Radiotherapy Costing and Tariff Development

Delivering a National Tariff for Radiotherapy

15 March 2011

NHS
National Cancer Action Team

BAILEY & MOORE

Background

* High degree of variation within Reference Costs for radiotherapy
* Concerns over impact of moving to a tariff system
* NCAT introduced costing template to allow costs to be compared
* Visited all providers and network leads to understand the local differences that contribute to this variation

The National Picture

* Meetings were organised with 49 English radiotherapy providers in May/June 2010, with the purpose of:
  * Ensuring a consistent and accurate approach to counting activity
  * Promoting a robust costing methodology, in line with national standards
  * Gaining an overview of the significant factors that will make Trust reference costs vary compared to their peers

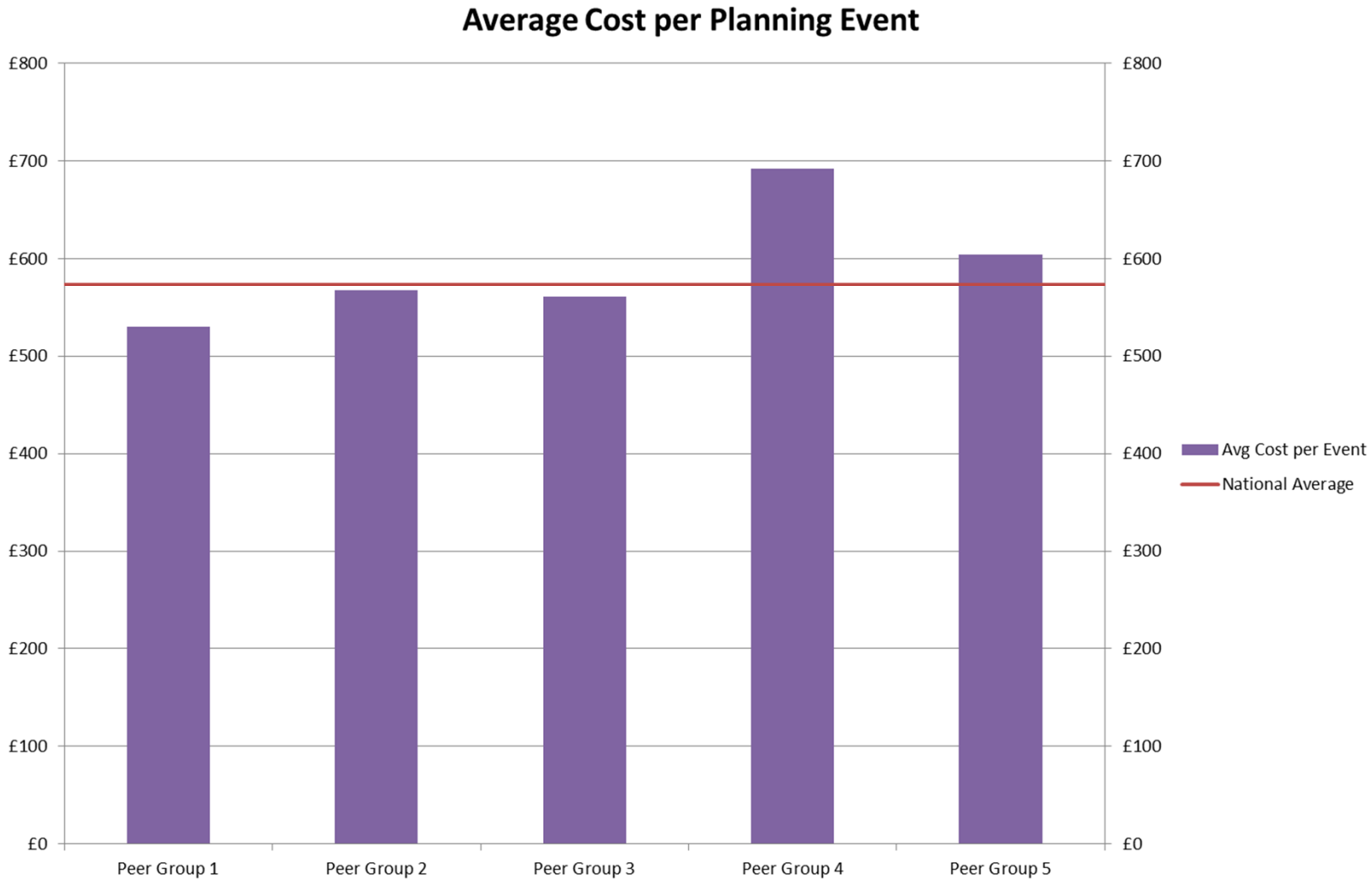
The National Picture

* Meetings followed standard format
* Discussed key issues affecting costing of radiotherapy services and variables that might affect the cost
* What issues make this provider different?
* Discussed 2008/09 Reference Costs and costing template if available

