

## Aintree University Hospital NHS Foundation Trust

### Cheshire and Merseyside A01

The Aintree University Hospital NHS Foundation Trust incorporates Aintree University Hospital in Liverpool <http://www.aintreehospital.nhs.uk/> <<http://www.aintreehospital.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	260	1526	31676
Case ascertainment (%)	102	91	95
Data completeness of:			

<b>All Patients:</b>	<b>Trust</b>	<b>Network</b>	<b>National</b>
– Pre-treatment TNM (%)	95	91	80
– Performance status (%)	89	87	86

<b>Patients having major resection:</b>	<b>Trust</b>	<b>Network</b>	<b>National</b>
Number of patients in Audit	149	925	19218
ASA grade 1 (%)	12	11	11
ASA grade 2 (%)	59	57	53
ASA grade 3 (%)	23	28	28
ASA grade 4+ (%)	5	2	3
ASA grade not recorded (%)	1	2	5
Data completeness of:			
7 Audit items for risk-adjustment (%)	88	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	260	1526	31676
Seen by Clinical Nurse Specialist (%)	84	90	87

<b>All patients deemed potentially curative</b>	<b>Trust</b>	<b>Network</b>	<b>National</b>
Number of potentially curative patients	63	401	7416
Undergoing major resection (%)	95	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	149	925	19218
Distant metastases (%)	10	7	8
Urgent or emergency surgery (%)	11	11	15
At least 12 lymph nodes excised (%)	79	84	84
Laparoscopic surgery attempted (%)	64	62	69
Risk-adjusted length of stay > 5 days (%)	61	66	62

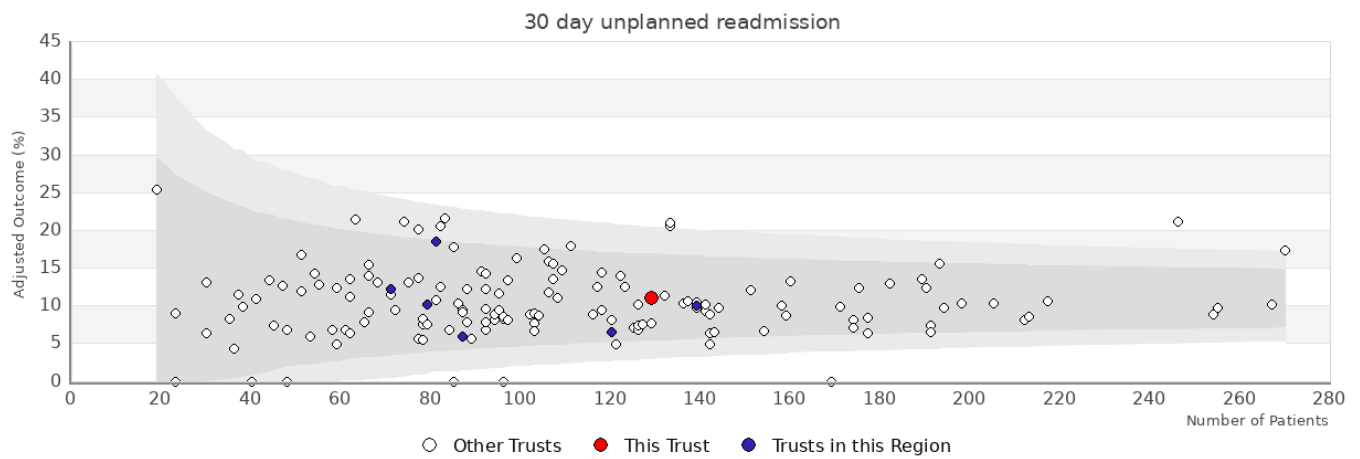
<b>Patients having major resection for stage III colon cancer:</b>	<b>Trust</b>	<b>Network</b>	<b>National</b>
Number of patients in audit	64	612	11837
Adjuvant chemotherapy (%)	59	56	62

