Freedom of Information Request: Our Reference   CTHB_77_19

Thank you for your request for information received on 12 March 2019, regarding NHS Digital Pathology Usage.   Please find the response from Cwm Taf University Health Board set out below:

You asked:

I am emailing under the freedom of information act to request certain information relating to histopathology services and the use of digital pathology systems in Welsh NHS Hospitals.

I am hoping to gain information regarding how the cellular pathology (histology) laboratories in the following hospital made use of digital pathology systems in 2018 and to determine how this new technology affected their routine histology services

- Royal Glamorgan Hospital

Further detail regard the specific questions I wish answered by each hospital/laboratory are detailed in the attached word document.

Our response:

Please find response attached, as requested.

Freedom of Information Request

I am writing to you under the Freedom of Information Act to request the following information on cellular pathology services [Histology]

The information request takes the form of a questionnaire, answers to this will form the basis of examining how digital pathology systems are affecting/will affect histology services in the UK (NHS).

Full details on information requirements are detailed in the questionnaire completion notes.

Please provide all the data that you can (that you have available). However, if some of the data is unavailable to you or you are unable to provide it for other valid reasons, I would ask you to return a partial response, completing those sections that you are able to. If unable to provide precise details estimated responses are acceptable – if estimated responses are provided, please indicated this (as well as approximate error margin).

Questionnaire (FOI request)

Completion notes

All questions related to laboratory structure and work completed during the year 2018 (entire year) unless otherwise stated in the question.

All questions relate to histopathology only (including routine immunohistochemistry) – please do not include details for Cytology, molecular pathology or any other disciplines unless otherwise stated.

Please complete all questions where possible – if precise data is unavailable please provide an estimate (stating that data is an estimate plus likely error margin expressed as a percentage).

If unable to complete all questions, please provide a partial response (just completing the data that you can).

If you are unable to provide data on any of the questions please note the question number and the reason data cannot be provided [FREE TEXT] in the sheet provided, this should include any data that would take too long to collate and would otherwise prevent you from replying to the Freedom of Information request. This will help the researcher better understand which information requests are reasonable and will inform any future requests for information.

Definitions

Pathology Network: For the purposes of this questionnaire a pathology network is defined as a formal grouping of histology laboratories that jointly process the work from a given area/given hospitals along the hub and spoke/ESL (Essential services laboratory) model recently proposed by NHSI.

Digital Pathology: This includes all forms of digital systems used in the diagnostic process as listed below:

- **Telepathology**: The use of remote digital microscopes – live video/robotic microscopy in the diagnostic process
- **Whole slide Imaging (WSI)**: The use of scanned images of slides (virtual slides) in the diagnostic process
- **Image Analysis**: The use of artificial intelligence systems to aid with certain aspects of the diagnostic process – for the purposes of this questionnaire this should be limited to those systems that automate an aspect of the diagnostic process only (automated counts of ER/PR/Her2/Ki-67 etc.) as opposed to digital annotation of slides or measurement between marked points on a digital slide

Primary diagnosis (report): The diagnostic report issued by the pathologist responsible for the case – for the purposes of this questionnaire this included multiple supplementary reports as a result of follow up testing (e.g. further immunohistochemistry)

Secondary diagnosis (report): For the purposes of this questionnaire this refers to the process of seeking a second opinion (either internally or externally)

Managed Service Contract: A contractual arrangement with an equipment provider that allows equipment purchase and maintenance costs to be spread across several years on a fixed payment plan

Section 1: Respondent/response details

Q1: Respondent/response details

- **Cwm Taf University Health Board**
- **Royal Glamorgan Hospital, Ynysmaerdy, Llantrisant, Mid Glamorgan, CF728XR**
- **Cwm Taf Cellular Pathology Services**
- **Cwm Taf Cellular Pathology Services, Pathology Directorate, Royal Glamorgan Hospital, Ynysmaerdy, Llantrisant, Mid Glamorgan, CF728XR**

Section 2: Details of laboratory that provides histopathology services for your trust

Q2: was your histology laboratory a referral centre for specialist testing in 2018 [Y/N] **No** – (receives and processes referred work from other laboratories)

Q3: Was your histology laboratory part of a pathology network in 2018 [Y/N] - **No**

- If [Y] please detail the following – **N/A**
    - Number of laboratories within the network
    - Names of laboratories – please list [FREE TEXT]
    - Nature of each laboratory in network (Hub laboratory or spoke/ESL)

