

## 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 2015 – 31 Mar 2016. 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 2013 and 31 March 2014. 18-month stoma rates include rectal cancer patients undergoing a major resection between 1 April 2012 and 31 March 2015.

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, and to the National Radiotherapy Dataset (RTDS) for information on radiotherapy treatment in England.

## 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.

### 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.

## 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.

## 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 with 18 months of the initial surgical procedure.

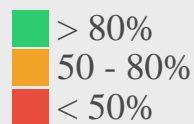
See [FAQs <https://www.nboca.org.uk/about/faq/>](https://www.nboca.org.uk/about/faq/) for more details.

## Data Quality

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<b>All Patients:</b>	<b>Trust</b>	<b>Network</b>	<b>National</b>
Number of patients in Audit	220	1602	30710
Case ascertainment (%)	106	103	95
Data completeness of:			
– Pre-treatment TNM (%)	87	72	76
– Performance status (%)	91	95	83

<b>Patients having major resection:</b>	<b>Trust</b>	<b>Network</b>	<b>National</b>
Number of patients in Audit	118	1006	19231
ASA grade 1 (%)	11	9	12
ASA grade 2 (%)	59	57	53
ASA grade 3 (%)	25	26	27
ASA grade 4+ (%)	2	3	3
ASA grade not recorded (%)	3	4	6
Data completeness of:			
7 Audit items for risk-adjustment (%)	75	76	81

**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	220	1602	30710
Seen by Clinical Nurse Specialist (%)	98	95	91

## 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	118	1006	19231
Distant metastases (%)	8	9	9
Urgent or emergency surgery (%)	13	17	16
At least 12 lymph nodes excised (%)	93	87	84
Laparoscopic surgery attempted (%)	50	55	63

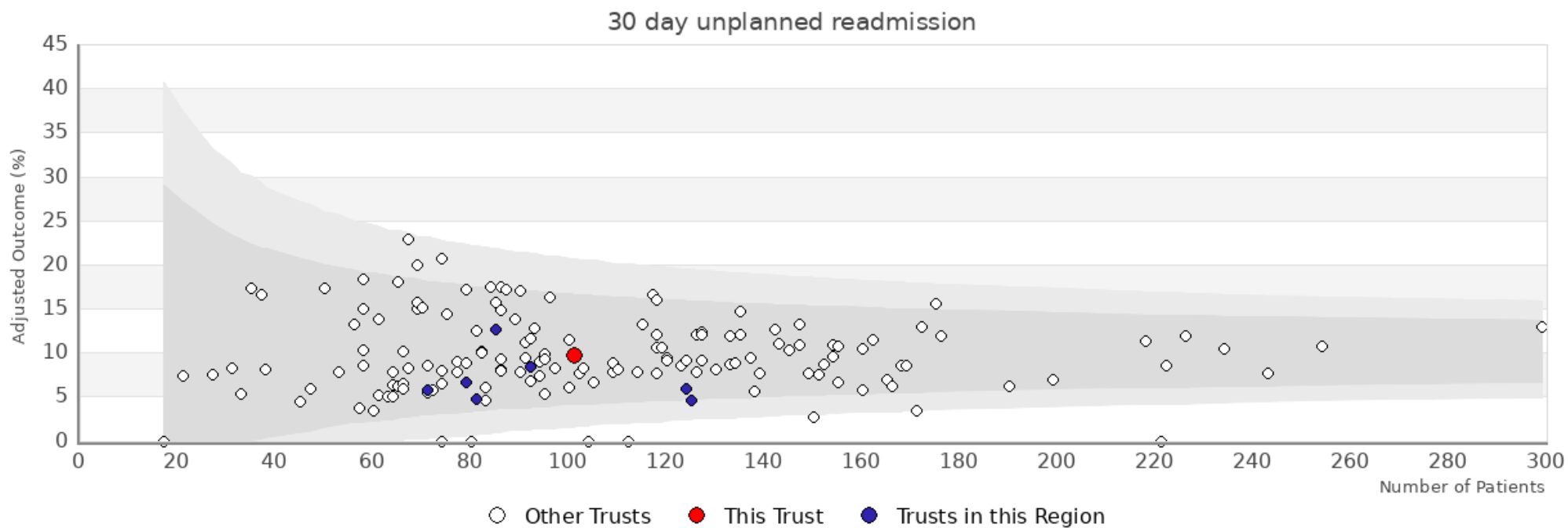
<b>Patients having major resection:</b>	<b>Trust</b>	<b>Network</b>	<b>National</b>
Risk-adjusted length of stay > 5 days (%)	74	76	69

