

## 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 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

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All Patients:	Trust	Network	National
Number of patients in Audit	302	3445	31676
Case ascertainment (%)	100	100	95
Data completeness of:			
– Pre-treatment TNM (%)	63	79	80

<b>All Patients:</b>	<b>Trust</b>	<b>Network</b>	<b>National</b>
– Performance status (%)	78	88	86

<b>Patients having major resection:</b>	<b>Trust</b>	<b>Network</b>	<b>National</b>
Number of patients in Audit	190	2169	19218
ASA grade 1 (%)	2	11	11
ASA grade 2 (%)	60	53	53
ASA grade 3 (%)	34	30	28
ASA grade 4+ (%)	4	3	3
ASA grade not recorded (%)	1	3	5
Data completeness of:			
7 Audit items for risk-adjustment (%)	94	82	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	302	3445	31676
Seen by Clinical Nurse Specialist (%)	86	88	87

<b>All patients deemed potentially curative</b>	<b>Trust</b>	<b>Network</b>	<b>National</b>
Number of potentially curative patients	50	845	7416
Undergoing major resection (%)	84	88	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	190	2169	19218
Distant metastases (%)	8	9	8
Urgent or emergency surgery (%)	11	17	15
At least 12 lymph nodes excised (%)	85	77	84
Laparoscopic surgery attempted (%)	62	74	69

<b>Patients having major resection:</b>	<b>Trust</b>	<b>Network</b>	<b>National</b>
Risk-adjusted length of stay > 5 days (%)	78	58	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	68	1249	11837
Adjuvant chemotherapy (%)	87	71	62

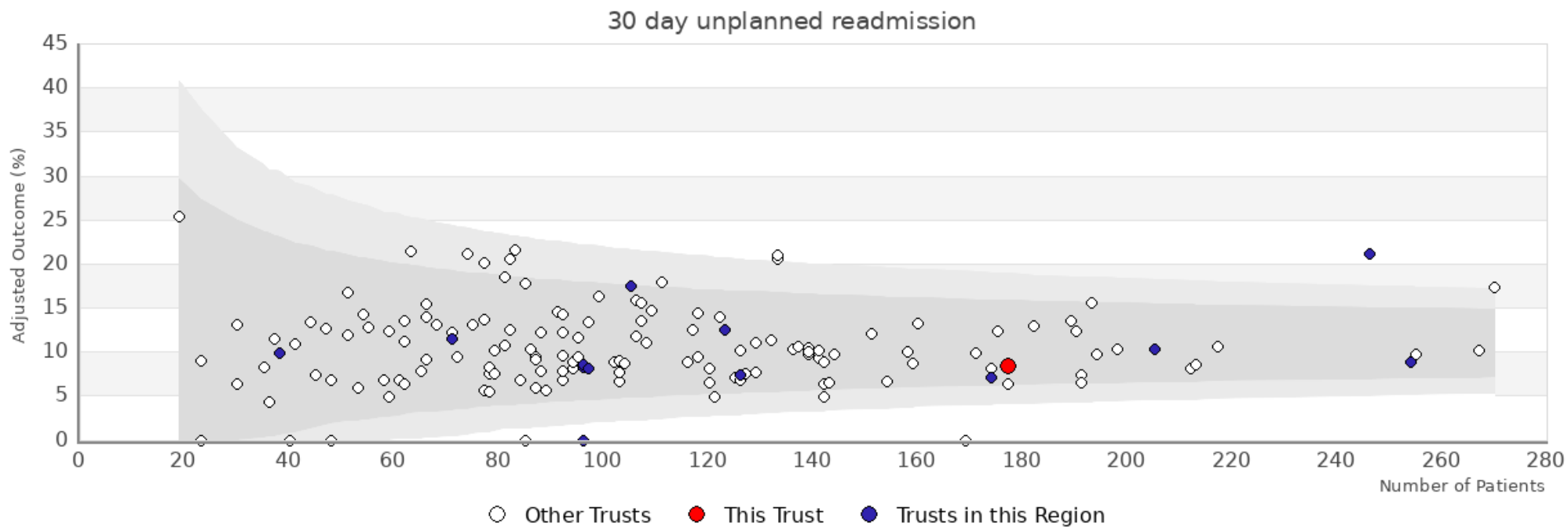
## Rectal cancer patients

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<b>Patients having major resection:</b>	<b>Trust</b>	<b>Network</b>	<b>National</b>
Number of patients in Audit	46	535	4588
Neoadjuvant therapy (%)	47	31	33
Circumferential resection margin: Recorded (%)	98	88	90
Circumferential resection margin: Negative (%)	98	80	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

