORKING GROUP: A MOVE AWAY FROM 'SPECIMENS' AS THE WORKLOAD UNIT

- 4.1 There is a general feeling, shared by the members of the working group, that the specimen (or request) as a workload unit cannot reflect the complexity of workload involved in reporting on different kinds of specimen. Maxima based on specimen numbers do not allow comparison of workloads between general histopathologists and specialist histopathologists, due to the varying caseload seen in each situation.
- 4.2 The working group considers that the workload unit employed should reflect the level of input required from a consultant in reporting the different types of specimen received. The working group have considered maxima based on blocks or slides received or on WELCAN units. All these approaches require a degree of IT infrastructure, which may not exist in some departments. Additionally, such an approach might mitigate against a more economical use of slides and blocks, and hence of valuable storage space, than would otherwise be the case. For instance, the use of acetate strips or multiwell cassettes for colonoscopy cases can reduce the number of blocks per case from six to one, without altering the amount of microscopy work done.
- 4.3 The reporting process involves a number of steps (see Appendix 2), some of which may be repeated several times before a report is finally authorised. The reporting process can usefully be broken down into two main components: macroscopy and microscopy.

Macroscopy includes specimen receipt (by the pathologist), cut-up and dictation of the gross description, specimen dissection and block selection. **In some cases (predominantly small biopsies, which can be counted, measured and cassetted in their entirety by biomedical scientists [BMS]) there will be no consultant input to macroscopy as defined here.** Additionally, BMS are increasingly involved in the cut-up of larger and more complex specimens, as outlined in the *Final report of the Joint College/Institute of Biomedical Science Working Group on the implementation of the extended role of biomedical scientists in specimen description dissection and sampling* (www.rcpath.org/publications).

Microscopy includes examination of slides and any special stains or immunohistochemistry, construction and dictation of the report (either conventionally or using voice recognition technology), completion of any MDS and authorisation of the transcribed report.

- 4.4 Macroscopy and microscopy can usefully be considered separately at four levels of input from the pathologist: low, intermediate, high or very high. A sum score of input required can be determined for each specimen type (score 1 for low input, 3 for intermediate input, 5 for high input and 10 for very high input). This sum score for each specimen type would form the overall basis for calculation of the total number of sessions of clinical work devoted to histopathology or cytopathology within the department. Where appropriate, some of this work could be performed by BMS staff of the appropriate grade, in accordance with College guidelines and local practice. This is represented in the following table.

MICROSCOPY	MACROSCOPY			
	Low (=1)	Intermediate (=3)	High (=5)	Very high (=10)
Low (=1)	Score 2	Score 4	Score 6	Score 11
Intermediate (=3)	Score 4	Score 6	Score 8	Score 13
High (=5)	Score 6	Score 8	Score 10	Score 15
Very high (=10)	Score 11	Score 13	Score 15	Score 20

Notes

Where a consultant has no input to macroscopy, a score of zero is assigned for individual sessional workload calculations. An appropriate score should be included for overall departmental workload calculations.

Where consultants type the report themselves, an appropriate score may be added to the microscopy.

For those departments operating a system of internal referral between pathologists, it may be appropriate to assign a low score to the 'triage' pathologist, but a high score to the specialist (e.g. a lymph node biopsy).

Where a trainee under supervision undertakes macroscopic dissection, the workload score for macroscopy should be added to the overall departmental workload total. It is recommended that trainees keep a separate account of their individual scores as well as an aid to trainee workload assessment (see also paragraph 4.9).

- 4.5 The suggested allocation of workload scores for individual specimen types is reproduced in Appendix 3.
- 4.6 A workload of 10 units per **hour** (i.e. 40 units for a 4-hour PA or 35 units for a 3.5-hour session) is considered appropriate.
- 4.7 In each year there are 52 weeks. Assuming 6 weeks annual leave, 2 weeks study leave and 2 weeks bank holidays and statutory days (8 bank holidays + 2 statutory days – which may now be added to annual leave in some Trusts) that leaves $52 - (6 + 2 + 2) = 42$ working weeks. Allowance should also be made for professional/special leave taken to perform duties in the wider interest of the NHS and short periods of sick leave. It is suggested that departmental workload calculations be based on assumed working year of 40 weeks.
- 4.8 The impact of medical trainees on a consultant's workload is highly variable and difficult to quantify. Departments may choose to allocate consultant time spent supervising trainees to DCC or SPA or a mixture of both. This should be in addition to any sessional allocation for work as designated educational supervisor.
- 4.9 Completion of MDS is part of reporting activity and can be considered as part of microscopy. The proposed tiered system of scoring takes account of the completion of MDS as part of the report.
- 4.10 These workload recommendations are given for guidance. They are based on generally accepted consultant-based practice, as outlined in various College publications published from time to time and practiced within the NHS, having cognisance of the restraints of that service. In those departments that have a specific research or other special interest in a given type of specimen that causes work to be

done, it may be appropriate for extra units to be allotted to that specimen type, based on the department's agreed and audited experience. For the individual, the job-planning process may indicate that such extra work should be included in the PAs paid for by an academic institution or research grant(s), rather than NHS service time.