## 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	18	219	4468
Neoadjuvant therapy (%)	50	44	35
Circumferential resection margin: Recorded (%)	78	63	26
Circumferential resection margin: Positive (%)	22	8	7
Rectal volume	N/A	N/A	N/A

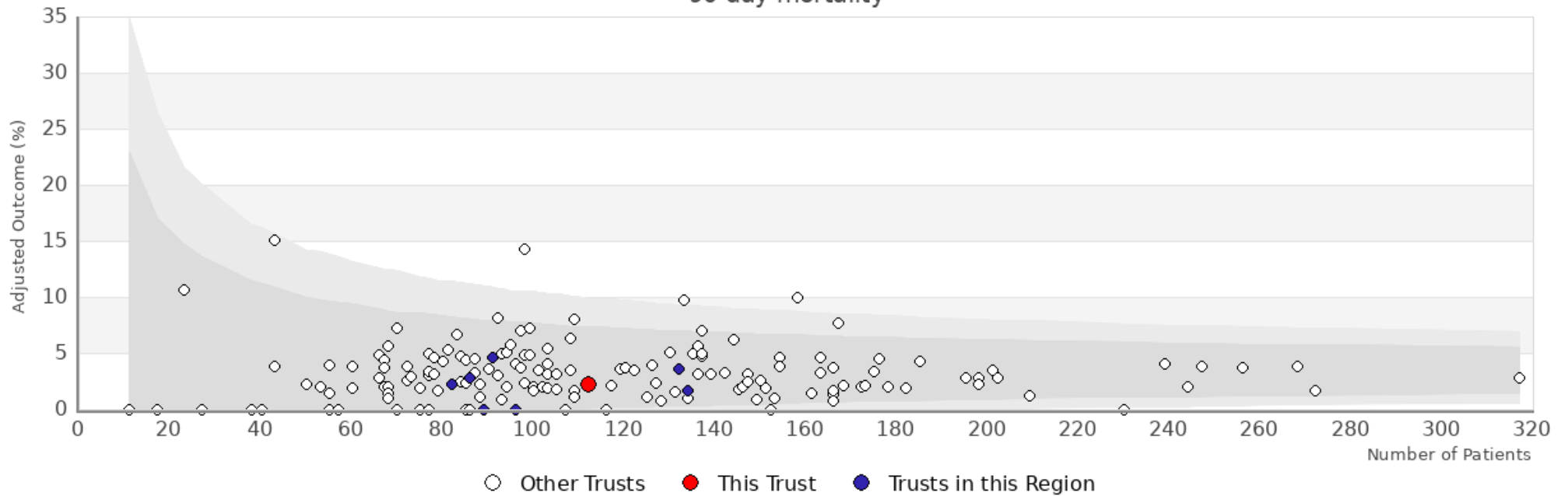
<b>Patients in APER/Hartmanns estimate:</b>	<b>Trust</b>	<b>Network</b>	<b>National</b>
Number of patients in APER/Hartmanns estimate	N/A	N/A	N/A
APER/Hartmanns (%)	N/A	N/A	N/A



Trust	Number	Adjusted	Observed
Aintree University Hospital NHS Foundation Trust	101	9.7%	9.9%
Other trusts within the region: Cheshire and Merseyside			
Countess of Chester Hospital NHS Foundation Trust	92	8.4%	8.7%
East Cheshire NHS Trust	79	6.7%	6.3%

