

## The Newcastle Upon Tyne Hospitals NHS Foundation Trust

Northern A09

The The Newcastle Upon Tyne Hospitals NHS Foundation Trust incorporates Royal Victoria Infirmary and Freeman Hospital in Newcastle-upon-Tyne <http://www.newcastle-hospitals.org.uk/> <<http://www.newcastle-hospitals.org.uk/>>

### Patient inclusion and data sources

The majority of these results are for patients in England and Wales diagnosed with bowel cancer 1 Apr 2016 – 31 Mar 2017. The exceptions are for 2-year mortality and 18-month stoma rate. Two-year mortality estimates include patients undergoing a major resection between 1 April 2014 and 31 March 2015. 18-month stoma rates include rectal cancer patients undergoing a major resection between 1 April 2013 and 31 March 2016.

The Audit dataset is linked to Hospital Episode Statistics (HES) and Patient Episode Database for Wales (PEDW) at the patient level to obtain further information on patient care and follow-up such as stoma reversal and emergency readmissions in England/Wales. The dataset also links to Office of National Statistics records. These provide information about date, place and cause of death.

NBOCA also links to the National Radiotherapy Dataset (RTDS) for information on radiotherapy treatment in England, and the Systemic Anti-Cancer Therapy database (SACT) for information on chemotherapy treatment in England. In addition, the audit linked to the National Emergency Laparotomy Audit (NELA) for the first time this year. This provides information on emergency bowel cancer operations.

### Data Quality

#### Data completeness

% of relevant patient group with useable value of data item.

#### Case ascertainment

Number of patients reported to the Audit as a percentage of the number of patients admitted for the first time to the trust/network with a diagnosis of bowel cancer within the audit period according to HES/PEDW. This can be larger than 100 if more patients are reported to the Audit than identified in HES/PEDW.

#### Data completeness

% of relevant patient group with useable value of data item.

#### 7 audit items for risk-adjustment

The per cent of patients with complete data items on all of age, sex, ASA grade, pathological T-stage, pathological N-stage, distant metastases and site of cancer.

#### ASA grade

% of patients recorded as having a major resection who have a particular ASA grade recorded, or no ASA recorded.

## Management of all patients

### No major resection: too little cancer

Those undergoing a local resection of polypectomy.

### No major resection: too much cancer

No excision and reason for no treatment includes advanced stage cancer OR no excision and non-curative intent and metastatic disease.

### No major resection: too frail

not in too much cancer group AND no excision and reason for no treatment includes significant co-morbidity OR no excision and performance status 3 or 4.

### No major resection: unknown/other reason:

no excision and does not meet any of the above criteria.

## Management of patients having major resection

### At least 12 lymph nodes excised (%)

% of colon cancer patients undergoing major resection with a recorded number of lymph nodes, who had at least 12 lymph nodes examined.

## Rectal cancer patients

### Neo-adjuvant therapy (%)

% of rectal cancer patients having short- or long-course radiotherapy prior to major resection.

### Circumferential resection margin: Negative (%)

% of rectal cancer patients undergoing major resection whose CRM is reported to be negative.

### Circumferential resection margin: Present (%)

% of rectal cancer patients undergoing a major resection who have a recorded CRM.

### APER rate (%)

% of patients with rectal cancer undergoing abdominoperineal excision of the rectum and therefore having a permanent stoma.

## Compare trust outcomes

Funnel plots display trust risk-adjusted outcomes for 90-day mortality, 30-day unplanned readmission, 2-year mortality and, for rectal cancer patients, 18-month stoma rate. The funnel regions represent the 95 per cent limit and the 99.8 per cent limit for trusts compared to the national average. Those trusts with results outside the outer (99.8 per cent) limit are considered potential outliers.

Risk adjustment is performed using the seven items listed under Data Quality as well as mode of admission (elective/emergency) and number of co-morbidities according to HES/PEDW, and an interaction between age and distant metastases. Missing values are imputed using Multiple Imputation. The model for two-year mortality additionally includes interactions between follow-up time (0-3 months after surgery vs. 3-24 months after surgery) and all of the risk factors.

A stoma is considered to be reversed if a HES/PEDW record with relevant code is identified within 18 months of the initial surgical procedure.

See [FAQs <https://www.nboca.org.uk/about/faq/>](https://www.nboca.org.uk/about/faq/) for more details.




