



FACULTY OF PATHOLOGY
ROYAL COLLEGE OF PHYSICIANS OF IRELAND

Guidelines for the Implementation of a National Quality Assurance Programme in Histopathology - Version 4.0

Developed by
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1. Introduction

The development of a National QA Programme in Histopathology has been undertaken by the Faculty of Pathology, RCPI. The fundamental aim of this QA Programme is to assure enhancement of patient care with timely, accurate and complete pathology diagnoses and reports.

This document provides guidance to pathologists on the implementation of a QA programme in Histopathology, Cytopathology, Neuropathology and Autopsy including recognised sub speciality Paediatric & Perinatal Pathology. Local protocol will determine how these guidelines are adapted but it is recommended that systems are developed to collate the required data for each monitor outlined in this document.

This quality assurance programme is merely a small component in maintaining a quality laboratory. Quality in a laboratory is dependent on a host of structural and personnel factors. Quality assurance and improvements must be weaved into all systems of the laboratory to achieve the best possible outcome. Local quality management systems should be in place to direct, control and coordinate quality. A Quality committee should be established within each histopathology laboratory to ensure routine review of quality data and to initiate improvements where required. It is critical that well established procedures and systems are in place for the reporting, evaluation and root cause analysis of errors. This document offers guidance on response to error discovery; this guidance is intended to complement current practices¹.

As stated in a recent RCPATH publication³ it is important to recognise that the interpretative reports provided in Pathology are the opinion of the reporting pathologist. There is therefore a subjective element in the content of any report. This is relevant when more than one pathologist reviews diagnostic material, as legitimate variations in opinion may be expected in some clinical contexts, especially due to the variability in inter-observer reproducibility for many pathology factors. The degree of uncertainty may also reflect the adequacy of the material provided for assessment and the nature of the disease process. The pathologists training and experience, continued professional development, and participation in competency assessment schemes play an important role in managing this uncertainty.

Adequate resourcing by Hospital Management is essential to ensure successful implementation of this QA programme at a local level. Pathologists should work with hospital management to ensure that the agreed quality assurance processes are appropriately resourced.

This National Quality Assurance Programme in Histopathology sets out to

- Develop and implement guidelines for the routine measurement and review of quality indicator data for Histopathology Laboratories.
- Develop National QA benchmarks in Histopathology to maintain high standards of quality. It will be necessary to collate and analyse data for a period of time prior to setting benchmarks.

This document outlines

- The key quality monitors with associated indicators by which individual histopathology laboratories will monitor their activities.
- Recommendations for the measurement of each key quality monitor.
- Existing National and International Benchmarks (where available) for each key monitor.

The National Cancer Control Programme has several QA programmes happening simultaneously for common cancers. Histopathology departments will need to include these parameters in annual QA reports. Finally, the Faculty of Pathology accepts that this QA Programme is an evolving process and that this document will require regular review.

1.1. Hospital workload

The following data should be measured and reported annually for each department. See end notes for detailed clarification of workload categories.

Workload	Number
Total no of cases ⁱⁱ	
No. of Small Biopsies ⁱⁱⁱ	
No. of GI Endoscopic Biopsies	
No. of Cancer Resections ^{iv}	
No. of Non Biopsies other ^v	
Total no. of specimens	
Total no. of blocks ^{vi}	
Total no of stains ^{vii}	
No. of levels/sections ^{viii} (routine H&Es)	
No. of cases	
No. of stains	
No. of Extra H&E's ^{ix}	
No of cases	
No of stains	
No. of Immunohistochemical stains	
No of cases	
No of stains (including controls)	
No. of Special Stains ^x	
No of cases	
No of stains (including controls)	
No. of Frozen sections	
No. of cases	
No. of stains	
Cytology	
No. of Gyne Cytology cases ^{xi}	
No. of Non-Gyne Cytology cases – Exfoliative ^{xii}	
No. of Non-Gyne Cytology cases –FNA ^{xiii}	
No. of Cytoblocks/Cellblocks ^{xiv}	
Autopsy	
No. of coroner Autopsies ^{xv}	
No. of consented Autopsies ^{xvi}	
No. of consented Autopsies as a percentage of overall hospital deaths	

1.2. Histopathology Guidelines (including Cytopathology & Neuropathology)

1.2.1 Inter institutional Consultation

Inter institutional case review provides an additional mechanism for evaluating diagnostic accuracy at the original institution. It occurs when a patient's treatment is transferred to another institution triggering a review of original diagnosis. It can also occur when a clinician requests a review of original diagnosis by an external institution. It is a very useful form of peer review and should be distinguished from Inter Institutional opinions which are requested because of diagnostic uncertainty or lack of peer group consensus. The following indicators should be measured and reviewed quarterly for Inter-institutional consultation.

Phase	Monitor	Indicators	Review schedule
Analytic	Inter Institutional Consultation	Cases referred externally for review ^{xvii}	Quarterly
		<ul style="list-style-type: none"> No. of cases referred % Agreement^{xviii} 	
		Cases received internally for review ^{xix}	
		<ul style="list-style-type: none"> No. of cases received % Agreement 	
		Cases referred externally for opinion ^{xx}	
		<ul style="list-style-type: none"> No. of cases referred 	

1.2.2 Intradepartmental Consultation

Intradepartmental consultation is where a consultant pathologist seeks a second opinion from another consultant pathologist within his/her department or within his/her regional hospital network on a particular case. It is difficult to specify for all situations the types or proportions of cases that should be subject to review. Generally a pathologist should seek a second opinion if there is any doubt about the correct diagnosis. Pathologists should record the involvement of colleagues, with their agreement, in the QA system and if deemed necessary in the final report. The following indicator should be measured and reviewed on a 6monthly basis for intradepartmental consultation.

Phase	Monitor	Indicators	Review schedule
Analytic	Intradepartmental Consultation	<ul style="list-style-type: none"> % of total cases with intradepartmental consultation 	6 monthly

1.2.3 Correlation of frozen section diagnosis with final diagnosis.

Monitoring the correlation of frozen section diagnosis and permanent section diagnosis is an integral component of a quality assurance/quality improvement program. It provides a very important measure of performance with respect to frozen section diagnostic accuracy. It is recommended that permanent section slides should be analysed with the accompanying frozen section slides to establish if any discrepancy exists. It is recognised that certain frozen section activities (e.g. Sentinel lymph node, surgical margin analysis) have a high discordance rate. Each frozen section disagreement (major) should be treated as an event that requires investigation and action, and discrepancies should be reconciled in the final pathology report. Local protocols should outline the process for treatment of a major discordance. The following indicators should be measured and reviewed monthly for frozen section correlation with final diagnoses.