Patients in APER/Hartmanns estimate:	Trust	Network	National
APER/Hartmanns (%)	N/A	N/A	N/A

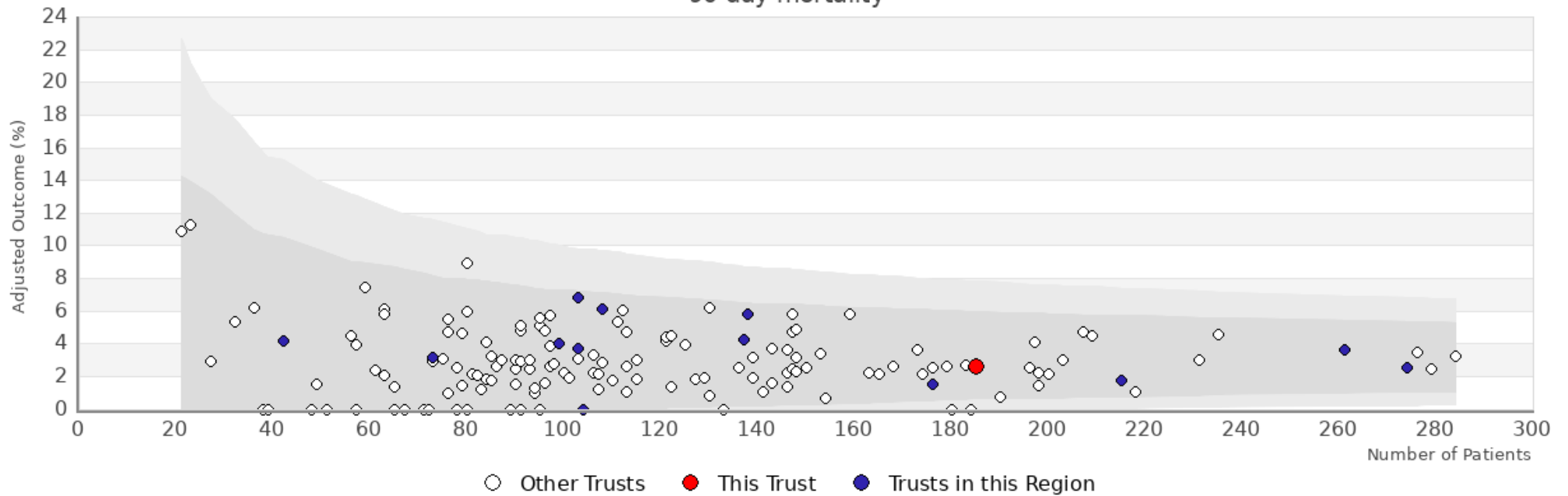


Trust	Number	Adjusted	Observed
The Royal Wolverhampton NHS Trust	177	8.4%	8.5%
Other trusts within the region: West Midlands			
University Hospitals of Derby and Burton NHS Foundation Trust - Queens Hospital (Burton)	96	8.3%	8.3%



Trust	Number	Adjusted	Observed
George Eliot Hospital NHS Trust	71	11.5%	11.3%
Sandwell and West Birmingham Hospitals NHS Trust	123	12.5%	13%
Shrewsbury and Telford Hospital NHS Trust	205	10.4%	10.2%
South Warwickshire NHS Foundation Trust	96	8.6%	8.3%
The Dudley Group NHS Foundation Trust	97	8.1%	8.3%
University Hospitals Coventry and Warwickshire NHS Trust	126	7.3%	7.1%
University Hospitals of North Midlands NHS Trust	246	21.2%	20.7%
Walsall Healthcare NHS Trust	38	9.8%	10.5%
Worcestershire Acute Hospitals NHS Trust	254	8.8%	8.7%
Wye Valley NHS Trust	105	17.5%	17.1%
University Hospitals of Derby and Burton NHS Foundation Trust - Royal Derby Hospital	174	7.1%	6.9%