## Data Quality

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All Patients:	Trust	Network	National
Number of patients in Audit	223	1981	30541
Case ascertainment (%)	106	103	93
Data completeness of:			
– Pre-treatment TNM (%)	97	78	78
– Performance status (%)	100	82	85

Patients having major resection:	Trust	Network	National
Number of patients in Audit	160	1180	19183
ASA grade 1 (%)	8	10	12
ASA grade 2 (%)	48	48	52
ASA grade 3 (%)	38	34	27
ASA grade 4+ (%)	5	4	2
ASA grade not recorded (%)	1	4	7
Data completeness of:			
7 Audit items for risk-adjustment (%)	99	92	83

### Key:

	> 80%
	50 - 80%
	< 50%

## Management of all patients

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All Patients:	Trust	Network	National
Number of patients in Audit	223	1981	30424
Seen by Clinical Nurse Specialist (%)	96	94	93

## Management of patients having major resection

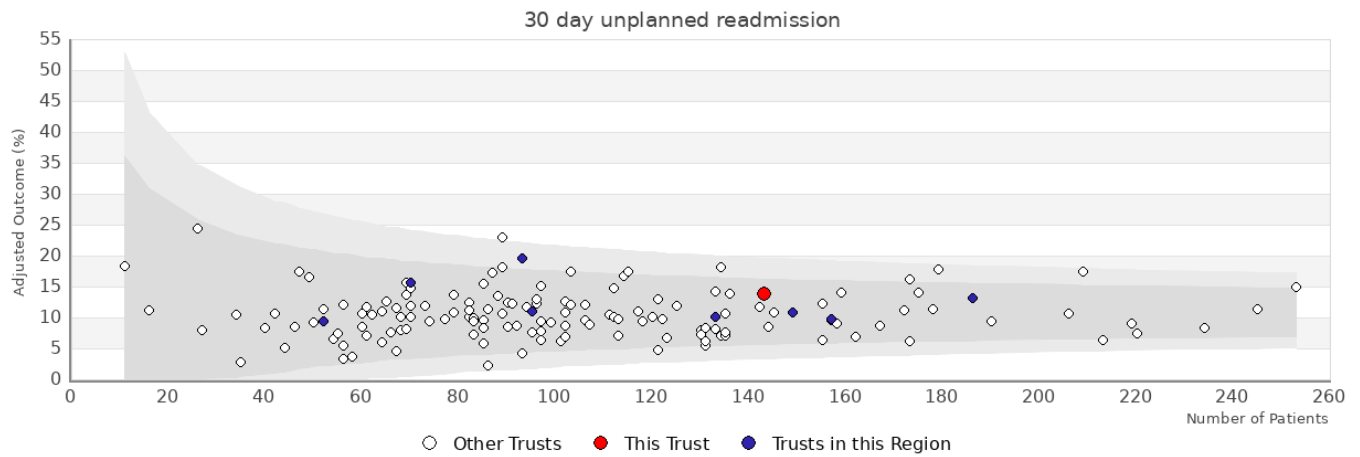
<b>Patients having major resection:</b>	<b>Trust</b>	<b>Network</b>	<b>National</b>
Number of patients in Audit	160	1180	19222
Distant metastases (%)	8	8	8
Urgent or emergency surgery (%)	12	15	17
At least 12 lymph nodes excised (%)	94	88	87
Laparoscopic surgery attempted (%)	79	80	66
Risk-adjusted length of stay > 5 days (%)	66	55	64

## Rectal cancer patients

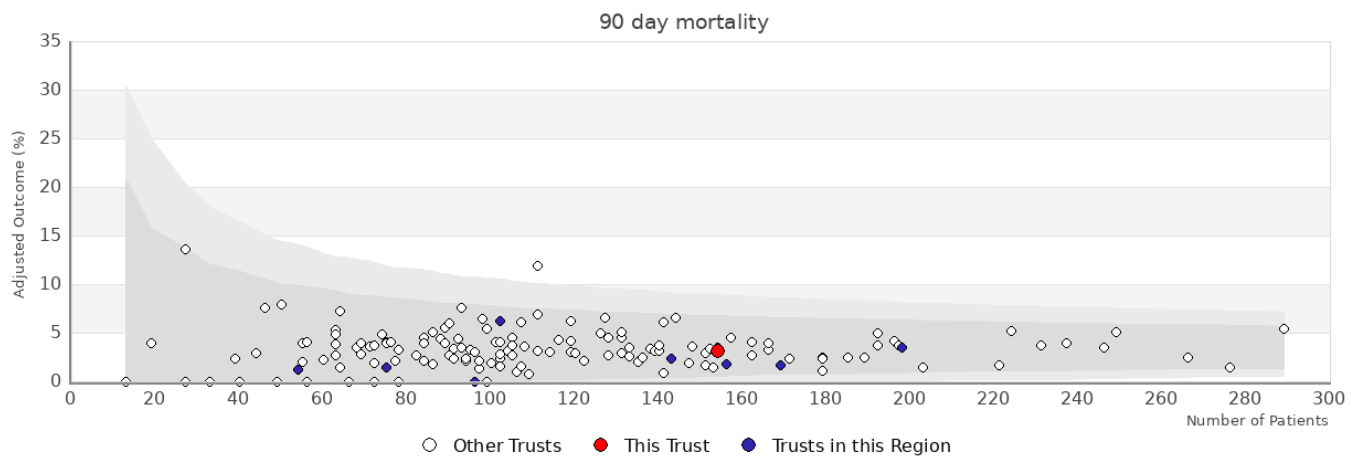
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<b>Patients having major resection:</b>	<b>Trust</b>	<b>Network</b>	<b>National</b>
Number of patients in Audit	54	298	4503
Neoadjuvant therapy (%)	32	37	36
Circumferential resection margin: Present (%)	96	91	84
Circumferential resection margin: Negative (%)	85	85	77
Rectal volume	N/A	N/A	N/A