- 4.11 Where there is a significant mismatch between staffing and workload, it will be necessary to implement a workload management strategy to ensure the continued provision of a safe and effective histopathology service. As a first step, the recommendations of the College report (*Histopathology of Limited or No Clinical Value* (2nd edition in preparation; see www.rcpath.org/publications) should be implemented, with the agreement of clinical teams. This should enable a reduction in workload if any activity of no clinical value is being undertaken. Secondly, consideration should be given to replacement of consultant activity by the use of permissible extended roles of biomedical scientists. Thirdly, such a management strategy might involve stratification of specimens received according to the urgency with which a report is required to inform patient management ('triage'). It may be necessary to introduce the concept of a histopathology 'waiting list' for less urgent specimens. The workload management strategy should be carried out according to pre-established protocols, which have been produced and agreed following discussion with pathology consultant colleagues, clinical consultant colleagues, the clinical director for pathology and the Trust management. Further advice regarding workload management in such circumstances is available in the 2001 College document, *Workload Management in Laboratory Medicine: Patient Safety and Professional Practices* (www.rcpath.org/publications).

5 CYTOPATHOLOGY

- 5.1 In the previous guidelines, a cytopathology specimen was assumed to have a workload implication equal to two-thirds of that of a histopathology specimen. Using the sessional unit-based system outlined above (paragraphs 4.3–4.11), a maximum of 10 microscopy units per hour (i.e. 40 units for a 4-hour PA or 35 units for a 3.5-hour session) is recommended. A cervical case is considered to represent 2 units. A non-gynaecological cytopathology specimen with 1 to 3 slides is considered to represent 2 units, and a specimen with 4 or more slides to represent 3 units. A non-gynaecological specimen with 9 or more slides or a complex case (e.g. with immunocytochemistry) is considered to represent 5 units.
- 5.2 In regard to variation between workload impact of different cytology specimens, the working group make three observations.
- i) The advent of liquid-based cytology in both gynaecological and non-gynaecological cytology is liable to decrease the variations in workload between different specimens due to the number of slides presented for examination. However, the amount of work involved in reporting certain types of specimen may **increase** due to the availability of material for additional techniques such as immunocytochemistry.
 - ii) The application of workload management such as is outlined in the College discussion document, *Histopathology of Limited or No Clinical Value* (2nd edition in preparation; see www.rcpath.org/publications) may reduce variation in the number of slides submitted with any individual case.
 - iii) Any development of the BMS role in reporting both gynaecological and non-gynaecological cytology will need to be taken into account when calculating the workload of an individual consultant.

- 5.3 If a consultant is involved in a dedicated FNA (fine needle aspiration) clinic in a reporting capacity or performs their own aspirates (with or without in-clinic reporting), such commitment will need to be identified within their job plan and would reduce the sessional availability for ‘general’ reporting accordingly.
- 5.4 It is recommended that a pathologist who undertakes cytopathology reporting should dedicate at least one session per week (on average) to cytopathology (as distinct from histopathology) reporting.

6 AUTOPSIES

- 6.1 In the College’s 2002 publication, *Guidelines on Autopsy Practice: Report of a Working Group of The Royal College of Pathologists* (www.rcpath.org/publications), the following statements were made regarding autopsy practice.
- A single standard should be applicable to all autopsy examinations, whether funded by the NHS, Coroner or Procurator Fiscal.
 - The central role of the medico-legal autopsy in the investigation of death necessitates the highest possible standards of practice
 - All autopsies required by law, whether in hospital mortuaries or public mortuaries, should be performed in a manner that allows reports to be written at least to the minimum standards set down in these guidelines.

The College regularly updates guidance on autopsy practice. See the College website for details (www.rcpath.org/publications).

Medico-legal autopsies are not strictly part of NHS work, although it might be argued that where such autopsies are performed on hospital cases, a service is being provided to the hospital clinicians and such autopsies may be useful for training. The exact contractual arrangements for medico-legal autopsies are subject to wide local variation and prescriptive guidance is not appropriate. It is, however, a College responsibility to ensure maintenance of good standards of practice and departments should ensure they have adequate staff to carry out their commitments. It is also appropriate for autopsies to be considered within a consultant’s overall workload for whichever agency this work is being undertaken.

- 6.2 The following workload allocations are recommended to aid consideration of the above.

Low input	1.5 hours (e.g. medicolegal autopsy on sudden unexpected death with no histology or toxicology)
Intermediate input	3 hours (e.g. medico-legal autopsy with toxicology or histology; hospital consent autopsy, particularly if supervising junior trainee)
High input	6 hours (e.g. medico-legal or consent autopsy on complex post-operative death or maternal death; any medico-legal case designated as ‘requiring special skills’)

Notes

The above time allocations 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.

These time allocations reflect those considered necessary to allow conduct of the autopsy in accordance with College guidelines.

These time allocations may be subject to review in the future if further recommendations are made regarding the audit, quality and conduct of autopsies.

Further suggestions for time allocation for **forensic** autopsies may follow negotiation with the Home Office and advice from the forensic pathology subcommittee and other responsible bodies.

Paediatric autopsies are addressed in Appendix 3.17.

7 SUGGESTIONS FOR IMPLEMENTATION OF GUIDELINES

The following suggestions are based on the experience of the first edition of these guidelines. Implementation can usefully be considered at two levels: departmental and individual.

7.1 Departmental implementation

In order to calculate the number of medical/BMS sessions required to deliver the specimen reporting service workload of the department, an individual department would need to have the facility to record the specimen type.

Using the 'P' code facility of the SNOMED system can do this best. One way would be to use 'P' codes 00001–00020 according to the number of units of work assigned to each specimen according to the matrix. Alternatively, one could simply use the appropriate given codes. A third way would be to use a two-digit code, the first digit representing the level of input to macroscopy and the second digit representing the level of input to microscopy (i.e. 0 = no input, 1 = low input, 2 = intermediate input, 3 = high input, 4 = very high input). The appropriate code could be derived from the matrix at the time of assignment of other SNOMED codes. The department would then be able to calculate the number of specimens of each grade of difficulty by using a simple SNOMED enquiry system, and hence the total number of sessions required to deliver the service.