Phase	Monitor	Indicators	Review schedule
Analytic	Correlation of frozen section diagnoses versus final diagnoses.	No. of cases, No of blocks	Monthly
		Correlation Results ^{xxi}	
		% Concordance	
		% Deferral rate	
		% Minor Discordance	
		% Major Discordance	
		Turnaround time ^{xxii}	
Median			

College of American Pathologists benchmarks are included for information^{xxiii}

1.2.4 Cytological/Histological correlation and follow-up

Cytological/Histological correlation and follow-up is the comparison of a Cytology diagnosis with final Histopathology diagnosis^{xxiv}, when available. Surgical resection specimens with prior relevant cytology should be reviewed and coded as concordant or discordant at the time of the surgical sign out. This practice will help to identify areas of practice requiring focused audit. No review of the particular cytology case is intended at this time and coding should be applied to the relevant surgical specimen.

Phase	Monitor	Indicators	Review schedule
Analytic	Cytological/Histological correlation	Case type ^{xxv}	6 monthly
		<ul style="list-style-type: none"> • No. of cytology cases with histology follow-up <ul style="list-style-type: none"> ▪ % Concordance^{xxvi} 	

1.2.5 Retrospective review

1.2.5.1 Focused real time review

It is recommended that focused review of previous negative cases and specific, clinically relevant areas of practice identified locally is conducted. A suggested list of case types and sample size for focused review has been included in the appendix^{xxvii}. Local protocol should determine which case type to review, frequency and number of cases to be considered. It is recommended that a minimum of one review is performed yearly and in a real time manner such that if a significant discrepancy that would affect patient care is found, the physician is notified as soon as possible. The following indicators should be measured and reviewed for retrospective review.

Phase	Monitor	Indicators	Review schedule
Analytic	Focused real time review	Case type	Minimum of 1 review per year
		% of cases reviewed	
		<ul style="list-style-type: none"> • Period of review 	
		<ul style="list-style-type: none"> • No. of cases per review 	
		<ul style="list-style-type: none"> • % Agreement 	

1.2.5.2 Report completeness

Measuring the completeness of pathology reporting is an important component of a department QA&QI plan and serve as one indicator of quality of care. CAP report that many studies have shown that standardized reporting forms, including synoptic reports or checklists, are highly effective in improving report adequacy, particularly for cancer reporting. ADASP⁹, RCPATH¹⁰ and CAP¹¹ Standards and Datasets for Histopathology on Cancers and Tissue Pathways have been written to help pathologists work towards a consistent approach for the reporting of the more common cancers and to define the range of acceptable practice in handling pathology specimens. Based on these datasets, the Faculty has released standard minimum datasets for prostate, lung, breast and colorectal cancer reporting. These can be found at the following location on the Faculty website: [National QA Programme](#). It is recommended to conduct a minimum of one review yearly with particular emphasis on completeness of cancer reporting in accordance with these datasets. The following indicators should be recorded as a minimum for report completeness. It should be noted that discrepancies noted during this review process should be recorded and reviewed in local QA committee meeting.

Phase	Monitor	Indicators	Review schedule
Analytic	Report completeness	Case type	Minimum of 1 review per year
		No of reviews	
		<ul style="list-style-type: none"> • Period of review • No. of cases per review 	
		<ul style="list-style-type: none"> • % Completeness^{xxviii} 	

1.2.6 Multi disciplinary Team

Organisation of MDT meetings and determining cases for review is the responsibility of the MDT coordinator within the hospital. It is the responsibility of the Pathologist to

- prepare the cases assigned for review at MDT
- reconcile any discrepancies noted prior to MDT
- issue an addendum report if required.
- attend MDT meetings
- maintain records of which cases were discussed at MDT
- record if disagreement^{xxix} arises between the final diagnosis in pathology report and consensus reached at conference
- issue an addendum report post MDT if required.

Cytology cases deemed potentially discordant prior to MDT should preferably be reviewed by a Pathologist with an interest in cytology. The Pathologist is not responsible for determining what cases are presented at MDT or for clinical follow-up.

The following indicators should be measured and reviewed quarterly for multidisciplinary team meetings

Phase	Monitor	Indicators	Review schedule
Analytic	Multi disciplinary Team	Total no. of cases reviewed ^{xxx}	Quarterly
		% Agreement	

1.2.7 Laboratory based Non-conformances

Reporting of laboratory based non-conformances is a requirement for laboratory accreditation. Each histopathology laboratory should have existing policies, processes and procedures in place for reporting non-conformances and determining corrective and preventative action. The following indicators should be measured and reviewed quarterly for laboratory based non-conformances.

Phase	Monitors	Indicators	Review schedule
Analytic Pre-analytic Post-analytic	Non-conformance ^{xxxii} reporting	Pre analytic ^{xxxii} <ul style="list-style-type: none"> • Total No. of non-conformances(expressed as % of total cases) <ul style="list-style-type: none"> ○ Risk rating^{xxxiii} Analytic ^{xxxiv} <ul style="list-style-type: none"> • Total No. of non-conformances(expressed as % of total cases) <ul style="list-style-type: none"> ○ Risk rating Post Analytic phase ^{xxxv} <ul style="list-style-type: none"> • Total No. of non-conformances(expressed as % of total cases) <ul style="list-style-type: none"> ○ Risk rating 	Quarterly

1.2.8 Laboratory based External Quality Assessment (e.g. NEQAS)

External quality assessment (EQA) schemes in histopathology form a key part of laboratory quality management. It is highly recommended that all histopathology laboratories participate in external quality assessment schemes that assess and score the quality of slide preparation and staining. The following indicators should be measured and reviewed yearly for External Quality Assessment schemes.

Phase	Monitors	Indicators	Review schedule
Analytic	External Quality Assessment	List of external quality assessment schemes participated in by hospital.	Yearly

1.2.9 Turnaround time

TAT is a key monitor of the overall function of the laboratory service and is considered a critical element of quality because of the impact on clinical management of patients. Turnaround time is measured from the time the lab receives the specimen to the time the final report is authorised. Turnaround time is calculated based on working days and does not include weekends or bank holidays. To ensure a meaningful representation of hospital case turnaround time it is recommended to classify *Biopsy TAT* and *Non Biopsy TAT* separately. Non Biopsy cases should be further classified into *Cancer Resections* (by organ/site) and into *All Other cases*. HIQA have released national standards for symptomatic breast disease and Lung, Prostate and Colon standards are in development, it is recommended to report cancer resections TAT by organ type. The following indicators should be measured and reviewed yearly for Turnaround time.

