

## Pennine Acute Hospitals NHS Trust

Greater Manchester A04

The Pennine Acute Hospitals NHS Trust incorporates Rochdale Infirmary, North Manchester General Hospital, Fairfield General Hospital in Bury, and Royal Oldham Hospital

<http://www.pat.nhs.uk/> <<http://www.pat.nhs.uk/>>

## Patient inclusion and data sources

The majority of these results are for patients in England and Wales diagnosed with bowel cancer 1 Apr 2017 – 31 Mar 2018. The exceptions are for adjuvant chemotherapy and the four trust outcomes: 30-day unplanned readmission, 90-day mortality, 2-year mortality and 18-month stoma rate. 30-day unplanned readmission and 90-day mortality are further restricted to patients undergoing surgery up to 31 October 2018 for patients treated in England, and up to 28 February 2018 for patients treated in Wales. Two-year mortality estimates include patients undergoing a major resection between 1 April 2015 and 31 March 2016. 18-month stoma rates include rectal cancer patients undergoing a major resection between 1 April 2014 and 31 March 2017. Adjuvant chemotherapy estimates include patients undergoing major resection for pathological stage III colon cancer between 01 June 2014 and 31 August 2017 in England only.

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.

## Data Quality

### 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. This can be larger than 100 if more patients are reported to the Audit than identified in HES.

### Data completeness

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

### 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

### Potentially curative patients

Patients electively diagnosed with colon cancer with pre-treatment staging of T2-T4 and no evidence of metastatic disease.

## 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.

### Adjuvant chemotherapy

% of adjuvant chemotherapy in patients undergoing major resection for pathological stage III colon cancer between 01 June 2014 and 31 August 2017 in England only. These are unadjusted chemotherapy rates.

## 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: Recorded (%)

% 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

All Patients:	Trust	Network	National
Number of patients in Audit	404	1493	31676
Case ascertainment (%)	110	96	95
Data completeness of:			

<b>All Patients:</b>	<b>Trust</b>	<b>Network</b>	<b>National</b>
– Pre-treatment TNM (%)	76	83	80
– Performance status (%)	75	88	86

<b>Patients having major resection:</b>	<b>Trust</b>	<b>Network</b>	<b>National</b>
Number of patients in Audit	196	910	19218
ASA grade 1 (%)	4	9	11
ASA grade 2 (%)	65	56	53
ASA grade 3 (%)	29	30	28
ASA grade 4+ (%)	3	3	3
ASA grade not recorded (%)	N/A	1	5
Data completeness of:			
7 Audit items for risk-adjustment (%)	93	89	86

### Key:

- > 80%
- 50 - 80%
- < 50%

## Management of all patients

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<b>All Patients:</b>	<b>Trust</b>	<b>Network</b>	<b>National</b>
Number of patients in Audit	404	1493	31676
Seen by Clinical Nurse Specialist (%)	100	93	87

<b>All patients deemed potentially curative</b>	<b>Trust</b>	<b>Network</b>	<b>National</b>
Number of potentially curative patients	101	342	7416
Undergoing major resection (%)	80	86	86

## Management of patients having major resection

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<b>Patients having major resection:</b>	<b>Trust</b>	<b>Network</b>	<b>National</b>
Number of patients in Audit	196	910	19218
Distant metastases (%)	1	10	8
Urgent or emergency surgery (%)	16	15	15
At least 12 lymph nodes excised (%)	86	79	84
Laparoscopic surgery attempted (%)	62	57	69
Risk-adjusted length of stay > 5 days (%)	74	67	62

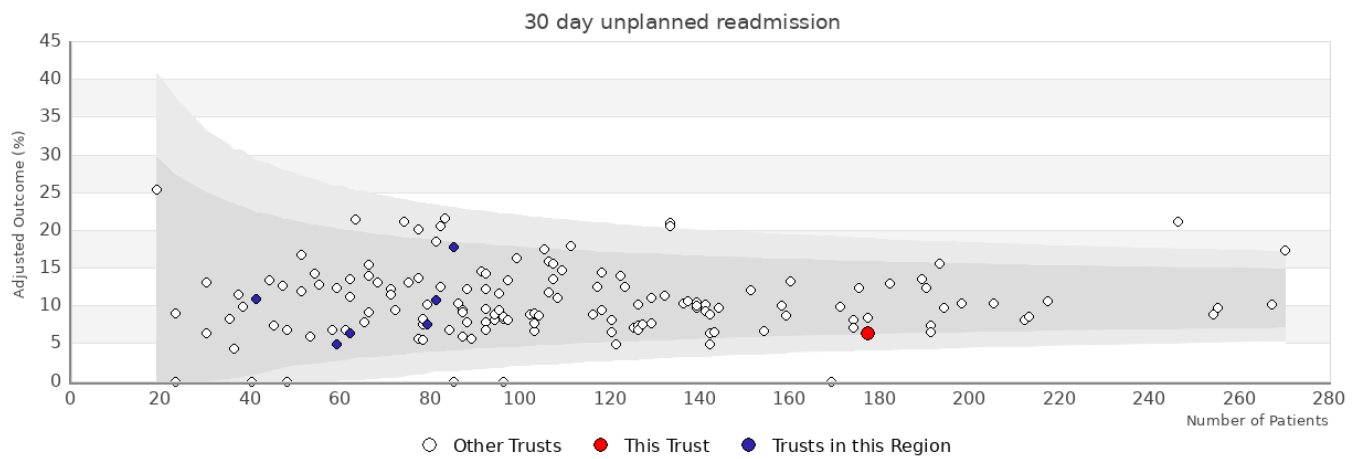
<b>Patients having major resection for stage III colon cancer:</b>	<b>Trust</b>	<b>Network</b>	<b>National</b>
Number of patients in audit	177	623	11837
Adjuvant chemotherapy (%)	59	57	62