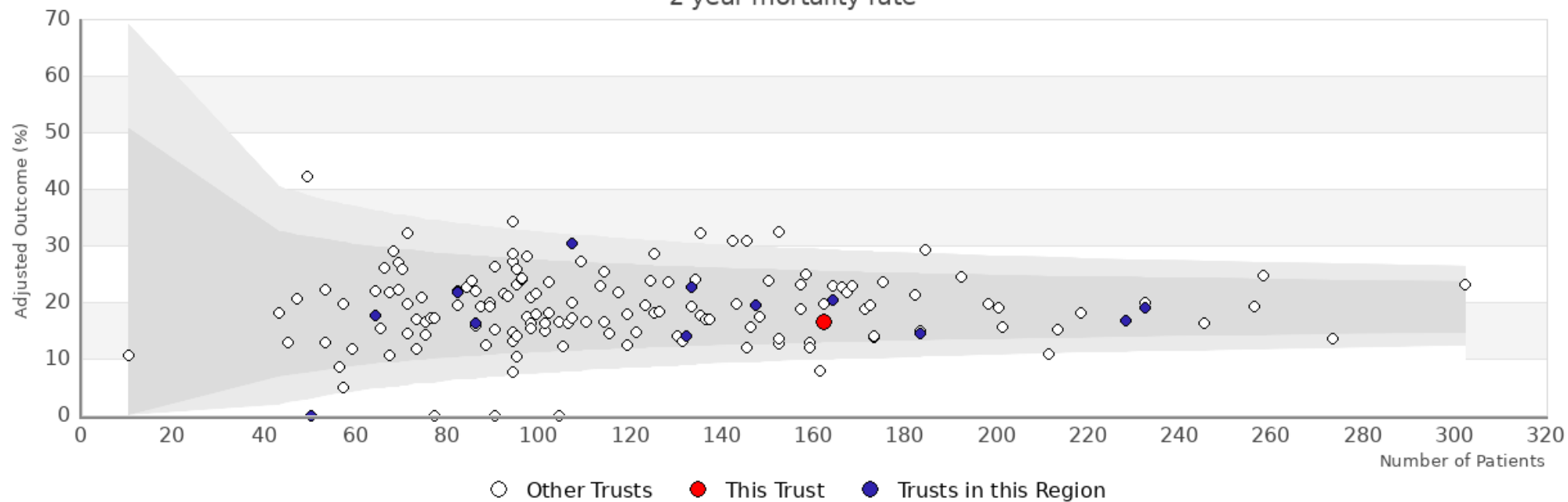
90 day mortality



Trust	Number	Adjusted	Observed
The Royal Wolverhampton NHS Trust	185	2.6%	3.2%
Other trusts within the region: West Midlands			
University Hospitals of Derby and Burton NHS Foundation Trust - Queens Hospital (Burton)	103	3.7%	6.8%