Phase	Monitors	Indicators	Benchmark level	Review schedule
Analytic	Turnaround time	<ul style="list-style-type: none"> • TAT for all Surgical cases <ul style="list-style-type: none"> ▪ % completed by day^{xxxvi} 1,2,3,4,5,6,7, 8, 9, 10 • TAT for all Cytology cases <ul style="list-style-type: none"> ▪ % completed by day 1,2,3,4,5,6,7 	*See note below	Yearly
		<ul style="list-style-type: none"> • Case type <ul style="list-style-type: none"> ○ Small Biopsy <ul style="list-style-type: none"> ▪ % completed by day 1,2,3,4,5,6,7 ○ GI Endoscopic Biopsy <ul style="list-style-type: none"> ▪ % completed by day 1,2,3,4,5,6,7 ○ Non Biopsy – Cancer Resection by organ/site^{xxxvii} <ul style="list-style-type: none"> ▪ % completed by day 3,4,5,6,7,8,9,10 ○ Non Biopsy other <ul style="list-style-type: none"> ▪ % completed by day 3,4,5,6,7,8,9,10 ○ Non Gynaecological cytology – FNA <ul style="list-style-type: none"> ▪ % completed by day 3,4,5,6,7 ○ Non Gynaecological cytology – Exfoliative <ul style="list-style-type: none"> ▪ % completed by day 3,4,5,6,7 ○ Gynaecological cytology <ul style="list-style-type: none"> ▪ % completed by day 3,4,5,6,7 		

*ADSP Benchmarks are included for information^{xxxviii}

1.2.10 Addendum Reports

An addendum report refers to any pathology report issued subsequent to final report and should be classified as corrected, supplementary or amended. The following indicators should be measured and reviewed on a quarterly basis.

Phase	Monitors	Indicators	Review schedule
Analytic Post Analytic	Addendum Reports	Review Period Report type ^{xxxix} <ul style="list-style-type: none"> ○ % Corrected report ○ % Supplementary Reports ○ % Amended Reports 	Quarterly

1.2.11 Reports communicated directly to clinician by Pathologist

Local policies and professional judgement of the Pathologist will determine when to communicate directly with the clinician. The following indicator should be measured and reviewed yearly.

Phase	Monitors	Indicators	Reporting schedule
Post Analytic	Reports communicated directly to clinician by pathologist	Number of cases reported to clinician (expressed as a percentage of total cases)	Yearly

1.3. Adult Autopsy Guidelines

Autopsy QA programme should include review of both Coroner and Non Coroner case types.

1.3.1 Intradepartmental Consultation

Intradepartmental consultation is where a pathologist seeks a second opinion from a colleague within his/her department on a particular case. Generally a pathologist should seek a second opinion if there is any doubt about the correct diagnosis, in particular information that might appear on the death certificate. Pathologists should record the involvement of colleagues, with their agreement, in the QA system and if deemed necessary in the final report. The following indicator should be measured and reviewed on an annual basis for intradepartmental consultation.

Phase	Monitors	Indicators	Reporting schedule
Analytic	Intradepartmental Consultation	% of total cases with Intradepartmental Consultation	Yearly

1.3.2 Autopsy Case review

Autopsy case review is auditing of randomly selected or focused case types prior to authorization of the final report. Obtaining the opinion of a colleague on an element of an autopsy (e.g. histological sections of myocardium, wording of cause of death statement) would not qualify as a review of a case. In effect, the report must be finalised and ready to be signed off by the responsible pathologist before it is submitted for review. For autopsy case review we recommend that a minimum of 5% of all cases for that year be considered for review. This should be no less than 10 cases. ICU deaths and sudden cardiac deaths are suggested case types for focused review. An evaluation form for autopsy is provided to facilitate autopsy case review (Refer Appendix 1 – Sec 1.7). This form aims to interrogate the completeness, accuracy and scope of any given completed autopsy.

The following indicators should be measured and reviewed yearly for autopsy case review.

Phase	Monitors	Indicators	Review period
Analytic	Autopsy Case Review	Summary review of all cases	Annually
		<ul style="list-style-type: none"> • % of cases with toxicology 	
		<ul style="list-style-type: none"> • % of cases with histology 	
		<ul style="list-style-type: none"> • % of cases with brain retention 	
		<ul style="list-style-type: none"> • % of cases with other organ retention 	
		Focused or Random review	
		<ul style="list-style-type: none"> ○ Review type <ul style="list-style-type: none"> ▪ No of cases reviewed 	
		<ul style="list-style-type: none"> ▪ % of total cases reviewed 	
		Evaluation of Overall Autopsy ^{xii}	
		<ul style="list-style-type: none"> ○ % Excellent 	
		<ul style="list-style-type: none"> ○ % Good 	
		<ul style="list-style-type: none"> ○ % Satisfactory 	
		<ul style="list-style-type: none"> ○ % Poor 	
<ul style="list-style-type: none"> ○ % Unacceptable 			

1.3.3 Turnaround time

The Faculty recognises the potential benefit of provisional autopsy reporting to clinicians, pathologists and the coroner and recommends that provisional reporting be adopted as standard practice. For the purposes of this QA programme, the turnaround time of the autopsy final report will be monitored. Final report turnaround time is measured from the date of autopsy to the date the final report is authorised. The following indicators should be measured and reviewed on an annual basis for Autopsy TAT.

Phase	Monitors	Indicators	Review period
Analytic	Turnaround Time.	Total no of cases	Annually
		% completed within 1, 2, 3, 4,5 and 6 months	
		<ul style="list-style-type: none"> • Case type <ul style="list-style-type: none"> ○ Cases with neither toxicology nor neuropathology <ul style="list-style-type: none"> ▪ % completed within 1, 2 and 3 months ○ Cases with neuropathology but no toxicology <ul style="list-style-type: none"> ▪ % completed within 2, 3 and 4 months ○ Cases with toxicology <ul style="list-style-type: none"> ▪ % completed within 3 and 6 months ○ Cases with toxicology and other examination e.g. neuropathology <ul style="list-style-type: none"> ▪ % completed within 3 and 6 months 	

Royal College of Pathologists, ADASP and CAP Benchmarks are included for information^{xii}

1.4. Paediatric Autopsy Guidelines

Paediatric Autopsy refers to autopsies carried out on children aged 14 and under.

