

## 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 2019 – 31 Mar 2020. The exceptions are for adjuvant chemotherapy, APER/Hartmann's and the five trust outcomes: 30-day unplanned readmission, 30-day unplanned return-to-theatre, 90-day mortality 2-year mortality and unclosed ileostomy.

30-day unplanned readmission, 30-day unplanned return to theatre and 90-day mortality are further restricted to patients undergoing surgery up to 31 March 2020. Two-year mortality estimates include patients undergoing a major resection between 1 April 2017 and 31 March 2018. Adjuvant chemotherapy estimates include patients undergoing major resection for pathological stage III colon cancer between 01 December 2016 and 31 August 2019.

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 NCRAS in England and PEDW in Wales. This can be larger than 100 if more patients are reported to the Audit than identified in NCRAS/PEDW.

## **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 2016 and 31 August 2019. These are unadjusted chemotherapy rates. SACT and HES data re used for patients treated in England and PEDW data are used for patients treated in Wales.

## **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 this audit year.

### APER/Hartmann's (%)

% of patients whose rectal cancer resection is an abdomino-perineal excision of rectum (APER)/pelvic exenteration/Hartmann's 1 April 2014 to 30 September 2018.

## Compare trust outcomes

Funnel plots display trust risk-adjusted outcomes for 30-day unplanned readmission, 30-day unplanned return to theatre, 90-day mortality, 2-year mortality and 18-month unclosed ileostomy. 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.

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	287	3656	32641
Case ascertainment (%)	Good	Good	Good
Data completeness of:			
– Pre-treatment TNM (%)	94	78	85

<b>All Patients:</b>	<b>Trust</b>	<b>Network</b>	<b>National</b>
– Performance status (%)	90	84	86

<b>Patients having major resection:</b>	<b>Trust</b>	<b>Network</b>	<b>National</b>
Number of patients in Audit	175	2244	18552
ASA grade 1 (%)	2	7	9
ASA grade 2 (%)	52	51	53
ASA grade 3 (%)	39	34	30
ASA grade 4+ (%)	6	3	2
ASA grade not recorded (%)	1	5	6
Data completeness of:			
7 Audit items for risk-adjustment (%)	96	89	89

#### 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	287	3656	29766
Seen by Clinical Nurse Specialist (%)	88	87	86

<b>All patients deemed potentially curative</b>	<b>Trust</b>	<b>Network</b>	<b>National</b>
Number of potentially curative patients	69	881	8157
Undergoing major resection (%)	88	88	83

## 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	175	2244	18515
Distant metastases (%)	12	6	6
Urgent or emergency surgery (%)	16	16	21
At least 12 lymph nodes excised (%)	86	85	86
Laparoscopic surgery attempted (%)	61	72	71

<b>Patients having major resection:</b>	<b>Trust</b>	<b>Network</b>	<b>National</b>
Risk-adjusted length of stay > 5 days (%)	75	58	58

<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	80	1158	10335
Adjuvant chemotherapy (%)	80	67	63

