

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/fag/>](https://www.nboca.org.uk/about/fag/) 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: | | | |
| – Pre-treatment TNM (%) | 76 | 83 | 80 |

| All Patients: | Trust | Network | National |
|--------------------------|--------------|----------------|-----------------|
| – Performance status (%) | 75 | 88 | 86 |

| Patients having major resection: | Trust | Network | National |
|---|--------------|----------------|-----------------|
| 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

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

| All patients deemed potentially curative | Trust | Network | National |
|---|--------------|----------------|-----------------|
| Number of potentially curative patients | 101 | 342 | 7416 |
| Undergoing major resection (%) | 80 | 86 | 86 |

Management of patients having major resection

| Patients having major resection: | Trust | Network | National |
|---|--------------|----------------|-----------------|
| 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 |

| Patients having major resection: | Trust | Network | National |
|---|--------------|----------------|-----------------|
| Risk-adjusted length of stay > 5 days (%) | 74 | 67 | 62 |

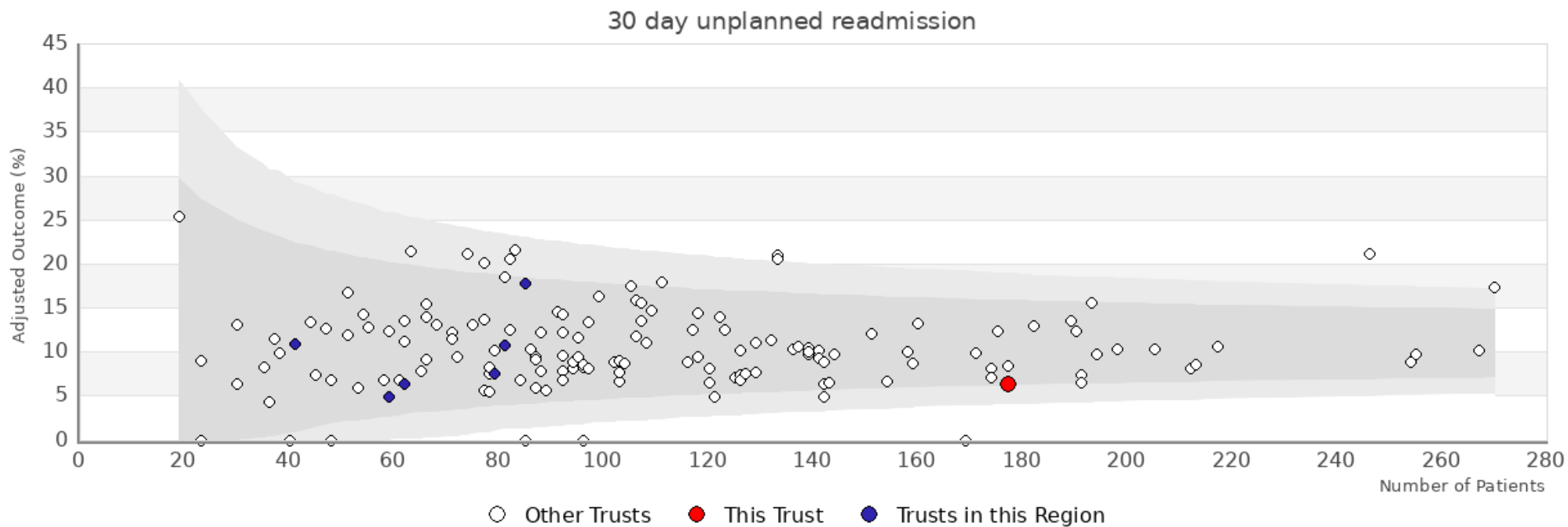
| Patients having major resection for stage III colon cancer: | Trust | Network | National |
|--|--------------|----------------|-----------------|
| Number of patients in audit | 177 | 623 | 11837 |
| Adjuvant chemotherapy (%) | 59 | 57 | 62 |

Rectal cancer patients

| Patients having major resection: | Trust | Network | National |
|--|--------------|----------------|-----------------|
| 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 |