1.4.1 Extra Departmental Consultation

Paediatric Autopsy extra departmental consultation occurs when cases are presented for review at multi-disciplinary Morbidity and Mortality forums. The following indicator should be measured and reviewed on an annual basis for extra departmental consultation.

Phase	Monitors	Indicators	Reporting schedule
Analytic	Extra departmental Consultation	% of total cases reviewed at M&M	Yearly

1.4.2 Retrospective review

Retrospective review is auditing of randomly selected or focused case types post reporting of final diagnosis. For autopsy retrospective review it is recommend that all Metabolic/Cot deaths, all SIDS and a minimum of 20 other paediatric autopsy cases are reviewed per year. It is recommended that retrospective review be carried out within 1 month of PM completion and no later than 3 months. An evaluation form based on a modified version of the Rushton System to facilitate retrospective review is provided (Refer Appendix 2 Sec 0, Appendix 3 Sec 1.9). It is a scoring system which aims to interrogate the completeness and scope of a completed autopsy. It should be noted that Evaluation of Overall Autopsy is an important quality measure for paediatric autopsy as in adult autopsy and will be included in future revisions of these QA Guidelines.

The following indicators should be measured and reviewed yearly for retrospective review.

Phase	Monitors	Indicators	Review period
Analytic	Retrospective review	Case Type	Annually
		<ul style="list-style-type: none"> ▪ SIDS/Metabolic cases ▪ All other paediatric autopsy cases 	
		<ul style="list-style-type: none"> ○ % of total cases reviewed 	
		<ul style="list-style-type: none"> ○ Scores of cases reviewed 	
		<ul style="list-style-type: none"> • Mean 	
<ul style="list-style-type: none"> • Range 			
<ul style="list-style-type: none"> • % cases below minimum 			

1.4.3 Turnaround time

Final report turnaround time is measured from the date of autopsy to the date the final report is authorised. The following indicators should be measured and reviewed annually for Paediatric Autopsy Final Report TAT.

Phase	Monitors	Indicators	Review period
Analytic	Final Report Turnaround Time.	Total no of cases	Annually
		% total cases completed within 1,2,3,4,5 and 6 months	
		% cases SIDS/Metabolic cases completed within <ul style="list-style-type: none"> • 3 months • 6 months 	
		% all other paediatric autopsy cases completed after 2, 3 and 4 month intervals.	

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1.5. Revision History

Version	Date	Guideline Changes	Details
1.0	08/04/09	None	Original baseline version of Histopathology QA Guidelines
2.0	03/12/09	1.1 Hospital Workload	Total number of Specimens added
			No of Biopsies sub divided in order to more accurately capture case mix
			Total no of blocks and no of cases by organ/site added in order to capture case mix for interpretation of Frozen section TAT
			Classification list of organ/site included in appendix
			Non-Gynae cytology – Exfoliative category changed to include effusion cytology (pleural, peritoneal, pericardial) and peritoneal washings in appendix
		1.2.1 Inter institutional Consultation	Definition of Agreement added to appendix
		1.2.2 Intradepartmental Consultation	Case type denominator removed. It is sufficient to monitor % of <i>total</i> cases with intradepartmental consultation.
			Option to seek second opinion within regional/hospital network added in order to facilitate intradepartmental consultation in practices with only one pathologist
		1.2.3 Correlation of frozen section diagnosis with final diagnosis	Summary of case types removed, this is now covered in hospital workload
			Terminology in guideline changed from ‘Local protocols should outline the process for treatment of a <i>sentinel event</i> ’ to ‘Local protocols should outline the process for treatment of a <i>major discordance</i> ’
			Equation for the calculation of turnaround time & guidance on frozen section cases where specimens are provided over a period of time added to appendix
			Mean changed to Median as it better expresses the common-run, since it is not, as is the mean, affected by an excessively high or low figure
		1.2.4 Cytological/histological correlation & follow up	Provision included to allow the review of a sampling of cases where labs are restricted due to Lab Information Systems and/or excessive numbers of cases
			Guidance added on the category of Non Gynaecological cytology – FNA. For the purposes of interpreting discordance it is recommended that this category be further sub-divided at a local level to more clearly represent case mix.
		1.2.5 Retrospective review	Suggested sample size for focused review added to appendix

Version	Date	Guideline Changes	Details
			% Completeness added as indicator and definition of completeness added to appendix
			Note added to advise standardisation of minimum cancer datasets currently under review by the Faculty
		1.2.6 Multi disciplinary Team	Breakdown of indicators edited to improve clarity and ease of monitoring
		1.2.7 Laboratory based Incidents	Term 'incident' changed to 'non-conformance' as this more clearly represents the types of occurrences to be monitored for this guideline
			HSE risk assessment matrix to be used to classify non conformances as low medium and high and added to appendix
		1.2.9 Turnaround Time	Turnaround time phrasing changed for clarity of understanding from 'time the lab receives the specimen to the time the final report is <i>issued</i> ' to 'time lab receives the specimen to the time the final report is <i>authorised</i> '
			Measure of TAT for all surgical cases and all cytological cases added
			Case Type classification further broken out to more accurately represent case mix
			Classification of organ/site included in appendix for 'Non Biopsy – Cancer resection' in order to separate cases with very different expected turnaround times
		1.3.2 Adult Autopsy Retrospective review	Recommended time from PM completion date within which to conduct retrospective review added
			Review type and % cases reviewed added as indicators to retrospective review
			Retrospective review changed to include 'Evaluation of overall Autopsy' Evaluation of Autopsy classification added to appendix
			Autopsy retrospective review form added to appendix
		1.3.3 Adult Autopsy Turnaround time	Guidance added on the practice of provisional autopsy reporting
			Measure of TAT for total autopsy cases added
		1.4 Paediatric Autopsy Guidelines	QA Guidelines added for paediatric autopsy
3.0	07/05/10	1.1 Hospital Workload	Further clarification of cancer resection categorization added to appendix
			Guidance on the counting of further levels for the calculation of workload totals added to appendix.
		1.2.4 Cytological/histological correlation & follow up	Guidance provided on best practice in the event of discrepancies arising at review regarding specialist histology or cytology knowledge,