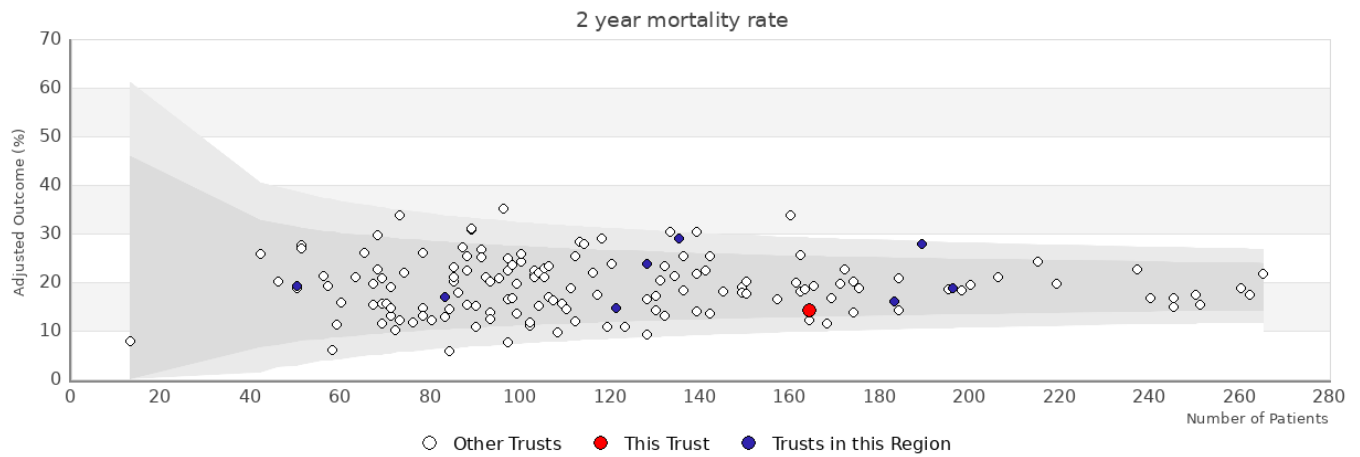
<b>Patients in APER/Hartmanns estimate:</b>	<b>Trust</b>	<b>Network</b>	<b>National</b>
Number of patients in APER/Hartmanns estimate	N/A	N/A	N/A
APER/Hartmanns (%)	N/A	N/A	N/A