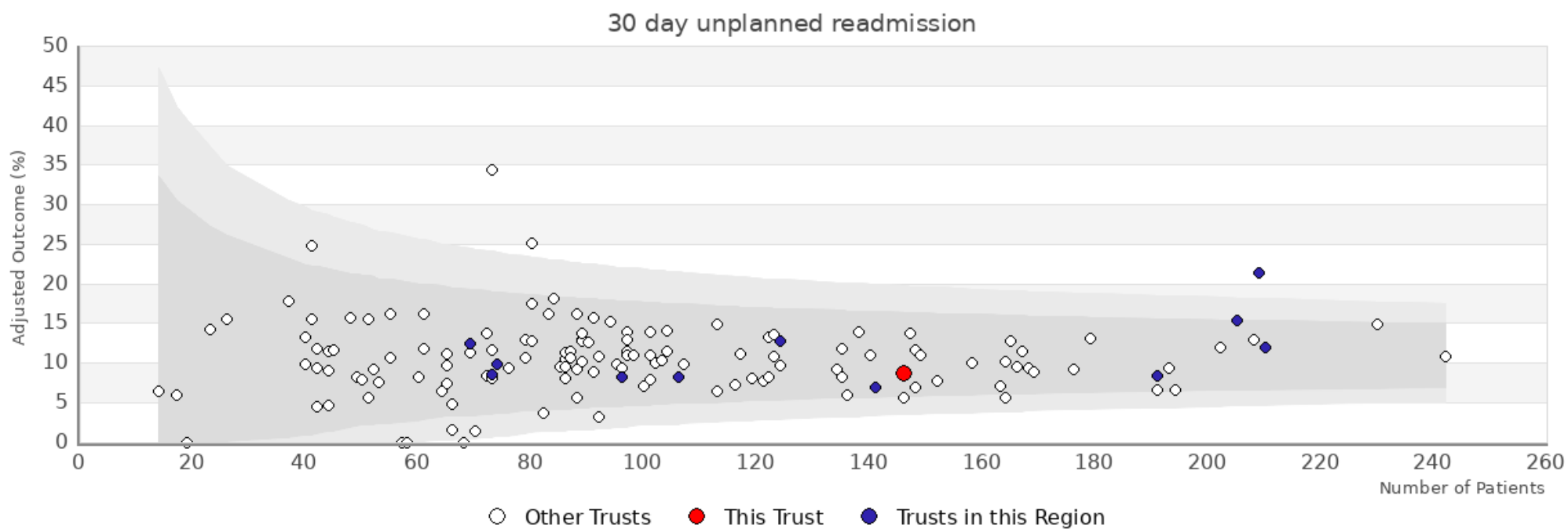
## Rectal cancer patients

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<b>Patients having major resection:</b>	<b>Trust</b>	<b>Network</b>	<b>National</b>
Number of patients in Audit	51	538	4137
Neoadjuvant therapy (%)	41	34	34
Circumferential resection margin: Recorded (%)	92	92	90
Circumferential resection margin: Negative (%)	84	86	84
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	191	2151	17956

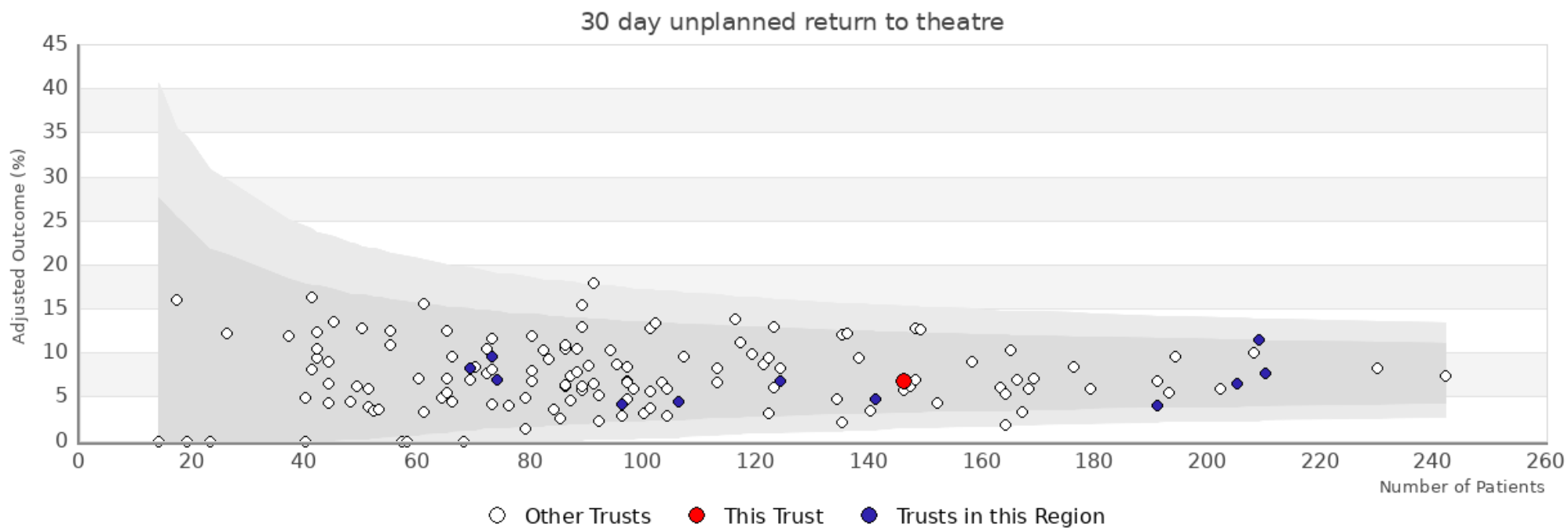
<b>Patients in APER/Hartmanns estimate:</b>	<b>Trust</b>	<b>Network</b>	<b>National</b>
APER/Hartmanns (%)	21	33	37



Trust	Number	Adjusted	Observed
The Royal Wolverhampton NHS Trust	146	8.6%	8.9%
Other trusts within the region: West Midlands			
George Eliot Hospital NHS Trust	69	12.4%	13%
Sandwell and West Birmingham Hospitals NHS Trust	106	8.2%	8.5%