## Rectal cancer patients

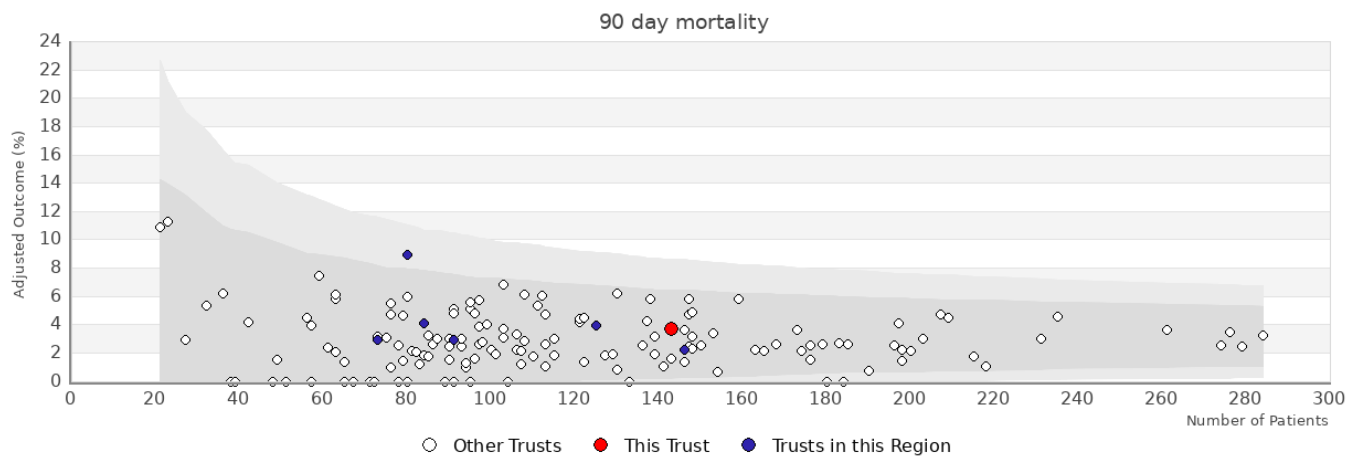
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<b>Patients having major resection:</b>	<b>Trust</b>	<b>Network</b>	<b>National</b>
Number of patients in Audit	31	196	4588
Neoadjuvant therapy (%)	61	41	33
Circumferential resection margin: Recorded (%)	84	78	90
Circumferential resection margin: Negative (%)	6	60	80
Rectal volume	N/A	N/A	N/A

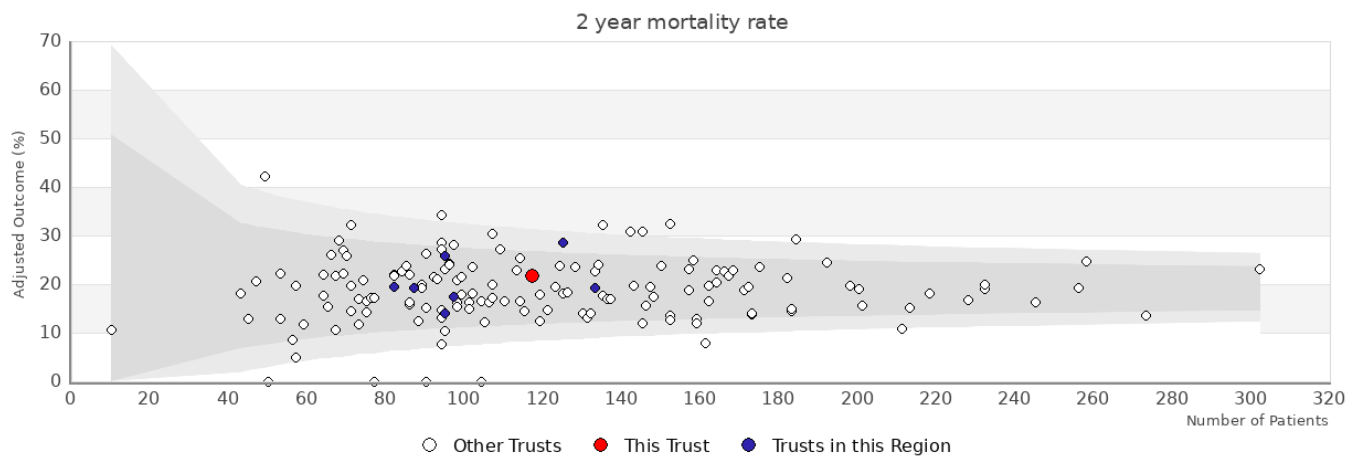
<b>Patients in APER/Hartmanns estimate:</b>	<b>Trust</b>	<b>Network</b>	<b>National</b>
Number of patients in APER/Hartmanns estimate	N/A	N/A	N/A
APER/Hartmanns (%)	N/A	N/A	N/A