Q4: Did your histology laboratory send a significant proportion of cases to an external "outsourcing" service (e.g. Source Bioscience) for reporting in 2018 [Y/N] - **No**

Q5: Staffing – please complete the following table indicating how many whole time equivalent (WTE) staff you employed in your histology laboratory during 2018 at the indicated grades

	Permanent staff (WTE)	**Bank/locum staff (WTE)**
Agenda for change band 2	0	0
Agenda for change band 3	**4.54 (3 MLA, 1.54 admin)**	**2 bank (MLA)**
Agenda for change band 4	0	0
Agenda for change band 5	**3 (trainee BMS)**	0
Agenda for change band 6	**7 (carrying 1 vacancy)**	0
Agenda for change band 7	1	0
Agenda for change band 8	2	0
Medical staff (Pathologists)	**4.7 (approx.- 5 medical staff, some are not full time)**	2

- Band 2/3/4 (Medical laboratory assistants (MLA) , associate practitioners, or administrative staff)
- Band 5/6 (Biomedical scientists (BMS))
- Band 7/8 (Senior biomedical scientists, managerial staff)

Q6: Please provide details below for the number, severity, and type of any errors or adverse incidents recorded in your histology laboratory during 2018 related to the laboratory, and the reporting process

- The reporting process relates to the production of a diagnostic report from the analysis of stained slides/virtual slides – ***No data currently available for reporting process errors.**

	Laboratory	Reporting
Number of errors	38	*
Number of AIRS (no-harm/minor)	12	*

Number of AIRS (moderate)	**0**	*	
Number of AIRS (severe)	**0**	*	

- AIR = Adverse incident

Section 3: Budgetary breakdown

Q7: Please provide a complete budgetary breakdown statement for the year 2018 (Microsoft excel format) detailing income and expenditure for your histology laboratory

Information provided in the table below by finance for 01/04/2017 to 31/03/2018 – year end information for 2018 -2019 not yet available:

Pathology FOI Request 21st March		Budget	Expenditure	Variance
		£000	£000	£000
BMS		709	916	207
Nursing				0
Admin		36	41	5
Other		9	0	-9
Pay		754	957	203
Lab Costs		111	190	79
SLA's				0
Drugs				0
Other		60	35	-25
Non Pay		171	225	54
Mortuary Fees		-200	-310	-110
Other Income		-67	-3	64
Income Total		-267	-313	-46
Grand Total		658	869	211

Section 4: Workload breakdown

Q8: Please provide a complete workload breakdown for 2018 containing the following details for each case processed by your histology laboratory (Microsoft excel format) – **Date unavailable**

Date case received in laboratory

- Date stained slides produced in laboratory
- Date of final (primary) diagnostic report
- Sample type (e.g. Gastric biopsy, skin excision etc.)
- Number of slides per case
- RCPath workload score for case (if recorded)
- Detail if a second opinion (secondary diagnosis) was sought from another consultant pathologist within your laboratory (internal second opinion)
- Detail if a second opinion (secondary diagnosis) was sought from another consultant pathologist in another laboratory
- Detail if case was referred from another laboratory (if a specialist testing centre)
- Detail if case was outsourced (e.g. to source bioscience)
- Please ensure all patient identifying details/laboratory numbers etc. are removed from the case record

NOTE: If a workload breakdown cannot be extracted from your laboratory information systems please provide the following key details

- Number of histology cases and slides received in 2018 - **19188 histology cases Data on slides unavailable**
- Turnaround times – Average (MEAN), min, max – from receipt of cases in laboratory until production of diagnostic report in 2018 - **data unavailable**
- Average (MEAN) RCPath workload score for cases in 2018 (If available) - **data unavailable**
- Number of cases/slides referred from another laboratory in 2018 - **0**
- Number of cases/slides outsourced in 2018 – **data unavailable**
- Number of cases/slides where an internal second opinion was sought - **data unavailable**
- Number of cases/slides where an external second opinion was sought - **data unavailable**

Section 5: Use of digital/computational pathology

Q9: Did your histology laboratory use any form of digital/computational pathology in 2018 [Y/N] - **NO**

NOTE: If your histology laboratory does not currently use any form of digital/computational pathology the remainder of this section can be left blank

Q10: Please indicate which of the listed systems where used in your histology laboratory in 2018