Version	Date	Guideline Changes	Details
		1.2.5.2 Report Completeness	Link added to Faculty approved minimum datasets for lung, colorectal, prostate and breast cancer reporting
		1.2.6 Multi Disciplinary team	Further clarification of MDT categorisation added to appendix
		1.2.7 Laboratory based Incidents	Correction made to HSE risk assessment matrix scoring system in appendix
		1.3.2 Adult Autopsy Retrospective review	Adult Autopsy Retrospective review changed to Adult Autopsy Case review and retrospective element of review removed following discussions with representatives of the Coroners Association
			Autopsy case review form changed to reflect above change to procedure for Adult Autopsy Review
		1.4.2 Paediatric Autopsy Retrospective review	Amendments made to Paediatric Autopsy evaluation form in appendix
4.0	30/06/11	1.1 Hospital Workload	Guideline refined and further clarification added to end note to ensure data collected is comparable
		1.2.4 Cytological/histological correlation & follow up	Guideline simplified
		1.2.6 Multi Disciplinary team	Indicator modified to simplify data collection requirement

1.6. References

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9. ADASP Checklists – (<http://www.adasp.org/Checklists/checklists.htm>)
10. RCPATH Datasets and Tissue Pathways – (<http://www.rcpath.org/index.asp?PageID=254>)
11. CAP Cancer Protocol and Checklists - College of American Pathologists
12. The Quality and Value of Sudden Infant Death Necropsy Reporting in Ireland – Sheehan KM, McDonnell M, Doyle EM, Matthews T, Devaney DM - J Clin Pathol. 2003 Oct;56(10):753-7.

1.7. Appendix 1

For illustrative purposes, the following appendix contains a copy of the 'Autopsy Case Review Form'. This spreadsheet, provided to facilitate Autopsy Case Review, is available at the following page on the Faculty website: [National QA Programme](#)

Histopathology QA Programme Adult Autopsy Case Review Form Revision 2.0		FACULTY OF PATHOLOGY <small>ROYAL COLLEGE OF PHYSICIANS OF IRELAND</small>						
Date of review (mm/dd/yyyy):	<input type="text"/>							
Reviewer Name(s):	<input type="text"/>							
Autopsy Number:	<input type="text"/>							
NCHD:	<input type="text"/>							
Consultant:	<input type="text"/>							
Date of autopsy (mm/dd/yyyy):	<input type="text"/>							
Final report date* (mm/dd/yyyy):	<input type="text"/>							
Final Report Turn-around time (days):	<input type="text"/>							
Evaluation of Clinical Details provided	<input type="checkbox"/> Good <input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> Unavailable							
Comment	<input type="text"/>							
Evaluation of Autopsy Protocol	<input type="checkbox"/> Good <input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory							
Comment	<input type="text"/>							
Evaluation of Special Procedures conducted								
Toxicology	<input type="checkbox"/> Considered necessary but not performed <input type="checkbox"/> Considered necessary and performed							
Histology	<input type="checkbox"/> Considered necessary but not performed <input type="checkbox"/> Considered necessary and performed							
Brain retention	<input type="checkbox"/> Considered necessary but not performed <input type="checkbox"/> Considered necessary and performed							
Evaluation of Overall autopsy diagnosis	<input type="checkbox"/> Excellent <input type="checkbox"/> Good <input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory <input type="checkbox"/> Unacceptable							
Comment	<input type="text"/>							
<p>*It is the responsibility of the reviewer to determine the exact Final Report date and include this information and the corresponding Turnaround time in the Autopsy Case Review form. As each review is carried out prior to authorisation, this information will only be available after the initial review has taken place.</p> <p style="text-align: center;">Definition of Terms</p> <p>Evaluation of Clinical details</p> <p><u>Good:</u> The history provides sufficient background information about the deceased to make clear the context of the autopsy.</p> <p><u>Satisfactory:</u> The history provides some background information about the deceased and makes the context of the autopsy somewhat clearer - compared to having no history at all.</p> <p><u>Unsatisfactory:</u> The history provides little background information about the deceased or the circumstance of the death. It does not make clear the context of the autopsy. It may leave the reader wondering where the deceased was at the time of death and in what circumstances they died.</p> <p><u>Unavailable:</u> Clinical details not available to pathologist</p> <p>Evaluation of Autopsy Protocol</p> <p><u>Good:</u> The autopsy protocol is sufficiently detailed for the reader to understand how that particular system appeared during the autopsy macroscopically. A good description may contain negative features – e.g. 'no focal lesions were seen on sectioning the brain'; 'the tricuspid, pulmonary, mitral and aortic valves appeared unremarkable'.</p> <p><u>Satisfactory:</u> The pathologist has made some effort to describe the internal & external examination</p> <p><u>Unsatisfactory:</u> Very little effort has been made to describe the internal & external findings. It provides no or very little comment about negative findings, implying a lack of critical observation.</p> <p>Evaluation of Overall autopsy diagnosis</p> <p><u>Excellent:</u> The autopsy report reads well and the cause of death takes into appropriate account the findings presented in the autopsy report. The autopsy report is of a standard that you would expect of yourselves and/or your colleagues</p> <p><u>Good:</u> The cause of death takes into appropriate account the findings presented in the autopsy report. It may not be as detailed as an autopsy report that would be classified as excellent</p> <p><u>Satisfactory:</u> The autopsy report sufficiently explains the cause of death given by the pathologist. The autopsy report fulfils its main purpose of documenting the cause of death but lacks additional details that distinguish a Good or Excellent autopsy report. There is obvious room for improvement.</p> <p><u>Unsatisfactory:</u> The autopsy report does not sufficiently explain the cause of death given by the pathologist. The cause of death may appear to be incorrect based on the information presented in the autopsy report. The autopsy report is at a standard below what you would expect of yourself and your colleagues</p> <p><u>Unacceptable:</u> The autopsy report does not sufficiently explain the cause of death given by the pathologist OR the cause of death is incorrect. It may be carelessly drafted. The autopsy report is below an acceptable standard that the profession would expect, which indicates that the pathologist is likely to be unreliable</p> <p style="text-align: center;">Revision Control</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">Version 1.0</td> <td style="width: 20%;">26/11/09</td> <td style="width: 65%;">Original baseline version of Adult Autopsy Retrospective Review Form</td> </tr> <tr> <td>Version 1.0</td> <td>07/05/10</td> <td>Form modified to facilitate prospective as opposed to retrospective review of Autopsy review</td> </tr> </table>			Version 1.0	26/11/09	Original baseline version of Adult Autopsy Retrospective Review Form	Version 1.0	07/05/10	Form modified to facilitate prospective as opposed to retrospective review of Autopsy review
Version 1.0	26/11/09	Original baseline version of Adult Autopsy Retrospective Review Form						
Version 1.0	07/05/10	Form modified to facilitate prospective as opposed to retrospective review of Autopsy review						

1.8. Appendix 2

For illustrative purposes, the following appendix contains a copy of the scoring system to be used for paediatric autopsy retrospective review for SIDS post mortems. This document is available at the following page on the Faculty website: [National QA Programme](#)

Post Examination Audit of Post Mortem Reports: SIDS PM - Modification of the Rushton System

PM.....