For those working wholly in the NHS, 7.5 PA **less an allowance for MDTMs and patient-related administration** (say 1.5 PA) per week for 40 weeks a year is a reasonable allowance of reporting work per whole-time equivalent (WTE) consultant. In other situations, an appropriate sessional commitment to reporting work should be used.

An algorithm based on T and P codes would provide an individual department with a method of assessing the changes in sessional requirements imposed by a change in clinical practice. Such changes in clinical practice might well not affect the number of cases received in a department but would affect the overall workload, e.g. a change in policy from single rectal biopsies to a full colonoscopic biopsy series for the investigation of diarrhoea. The units of workload management can also be used to predict the sessional requirements in pathology of a planned increase in medical work elsewhere in the Trust. For instance, as a result of cancer network proposals, one Trust may take on radical excisions of a specific cancer type that were previously done elsewhere. It is hoped that use of the guidelines and the workload figures that follow would enable a more accurate assessment of the impact of such changes in clinical practice.

7.2 Individual workload management

Several departments in the country have already implemented a workload management strategy for their individual consultants, after appropriate discussions with clinical colleagues and management. This has involved triaging specimens into 'urgent', 'soon' and 'routine' on the basis of priority shown on the clinical request form. Each pathologist in the relevant department has then undertaken to do a specific number of cases per day.

In order to audit this work pattern, it was found necessary to complete a simple worksheet of the type shown in Appendix 4. This worksheet has been enhanced to show the four categories of work possible per specimen and may be used for either gross description or microscopy work. Such a table could then be used for each pathologist to demonstrate the amount of work that he or she completes in terms of workload units, protecting the patients and pathologists from overwork. Whether or not pathologists complete such worksheets on a continuous basis, or for a sample period such as one month in six, would depend on local circumstances and negotiation.

Alternatively, using the SNOMED 'P' codes as outlined above, an 'electronic' worksheet could be produced for each consultant by using the SNOMED enquiry system.

Worksheets may also be used to provide individual workload data for annual appraisal and revalidation. The data obtained may also be used to support negotiations for job plan review, extra staff members, extra sessional payments, etc. in departments where pathologists are hard pressed.

In those departments that have used a workload management system successfully, there is a fluctuation in the quantity of unreported work, including work in progress through microtomy and staining, within the department.

7.3 General comments

It should be noted that this workload management scheme only applies to the reporting component of a pathologist's workload as outlined in the guidelines. Appropriate assessment should be made of the sessional components of the other parts of a pathologist's workload.

It is recognised that some pathologists work faster than others. These guidelines can only represent a reasonable average. They are not intended to provide a basis for a 'fee per case' system of payment, neither are they to be used to support an argument for payment for an increased number of PAs based on the amount of cases reported rather than the time spent at the workplace, where the latter is the basis of remuneration.

Appendix 1 College recommendations on staffing and workloads in histopathology services: points to be considered in any review

(This version takes account of the discussion by the Specialty Advisory Committee on Histopathology at its meeting in February 2002.)

1. Should the recommended maximum workload be expressed as per year (as currently) or per session? A sessional rather than annual basis could enable consultants to fulfil better their job plans and to estimate the additional sessions required for any increase in demand and for waiting list initiatives.
2. Does the trend towards subspecialisation enable higher safe maximum workloads? Some argue that subspecialists can deal with work more expeditiously than can consultants who are reporting a wider case-mix. The workload recommendations should also take account of the 'learning curve': the tolerable and safe workload maximum may increase with increasing experience.
3. What allowance should be made for working to minimum datasets and MDT participation? Each MDT meeting is currently estimated to occupy at least one session.
4. What adjustment should be made to take account of the extended roles of BMSs in cervical screening cytology and in specimen dissection and sampling? The aim is to relieve consultants of some work pressures but not of their consultant responsibility for the delegated work.
5. Are we content with 'requests' as the workload unit? This does not take account of the varying complexity and workload associated with different requests. We could devise another way of estimating the workload that is more sensitive to these factors, such as counting blocks or slides. Alternatively, the 'requests' could be weighted according to complexity.
6. Is it acceptable for DGH consultants to be expected to handle twice the maximum workload of their teaching hospital colleagues? All consultants are expected to work to the same standards. Many DGH consultants are active in teaching and research, and there is variable teaching and research activity among teaching hospital consultants. This would be solved by a sessional approach to workloads and staffing (see point 1 above).
7. Is there an evidence base for current or future recommendations on staffing and workloads? Individuals work at different rates; some can tolerate and report reliably higher workloads than currently recommended. Minimum workloads might be just as important for safe practice.
8. What is the effect of trainees on consultants' workloads? Junior trainees require training. Senior trainees may relieve consultants of some workload.

**JCE Underwood
Chairman, SAC on Histopathology
4 March 2002**

Appendix 2 Processes involved in reporting a histology case

1. Check identity of specimen
2. Dictate gross description
3. Dissect specimen
4. Dictate further as required
5. Select and cut blocks
6. Recheck identity and cassette blocks
7. Receive slides, etc. in office or reporting room
8. Check identity
9. Examine slides
10. Make preliminary assessment – dictate or write report if possible at this stage
11. Order special stains, recuts, etc. as appropriate
12. Communicate with clinicians in charge of the case as appropriate
13. Discuss with colleagues, etc.
14. Receive specials, etc.
15. Check identity
16. Review all slides and information gathered
17. Dictate/write final report
18. Receive transcribed report
19. Check identity
20. Review transcribed report, amending as appropriate
21. Assign code (SNOMED or SNOP)
22. Sign/authorise

Appendix 3 Workload matrices for pathology specialties

A3.1 Preliminary remarks

The following categories are provided for guidance only. Where departments choose to vary from these categories significantly, or to amend them in the light of experience, this is best done through discussion at formally minuted meetings involving all the pathologists affected by the proposed amendments. Such local variations should be fully documented and audited.