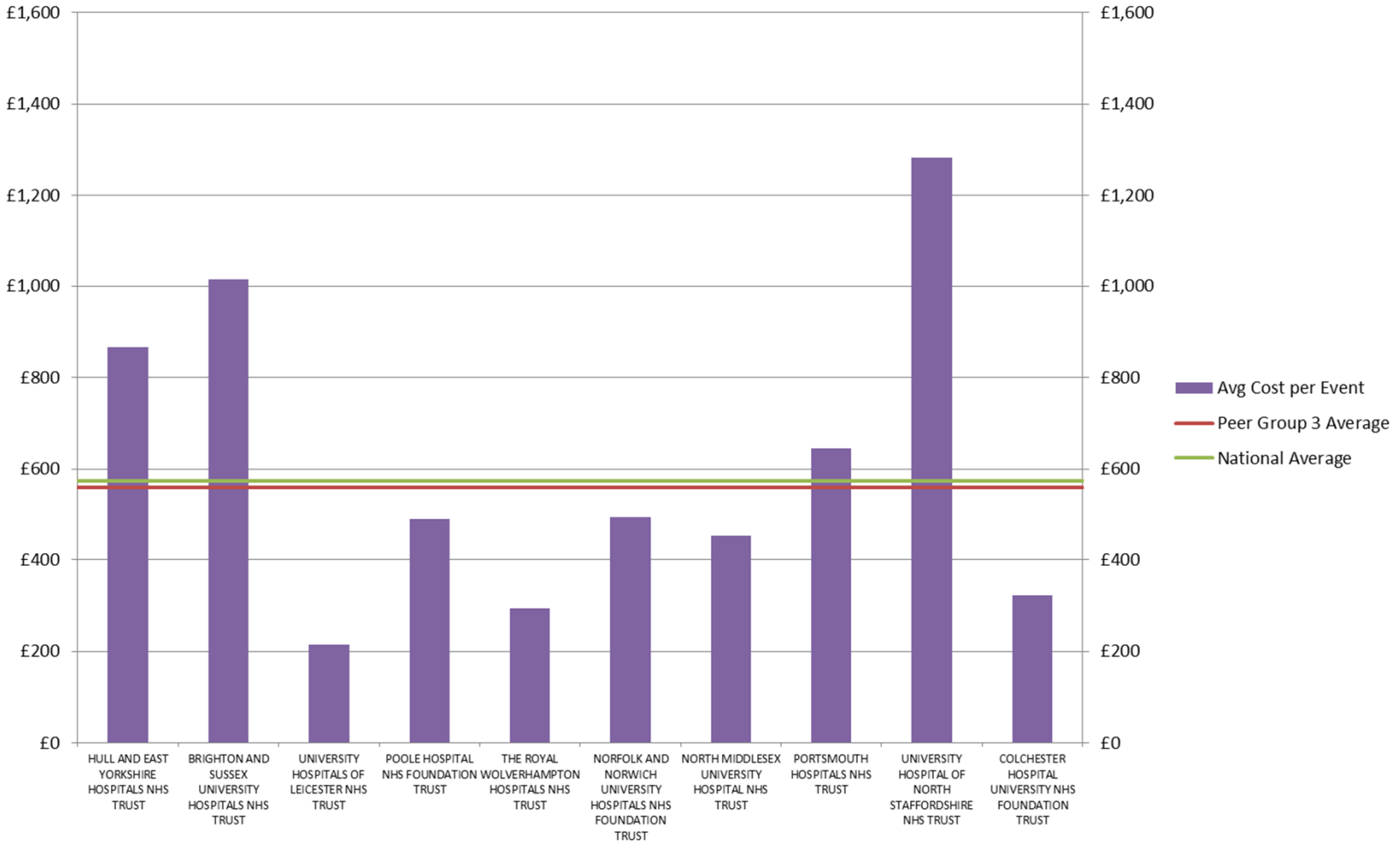
Meeting Radiotherapy providers

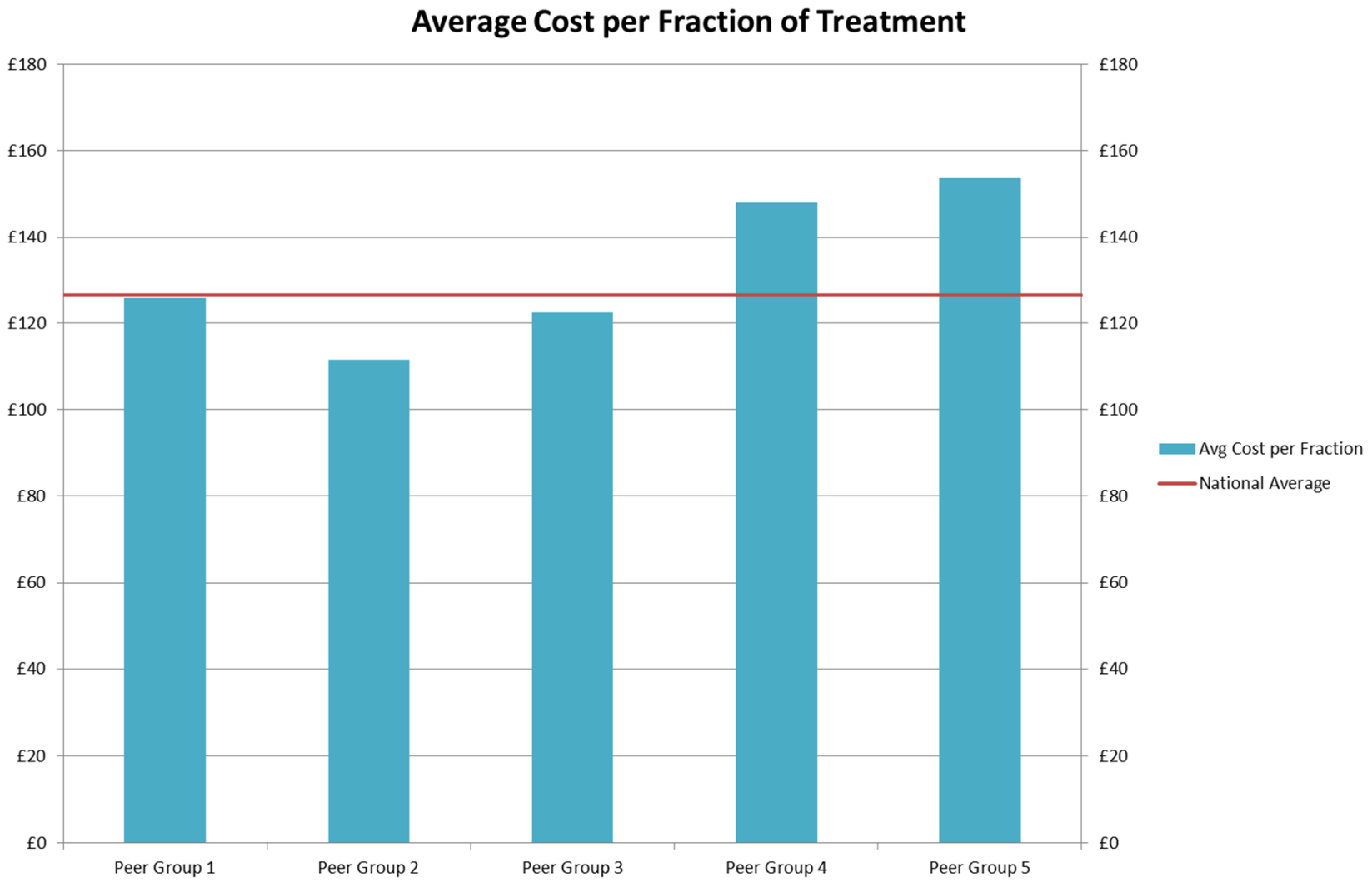
* Each provider was benchmarked against peer group and national averages:
  - Average unit cost of planning event
  - Average unit cost of fraction of treatment
  - Fractions per planning event
  - Split of costs planning v treatment
  - Fractions & cost quantum per Linacs

