DOUGLASS HANLY MOIR PATHOLOGY

Quality is in our DNA

Quality assurance – diamond-quality in a histopathology laboratory

Wells-Reed K, Myint E

Histopathology Department, Douglass Hanly Moir Pathology, Macquarie Park, Sydney, Australia

Introduction

This poster aims to give professionals working in histopathology a clear idea and understanding of the smooth running of a quality laboratory and the policies, practices and procedures needed to achieve a diamond-quality standard.

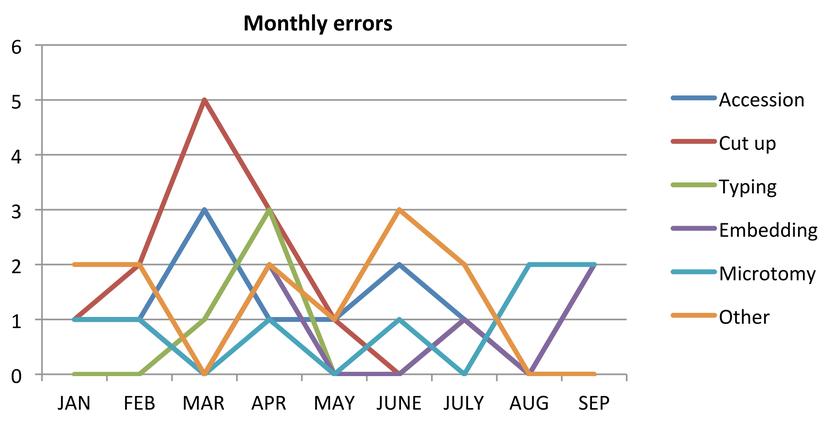
Aim

Just as a diamond needs to undergo a number of processes in order to become a high-quality stone, so too does the Histology process require a certain number of steps in order to produce quality end results.

Polices and Practices

1. Medical Laboratory Scientist

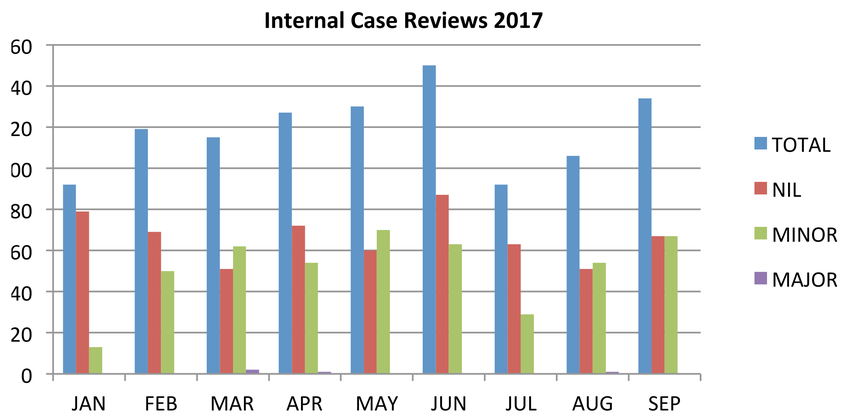
Quality checks are required at every stage and should be routinely conducted. At cut-up, good cut sections that are properly marked and orientated with concise macroscopic descriptions of the sample are the diamond standard. Quality embedding requires correct orientation, adequate wax in the block, and the tissue pushed down to ensure minimal trimming. The microtomist should aim to produce good-quality sections with minimal tissue loss, especially for smaller samples. Typists should ensure that the correct transcription is typed. All errors occurring in each of the areas involved in the histological pathology process are monitored, recorded and collated at the end of every month. Statistical analysis involves calculating the percentage of errors against the number of specimens, with an acceptable rate being less than 1 per cent. Each area is responsible for its part in the production of a good section for a pathologist to diagnose and subsequently, for a quality report to be sent out. Much like the checks in place to ensure diamond quality from mining through to market, a histopathology laboratory requires checks to be adhered to in each of the areas outlined above to ensure quality diagnosis and reporting. The key to improving quality is the monitoring and reviewing of all areas involved in pre-analytical, analytical and post-analytical activities, ensuring quality processes are emphasised and implemented. The table below shows the monthly error rate, graphed per area.