It is recommended that the workload score allocation scheme should be adapted in each department according to consensus within that department and that the final scores allocated should be realistic rather than aspirational.

The scores have been allocated on the basis of the average per case. It may be appropriate to allocate a score other than that suggested in the matrix **in an individual case** if the case has taken a significantly different amount of time (either less or more) to report (e.g. due to unexpectedly low or high diagnostic complexity) than that allocated in the matrix. If this is a recurring event then an agreed, audited departmental amendment to the matrix is recommended, as previously outlined.

If an uninvolved organ is removed as part of a large resection specimen (e.g. uterus +/- adnexae with a cystectomy or spleen with a gastrectomy), it may be appropriate to incorporate an additional score for the uninvolved organ.

When additional macroscopic techniques (e.g. specimen photography) are undertaken, it may be necessary to increase the workload allocation over the nominal number of units assigned to macroscopy. A higher allocation could be made routinely where local standard operating procedures dictate how specimen examination and dissection are carried out.

If a specimen is sent for a second opinion, it may be appropriate to add a score of 1 unit to microscopy to allow for the time involved. An internal (intradepartmental) referral for a second opinion may also attract a suitable unit allocation where there is a significant impact on workload of the pathologist to whom the case is referred.

Referred cases

Pathologists receiving referral cases should either allocate an appropriate workload score from the matrices or log the actual time involved.

Needle core biopsies

Many comments have been received regarding the time allocation for needle core biopsies. The working group considers that all core biopsies for suspected malignancy (irrespective of the site of origin) should have an allocation of 3 units for microscopy per block, with up to six cores per block. If immunohistochemistry is necessary, the score is increased to 5 units.

Mucosal biopsies (and other small biopsies)

A large number of comments have been received regarding the time spent in assessment of these biopsies, reflecting the variation in practice. These comments have been carefully considered and it is the view of the working party that all such biopsies from one site and included in one block should be scored together as one specimen. When, for reasons of economy, biopsies from different sites are cassetted together but are distinguishable (e.g. gastric antral and body mucosa in the same container) or

when a multiwell cassette is used, they should be scored separately as one specimen each. On this basis, all mucosal biopsies and other small biopsies should score 1 unit for microscopy at each site.

Special stains and immunohistochemistry on small biopsy specimens

The examination of special stains and immunohistochemical stains increases the amount of time required to assess an individual specimen. It is recognised that specimens from different sites may require different approaches but overall, having considered the comments received, it is the opinion of the working party that if a small biopsy specimen requires up to 4 special stains and/or immunohistochemical stains it should increase the microscopy score from low (= 1 unit) to intermediate (= 3 units). For 5 or more special stains and/or immunohistochemical stains, the workload allocation should increase to high (= 5 units).

Multiple specimens received as one request

Numerous comments have been received regarding this. The working party consider that a workload score allocation should be made that is appropriate to each of the individual components, taking care to avoid double counting where a score in the matrix already incorporates more than one component (e.g. local resection **and** regional lymph node dissection).

NOTE ON NEUROPATHOLOGY

The matrix in Appendix 3.16 for neuropathology has been devised by the British Society for Neuropathology and should be applied using the **time-based** (rather than unit-based) values detailed for different specimen types.

A3.2 Bone and soft tissue pathology

MICROSCOPY	MACROSCOPY			
	Low (= 1)	Intermediate (=3)	High (=5)	Very high (=10)
Low (= 1)	Ganglion cysts Synovial biopsies Other small orthopaedic biopsies (non-tumour) Excision small lipoma (< 5 cm)			
Intermediate (=3)	Excision large lipoma (> 5 cm) Excision small benign soft tissue lesions	Large bone biopsy Head of femur		
High (=5)	Small bone biopsy (non-tumour)	Metabolic bone biopsy without histomorphometry		Amputation for soft tissue malignancy
Very high (=10)	Small bone and soft tissue malignancy biopsy	Bone histomorphometry	Local resection of bone/soft tissue malignancy	Radical excision/ amputation of a bone sarcoma

A3.3 Breast pathology

MICROSCOPY	MACROSCOPY			
	Low (=1)	Intermediate (=3)	High (=5)	Very high (=10)
Low (=1)		Implant capsule examination		
Intermediate (=3)	Excision mastectomy scar (reconstruction) Breast core biopsy Excision benign breast lesion Nipple biopsy Microdochestomy	Reduction mammoplasty (unilateral or bilateral) Isolated axillary node dissection Excision benign breast lesion requiring 3D orientation Re-excision of breast tumour without axillary node dissection	Prophylactic mastectomy	
High (=5)	Sentinel lymph node biopsy Breast core biopsy with 4 or more levels and/or immuno-histochemistry Mammotome biopsy specimens	Excision biopsy malignant breast lesion	Excision biopsy malignant lesion requiring 3D orientation Biopsy/excision non-palpable microcalcific lesions Wide local excision malignant lesion with axillary node dissection Mastectomy specimen Local resection for DCIS requiring 3D orientation	
Very high (=10)				More complex cases, e.g. requiring X-ray of blocks/ slices, repeated block selection sessions, or multipart mammographically localised malignancy with specimen X-rays and separate marginal samples

Notes

1. Breast malignancies received fresh and cut or sampled prior to fixation and subsequent cut-up should have an additional 2 points of macroscopic time.
2. With the exception of reduction mammoplasties for bilateral surgery score each side separately.