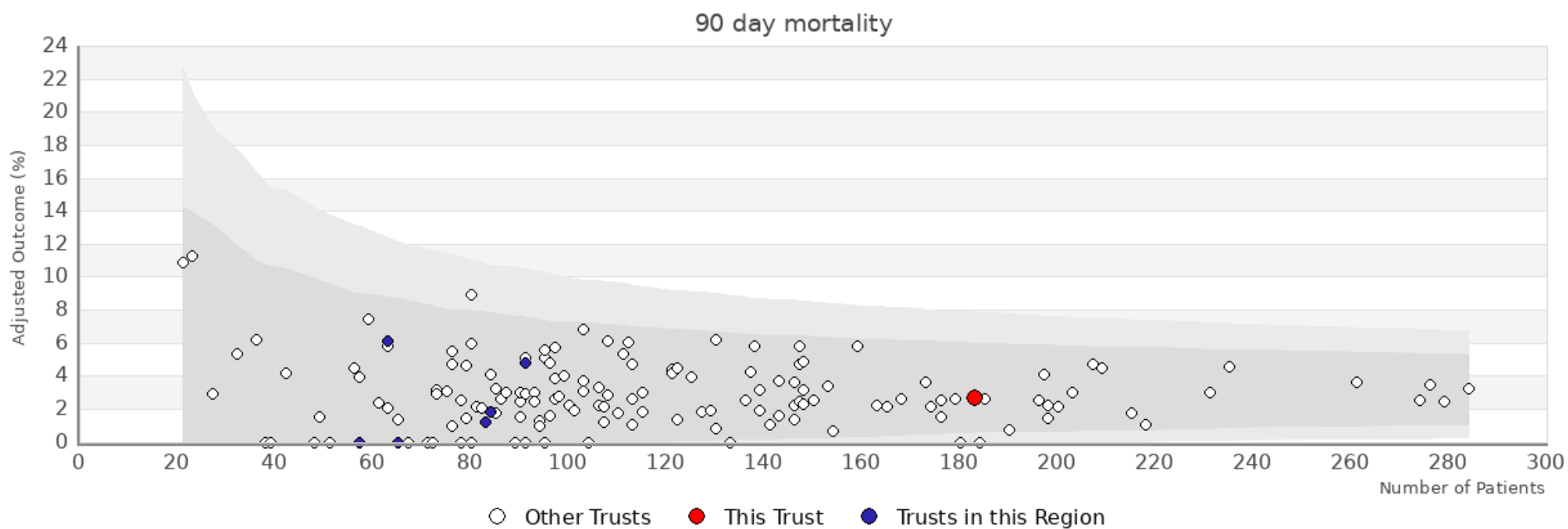
| Patients in APER/Hartmanns estimate: | Trust | Network | National |
|---|--------------|----------------|-----------------|
| Number of patients in APER/Hartmanns estimate | N/A | N/A | N/A |

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



| Trust | Number | Adjusted | Observed |
|--|--------|----------|----------|
| 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% |

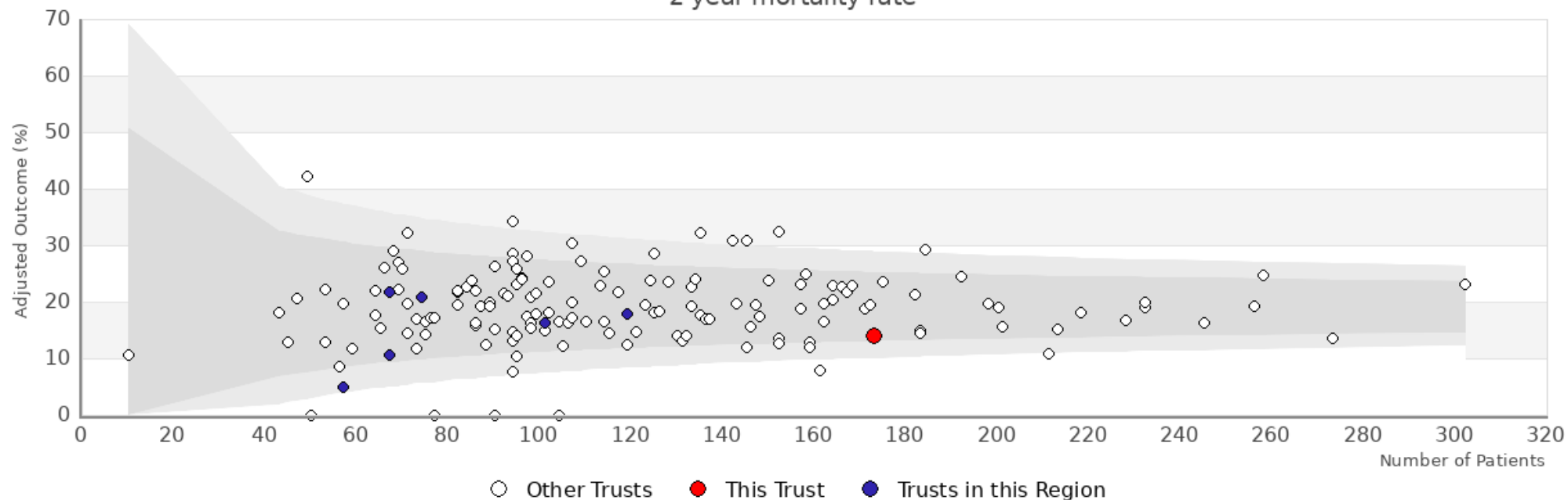
| Trust | Number | Adjusted | Observed |
|--|--------|----------|----------|
| Stockport NHS Foundation Trust | 81 | 10.7% | 11.1% |
| Tameside Hospital NHS Foundation Trust | 62 | 6.4% | 6.5% |
| The Christie NHS Foundation Trust | 41 | 11% | 12.2% |
| Wrightington, Wigan and Leigh NHS Foundation Trust | 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% |