Grade	Accessioning	Cut-up	Typing	Embedding	Microtomy	Other	Total errors
Minor	4	6	5	2	4	2	23
Major	0	0	0	1	2	0	3
Total cases processed				Total blocks processed			
TOTAL	CASES	28742	%	TOTAL	BLOCKS	86820	%
Total	ERRORS	26	0.09	Total	ERRORS	26	0.03
Minor	ERRORS	23	0.08	Minor	ERRORS	23	0.026
Major	ERRORS	3	0.01	Major	ERRORS	3	0.003

2. Pathologist

There are numerous quality checks and assurances that the Pathologist must undertake. These include both internal and external case reviews, external quality assurance in the different modules reported upon, reviews on frozen sections, multidisciplinary case meetings, amended reports and collaboration with colleagues for second opinions. A graph of collated statistics for internal case reviews is given below, for example.



3. Clinicians and Patients

Clinicians always require as fast a turnaround time as possible in order to provide quality patient care. And of course, patients too want quick results and a correct diagnosis, in order to undertake treatment, if necessary. The table below shows examples of outstanding report lists.

HISTO NUMBER	LAB NUMBER	DATE ACCESSIONED	NAME	SPECIMEN	DOCTOR	BLOCKS	SLIDES	BATCH NUMBER	PRIORITY/ ROUTINE	STATUS	PATHOLOGIST
093378-17MP	287827760	7/10/2017	SAINT, KERRIE	ENDOMETRIAL CURETTINGS	DR HARAGOOD, JANE	1	1	6A	R	R	Clarie Birow
094454-17MP	242520340	11/10/2017	MONK, WALLY	Rectal biopsy	DR FISHERY, DEANO	1	1	6AB	R	R	Liz Sinclaire
092549-17MP	288069890	5/10/2017	GRIFFIN, AIDEN	Duodenal biopsy	DR LEACHER, MARGARETTE	1	1	1AJ	R	R	Crissy Caldere
093423-17MP	288689200	9/10/2017	PAMERO ,ROBIN	Placenta (single)	DR PARRAY, BERNIE	11	1	8AM	R	C	Susan Daniel
093906-17MP	245804210	10/10/2017	CAFFER, JULIA	CONSULTATION	DR KAMATHY, VASANI	6	4	CON1	R	C	Jenny Robbie

P - Pending	more than 5 days since Date Collected
C - Complete	5 days since Date Collected
I - Authorised/Incomplete	4 days since Date Collected
H - Held	3 days since Date Collected
A - Authorised	2 days since Date Collected
R - Reported	1 day since Date Collected

Conclusion

Think of how much easier your job would be if everyone cared as much about quality as you do. Quality assurance removes any and all doubt about your expectations of achieving 100% total quality. It should be done with a limited number of quality meetings, lectures and memorandums. We should encourage employees from all levels in the chain, from specimen reception to reports, to take quality personally and emphasise the importance of exceeding the customer's expectations.

References

1. Odega, Kevin. (2015). Quality control and assurance in histopathology laboratory. 10.13140/RG.2.1.4164.1443. [Accessed July 10, 2017]
2. N Iyengar, Jayaram. (2009). Quality control in the histopathology laboratory: An overview with stress on the need for a structured national external quality assessment scheme. Indian journal of pathology & microbiology. 52. 1-5. DOI:10.4103/0377-4929.44951. [Accessed July 10, 2017]
3. Mohammedsaleh, Z. (2014) The Role of Technical Quality Control in Histology Laboratories, *J Cytol Histol*, 5:264. DOI: 10.4172/2157-7099.1000264 [Accessed July 10, 2017]