## Rectal cancer patients

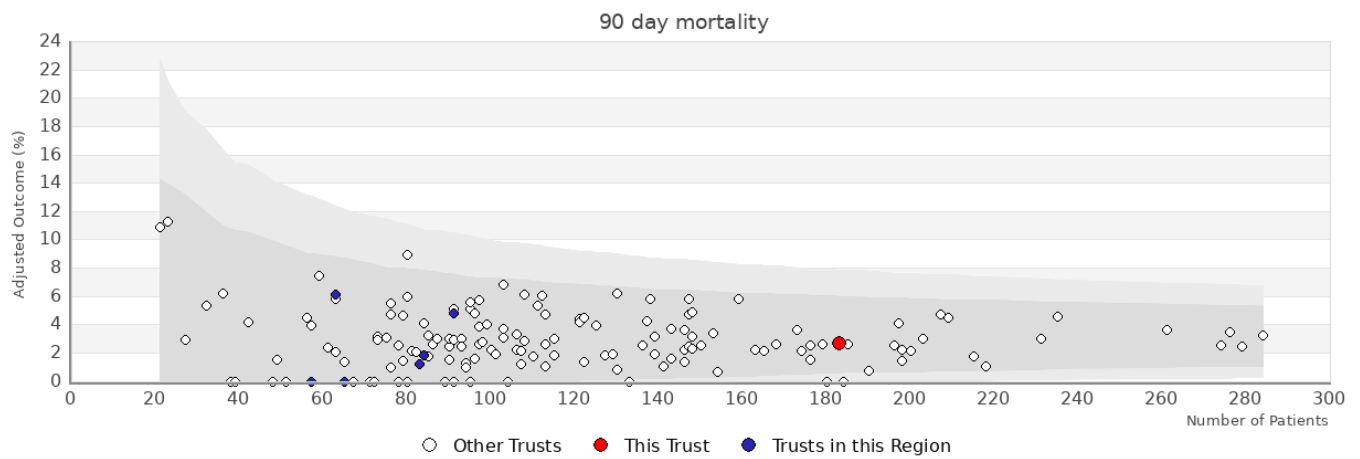
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<b>Patients having major resection:</b>	<b>Trust</b>	<b>Network</b>	<b>National</b>
Number of patients in Audit	32	194	4588
Neoadjuvant therapy (%)	54	55	33
Circumferential resection margin: Recorded (%)	91	94	90
Circumferential resection margin: Negative (%)	84	85	80
Rectal volume	N/A	N/A	N/A

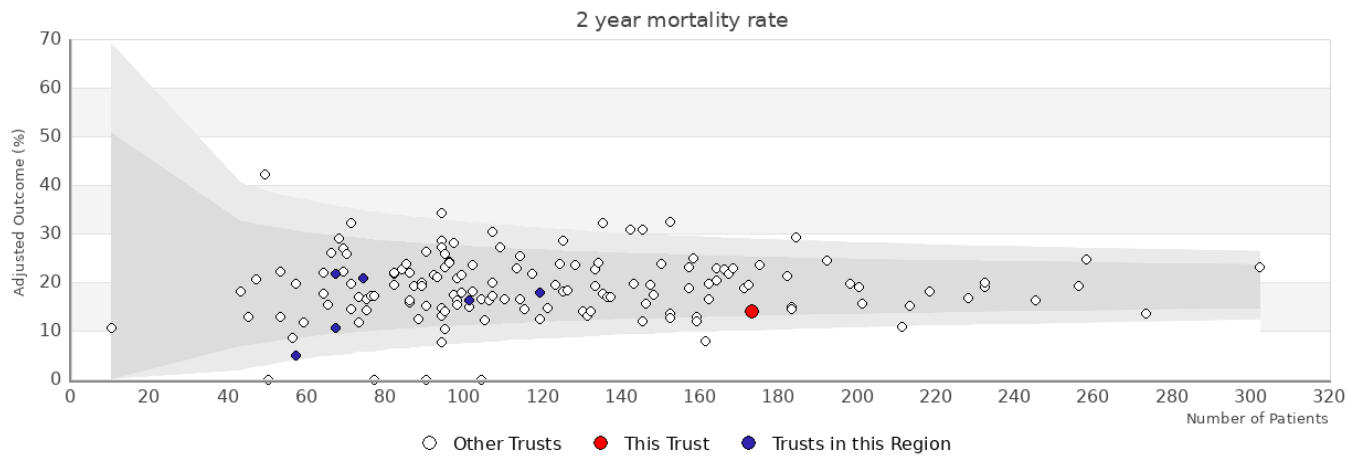
<b>Patients in APER/Hartmanns estimate:</b>	<b>Trust</b>	<b>Network</b>	<b>National</b>
Number of patients in APER/Hartmanns estimate	N/A	N/A	N/A
APER/Hartmanns (%)	N/A	N/A	N/A



