Breast Staging Accuracy & Completeness – An Audit

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BACKGROUND

The introduction of national drivers to improve the quality of cancer staging data and the ongoing work of the North West Project encouraged clinical teams to focus on staging quality and completeness. Together with repeatedly reported poor levels of breast staging completeness for East Lancashire Hospitals NHS Trust (ELHT) a co-ordinated audit based project was implemented. Its aim was to identify ways to improve breast cancer staging data completeness and accuracy and specifically assessing the benefits of using current imaging data as a source for pre-treatment staging.

The purpose of the audit was:

- To assess whether a difference in data completeness has been achieved by the introduction pre-treatment staging;
- To assess whether current imaging information is sufficient to use for pre-treatment staging;
- To try and identify improvements that can be made to staging completeness and accuracy.

METHODS

The audit reviewed 193 patients that were diagnosed with a breast cancer between July and December 2012 assessing a range of prognostic variables including histology, NPI, size of tumour and pre and post treatment staging values. Patient hospital records were revisited and improved following review and the impact of the data clean up exercise on staging completeness was assessed through the North West Cancer Intelligence Service MDT Data feedback reports.

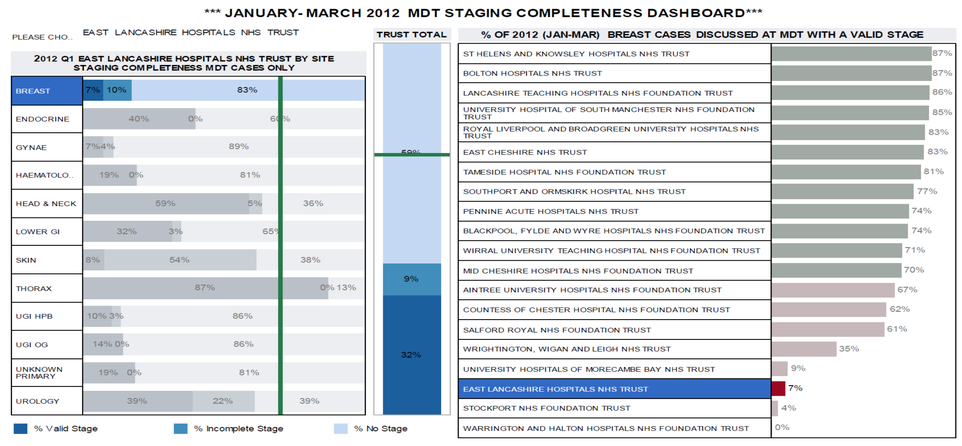

Table 1. Pre Audit Trust Staging Completeness Report – (East Lancashire Breast Staging Completeness Performance and trust overall completeness highlighted)

RESULTS

Table 2. Breast Pre Treatment Data Completeness Results POST Audit

	Total Diagnosed	Total Pre-treatment Stageable Cases	Fully Staged Cases	% Fully Staged	Partially Staged Cases	% Partially Staged
New Invasive Cancers	148	148	147	99.3%	1*	0.7%
Recurrences	15	0	-	-	-	-
DCIS	21	0	-	-	-	-
Unexpected Cancers (Staged Post Treatment Only)	7	0	-	-	-	-
Angiosarcomas (Unstageable Pre-Treatment)	2	0	-	-	-	-
TOTAL	193	0	147	99.3%	1	0.7%

* The single patient partially staged refused an Axillary ultrasound and therefore this was due to patient choice.

Table 3. Breast Post Treatment NPI Data Results POST Audit

	Total Cases Diagnosed	Total Cases with NPI	% with NPI
Surgery as First Treatment	133	133	100%
Chemotherapy as First Treatment	9	0	0%
Hormone as First Treatment	10	0	0%
No Treatment	1	0	0%
Died Before Treatment	1	0	0%
Active Monitoring	1	0	0%
Angiosarcoma	2	0	0%
TOTAL	157**	133	100%

** This includes the 148 stageable cases as well as the unexpected cancers as NPI is carried post treatment

Table 4. Breast Data Accuracy Comparing Pre and Post Treatment Staging Results POST Audit

	Number of patients	% of Patients
Cases Fully Staged	147	-
Less Cases with Neo-Adjuvant Treatment	18	-
Less Cases where Patient Died Prior to Treatment	1	-
Less cases for Active Monitoring	1	-
Less Cases with No Treatment	1	-
Total Patients for Comparison	126	-
Same pre and post treatment staging	69	57.02%
Higher post T stage but same N stage	9	7.44%
Lower post T stage but same N stage	14	11.57%
Same post T stage but higher N stage	16	13.22%
Higher post T and N stage	8	6.61%
Lower post T stage and higher N stage	5	4.13%

Overall breast staging completeness has increased from 7% to 93.6%

84.71% of patients had NPI recorded

Pre-treatment and pathological staging accuracy is very high 57.02% values were identical for 12 patient's yet staging was on the boundary – 9.92%

Discrepancy about 20mm tumours – T1c or T2?