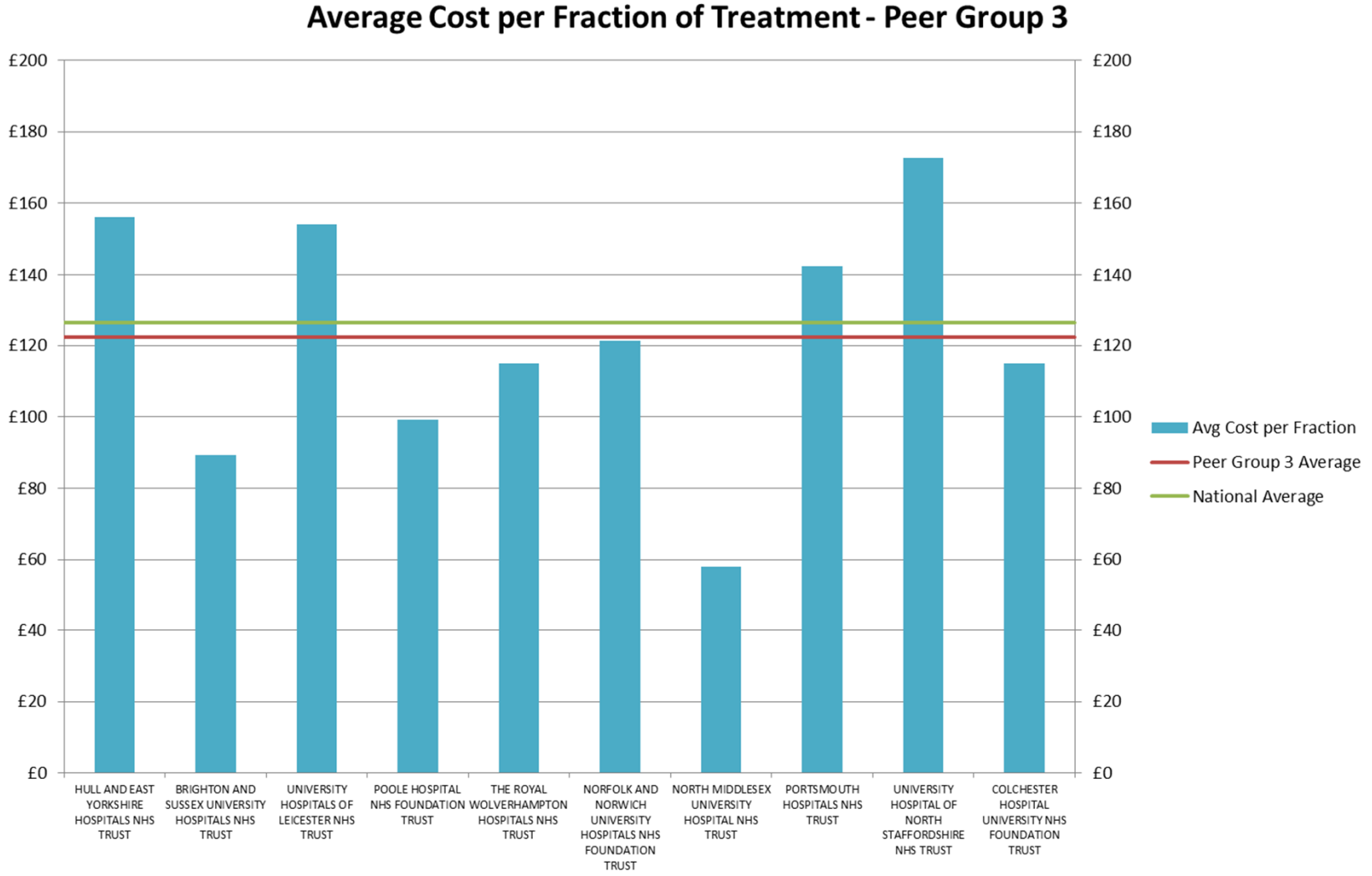
Reference Costs 2009/10


Average Cost per Planning Event
£800
£700
£600
£500
£400
£300
£200
£100
£0
Peer Group 1
Peer Group 2
Peer Group 3
Peer Group 4
Peer Group 5
Avg Cost per Event
National Average

Average Cost per Planning Event - Peer Group 3




Average Cost per Fraction of Treatment
£180
£160
£140
£120
£100
£80
£60
£40
£20
£0
Peer Group 1
Peer Group 2
Peer Group 3
Peer Group 4
Peer Group 5
Avg Cost per Fraction
National Average


