

## The Royal Wolverhampton NHS Trust

West Midlands A18

The Royal Wolverhampton NHS Trust incorporates New Cross Hospital in Wolverhampton <http://www.royalwolverhampton.nhs.uk/>  
<<http://www.royalwolverhampton.nhs.uk/>>

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### 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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<b>All Patients:</b>	<b>Trust</b>	<b>Network</b>	<b>National</b>
Number of patients in Audit	41	2837	30541
Case ascertainment (%)	15	88	93
Data completeness of:			
– Pre-treatment TNM (%)	93	80	78
– Performance status (%)	93	84	85

<b>Patients having major resection:</b>	<b>Trust</b>	<b>Network</b>	<b>National</b>
Number of patients in Audit	22	1814	19183
ASA grade 1 (%)	N/A	12	12
ASA grade 2 (%)	14	50	52
ASA grade 3 (%)	N/A	29	27
ASA grade 4+ (%)	N/A	3	2
ASA grade not recorded (%)	86	7	7
Data completeness of:			
7 Audit items for risk-adjustment (%)	14	76	83

**Key:**

## 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	41	2837	30424
Seen by Clinical Nurse Specialist (%)	100	95	93

## 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	22	1814	19222
Distant metastases (%)	9	9	8
Urgent or emergency surgery (%)	5	19	17
At least 12 lymph nodes excised (%)	94	90	87
Laparoscopic surgery attempted (%)	64	69	66

<b>Patients having major resection:</b>	<b>Trust</b>	<b>Network</b>	<b>National</b>
Risk-adjusted length of stay > 5 days (%)	N/A	59	64

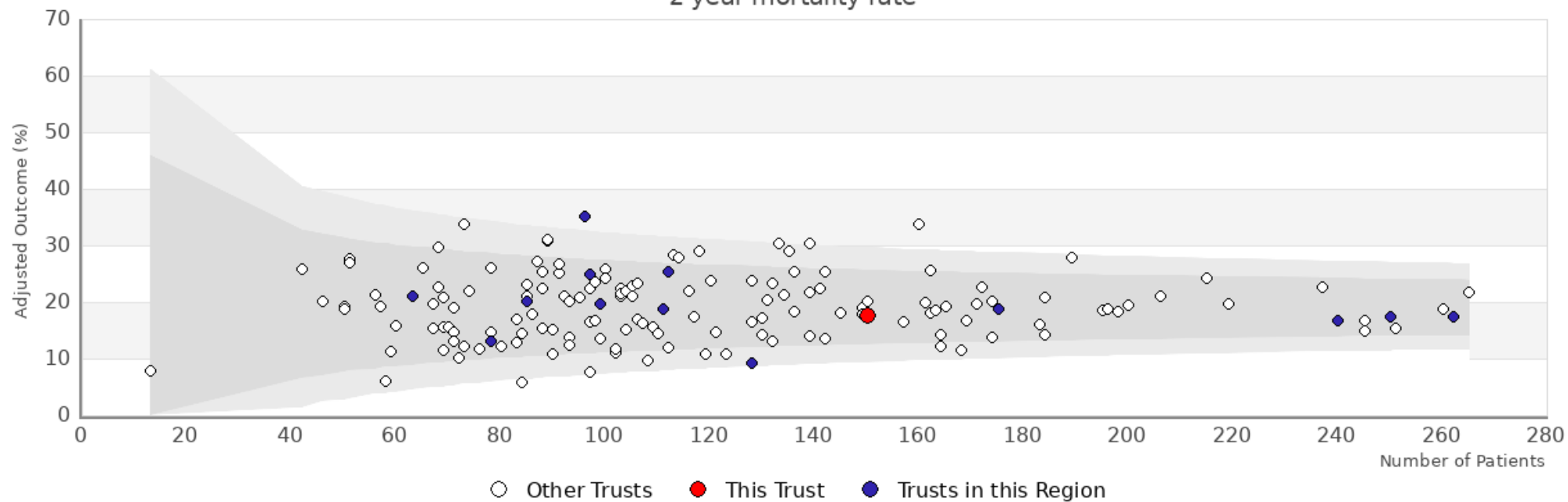
## Rectal cancer patients

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<b>Patients having major resection:</b>	<b>Trust</b>	<b>Network</b>	<b>National</b>
Number of patients in Audit	N/A	427	4503
Neoadjuvant therapy (%)	31	31	36
Circumferential resection margin: Present (%)	N/A	63	84
Circumferential resection margin: Negative (%)	N/A	57	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