- Telepathology
- Whole Slide Imaging
- Image analysis
- Other (please detail)
- Conventional (analogue) light microscopy

Q11: What was digital pathology used for in your laboratory during 2018

- Research
- Training
- Primary diagnosis
- Secondary diagnosis
- Preparing cases for review at multi-disciplinary team meetings
- Other (please detail)

Please skip questions 12-14 if you do not currently use whole slide imaging for primary or secondary reporting in your laboratory

Q12: If whole slide imaging was used in your laboratory in 2018 please provide the following details on system configuration

- Number of scanners
- Current size of digital slide archive
- Planned size of digital slide archive
- How are slides routinely scanned (timing)
    - On-demand
    - Overnight
- How are slides routinely scanned (configuration)
    - Routine x20 with x40 on demand

    o Routine x40

    o Routine use of z-stacking or on demand

    o Other (please detail)

Q13: If whole slide imaging was used in your laboratory in 2018 please provide the following details on system costs

- How were your current whole slide imaging scanning systems purchased?
  - Capital purchase
    - Please provide details on the capital purchase costs
  - Managed Service Contract (MSC)
    - Please provide details on the ongoing MSC costs
- Ongoing [Yearly] budgets for maintaining whole slide imaging scanning systems (if not included in MSC costs)

Q14: If whole slide imaging was used in your laboratory in 2018 please provide the following details on cases reported

- Number of cases where a primary diagnosis was produced using virtual slides
- Total number of slides where a primary diagnosis was produced using virtual slides
- Number of cases where a secondary diagnosis was produced using virtual slides
- Total number of slides where a secondary diagnosis was produced using virtual slides

Please skip questions 15-17 if you do not currently use image analysis for primary or secondary reporting in your laboratory

Q15: If image analysis was used in your laboratory in 2018 please provide the following details on system configuration

- Please detail what image analysis applications were used (e.g. ER scoring)
- Please detail the type of cases image analysis was used on (e.g. breast biopsies)

Q16: If image analysis was used in your laboratory in 2018 please provide the following details on system costs

- How were your current image analysis systems purchased?
  - Part of purchased WSI scanning system (If details on costs already included as part of question 15 please skip the rest of this question)
  - Capital purchase
    - Please provide details on the capital purchase costs
  - Managed Service Contract (MSC)
    - Please provide details on the ongoing MSC costs
- Ongoing [Yearly] budgets for maintaining image analysis systems (if not included in MSC costs)

Q17: If image analysis was used in your laboratory in 2018 please provide the following details on cases reported

- Number of cases where a primary diagnosis was produced with the assistance of image analysis
- Total number of slides where a primary diagnosis was produced with the assistance of image analysis

- Number of cases where a secondary diagnosis was produced with the assistance of image analysis
- Total number of slides where a secondary diagnosis was produced with the assistance of image analysis

Section 6: Automation/digitisation

Q18: Please indicate the digital systems that your histology laboratory used in 2018, as well as the age/usability of your laboratory information system

- Voice recognition system for reporting - **None**
- Digital case requesting (ICE) system - **None**
- Digital dissection macro imaging systems - **None**
- Voice recognition system for dissection - **None**
- Specimen tracking system – **LIMS – Trakcare Lab**
- Age of laboratory information system
  - **Less than 10Y old**/More than 10Y old
- Usability of laboratory information system
  - Very user friendly/Average/**Not at all user friendly**

Appendix

Please detail in the table below those questions that you cannot answer plus any information you can provide on why this is the case.

Question number	Reason unable to answer
1	Answered
2	Answered
3	Answered
4	Answered
5	Answered
6	Partial answer – No data on reporting process errors available. None known to laboratory.
7	Information provided by finance for 01/04/2017 to 31/03/2018 – year end information for 2018 -2019 not yet available
8	Cases calculated by manually checking numbers on the LIMS: Telepath from 1/1/18 to 5/3/18 and Trakcare lab from 6/3/18 to 31/12/18. No addition data on workload currently available due to the business intelligence system for LIMS (DEEPSEE) being completely user unfriendly and too complex for managers to operate. Several requests have been made to NHS Wales Informatics Service (NWIS) and the supplier, Intersystems, to remedy this.
9	NA
10	NA
11	NA
12	NA
13	NA
14	NA
15	NA
16	NA
17	NA