Average Cost per Fraction of Treatment - Peer Group 3
£200
£180
£160
£140
£120
£100
£80
£60
£40
£20
£0
HULL AND EAST YORKSHIRE HOSPITALS NHS TRUST
BRIGHTON AND SUSSEX UNIVERSITY HOSPITALS NHS TRUST
UNIVERSITY HOSPITALS OF LEICESTER NHS TRUST
POOLE HOSPITAL NHS FOUNDATION TRUST
THE ROYAL WOLVERHAMPTON HOSPITALS NHS TRUST
NORFOLK AND NORWICH UNIVERSITY HOSPITALS NHS FOUNDATION TRUST
NORTH MIDDLESEX UNIVERSITY HOSPITAL NHS TRUST
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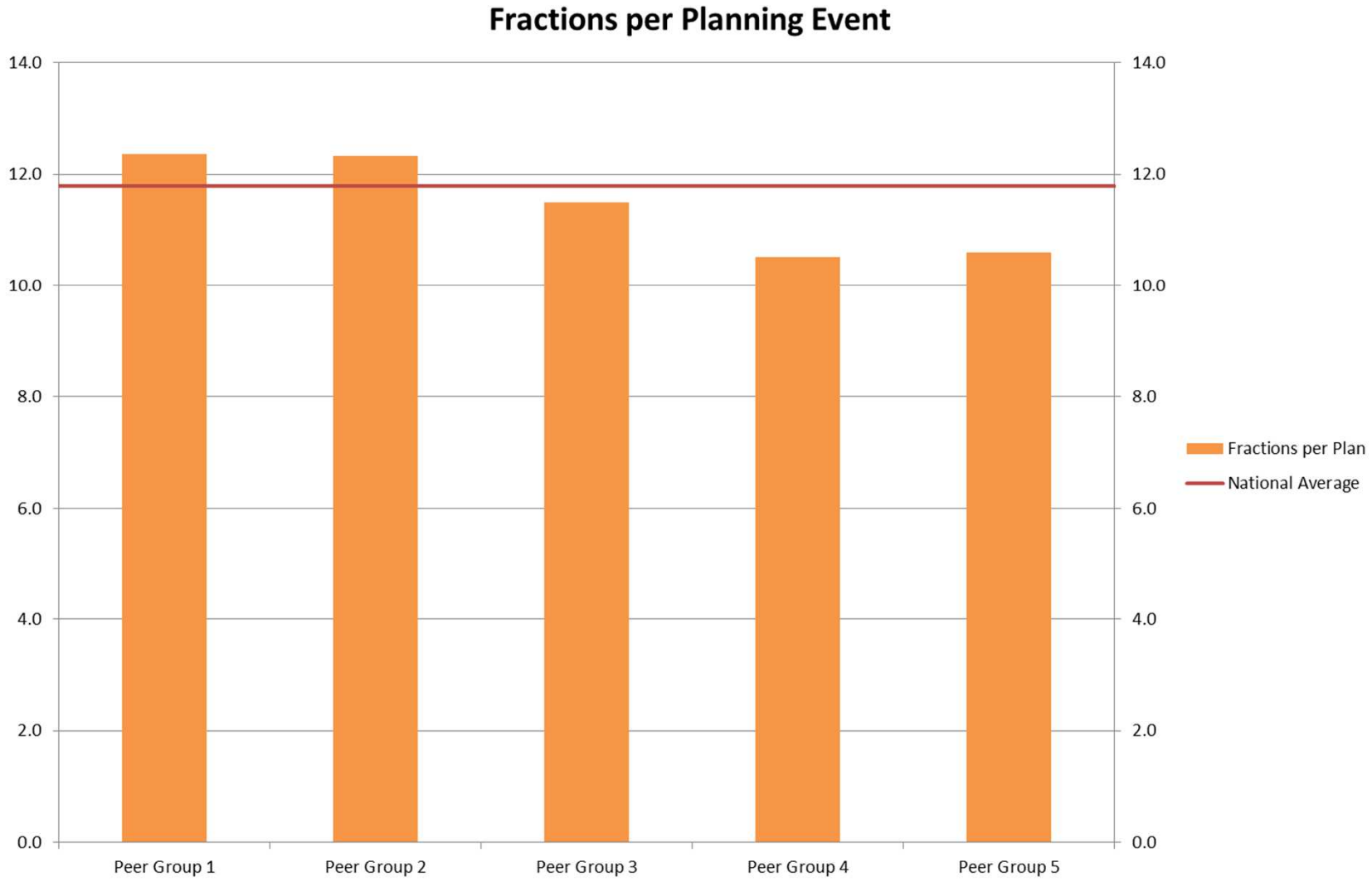