Trust	Number	Adjusted	Observed
Mid Cheshire Hospitals NHS Foundation Trust	81	4.7%	4.9%
Southport and Ormskirk Hospital NHS Trust	71	5.9%	5.6%
St Helens and Knowsley Hospitals NHS Trust	125	4.7%	4.8%
Warrington and Halton Hospitals NHS Foundation Trust	85	12.6%	12.9%
Wirral University Teaching Hospital NHS Foundation Trust	124	5.9%	5.7%

90 day mortality

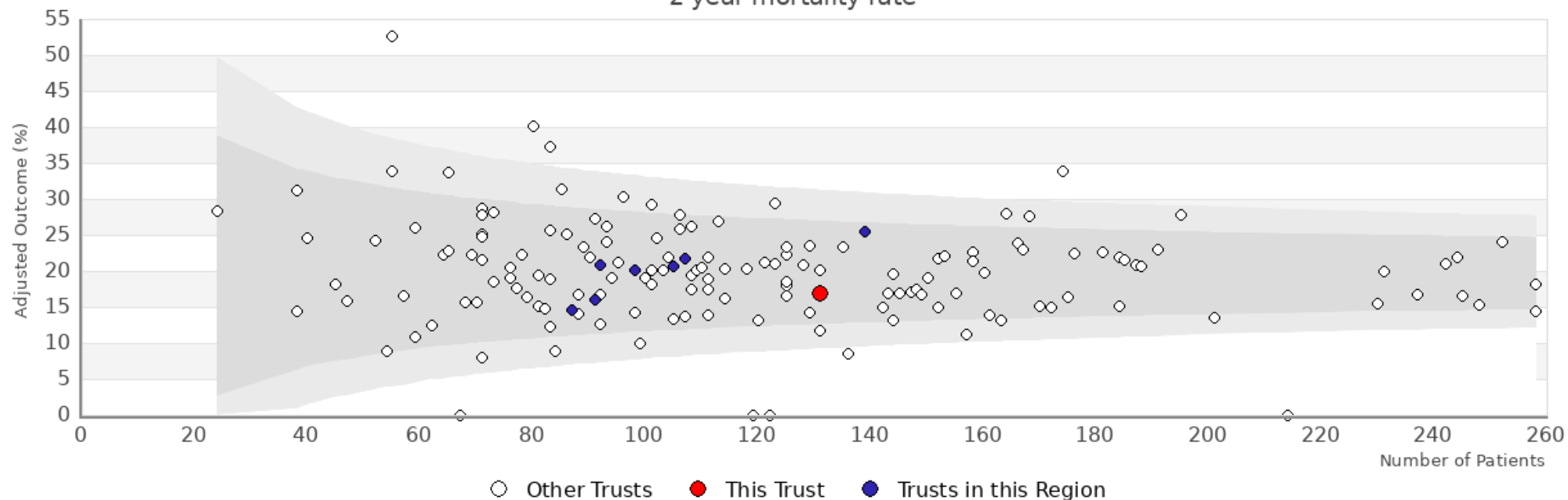


Trust	Number	Adjusted	Observed
Aintree University Hospital NHS Foundation Trust	112	2.3%	1.8%
Other trusts within the region: Cheshire and Merseyside			
East Cheshire NHS Trust	86	2.7%	3.5%
Southport and Ormskirk Hospital NHS Trust	82	2.2%	2.4%