Factor Category	Total Score	Factor Breakdown	Score	
Weights and measures	80*	Centiles/Reference ranges	16	
		Body weight	16	
		CRL	16	
		CHL	16	
		Head Circumference	16	
Main organ weights	40*	Heart	8	
		Lungs	8	
		Liver	8	
		Kidney	8	
		Brain	8	
Minor organ weights	15	Spleen	5	
		Adrenal	5	
		Thymus	5	
Histology main organ	50*	Heart	10	
		Lungs	10	
		Liver	10	
		Kidney	10	
		Brain	10	
Histology minor organ	30	Spleen	10	
		Adrenal	10	
		Thymus	10	
Radiology	100*		100	
Microbiology	50	Swabs	20	
		Blood cultures	10	
		PCR: infectious disease	10	
		CSF	10	
Biochemistry	20		20	
Toxicology	35*		35	
Virology	10		10	
Metabolic investigations+	50	Oil Red O stain for lipid*	10	
		Others	40	
Clinico-pathologic comment	20*		20	
Total Score	500		500	

Max score 500

* items included in proposed minimum accepted score 335

+frozen tissue, acyl carnitine, organic acid, fibroblast culture, basic screen

1.9. Appendix 3

For illustrative purposes, the following appendix contains a copy of the scoring system to be used for paediatric autopsy retrospective review for SB and NND post mortems. This document is available at the following page on the Faculty website: [National QA Programme](#)

Post Examination audit of Post mortem reports: SB & NND PM - Modification of the Rushton System

PM:

Factor Category	Total Score	Factor Breakdown	Score	
Weights and measures	80*	Centiles/Reference ranges	16	
		Body weight	16	
		CRL	16	
		CHL	16	
		Head Circumference	16	
Main organ weights	40*	Heart	8	
		Lungs	8	
		Liver	8	
		Kidney	8	
		Brain	8	
Minor organ weights	15	Spleen	5	
		Adrenal	5	
		Thymus	5	
Histology main organ	50*	Heart	10	
		Lungs	10	
		Liver	10	
		Kidney	10	
		Brain	10	
Histology minor organ	30	Spleen	10	
		Adrenal	10	
		Thymus	10	
Radiology	50		50	
Microbiology	50	Swabs	20	
		Blood cultures	10	
		PCR : infectious disease	10	
		CSF	10	
Placenta: gross and histo	100*	Gross	50	
		Micro	50	
Cytogenetics	35		35	
Virology	10		10	
Metabolic investigations	20	Oil red O stain for lipid	10	
		others+	10	
Clinico-pathologic comment	20*		20	
Total Score	500		500	

Max score 500

* items included in minimum accepted score of 290

+frozen tissue, acylcarnitine, organic acid, basic screen

ⁱ Response to adverse incident

Please note that the following guidance is based on Publications from the Royal College of Pathologists UK and the College of American Pathologists. Refer to references 1 and 2 for further details

The response to adverse incidents should follow established policies within the institution. A description of the steps followed should be maintained when significant incidents are discovered, which may include notifying the hospital's risk management department and any other committees as set out by local policies.

A discrepancy can be defined as a difference of opinion between the original interpretation and the interpretation at review. A discrepancy can only be considered an error when the discrepancy is confirmed by two independent reviewers. An identical discrepancy or error may lead to vastly different consequences depending on the timing of error discovery and the actions taken by the clinician.

Each discrepancy should be categorised as to the severity of the outcome on clinical care, as below. Collaboration with clinicians will be necessary to accurately evaluate patient impact.

- No Impact on care
- Minimal harm
- Minor harm
- Moderate harm
- Major harm

The following are guidelines on how to respond to the discovery of serious errors :

- Errors or discrepancies that may have a significant impact on patient care should be reported to the responsible clinician(s), Hospital risk management and any other committees as set out by local policies. If a change in care will result from this discovery, an amended pathology report should be issued.
- Errors or discrepancies with no impact on patient care should be forwarded to the departmental quality assurance program for analysis, as an improvement initiative may be necessitated. An addendum report may or may not be issued.
- Errors discovered very near the time of the original pathology report are usually handled by issuing an addendum report and notifying the responsible clinician. Again such errors should be discussed at departmental QA meetings and reported to any other committees as set out by local policies.
- The response to a diagnostic discrepancy detected late in the patient's clinical course may vary depending upon the nature of the error and the likely impact on the clinical care of the patient. Errors that may impact on patient's care should be discussed with the relevant clinicians for evaluation, possible action, and or root cause analysis.

ⁱⁱ A case generates a unique number within the lab information system. It can include multiple specimens and multiple blocks. Total no of cases is a count of these unique case numbers

ⁱⁱⁱ Small biopsy – Includes Core, Needle, Punch, Shave, Curetting
Please note bone marrow biopsies should be considered as 'non biopsy other' (P04)

^{iv} Notes on the classification of Cancer Resection:

- In most cases non-invasive tumours should be treated as cancer resections. However this should be considered on a case by case basis. The following examples should be coded as cancer resections: Thyroid resection, Salivary gland, Colectomy for Polyps, Breast Wide local excision for DCIS. The following examples should not be coded as cancer resections: Hysterectomy for fibroids, LLETZ.

- Cases in which a resection is performed for a presumptive diagnosis of malignancy that subsequently is a non-neoplastic process (for example Whipple's resection with chronic pancreatitis) should also be coded as a cancer resection
- Transurethral resections of bladder tumours should be classified as small biopsy (P01), however prostate TURP chippings should be regarded as non biopsy other (P04)
- If a cancer resection case includes different specimen types (submitted separately but as part of the same case e.g. lymph node dissection) the entire case should be recorded as one single cancer resection. The code is assigned to the cancer being resected and the specimen parts are not given a separate code. The following example is provided for clarity: In the case of a breast cancer resection, if part A is the wide local excision of the breast tumour, part B is deep margin tissue and parts C and D are axillary lymph node dissections the entire case should be still coded as a breast cancer resection (P03).