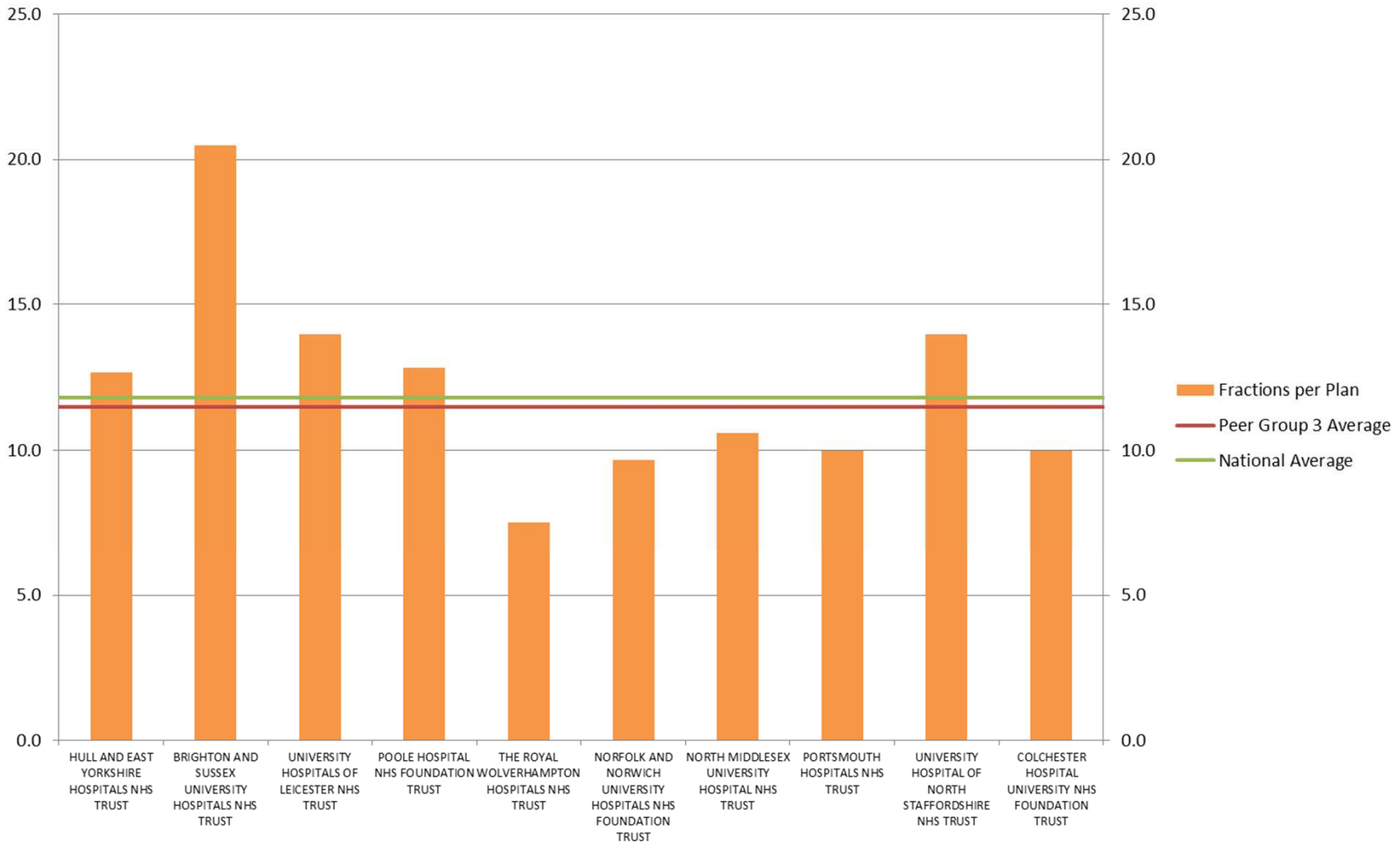
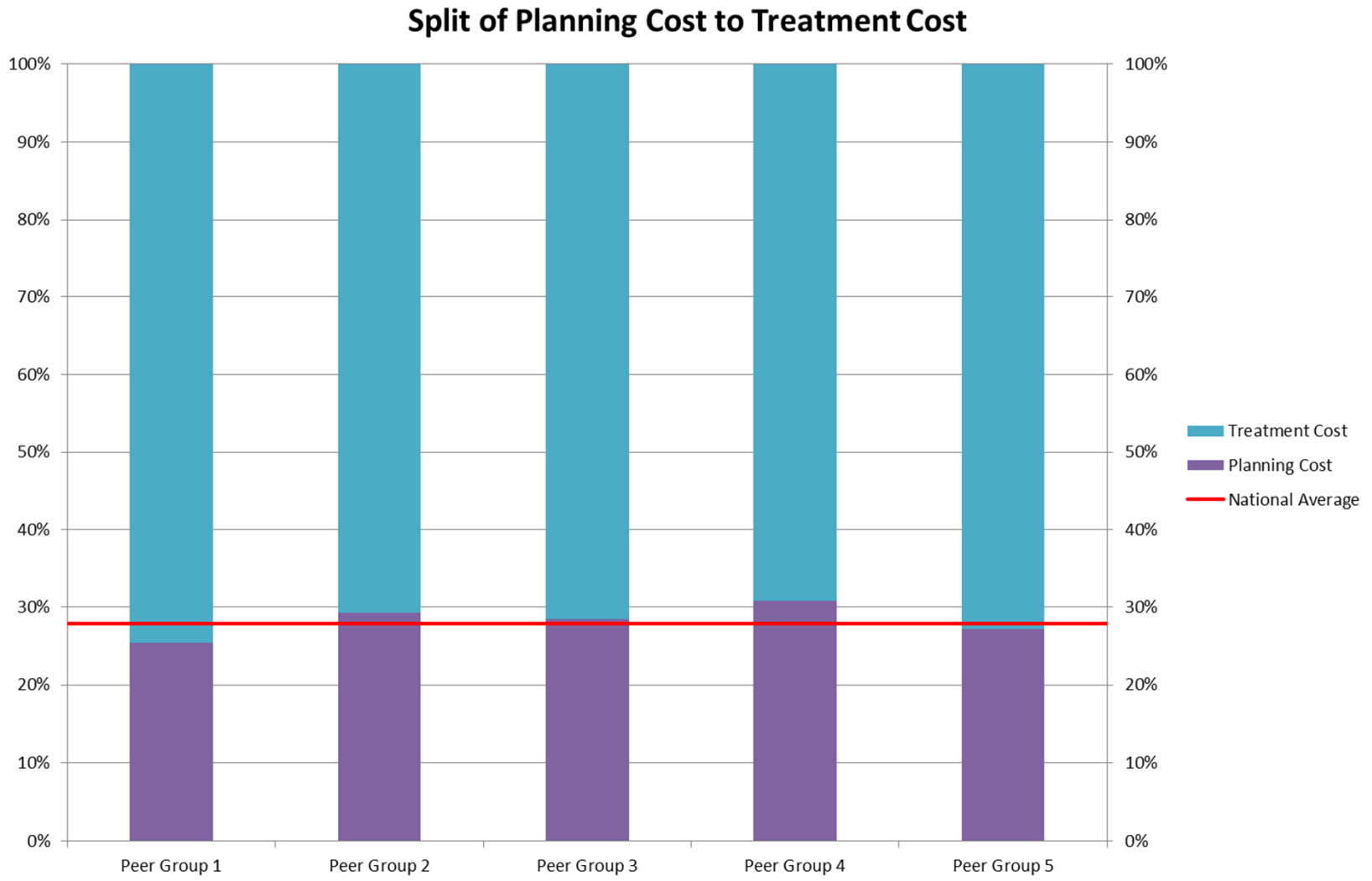
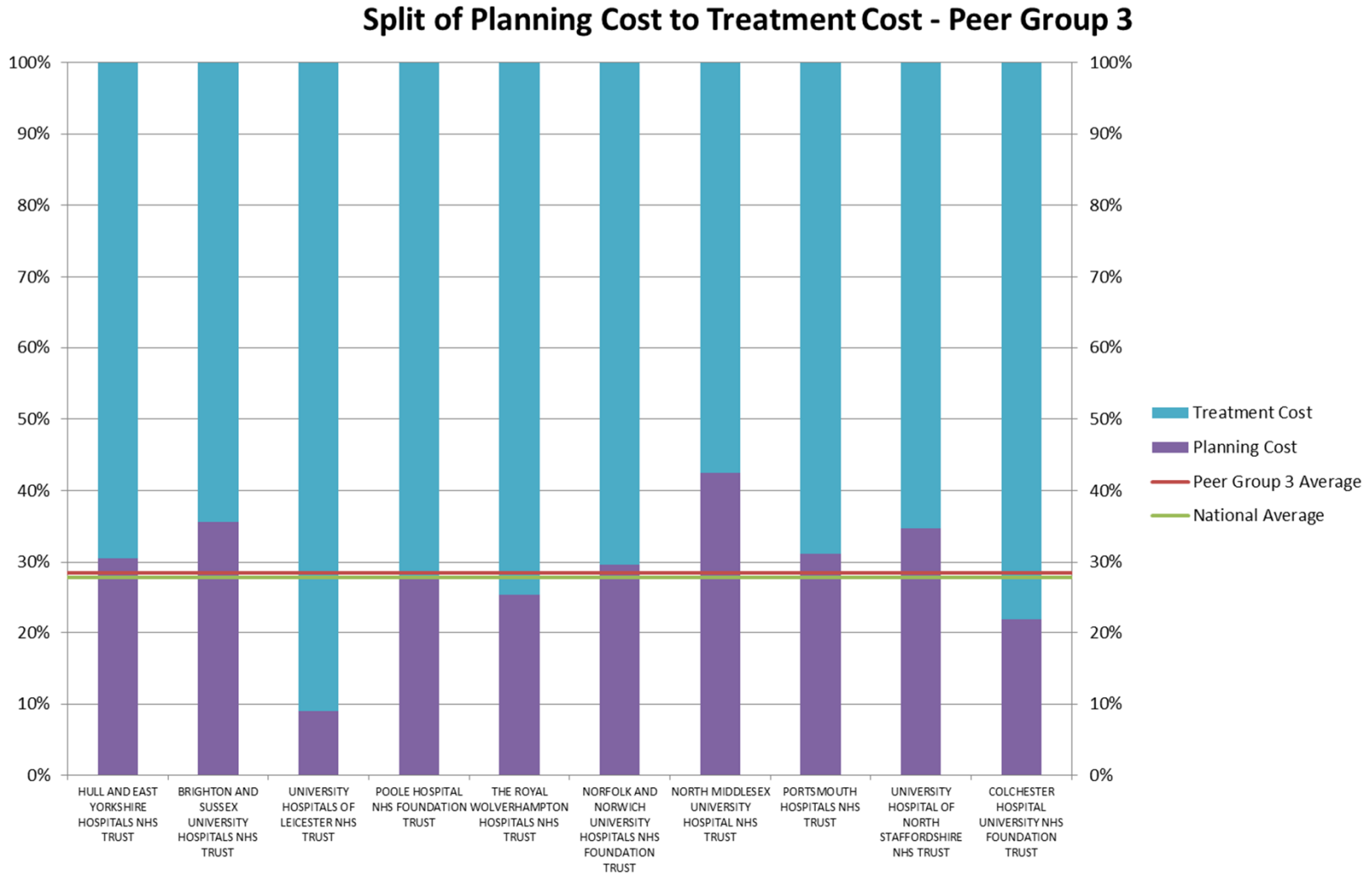
UNIVERSITY HOSPITAL OF NORTH STAFFORDSHIRE NHS TRUST
COLCHESTER HOSPITAL UNIVERSITY NHS FOUNDATION TRUST
Avg Cost per Fraction
Peer Group 3 Average
National Average