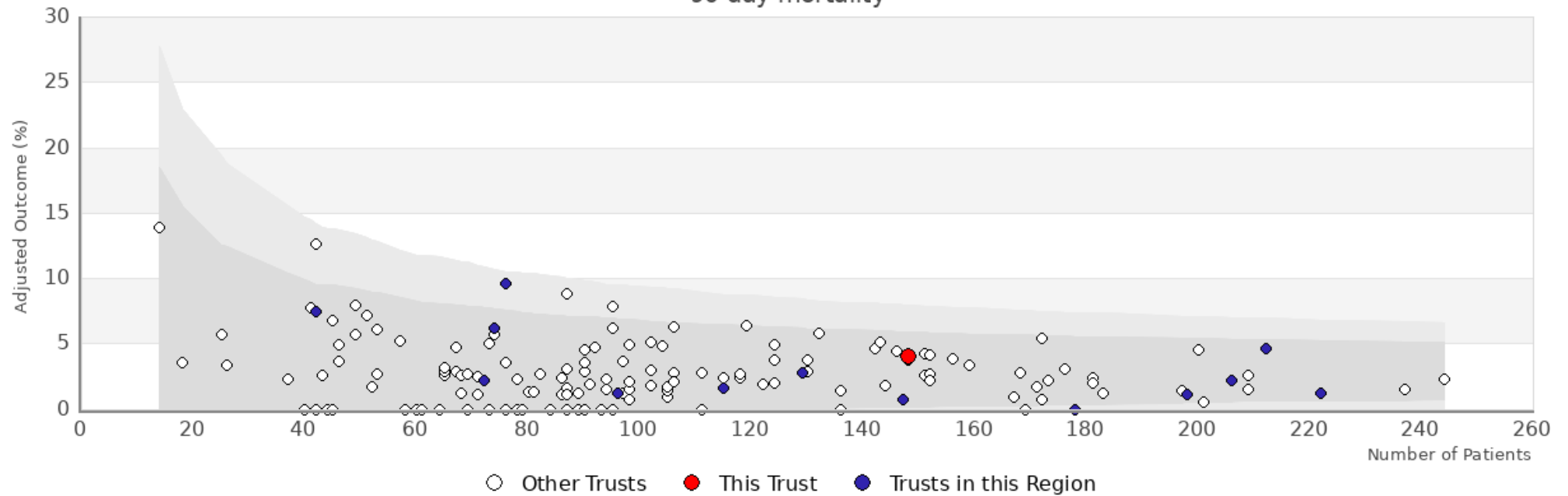
Trust	Number	Adjusted	Observed
Shrewsbury and Telford Hospital NHS Trust	205	15.4%	15.6%
South Warwickshire NHS Foundation Trust	96	8.3%	8.3%
The Dudley Group NHS Foundation Trust	124	12.7%	12.9%
University Hospitals Coventry and Warwickshire NHS Trust	141	6.9%	7.1%
University Hospitals of North Midlands NHS Trust	209	21.4%	21.1%
University Hospitals Birmingham NHS Foundation Trust	210	11.9%	11.9%
Walsall Healthcare NHS Trust	74	9.8%	9.5%
Worcestershire Acute Hospitals NHS Trust	191	8.3%	8.4%
Wye Valley NHS Trust	73	8.5%	8.2%



Trust	Number	Adjusted	Observed
The Royal Wolverhampton NHS Trust	146	6.9%	7.5%
Other trusts within the region: West Midlands			
George Eliot Hospital NHS Trust	69	8.3%	8.7%
Sandwell and West Birmingham Hospitals NHS Trust	106	4.4%	4.7%

Trust	Number	Adjusted	Observed
Shrewsbury and Telford Hospital NHS Trust	205	6.6%	6.8%
South Warwickshire NHS Foundation Trust	96	4.2%	4.2%
The Dudley Group NHS Foundation Trust	124	6.8%	7.3%
University Hospitals Coventry and Warwickshire NHS Trust	141	4.8%	5%
University Hospitals of North Midlands NHS Trust	209	11.5%	11%
University Hospitals Birmingham NHS Foundation Trust	210	7.7%	7.6%
Walsall Healthcare NHS Trust	74	6.9%	6.8%
Worcestershire Acute Hospitals NHS Trust	191	4.1%	4.2%
Wye Valley NHS Trust	73	9.6%	9.6%