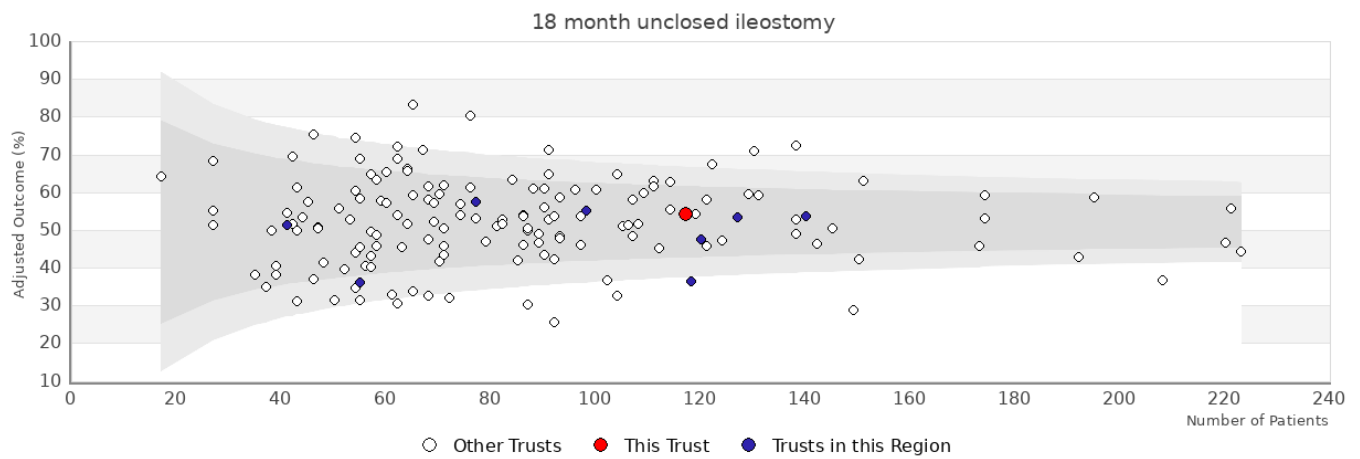
Trust	Number	Adjusted	Observed
The Newcastle Upon Tyne Hospitals NHS Foundation Trust	143	13.8%	14.7%
Other trusts within the region: Northern			
South Tyneside and Sunderland NHS Foundation Trust - Sunderland Royal Hospital	95	11.1%	11.6%
County Durham and Darlington NHS Foundation Trust	157	9.7%	9.6%
Gateshead Health NHS Foundation Trust	93	19.5%	20.4%
North Cumbria University Hospitals NHS Trust	70	15.7%	15.7%
North Tees and Hartlepool NHS Foundation Trust	133	10%	9.8%
Northumbria Healthcare NHS Foundation Trust	149	10.7%	10.7%
South Tees Hospitals NHS Foundation Trust	186	13.2%	12.9%
South Tyneside and Sunderland NHS Foundation Trust - South Tyneside District Hospital	52	9.5%	9.6%



Trust	Number	Adjusted	Observed
The Newcastle Upon Tyne Hospitals NHS Foundation Trust	154	3.1%	3.3%
Other trusts within the region: Northern			
South Tyneside and Sunderland NHS Foundation Trust - Sunderland Royal Hospital	102	6.2%	6.9%
County Durham and Darlington NHS Foundation Trust	169	1.7%	1.8%
North Cumbria University Hospitals NHS Trust	75	1.4%	1.3%
North Tees and Hartlepool NHS Foundation Trust	143	2.4%	2.8%
Northumbria Healthcare NHS Foundation Trust	156	1.7%	1.9%
South Tees Hospitals NHS Foundation Trust	198	3.4%	3.5%
South Tyneside and Sunderland NHS Foundation Trust - South Tyneside District Hospital	54	1.2%	1.9%



Trust	Number	Adjusted	Observed
The Newcastle Upon Tyne Hospitals NHS Foundation Trust	164	14.3%	14.7%
Other trusts within the region: Northern			
South Tyneside and Sunderland NHS Foundation Trust - Sunderland Royal Hospital	128	23.9%	24.9%
County Durham and Darlington NHS Foundation Trust	189	27.9%	28.3%
Gateshead Health NHS Foundation Trust	83	17.1%	26%
North Cumbria University Hospitals NHS Trust	135	29%	25.8%
North Tees and Hartlepool NHS Foundation Trust	121	14.7%	16%
Northumbria Healthcare NHS Foundation Trust	196	18.7%	18.2%
South Tees Hospitals NHS Foundation Trust	183	16%	15.4%
South Tyneside and Sunderland NHS Foundation Trust - South Tyneside District Hospital	50	19.3%	22.6%



Trust	Number	Adjusted	Observed
The Newcastle Upon Tyne Hospitals NHS Foundation Trust	117	54.2%	54.7%
Other trusts within the region: Northern			
South Tyneside and Sunderland NHS Foundation Trust - Sunderland Royal Hospital	98	55.2%	54.1%
County Durham and Darlington NHS Foundation Trust	140	53.8%	53.6%
Gateshead Health NHS Foundation Trust	55	36.2%	36.4%
North Cumbria University Hospitals NHS Trust	77	57.6%	58.4%
North Tees and Hartlepool NHS Foundation Trust	118	36.6%	36.4%
Northumbria Healthcare NHS Foundation Trust	120	47.7%	47.5%
South Tees Hospitals NHS Foundation Trust	127	53.6%	54.3%
South Tyneside and Sunderland NHS Foundation Trust - South Tyneside District Hospital	41	51.5%	56.1%