Fractions per Planning Event
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Peer Group 1
Peer Group 2
Peer Group 3
Peer Group 4
Peer Group 5
Fractions per Plan
National Average

Fractions per Planning Event - Peer Group 3




Split of Planning Cost to Treatment Cost
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Peer Group 1
Peer Group 2
Peer Group 3
Peer Group 4
Peer Group 5
Treatment Cost
Planning Cost
National Average


Split of Planning Cost to Treatment Cost - Peer Group 3
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
HULL AND EAST YORKSHIRE HOSPITALS NHS TRUST
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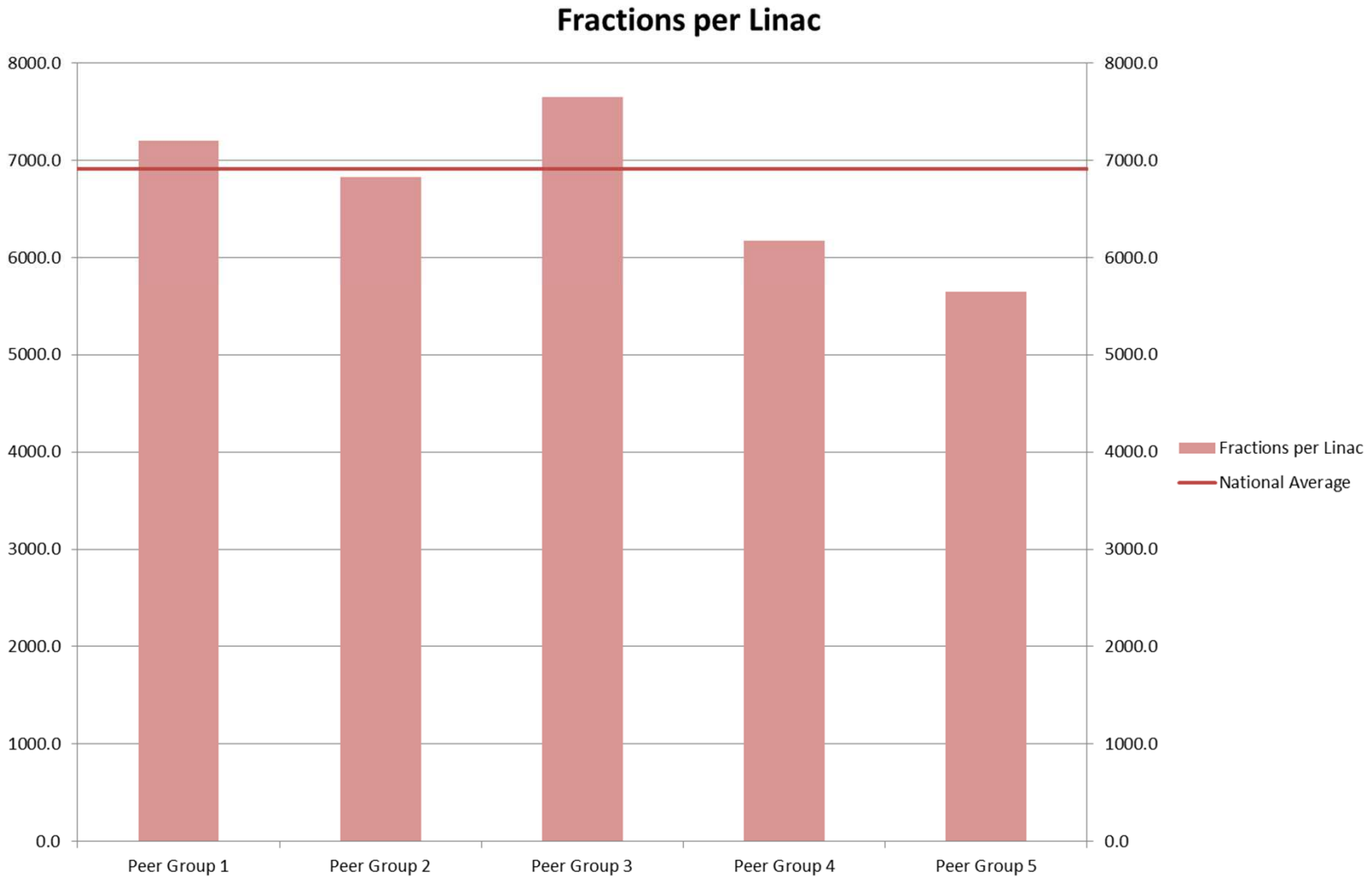
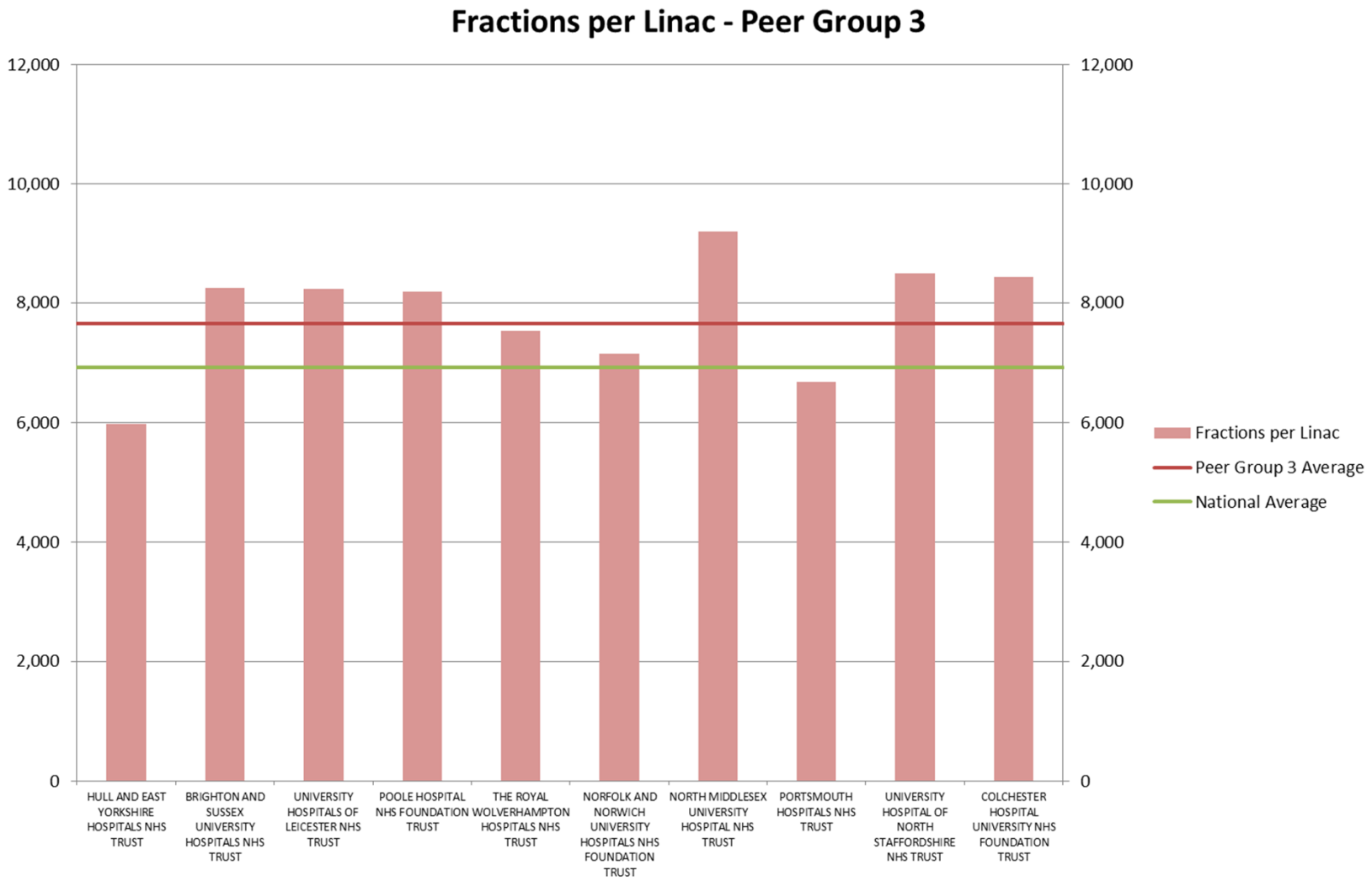
COLCHESTER HOSPITAL UNIVERSITY NHS FOUNDATION TRUST
Treatment Cost
Planning Cost
Peer Group 3 Average
National Average