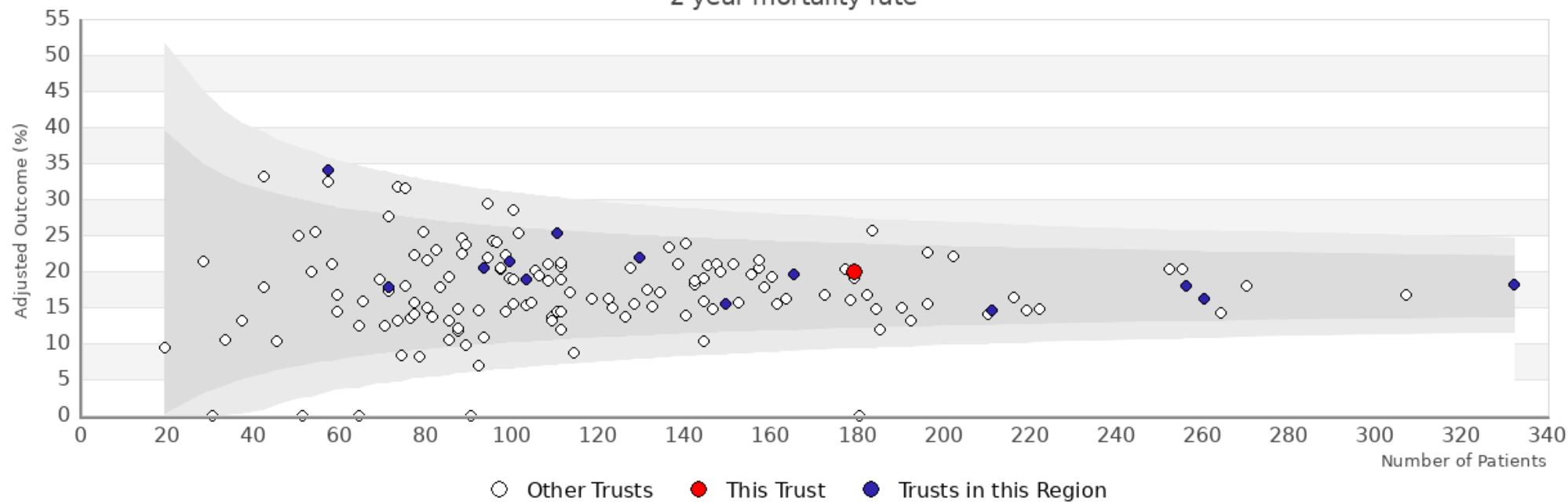
90 day mortality



Trust	Number	Adjusted	Observed
The Royal Wolverhampton NHS Trust	148	4%	6.8%
Other trusts within the region: West Midlands			
George Eliot Hospital NHS Trust	72	2.2%	2.8%
Sandwell and West Birmingham Hospitals NHS Trust	115	1.6%	2.6%