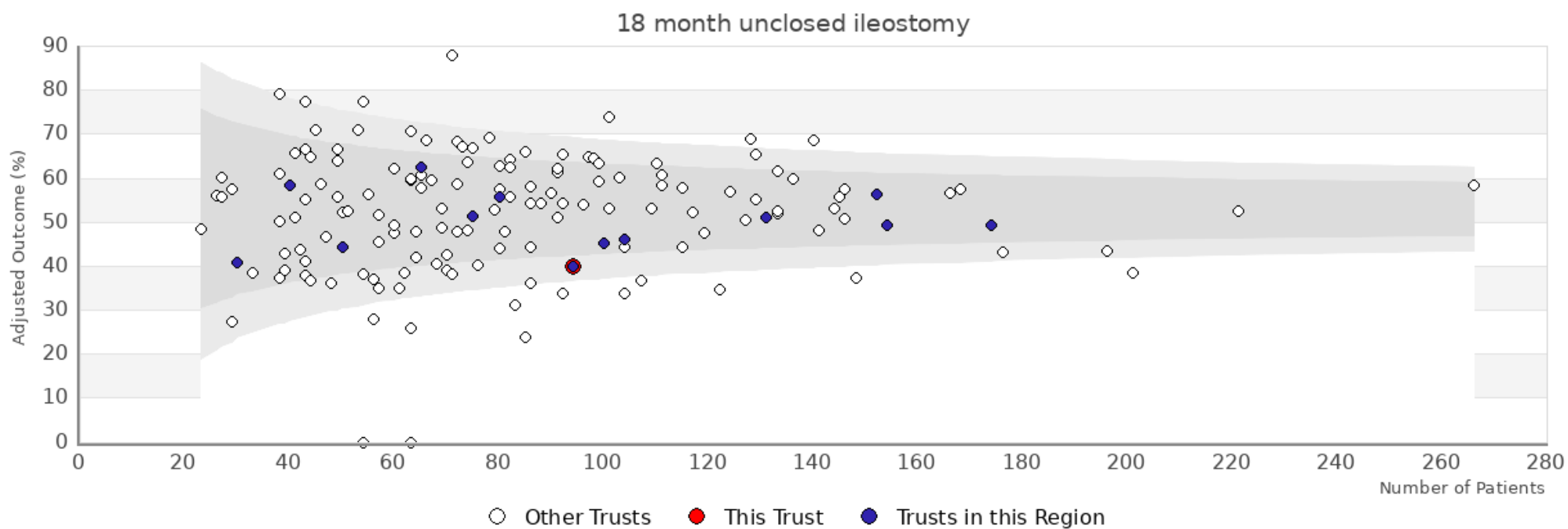
Trust	Number	Adjusted	Observed
George Eliot Hospital NHS Trust	73	3.1%	2.7%
Sandwell and West Birmingham Hospitals NHS Trust	138	5.8%	5.8%
Shrewsbury and Telford Hospital NHS Trust	215	1.8%	1.9%
South Warwickshire NHS Foundation Trust	99	4%	5.1%
The Dudley Group NHS Foundation Trust	103	6.8%	8.7%
University Hospitals Coventry and Warwickshire NHS Trust	137	4.3%	3.7%
University Hospitals of North Midlands NHS Trust	261	3.7%	2.7%
Walsall Healthcare NHS Trust	42	4.2%	4.8%
Worcestershire Acute Hospitals NHS Trust	274	2.5%	2.9%
Wye Valley NHS Trust	108	6.1%	5.6%
University Hospitals of Derby and Burton NHS Foundation Trust - Royal Derby Hospital	176	1.5%	1.1%

2 year mortality rate



Trust	Number	Adjusted	Observed
The Royal Wolverhampton NHS Trust	162	16.5%	20.2%
Other trusts within the region: West Midlands			
University Hospitals of Derby and Burton NHS Foundation Trust - Queens Hospital (Burton)	107	30.4%	41.4%

Trust	Number	Adjusted	Observed
George Eliot Hospital NHS Trust	64	17.7%	25%
Sandwell and West Birmingham Hospitals NHS Trust	133	22.6%	21.2%
Shrewsbury and Telford Hospital NHS Trust	183	14.5%	17.3%
South Warwickshire NHS Foundation Trust	86	16.2%	20.5%
The Dudley Group NHS Foundation Trust	147	19.5%	20.5%
University Hospitals Coventry and Warwickshire NHS Trust	132	13.9%	16.5%
University Hospitals of North Midlands NHS Trust	232	19.1%	22.7%
Worcestershire Acute Hospitals NHS Trust	228	16.7%	18.6%
Wye Valley NHS Trust	82	21.8%	20.6%
University Hospitals of Derby and Burton NHS Foundation Trust - Royal Derby Hospital	164	20.4%	17.9%



Trust	Number	Adjusted	Observed
The Royal Wolverhampton NHS Trust	94	39.9%	42.6%
Other trusts within the region: West Midlands			
University Hospitals of Derby and Burton NHS Foundation Trust - Queens Hospital (Burton)	80	55.6%	60%

Trust	Number	Adjusted	Observed
George Eliot Hospital NHS Trust	40	58.5%	62.5%
Sandwell and West Birmingham Hospitals NHS Trust	94	39.9%	41.5%
Shrewsbury and Telford Hospital NHS Trust	152	56.4%	56.6%
South Warwickshire NHS Foundation Trust	50	44.3%	46%
The Dudley Group NHS Foundation Trust	104	46.2%	50%
University Hospitals Birmingham NHS Foundation Trust	65	62.4%	63.1%
University Hospitals Coventry and Warwickshire NHS Trust	100	45.2%	44%
University Hospitals of North Midlands NHS Trust	154	49.3%	50.7%
Walsall Healthcare NHS Trust	30	40.8%	43.3%
Worcestershire Acute Hospitals NHS Trust	174	49.3%	49.4%
Wye Valley NHS Trust	75	51.4%	53.3%
University Hospitals of Derby and Burton NHS Foundation Trust - Royal Derby Hospital	131	51%	51.2%