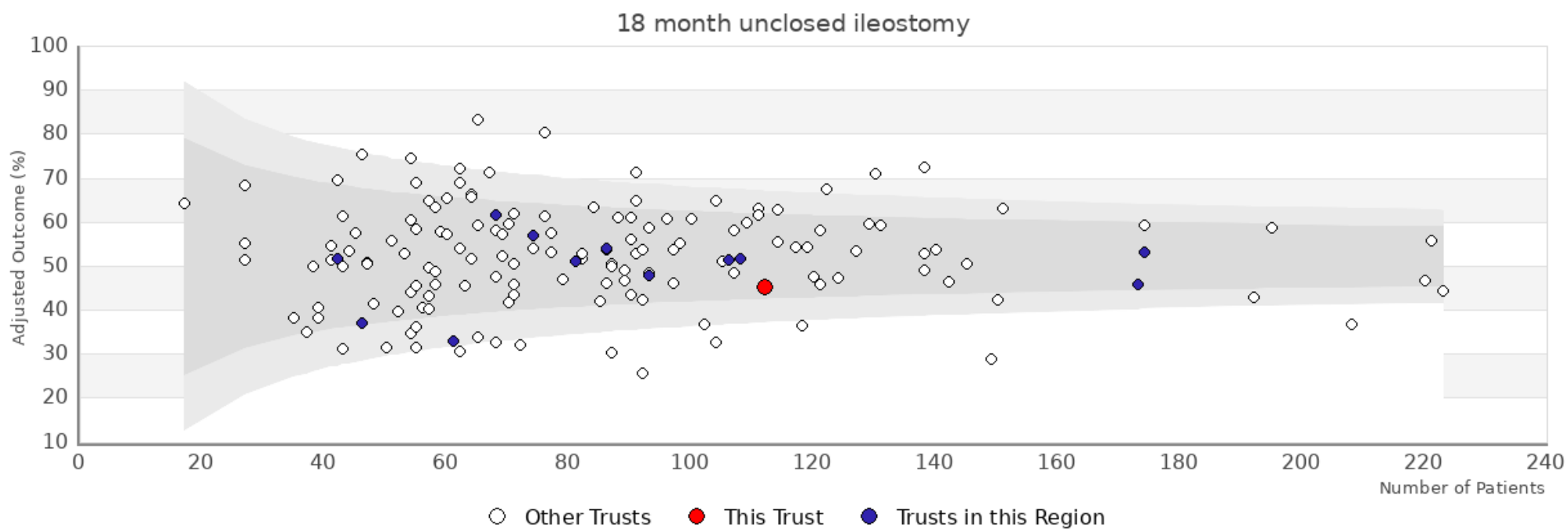
2 year mortality rate



Trust	Number	Adjusted	Observed
The Royal Wolverhampton NHS Trust	150	17.6%	18.3%
Other trusts within the region: West Midlands			
University Hospitals of Derby and Burton NHS Foundation Trust - Queens Hospital (Burton)	99	19.8%	22.7%

Trust	Number	Adjusted	Observed
George Eliot Hospital NHS Trust	63	21.1%	17.5%
Sandwell and West Birmingham Hospitals NHS Trust	111	18.8%	21.6%
Shrewsbury and Telford Hospital NHS Trust	240	16.7%	17.8%
South Warwickshire NHS Foundation Trust	78	13%	21.8%
The Dudley Group NHS Foundation Trust	112	25.4%	30.4%
University Hospitals Birmingham NHS Foundation Trust	97	24.9%	18.1%
University Hospitals Coventry and Warwickshire NHS Trust	128	9.2%	10.7%
University Hospitals of North Midlands NHS Trust	250	17.5%	22.6%
Walsall Healthcare NHS Trust	85	20.2%	34.1%
Worcestershire Acute Hospitals NHS Trust	262	17.5%	15.4%
Wye Valley NHS Trust	96	35.1%	33.4%
University Hospitals of Derby and Burton NHS Foundation Trust - Royal Derby Hospital	175	18.8%	18.9%





Trust	Number	Adjusted	Observed
The Royal Wolverhampton NHS Trust	112	45.3%	49.1%
Other trusts within the region: West Midlands			
University Hospitals of Derby and Burton NHS Foundation Trust - Queens Hospital (Burton)	74	56.8%	59.5%

Trust	Number	Adjusted	Observed
George Eliot Hospital NHS Trust	42	51.6%	54.8%
Sandwell and West Birmingham Hospitals NHS Trust	93	47.8%	49.5%
Shrewsbury and Telford Hospital NHS Trust	174	53%	52.9%
South Warwickshire NHS Foundation Trust	61	32.9%	34.4%
The Dudley Group NHS Foundation Trust	86	54%	57%
University Hospitals Birmingham NHS Foundation Trust	68	61.7%	57.4%
University Hospitals Coventry and Warwickshire NHS Trust	106	51.5%	51.9%
Walsall Healthcare NHS Trust	46	37%	39.1%
Worcestershire Acute Hospitals NHS Trust	173	45.9%	45.7%
Wye Valley NHS Trust	81	51.1%	54.3%
University Hospitals of Derby and Burton NHS Foundation Trust - Royal Derby Hospital	108	51.8%	52.8%