^v Non biopsy other – All other surgical specimens which are neither small biopsies nor cancer resections

^{vi} Total no of blocks is a count of each block for each specimen as entered on the LIS

^{vii} Total no of stains = sum of levels/sections (routine H&Es), extra H&E's, immunohistochemical stains and special stains

^{viii} Total no of levels/sections is a count of routine/first cut surgical H & Es only. Each level cut = 1 level/section

Each level cut routinely on a case will be counted as 1 HE (e.g. 3 levels of endoscopic biopsy on one slide counts as 3 HEs, this will be captured in the mapping of local codes to national codes in the NQAIS)

Note: If you have 2 or 3 sections all at 1 level these will be counted as 1 e.g. endoscopic biopsies, letztes, small biopsies, colposcopy biopsies

This category includes:

- Routine Single Cases
- Routine Multiple Cases i.e. cases with multiple specimens

^{ix} Extra H & Es

This category refers to additional H&E levels and recuts requested by the pathologist after the case has been issued to the pathologist

Each section is counted once e.g. 6 levels = 6 extra H & Es

This category includes the following types of requests which will be captured in the mapping of local codes to national codes in the NQAIS:

- Recuts – variable number of sections cut directly from the sample/block for a specific purpose (e.g. illustrate something interesting to colleagues, teaching slides, original slide broken)
- Levels – variable number of sections cut from further inside the sample/block (i.e. trim in and then take level 1 section, trim further and take level 2 section etc)
- Deepers – typically one or more sections cut from deeper into the sample/block
- Serial sections – variable number of sections cut from the entire sample/block, may require using up the whole sample/block, typically used when looking for something (e.g. size/extent of carcinoma)
- Unstained Slides – including spares routinely cut note: if it is routinely cut in case it is spare or unstained if it cut specifically for immune at a later stage then it should not be counted as an unstained this should be added into immunos.

Note: If you have 2 or 3 sections all at 1 level these will be counted as 1 e.g. endoscopic biopsies, letztes, small biopsies, colposcopy biopsies

- ^{xi} Gynae cytology refers to cervical cytology. Hospitals can break into urgent and routine if considered beneficial.
- ^{xii} Non-Gynae cytology (Exfoliative) refers to effusion cytology (pleural, peritoneal, pericardial), peritoneal washings, biliary brushings, respiratory (bronchial washings/brushings, BAL, sputum), urine, CSF & nipple discharge. Hospitals can break into urgent and routine if considered beneficial
- ^{xiii} Non-Gynae cytology (FNA) - Fine needle aspirations, includes image guided. Hospitals can break into urgent and routine if considered beneficial.
- ^{xiv} Cytoblock/Cellblock = a paraffin block generated from cytology material.
- ^{xv} Coroner autopsies = number of autopsies performed that were requested by the coroner.
- ^{xvi} Consented autopsies = number of autopsies performed that were requested by the hospital.
- ^{xvii} Cases referred externally for review refers to when patient's treatment is transferred to another institution triggering a review of patient original diagnosis or where a clinician has requested a review of original diagnosis by an external institution.
- ^{xviii} Agreement represents no change to primary diagnosis.
- ^{xix} Cases received internally for review refers to when patient's treatment is transferred internally triggering a review of patient diagnosis or where a clinician has requested a review of original diagnosis performed externally.
- ^{xx} Cases referred externally for opinion refers to where a Pathologist seeks opinion of an individual with perceived expert opinion at a separate institution due to diagnostic difficulty or lack of consensus opinion from intradepartmental consultation.
- ^{xxi} Correlation results
- Concordance – represents cases where frozen section and permanent section diagnosis are in agreement
 - Deferral rate - The number of cases where frozen section diagnosis was deferred until final diagnosis was reached on permanent section
 - Minor Disagreement/Discordance – represents a small change in diagnosis but there is minimal, if any, clinical relevance.
 - Major Disagreement/Discordance – represents a significant difference between the original frozen section diagnosis and the one rendered upon final diagnosis where potentially there is a serious impact on the patient's treatment or outcome.
- Classification of discrepancy
- Specimen sampling error , % of major discrepancies due to
 - Interpretation, % of major discrepancies due to
 - Block Sampling, % of major discrepancies due to
 - Sectioning inadequacy, % of major discrepancies due to
 - Inadequate clinical data, % of major discrepancies due to
 - Labelling errors, % of major discrepancies due to
- ^{xxii} Turnaround time is the time the lab receives a frozen section specimen to the time that a diagnosis is reported to the surgeon.
Where a Frozen section case contains a number of Blocks, TAT = Total TAT divided by the no. of Blocks

Where a Frozen section case contains a number of specimens provided over a period of time, each such specimen should be considered as a unique case only for the purpose of calculating TAT.

^{xxiii} CAP (College of American Pathologists) recommended benchmarks for frozen section turnaround is less than 20 minutes for 90% of all cases. CAP benchmarks are included as a reference guide only. These are not currently considered as national benchmarks but it may be beneficial to set as targets to challenge current performance until National QA benchmarks are developed.

TAT = <20 minutes Threshold = 90%

^{xxiv} Where discrepancies arise regarding sub-specialist histology or cytology interpretation, both cytopathologist and histopathologist should review the case in question together.

^{xxvi} Concordance – represents no difference between the original cytological diagnosis and the final Histological diagnosis

^{xxvii} Examples of areas suitable for the application of focused real time review:

- Thyroid cytology – e.g. the most recent 20 cases are selected for review
- Negative prostate needle biopsy case review – e.g. the most recent 20 cases are selected for review
- Melanocytic lesions – e.g. the most recent 20 cases are selected for review

^{xxviii} When reviewing a report for completeness it is recommended that the report be evaluated for the presence of core items defined by current best practice. If any one of these core items is omitted the report is considered incomplete. If all core items are present the report is considered complete.
%completeness = the no of complete reports expressed as a % of the total number of reports reviewed.

^{xxix} Only disagreement at MDT due to pathological interpretation should be classified as 'disagreement at MDT'. Disagreement which arises due to the availability of additional clinical information does not come under this category.

^{xxx} Notes on classification of case reviewed at MDT:

- In the case where no in house MDT's are held in a hospital and cases are referred externally for review at MDT, a case should only be recorded as reviewed at MDT if a pathologist from the institution which generated the case participates in person or remotely i.e. via videolink. Otherwise the case should be recorded under Inter-institutional case review as 'case referred externally for review' or under Intradepartmental consultation for cases sent out from smaller departments within their regional network.
- If a case is reviewed more than once at MDT, each individual review should be counted.