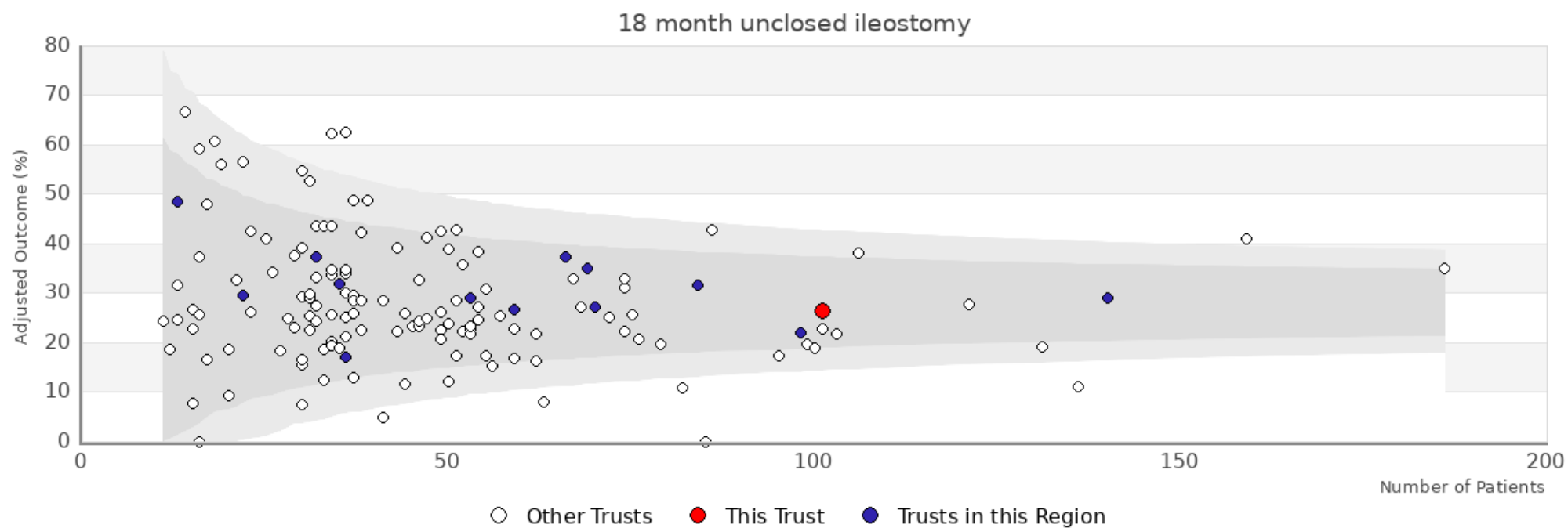
Trust	Number	Adjusted	Observed
Shrewsbury and Telford Hospital NHS Trust	206	2.2%	1.9%
South Warwickshire NHS Foundation Trust	96	1.2%	1%
The Dudley Group NHS Foundation Trust	129	2.8%	3.9%
University Hospitals Coventry and Warwickshire NHS Trust	147	0.7%	0.7%
University Hospitals of North Midlands NHS Trust	212	4.6%	4.3%
University Hospitals Birmingham NHS Foundation Trust	222	1.3%	1.4%
University Hospitals of Derby and Burton NHS Foundation Trust - Queens Hospital (Burton)	42	7.5%	11.9%
Walsall Healthcare NHS Trust	76	9.6%	10.5%
Worcestershire Acute Hospitals NHS Trust	198	1.2%	1%
Wye Valley NHS Trust	74	6.2%	6.8%

2 year mortality rate



Trust	Number	Adjusted	Observed
The Royal Wolverhampton NHS Trust	179	19.9%	23.2%
Other trusts within the region: West Midlands			
George Eliot Hospital NHS Trust	71	17.7%	19%
Sandwell and West Birmingham Hospitals NHS Trust	129	21.9%	23%

<b>Trust</b>	<b>Number</b>	<b>Adjusted</b>	<b>Observed</b>
Shrewsbury and Telford Hospital NHS Trust	211	14.6%	16%
South Warwickshire NHS Foundation Trust	93	20.6%	20.7%
The Dudley Group NHS Foundation Trust	110	25.3%	22.6%
University Hospitals Coventry and Warwickshire NHS Trust	149	15.4%	15.3%
University Hospitals of North Midlands NHS Trust	256	18%	18.1%
University Hospitals Birmingham NHS Foundation Trust	332	18.1%	16.4%
University Hospitals of Derby and Burton NHS Foundation Trust - Queens Hospital (Burton)	103	18.9%	26.5%
University Hospitals of Derby and Burton NHS Foundation Trust - Royal Derby Hospital	165	19.6%	18.4%
Walsall Healthcare NHS Trust	57	34.1%	41.5%
Worcestershire Acute Hospitals NHS Trust	260	16.3%	17.8%
Wye Valley NHS Trust	99	21.3%	20.2%



Trust	Number	Adjusted	Observed
The Royal Wolverhampton NHS Trust	101	26.4%	28.7%
Other trusts within the region: West Midlands			
George Eliot Hospital NHS Trust	13	48.4%	53.9%
Sandwell and West Birmingham Hospitals NHS Trust	69	35%	36.2%



Trust	Number	Adjusted	Observed
Shrewsbury and Telford Hospital NHS Trust	66	37.4%	39.4%
South Warwickshire NHS Foundation Trust	36	17%	16.7%
The Dudley Group NHS Foundation Trust	59	26.7%	30.5%
University Hospitals Coventry and Warwickshire NHS Trust	53	29.1%	28.3%
University Hospitals of North Midlands NHS Trust	70	27.2%	27.1%
University Hospitals Birmingham NHS Foundation Trust	140	29.1%	28.6%
University Hospitals of Derby and Burton NHS Foundation Trust - Queens Hospital (Burton)	35	31.8%	37.1%
University Hospitals of Derby and Burton NHS Foundation Trust - Royal Derby Hospital	84	31.6%	31%
Walsall Healthcare NHS Trust	22	29.4%	31.8%
Worcestershire Acute Hospitals NHS Trust	98	22.1%	22.5%
Wye Valley NHS Trust	32	37.4%	40.6%