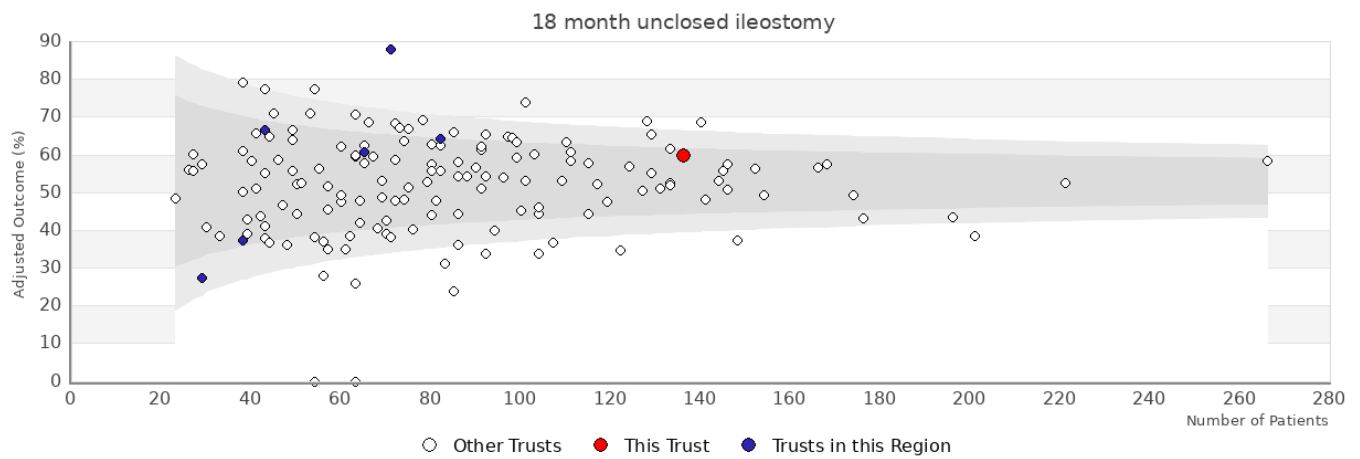
Trust	Number	Adjusted	Observed
Pennine Acute Hospitals NHS Trust	177	6.3%	6.2%
Other trusts within the region: Greater Manchester			
Bolton NHS Foundation Trust	79	7.6%	7.6%
Salford Royal NHS Foundation Trust	59	4.9%	5.1%
Stockport NHS Foundation Trust	81	10.7%	11.1%
Tameside Hospital NHS Foundation Trust	62	6.4%	6.5%
The Christie NHS Foundation Trust	41	11%	12.2%
Wrightington, Wigan and Leigh NHS Foundation Trust	85	17.8%	16.5%



Trust	Number	Adjusted	Observed
Pennine Acute Hospitals NHS Trust	183	2.7%	2.2%
Other trusts within the region: Greater Manchester			
Bolton NHS Foundation Trust	83	1.2%	1.2%
Stockport NHS Foundation Trust	84	1.8%	2.4%
Tameside Hospital NHS Foundation Trust	63	6.2%	9.5%
Wrightington, Wigan and Leigh NHS Foundation Trust	91	4.8%	4.4%



Trust	Number	Adjusted	Observed
Pennine Acute Hospitals NHS Trust	173	14.1%	13.7%
Other trusts within the region: Greater Manchester			
Bolton NHS Foundation Trust	119	17.9%	21.8%
Salford Royal NHS Foundation Trust	67	10.6%	9.4%
Stockport NHS Foundation Trust	101	16.2%	15.8%
Tameside Hospital NHS Foundation Trust	57	4.9%	5.4%
The Christie NHS Foundation Trust	67	21.8%	22.2%
Wrightington, Wigan and Leigh NHS Foundation Trust	74	20.9%	17.9%



Trust	Number	Adjusted	Observed
Pennine Acute Hospitals NHS Trust	136	59.7%	58.8%
Other trusts within the region: Greater Manchester			
Bolton NHS Foundation Trust	82	64.2%	64.6%
Salford Royal NHS Foundation Trust	43	66.7%	65.1%
Stockport NHS Foundation Trust	65	60.8%	61.5%
Tameside Hospital NHS Foundation Trust	38	37.4%	39.5%
The Christie NHS Foundation Trust	71	88%	87.3%
Wrightington, Wigan and Leigh NHS Foundation Trust	29	27.4%	27.6%