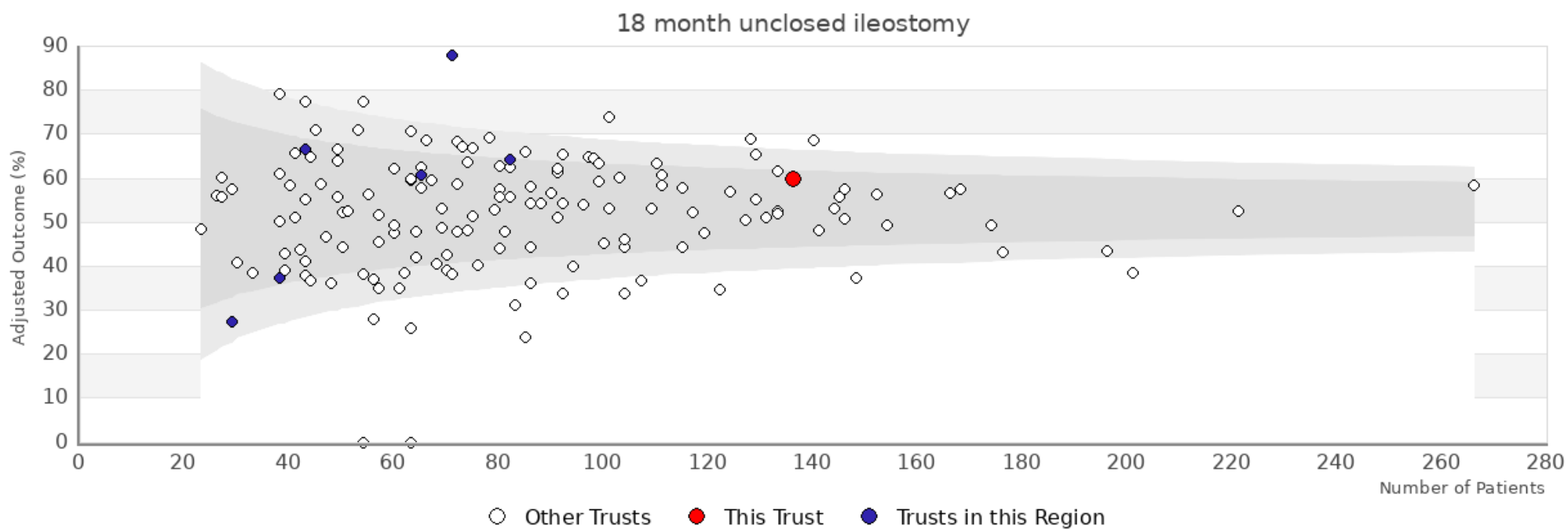
| Trust | Number | Adjusted | Observed |
|--|--------|----------|----------|
| Tameside Hospital NHS Foundation Trust | 63 | 6.2% | 9.5% |
| Wrightington, Wigan and Leigh NHS Foundation Trust | 91 | 4.8% | 4.4% |

2 year mortality rate



| 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% |

| Trust | Number | Adjusted | Observed |
|--|--------|----------|----------|
| 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% |

| Trust | Number | Adjusted | Observed |
|--|--------|----------|----------|
| 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% |