A3.4 Cardiorespiratory pathology

MICROSCOPY	MACROSCOPY		
	Low (=1)	Intermediate (=3)	High (=5)
Low (=1)	Bronchial biopsy without levels/special stains/immunostains Mediastinal lymph node biopsy for lung cancer staging	Valves, vessels	
Intermediate (=3)	Bronchial biopsy with up to 4 levels/special stains/immunostains Transbronchial biopsy for parenchymal lung disease Core biopsy of lung tumour Pleural biopsy	Pulmonary resection/explantation for non-neoplastic disease Frozen section reporting	
High (=5)	Bronchial biopsy with 5 or more levels/special stains/immunostains Core biopsy of lung tumour with immunostains Pleural biopsy with immunostains Mediastinal biopsy other than for lung cancer staging All endomyocardial biopsies Transplant transbronchial biopsies	VAT or open pulmonary biopsy Resected cardiac tumours	Pulmonary resection for neoplasm Resected tumours of mediastinum, pleura or chest wall Explanted hearts
Very high (=10)			

A3.5 Dermatopathology

MICROSCOPY	MACROSCOPY			
	Low (=1)	Intermediate (=3)	High (=5)	Extra high (=10)
Low (=1)	Curettings/shave/punch/ excision/incisional biopsy with no levels/special stains/ immunos ¹ Single specimens under 20 mm and single block			
Intermediate (=3)	Curettings/shave/punch/ excision/incisional biopsy with up to 4 blocks/levels/special stains/immunos BCC, SCC (MDS) ²	Small/simple orientated specimen Specimen greater than 20 mm	Single frozen section for disease diagnosis	
High (=5)	Curettings/shave/punch/ excision/incisional biopsy with 5 or more blocks/ levels/special stains/immunos Melanoma (MDS) Direct immunofluorescence In-situ hybridisation Genotypic analysis	Small complex orientated specimen	Multiple frozen sections for resection margins Large/complex orientated specimen Lymph node dissection	
Extra high (=10)	Transmission electron microscopy Examination of patient Plucked hair analysis	Single sentinel lymph node biopsy	Extremely large/ complex orientated specimen	Interval or Mohs resection

Notes

- Many skin specimens show considerable and unpredictable variation in complexity and reporting time. This includes, inflammatory dermatoses, alopecia and nail biopsies, adnexal lesions, lympho-proliferative disorders and other uncommon skin cancers. It is expected that higher basic workload scores (usually 3 or 5) will be applied to individual cases as appropriate. This qualification applies particularly to melanocyte lesions, due to their potential difficulty and inherent high medicolegal risk.
- Due to variable uptake of the British Association of Dermatologists' guidelines by clinicians, there is variable local requirement for a full College MDS. It is expected, however, that in centres requested to provide detailed information (especially decimal point measurements on resection margins and BCC depth for immuno-treatment) that a higher basic workload score (=5) will be applied as appropriate. These will constitute a proposed basic and extended MDS for BCC and SCC in the second edition of the MDS (due in late 2005).
- Many skin specimens require a review of previous histology and reports. This time should be added to the matrix score as appropriate.

A3.6 Endocrine pathology

MICROSCOPY	MACROSCOPY			
	Low (=1)	Intermediate (=3)	High (=5)	Very high (=10)
Low (=1)	Mucosal/small biopsy from one site without levels/ special stains/ immunos			
Intermediate (=3)	Mucosal/small biopsy from one site with up to 4 levels/special stains/ immunos Needle core biopsy with no immunos	Parathyroid, no frozens Thyroidectomy or lobectomy for Graves or goitre (up to 6 blocks) Completion thyroidectomy Adrenalectomy for hyperplasia or benign cortical lesion		
High (=5)	Mucosal/small biopsy from one site with 5 or more levels/special stains/immunos Needle core biopsy with immunos	Parathyroidectomy with intra-operative frozens or with immunos, or for primary carcinoma Thyroidectomy or lobectomy for primary malignancy, no immunos Thyroidectomy or lobectomy (7–12 blocks) Adrenalectomy for phaeochromocytoma or adrenocortical carcinoma	Bowel resection for carcinoid	
Very high (=10)		Thyroidectomy or adrenalectomy for primary neoplasm if more complex and/or immunos Partial pancreatic resection for endocrine neoplasm with immunos Appendicectomy for carcinoid with immunos		Whipples resection for endocrine neoplasm with immunos

Note

One may need to upgrade parathyroids if there are multiple glands or intraoperative frozen sections and/or imprints.

A3.7 Gynaecological pathology

MICRO-SCOPY	MACROSCOPY			
	Low (=1)	Intermediate (=3)	High (=5)	Very high (=10)
Low (=1)	Fallopian tubes for sterilisation Cervical polyp Products of conception (up to 3 blocks) Ectopic pregnancy (up to 3 blocks) Endometrial pipelle/curettings/ polyp (up to 3 blocks) Excision vulval/ vaginal cyst TCRE specimen (up to 3 blocks) Single myomectomy	Simple hysterectomy		
Intermediate (=3)	Small ovarian biopsy or incidental resection Simple ovarian cyst Multiple myomectomy Products of conception (4 or more blocks) Ectopic pregnancy (4 or more blocks) Endometrial pipelle/ curettings/ polyp (4 or more blocks) Omental/peritoneal/pelvic biopsy (with levels) Up to 3 cervical/vulval/vaginal biopsy with levels	Loop biopsy of cervix (LLETZ) or cone (up to 6 blocks) Hysterectomy with BSO for benign disease Placenta (singleton) Vulval mesenchymal tumours up to 4 blocks Simple ellipse excision of vulval lesion for VIN (up to 4 blocks) Prophylactic oophorectomy for FH of ca	Placenta (twin)	
High (=5)	Any of those in low macro/ intermediate micro with immuno/ special stains 4 or more cervical/vulval/vaginal biopsies with levels Products for PTD/mole	Loop biopsy of cervix (LLETZ) or cone with 7 to 12 blocks Hysterectomy for CIN Fallopian tube for failed sterilisation Vulval mesenchymal tumours 5+ blocks Large ellipse excision of vulval lesion for VIN (5+ blocks) Benign ovarian tumours	Trachylectomy Frozen section for gynaecological cancer Simple vulvectomy Malignant ovarian tumours Hysterectomy for PPH	Hysterectomy with BSO for cancer/atypical endometrial hyperplasia Trachelectomy with nodes
Very high (=10)	Mapping vulval biopsies (5+) with levels	Loop biopsy of cervix (LLETZ) or cone with 13 or more blocks		TAH, BSO with omentectomy and/or lymph nodes for cancer Pelvic exenteration Vulvectomy/vagin-ectomy with lymph nodes