Discrepancy about staging of multifocal tumours – largest tumour or total size?

Overall, for all cancers diagnosed at ELHT, staging completeness increased from 33% to 73%.

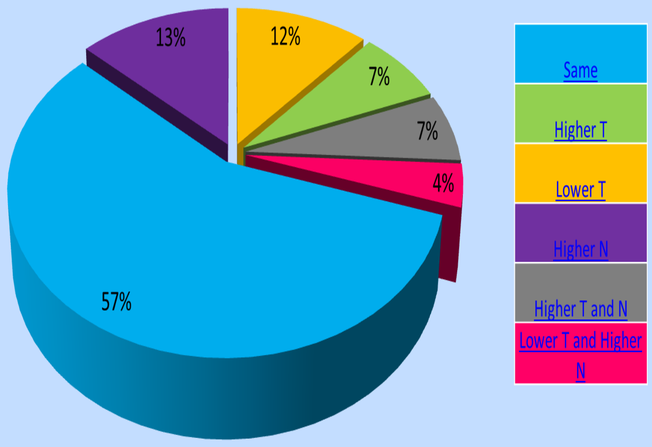

Table 5. Staging Accuracy based on Comparison of Pre and Post Staging POST Audit

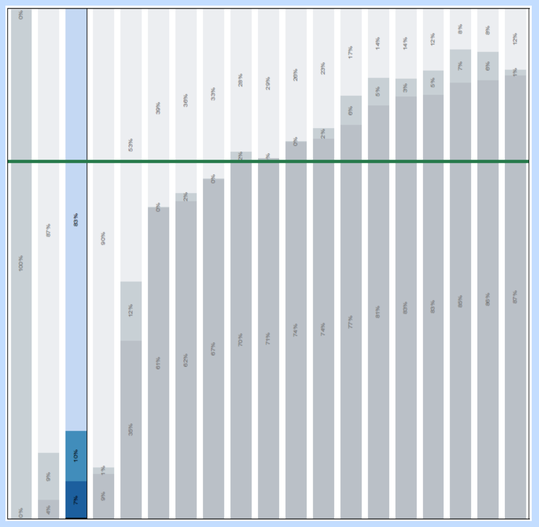

Table 6. North West Breast Staging Completeness by Trust **BEFORE** the Audit (East Lancashire position highlighted)

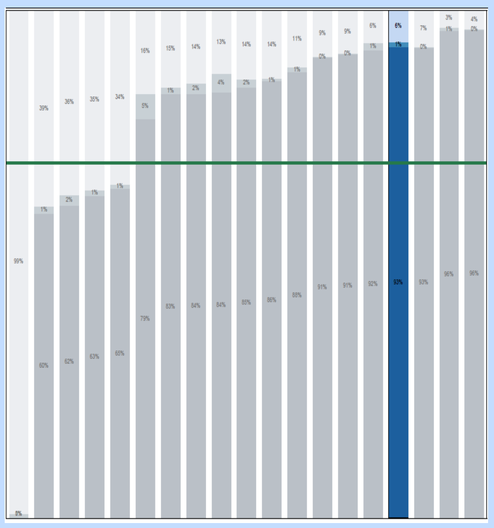

Table 7. North West Breast Staging Completeness by Trust **AFTER** the Audit (East Lancashire position highlighted)

CONCLUSIONS

The substantial increase in overall breast staging completeness from 7% to 93.6% highlights the benefit of data audits and team working and how local initiatives can really contribute towards the improvement of data quality, in particular staging completeness.

The audit demonstrated the value of feedback reporting loops for data quality and the further value added by the local auditing of data quality within an MDT setting.

Imaging data were shown to act as a reliable source for pre-treatment staging.

The engagement of multiple professional groups within this process has helped foster an increased awareness and focus on the quality and completeness of cancer data within the trust as well as providing clarity over ambiguous application.

RECOMMENDATIONS

As the result of the data audit the following recommendations were highlighted and some subsequently implemented at East Lancashire Hospitals NHS Trust to support the improvement of breast staging data accuracy:

- Ensure that clear definition and guidance are implemented for the staging of 20mm breast tumours;
- Ensure that agreement is sought for the staging of multifocal breast tumours for example to use the size of the largest foci and not the size in total;
- For cases with a 'U5 Axilla' that multiple Fine Needle Aspiration (FNAs) are carried out to ascertain an accurate and overall clinical N stage;
- For cases with 'U3 Axilla' that a repeat FNAs be carried out to check the accuracy of the clinical N Stage.

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