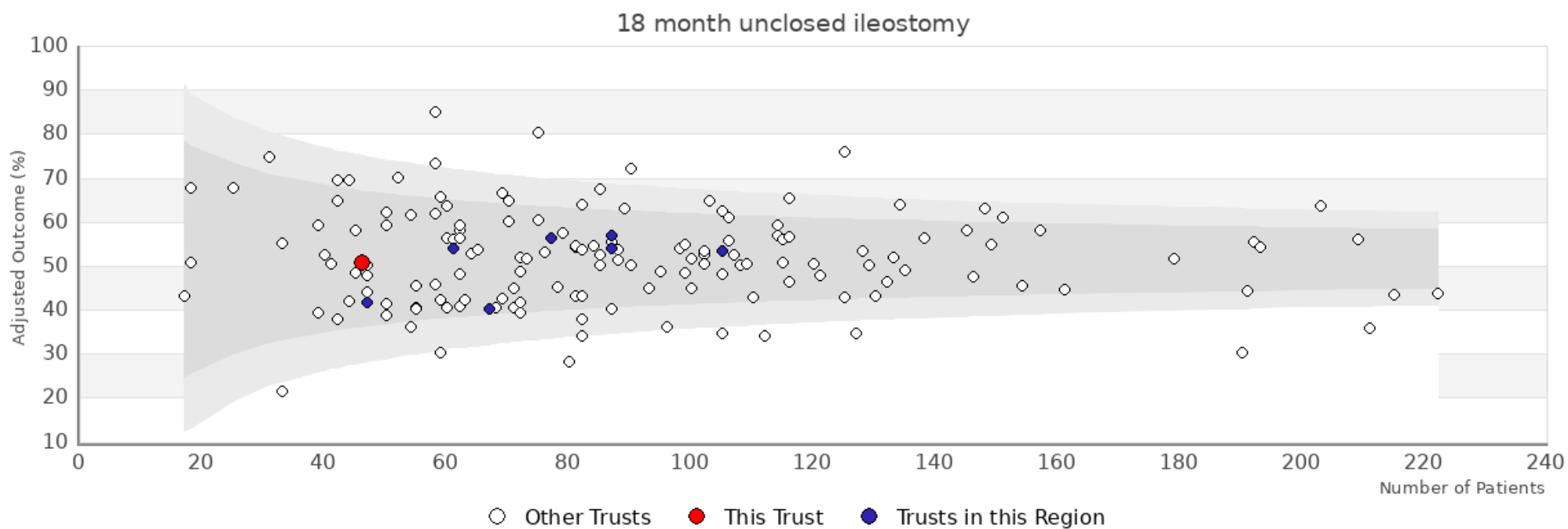
Trust	Number	Adjusted	Observed
St Helens and Knowsley Hospitals NHS Trust	132	3.6%	5.3%
Warrington and Halton Hospitals NHS Foundation Trust	91	4.6%	6.6%
Wirral University Teaching Hospital NHS Foundation Trust	134	1.6%	1.5%

2 year mortality rate



Trust	Number	Adjusted	Observed
Aintree University Hospital NHS Foundation Trust	131	16.9%	15.7%
Other trusts within the region: Cheshire and Merseyside			
Countess of Chester Hospital NHS Foundation Trust	105	20.7%	20%
East Cheshire NHS Trust	87	14.5%	17.5%

Trust	Number	Adjusted	Observed
Mid Cheshire Hospitals NHS Foundation Trust	91	16.1%	12.9%
Southport and Ormskirk Hospital NHS Trust	92	20.9%	22.2%
St Helens and Knowsley Hospitals NHS Trust	139	25.5%	35.2%
Warrington and Halton Hospitals NHS Foundation Trust	98	20.1%	15.6%
Wirral University Teaching Hospital NHS Foundation Trust	107	21.7%	20.4%



Trust	Number	Adjusted	Observed
Aintree University Hospital NHS Foundation Trust	46	50.9%	50%
Other trusts within the region: Cheshire and Merseyside			
Countess of Chester Hospital NHS Foundation Trust	87	57%	56.3%
East Cheshire NHS Trust	61	54.2%	54.1%

Trust	Number	Adjusted	Observed
Mid Cheshire Hospitals NHS Foundation Trust	77	56.3%	52%
Southport and Ormskirk Hospital NHS Trust	47	41.8%	40.4%
St Helens and Knowsley Hospitals NHS Trust	105	53.4%	56.2%
Warrington and Halton Hospitals NHS Foundation Trust	87	54.2%	54%
Wirral University Teaching Hospital NHS Foundation Trust	67	40.2%	38.8%