A3.8 Haematolymphoid pathology

MICROSCOPY	MACROSCOPY		
	Low (=1)	Intermediate (=3)	High (=5)
Low (=1)		Splenectomy for trauma Splenectomy for thrombocytopenia	
Intermediate (=3)	Lymph node biopsy or core biopsy without immunostains Bone marrow biopsy without immunostains		
High (=5)	Lymph node biopsy or core biopsy with immunostains Bone marrow biopsy with immunostains	Splenectomy for malignancy	
Very high (=10)	Lymph node biopsy or core biopsy with more than one round of immunostains Bone marrow biopsy with more than one round of immunostains		

A3.9 Head and neck (oral and ENT) pathology

MICROSCOPY	MACROSCOPY			
	Low (=1)	Intermediate (=3)	High (=5)	Very high (=10)
Low (=1)	Oral/ENT biopsy without levels/special stains/immunohistochemistry Nasal polyps Periapical lesions Cholesteatoma Smear for candida	Tonsillectomy Adenoidectomy		
Intermediate (=3)	Oral/ENT biopsy with up to 4 levels/special stains/immunohistochemistry	Local excision for dysplasia or cancer needing orientation Salivary gland excision for benign disease Teeth (including ground sections) for diagnosis Intraoperative frozen section	'Common' odontogenic tumours and fibro-osseous lesions	
High (=5)	Oral/ENT biopsy with 5 or more levels/special stains/immunohistochemistry Immunofluorescence for bullous lesions	Salivary gland excision for cancer		Mandibulectomy for mucosal carcinoma Laryngectomy Unilateral neck dissection
Very high (=10)	Biopsies of anaplastic lesions, or of mets from unknown primary		Multiple intra-operative frozen sections	Resection and neck dissection Bilateral neck dissection Maxillectomy, or mandibulectomy for jaw tumours Skull base resection

A3.10 Intestinal and colorectal pathology

MICROSCOPY	MACROSCOPY			
	Low (=1)	Intermediate (=3)	High (=5)	Very high (=10)
Low (=1)	<p>Mucosal biopsy(ies) from a single site without levels/special stains/immunohistochemistry</p> <p>Single colorectal polyp < 1 cm</p> <p>Appendix</p> <p>Haemorrhoids</p> <p>Peritoneal or omental biopsy without levels/special stains/immunohistochemistry</p> <p>Excision fistula in ano</p>			
Intermediate (=3)	<p>Mucosal biopsy(ies) from single site with up to 4 levels/special stains/immunohistochemistry</p> <p>Excision large (> 1 cm) colorectal polyp</p> <p>Peritoneal or omental biopsy with up to 4 levels/special stains/immunohistochemistry</p>	<p>Colectomy or intestinal resection for gangrene, diverticular disease, volvulus or pseudo-obstruction</p> <p>Endoscopic mucosal resection of tumour</p> <p>Small intestinal resection for benign disease</p>		
High (=5)	<p>Mucosal biopsy(ies) from single site with 5 or more levels/special stains/immunohistochemistry</p> <p>Peritoneal or omental biopsy with 5 or more levels/special stains/immunohistochemistry</p>		<p>Colectomy for IBD</p> <p>Colectomy for colorectal or anal malignancy</p> <p>Small intestinal resection for malignant disease</p>	
Very high (=10)		<p>Appendectomy for carcinoid with immunohistochemistry</p>		<p>Colectomy for cancer in IBD</p> <p>Colectomy for cancer on a background of polyposis</p> <p>Colectomy for multiple synchronous cancers</p>

A3.11 Ocular pathology

MICROSCOPY	MACROSCOPY			
	Low (=1)	Intermediate (=3)	High (=5)	Very high (=10)
Low (=1)	<p>Curettings/punch/shave/ simple excision with no levels/special stains/ immunos</p> <p>Single specimens under 20 mm and single blocks (would include simple cornea, conjunctiva, lid lesion, choroidal biopsy, etc.)</p>			
Intermediate (=3)	<p>Curettings/punch/shave/ simple excision with up to 4 levels/special stains/ immunos</p> <p>BCC, SCC (MDS)¹</p> <p>Straightforward ocular fluid cytology/impression cytology</p>	<p>Specimens greater than 20 mm</p> <p>Simple orientated specimens, i.e. mid full- thickness lid resections</p>		
High (=5)	<p>Curettings/punch/shave/ simple excision with 5 or more levels/special stains/immunos</p> <p>Problematical melanocytic lesions</p> <p>Melanoma (MDS)*</p> <p>Evisceration specimens</p>	<p>Small complex orientated specimens, i.e. small canthal specimens</p>	<p>Large complex orientated specimens, i.e. large medial canthal resections and exenterations</p> <p>Frozen sections on resection margins</p> <p>Enucleation specimen</p>	
Extra high (=10)	<p>Transmission electron microscopy</p>		<p>FS and 'fixed' Mohs</p>	<p>Extremely complex orientated specimens</p>