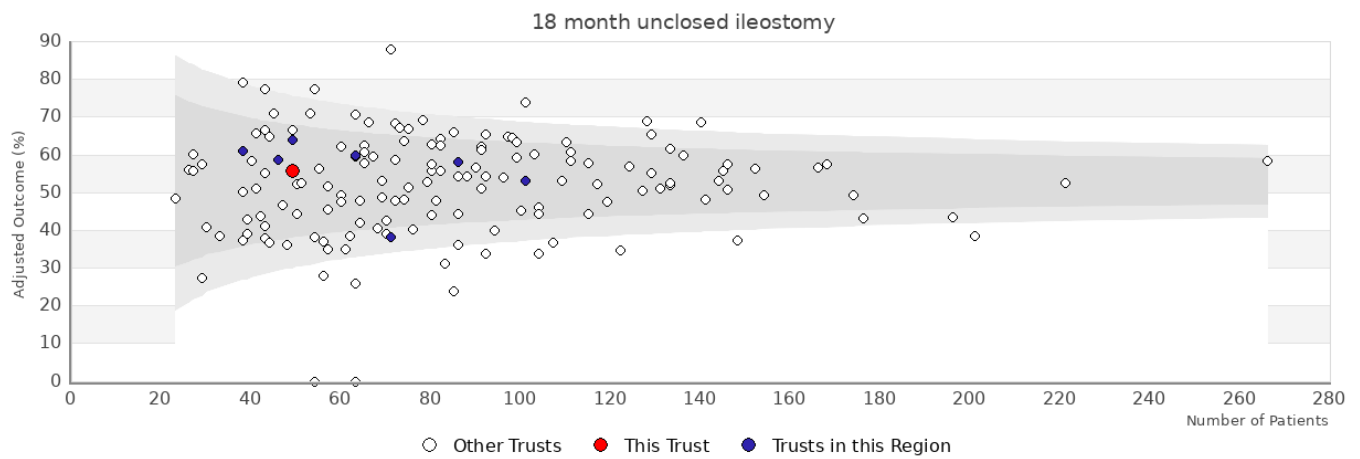
Trust	Number	Adjusted	Observed
Aintree University Hospital NHS Foundation Trust	129	11%	10.9%
Other trusts within the region: Cheshire and Merseyside			
Countess of Chester Hospital NHS Foundation Trust	81	18.5%	17.3%
East Cheshire NHS Trust	71	12.3%	11.3%
Mid Cheshire Hospitals NHS Foundation Trust	87	5.9%	5.8%
St Helens and Knowsley Hospitals NHS Trust	139	10%	10.1%
Warrington and Halton Hospitals NHS Foundation Trust	79	10.2%	10.1%
Wirral University Teaching Hospital NHS Foundation Trust	120	6.6%	6.7%



Trust	Number	Adjusted	Observed
Aintree University Hospital NHS Foundation Trust	143	3.7%	3.5%
Other trusts within the region: Cheshire and Merseyside			
Countess of Chester Hospital NHS Foundation Trust	84	4.1%	2.4%
East Cheshire NHS Trust	73	2.9%	2.7%
Mid Cheshire Hospitals NHS Foundation Trust	91	2.9%	2.2%
St Helens and Knowsley Hospitals NHS Trust	146	2.2%	2.7%
Warrington and Halton Hospitals NHS Foundation Trust	80	9%	6.3%
Wirral University Teaching Hospital NHS Foundation Trust	125	3.9%	4%



Trust	Number	Adjusted	Observed
Aintree University Hospital NHS Foundation Trust	117	21.7%	19.6%
Other trusts within the region: Cheshire and Merseyside			
Countess of Chester Hospital NHS Foundation Trust	95	14.1%	15.8%
East Cheshire NHS Trust	95	25.8%	25%
Mid Cheshire Hospitals NHS Foundation Trust	87	19.2%	13.4%
Southport and Ormskirk Hospital NHS Trust	82	19.5%	18.7%
St Helens and Knowsley Hospitals NHS Trust	125	28.6%	35.3%
Warrington and Halton Hospitals NHS Foundation Trust	97	17.5%	19.3%
Wirral University Teaching Hospital NHS Foundation Trust	133	19.2%	19.2%



Trust	Number	Adjusted	Observed
Aintree University Hospital NHS Foundation Trust	49	55.8%	53.1%
Other trusts within the region: Cheshire and Merseyside			
Countess of Chester Hospital NHS Foundation Trust	86	58.1%	57%
East Cheshire NHS Trust	49	64%	65.3%
Mid Cheshire Hospitals NHS Foundation Trust	71	38.1%	36.6%
Southport and Ormskirk Hospital NHS Trust	46	58.6%	54.4%
St Helens and Knowsley Hospitals NHS Trust	101	53.2%	56.4%
Warrington and Halton Hospitals NHS Foundation Trust	38	61.1%	60.5%
Wirral University Teaching Hospital NHS Foundation Trust	63	59.9%	60.3%