^{xxxi} A laboratory non-conformance is any event that has the potential to cause harm and should be classified according to the HSE risk assessment matrix in appendix XXV below

^{xxxii} Pre-analytic phase of the test cycle is specimen delivery and accessioning. Pre-analytic lab based incidents include

- Specimen fixation
- Specimen delivery
- Specimen identification
- Inadequate clinical history
- Inadequate representativeness/sampling
- Accessioning errors
- Lost specimens

^{xxxiii} It is recommended to utilise the HSE risk assessment matrix to classify incidents into High, Medium

or low.

- Risk rating:
 - Low = 1 - 5
 - Medium = 6 - 12
 - High = 15 - 25
- **Risk rating = Impact * likelihood**
- Impact: Negligible (1) Minor (2) Moderate (3) Major (4) Extreme (5)
- Likelihood: Almost certain (5), Likely (4), Possible (3), Unlikely (2), Rare / remote (1)

This risk assessment document published by the HSE is available from their website at the following link:
[HSE Risk Assessment Tool](#)

^{xxxiv} Analytic phase of the test cycle begins with gross examination of the specimen and ends with report authorisation. In this monitor we are concerned with reviewing lab based incidents which include

- Lost Specimens
- Floatation errors
- Extraneous tissue
- Block labelling errors labelling
- Slide labelling errors
- Inadequate representativeness/sampling (tissue, blocks, levels)
- Pertinent ancillary diagnostic study not initially done
- Inadequate staining
- Transcription errors
- Verification errors

^{xxxv} Post-analytic phase of the test cycle begins with report authorisation and includes communication with clinicians and report delivery.

Post analytic lab based incidents include -

- Report delivery and communication errors

^{xxxvi} For Turnaround time calculations the day of receipt of a specimen is considered day 0. The % of cases completed by day 1 includes samples completed on day 0 and day 1.

^{xxxvii} Organ/site classification for cancer resection turnaround time:

1. Upper GIT
2. Lower GIT
3. Pancreatic-hepatobiliary
4. Peritoneum / Omentum
5. Skin*
6. Soft tissue
7. Breast
8. Male Genital System
9. Female Genital System
10. Urinary System
11. Cardiovascular
12. Central Nervous System
13. Lymph node (other than metastatic neoplasm), spleen, bone marrow
14. Lung,pleura, mediastinum
15. Head & neck
16. Endocrine (thyroid, adrenal, parathyroid)
17. Skeletal system (bone/joints)
18. Haematopathology
19. Other

*For the classification of cancer resection turnaround time this group includes melanomas only

^{xxxviii} ADASP (Association of Directors of Anatomic and Surgical Pathology) recommended benchmarks for TAT are as following -

- Urgent Biopsies - 2days TAT, 80% threshold
- Biopsies - 3days TAT, 80% threshold
- Surgical specimens - 3days TAT, 80% threshold

Additional Time for Special Procedures

- Overnight fixation – 1 day
- Decalcification – 1 day
- Resubmission – 1-2days
- Recuts – 1 day
- Immunohistochemistry – 1-2days
- Electron microscopy – 2-3days
- Intradepartmental consultation – 1 day

ADASP benchmarks are included as a reference guide only. These are not currently considered as national benchmarks but it may be beneficial to set as targets to challenge current performance until National QA benchmarks are developed. It should be noted that turnaround times are significantly affected by institutional size, the volume of cases processed, technical procedures resulting in delayed slides, integration of resident training, decreased staffing levels and the need for intradepartmental and or inter-institutional review

^{xxxix}

- Corrected reports - A corrected report is issued when transcription, patient identification, specimen site, or other related reporting errors occur. Corrected reports do not change original diagnosis
- Supplementary report - A supplementary report is issued when new information becomes available after the final report has been submitted. Newly obtained clinical information, findings on additional histological sections or review of archival material, the results of special studies such as immunohistochemistry or molecular diagnostics, and the results of consultations may be included in a supplementary report. When issued following a provisional report the supplementary report acts as the final report. If the final report has been issued and the subsequent supplementary information changes the original diagnoses an amended report should be issued.
- Amended Report - An amended report is issued when the final report diagnosis changes or other important pathologic information becomes available that results in a major change in diagnosis and / or treatment. The reasons for the revision should be explained in the report and the clinician notified, because a revised report may significantly affect patient care.

^{xi}

Evaluation of Overall autopsy diagnosis - taken from NCEPOD Coronial Autopsy Report 2006

Excellent: The autopsy report reads well and the cause of death takes into appropriate account the findings presented in the autopsy report. The autopsy report is of a standard that you would expect of yourselves and/or your colleagues

Good: The cause of death takes into appropriate account the findings presented in the autopsy report. It may not be as detailed as an autopsy report that would be classified as excellent

Satisfactory: The autopsy report sufficiently explains the cause of death given by the pathologist. The autopsy report fulfils its main purpose of documenting the cause of death but lacks additional details that distinguish a Good or Excellent autopsy report. There is obvious room for improvement.

Unsatisfactory: The autopsy report does not sufficiently explain the cause of death given by the pathologist. The cause of death may appear to be incorrect based on the information presented in the autopsy report. The autopsy report is at a standard below what you would expect of yourself and your colleagues.

Unacceptable: The autopsy report does not sufficiently explain the cause of death given by the pathologist OR the cause of death is incorrect. It may be carelessly drafted. The autopsy report is below an acceptable standard that the profession would expect, which indicates that the pathologist is likely to prepare misleading or incorrect autopsy reports in the future, if not addressed.

^{xii} Royal College of Pathologists, ADASP and CAP recommended benchmarks for TAT are as following:

- (a) *Royal College of Pathologists*
 - Summary of findings 2 days
 - Final report 2-3 weeks (4-6 weeks if brain retained)
- (b) *Recommendations of Association of Directors of Anatomic and Surgical Pathology (Modern Pathology 2992; 5:567): (Refers to hospital (non coroner) cases only)*
 - Provisional report 1 working day (acceptable threshold, 90%)
 - Final report 30 working days (acceptable threshold, 80%)
- (c) *CAP recommendations: (Refers to hospital (non coroner) cases only)*
 - Provisional report 2 working days
 - Final report 1 month for routine cases, 3 months for complicated cases

The above benchmarks are included as a reference guide only. These benchmarks are not currently considered as national benchmarks but it may be beneficial to set as targets to challenge current performance until National QA benchmarks are developed. Reference benchmarks are included for provisional reporting as this activity occurs in some hospitals and can be reported on at a local level.