Note

1. Subject to review by the College.

A3.12 Upper gastrointestinal and hepatobiliary pathology

MICROSCOPY	MACROSCOPY			
	Low (=1)	Intermediate (=3)	High (=5)	Very high (=10)
Low (=1)	<p>Mucosal biopsy(ies) from a single site without levels/special stains/immunostains</p> <p>Gall bladder</p> <p>Omental or peritoneal biopsy without levels/special stains/immunostains</p>			
Intermediate (=3)	<p>Mucosal biopsy(ies) from single site with up to 4 levels/special stains/immunostains</p> <p>Omental or peritoneal biopsy with up to 4 levels/special stains/immunostains</p> <p>Pancreas biopsy</p>	<p>Gastrectomy for benign disease</p> <p>Endoscopic mucosal resection of tumour</p> <p>Liver resection for metastasis</p>		
High (=5)	<p>Mucosal biopsy(ies) from single site with 5 or more levels/special stains/immunostains</p> <p>Omental or peritoneal biopsy with 5 or more levels/special stains/immunostains</p> <p>Liver biopsy</p>	<p>Liver resection for primary tumour</p> <p>Explant liver resections at transplantation</p>	<p>Gastrectomy for malignancy</p> <p>Oesophagectomy for malignancy</p>	
Very high (=10)				Whipples pancreaticoduodenectomy specimens

A3.13 Urological and renal pathology

MICROSCOPY	MACROSCOPY			
	Low (=1)	Intermediate (=3)	High (=5)	Very high (=10)
Low (=1)	Epididymis Foreskin Renal pelvis/ureter Vasectomy Penile/testicular/bladder biopsy without levels/ special stains/immunostains TURP/TURBT (1 block)			
Intermediate (=3)	Penile/testicular/bladder biopsy with up to 4 levels/ special stains/immunostains TURP/TURBT (2–4 blocks) Needle core biopsy (e.g. prostate/retroperitoneum/ kidney tumour) without immunostains Lymph nodes	Orchidectomy for benign disease Nephrectomy for benign disease		
High (=5)	Penile/testicular/bladder biopsy with 5 or more levels/special stains/ immunostains TURP/TURBT (5 or more blocks) Needle core biopsy (e.g. prostate/retroperitoneum/kidney tumour) with immunostains Medical renal biopsy (no immunostain or EM)	Partial cystectomy Ureter for malignant disease	Retroperitoneal lymph node dissection (post chemotherapy) Orchidectomy for tumour Nephrectomy for tumour	
Very high (=10)	Medical renal biopsy with immunostain and EM			Radical prostatectomy Radical cystectomy Penectomy

A3.14 Miscellaneous

MICROSCOPY	MACROSCOPY		
	Low (=1)	Intermediate (=3)	High (=5)
Low (=1)	Small biopsy from one site without levels/special stains/immunos Second reporting of first diagnosis of malignancy		
Intermediate (=3)	Small biopsy from one site with up to 4 levels/special stains/immunos Needle core biopsy without immunos Temporal artery biopsies	Frozen section (any indication)	
High (=5)	Small biopsy from one site with 5 or more levels/special stains/immunos Needle core biopsy with immunos		

A3.15 Cytopathology

Workload scores

Cervical case (to include review of associated cytology or histology slides where appropriate)	2 units
Non-gynaecological specimen (1–3 slides)	2 units
Non-gynaecological specimen (4–8 slides)	3 units
Non-gynaecological specimen (9 slides or more or complex case, e.g. with immunocytochemistry)	5 units

A3.16 Neuropathology consultant workload assessment

Workload element			Time (hrs)	Notes	
Neurosurgical biopsy	Frozen section/smear		0.5		
	Paraffin histology	Complexity 1	0.25	1	
		Complexity 2	0.5		
		Complexity 3	1.0		
		Complexity 4	2.0		
Autopsies	Head only		2.0	2	
	Standard neuropathological autopsy		3.0		
	Complex neuropathological autopsy		5.0		
Macroscopic brain examination	Standard examination of fixed brain ± cord		1.0	3	
	Complex brain ± cord examination		3.0		
Autopsy histology	Brain/spinal cord	< 5 blocks	1.0	4	
		6–10 blocks	2.0		
		11–15 blocks	3.0		
		16–20 blocks	4.0		
		> 20 blocks	4.0 + 1.0/5 blocks		
	Other tissues	< 5 blocks	0.5	5	
		6–10 blocks	1.0		
		> 10 blocks	1.0 + 0.5/5 blocks		
		Special stains/immunocytochemistry	< 5 blocks	0.5	
			6–10 blocks	1.0	
11–15 blocks	1.5				
16–20 blocks	2.0				
	> 20 blocks	2.0 + 0.5/5 blocks			
Muscle biopsies and other histochemistry	Performing biopsy		3.0	6	
	Histochemistry/block		1.0		
	Immunocytochemistry/case		0.5		
	EM/block		1.0		

Workload element			Time (hrs)	Notes
Nerve biopsies	Performing biopsy		3.0	
	Standard report		1.0	
	Immunocytochemistry/case		0.5	
	Morphometry/case		1.0	
	Nerve fibre teasing/case		1.0	
	EM/case		1.0	
CSF cytology	Simple		0.25	7
	Complex		0.5	
Ophthalmic pathology	Globe – standard		1.0	
	Complex		2.0	
	Orbital/periorbital/corneal (LM only) biopsy		As neuro-surgical	
	Corneal EM/block		1.0	

Notes

The time allocated includes cutting up, orientation of specimens, etc.

- Complexity:
 - Level 1 e.g. diagnosis possible on H&E; < 5 blocks, etc.
 - Level 2 e.g. immunocytochemistry, levels, clinical consultation, etc. required for diagnosis.
 - Level 3 e.g. difficult or large specimens requiring orientation, photography, extensive consultation, etc. for reporting.
 - Level 4 e.g. very difficult cases requiring EM, referral for second opinion, etc. for diagnosis.
- Times for autopsies include study of case notes, clinical consultation, discussion with clinical colleagues and next of kin of issues relating to consent (both for the autopsy itself and for the retention of tissue samples or the whole brain ± spinal cord), organ removal and production and validation of the report. A standard autopsy includes removal of the brain and usually the spinal cord. A complex autopsy may be a high-risk (e.g. suspected CJD) or perinatal case, or one in which a considerable amount of extra preparation or dissection is required.
- Times for macroscopic examination include review of case notes and the production and validation of the macroscopic brain/cord report. A standard examination includes the slicing and sampling for histology of the brain ± spinal cord. A complex examination may include the precautions necessary for dealing with a high-risk (e.g. suspected CJD) case, detailed photography (e.g. in a potential criminal case) or other special investigations at the time of the brain cut (e.g. X-ray examination of slices).
- Total times for cases are calculated individually. ‘Block’ means one of standard Tissue Tek size. For larger blocks, an appropriate correction should be made based on the surface area of the block, e.g. a block filling a Surgipath Super Cassette, which is four times the surface area of a standard Tissue Tek block, would be counted as four blocks for workload assessment purposes.

Example: a case required examination of 14 blocks of brain, 8 of spinal cord and 2 each of heart and lung. Two special stains were performed on 10 of the brain blocks and 2 immunocytochemical procedures on 6.

14 brain + 8 cord = 22 = 4.5 hours

2 heart + 2 lung = 4 = 0.5 hours

2 x 10 specials = 2 x 1.0 = 2.0 hours

2 x 6 immunocytochemical preparations = 2 x 1.0 = 2.0 hours

Total time for case = 9.0 hours

5. 'Other tissues' are any other tissues sampled at autopsy – except muscle, nerve or eye, which are calculated separately.
6. 'Other histochemistry' rectal biopsies for Hirschsprung's disease, etc.
'Performing biopsy' includes time for brief clinical history and examination prior to biopsy, consenting of patient, the actual surgical procedure and usually a brief postoperative assessment.
The work per block and per investigation are summed.
7. Simple CSF cytology: 2 cytopins
Complex CSF cytology: > 2 cytopins, cell counts, immunocytochemistry, etc.

These figures are the product of wide consultation amongst consultant members of the British Neuropathological Society and have been refined and validated by sequential review in different neuropathology laboratories with varying workloads and work patterns.

A3.17 Paediatric pathology

The matrices for paediatric pathology workloads were approved by the British Paediatric Pathology Association.

A3.17.1 Paediatric post-mortems

The following workload allocations are recommended for perinatal/paediatric post-mortem cases:

- low/intermediate group: 2 hours
- intermediate/intermediate group: 3 hours
- intermediate/high group: 4 hours
- high/high group: 7–8 hours
- very high/very high group: 2 sessions and above.

The paediatric medicolegal autopsies, although not strictly part of the NHS work, are carried out and are expected by clinicians to be carried out within the usual working hours. Many of these are very time consuming and the individual Trusts will have to decide whether their pathologists are able to support this type of work.

MICRO	MACRO			
	Low	Intermediate	High	Very high
Low		Limited examination and placenta Intrauterine death in early second trimester with autolysis		
Intermediate		Mid-trimester spontaneous miscarriage Termination for one system abnormality	Termination for complex abnormalities	
High			Second to third trimester unexpected stillbirth	
Very high				Sudden deaths in infancy Post-operative paediatric deaths Premature newborn infants Paediatric intensive care patients Paediatric forensic deaths

A3.17.2 Paediatric surgical pathology

The same units of time as for other specialist matrices apply to paediatric surgical macroscopic and microscopic examinations.

MICRO	MACRO			
	Low (=1)	Intermediate (=3)	High (=5)	Very high (=10)
Low (=1)	Appendix PUJ Foreskin Naevus (non-congenital) Gall bladder Small/mucosal biopsy from a single site with no levels/ special stains/immunostains			
Intermediate (=3)	Small/mucosal biopsy from a single site with up to 4 levels/ special stains/immunostains	Naevus (congenital) Nephrectomy or partial nephrectomy for non-neoplastic disease	Placenta (singleton)	Twin placenta
High (=5)	Small/mucosal biopsy from a single site with 5 or more levels/special stains/immunostains Endomyocardial biopsy (post-transplant) Lung biopsy (post-transplant) Renal biopsy (post-transplant) Bone marrow* Lymph node* Vacuolated lymphocyte screen	Lung biopsy (for structural disease)	Colectomy for IBD Neuroblastic tumour (resection) Skin biopsy (Batten's/storage disease) Explanted lung Explanted heart Orchidectomy	Paediatric tumour resections (non-radical)
Very high (=10)	Renal biopsy (with immunostain and EM) Liver biopsy (with immunostain and EM) Lymph node with immunostain and molecular analysis	Rectal suction biopsy (with frozen section and cholinesterase staining)	Paediatric tumour biopsy	Hirschsprung's pull-through procedure Wilms tumour (resection) Pancreas (PHH) Radical excision/ amputation of sarcoma

Notes

* See haematolymphoid table.

For other specimens, please consult the other specialist tables.