Fractions per Linac
8000.0
7000.0
6000.0
5000.0
4000.0
3000.0
2000.0
1000.0
0.0
Peer Group 1
Peer Group 2
Peer Group 3
Peer Group 4
Peer Group 5
Fractions per Linac
National Average


Fractions per Linac - Peer Group 3
12,000
10,000
8,000
6,000
4,000
2,000
0
HULL AND EAST YORKSHIRE HOSPITALS NHS TRUST
BRIGHTON AND SUSSEX UNIVERSITY HOSPITALS NHS TRUST
UNIVERSITY HOSPITALS OF LEICESTER NHS TRUST
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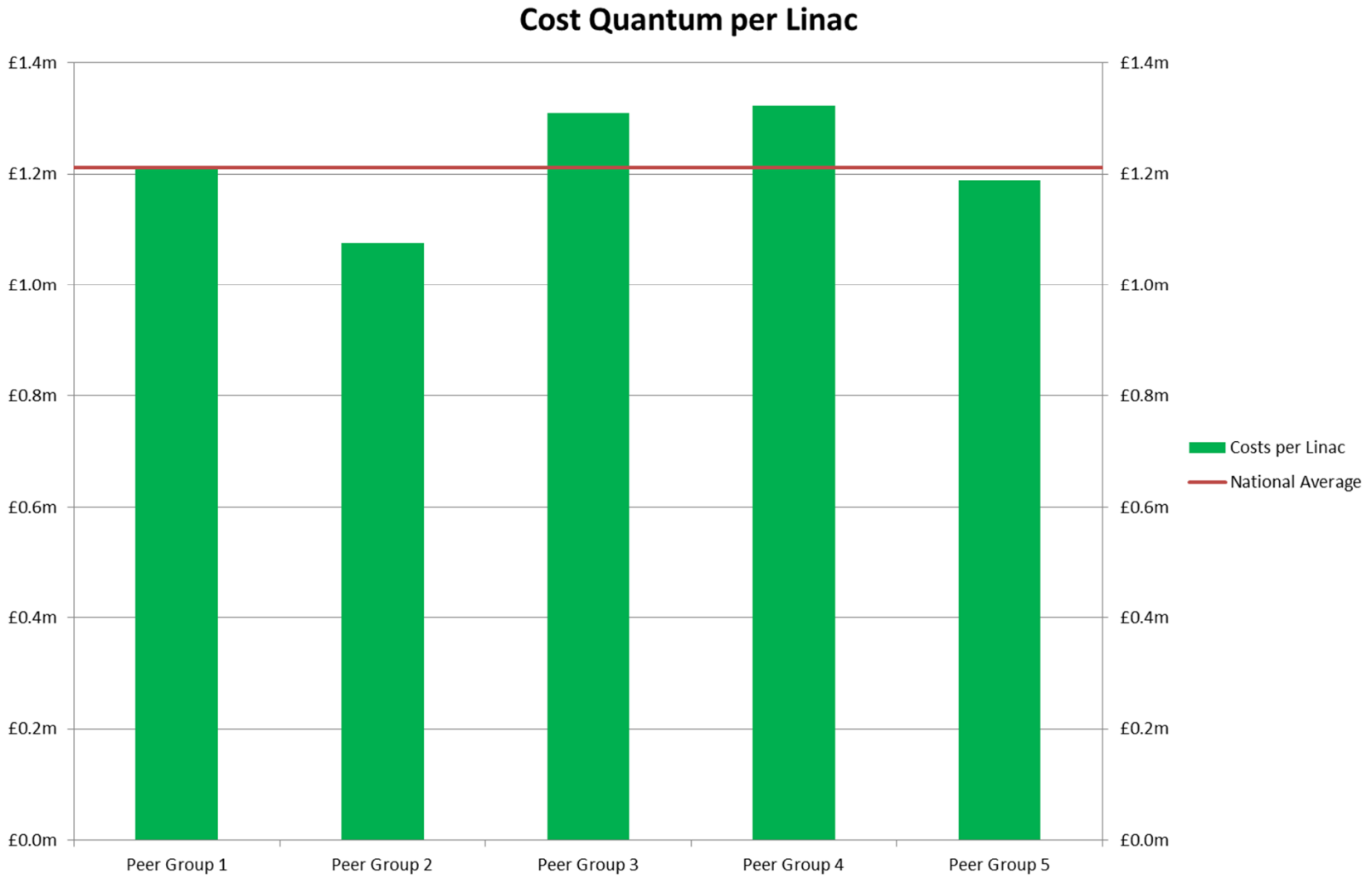
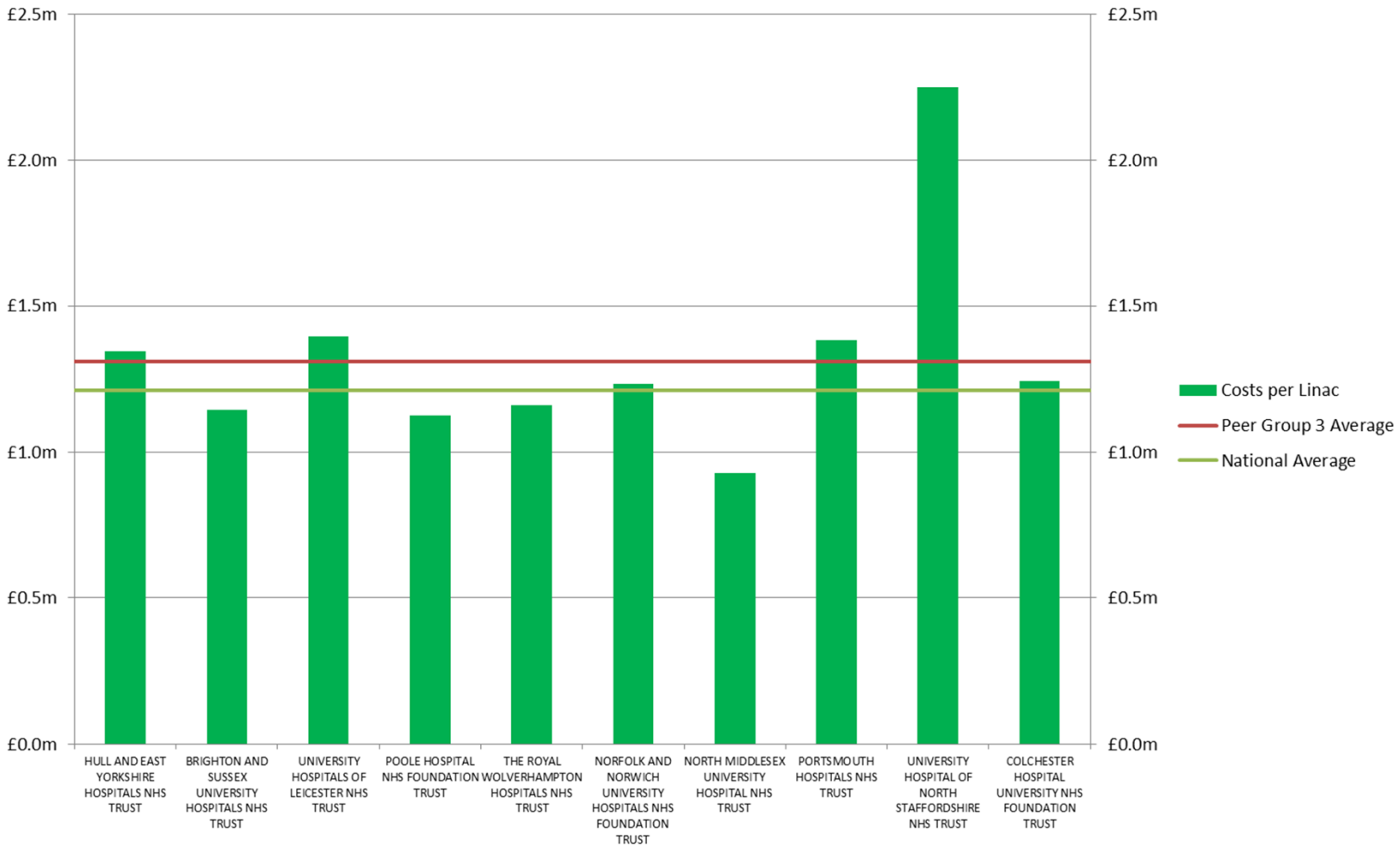
COLCHESTER HOSPITAL UNIVERSITY NHS FOUNDATION TRUST
Fractions per Linac
Peer Group 3 Average
National Average


Cost Quantum per Linac
£1.4m
£1.2m
£1.0m
£0.8m
£0.6m
£0.4m
£0.2m
£0.0m
Peer Group 1
Peer Group 2
Peer Group 3
Peer Group 4
Peer Group 5
Costs per Linac
National Average

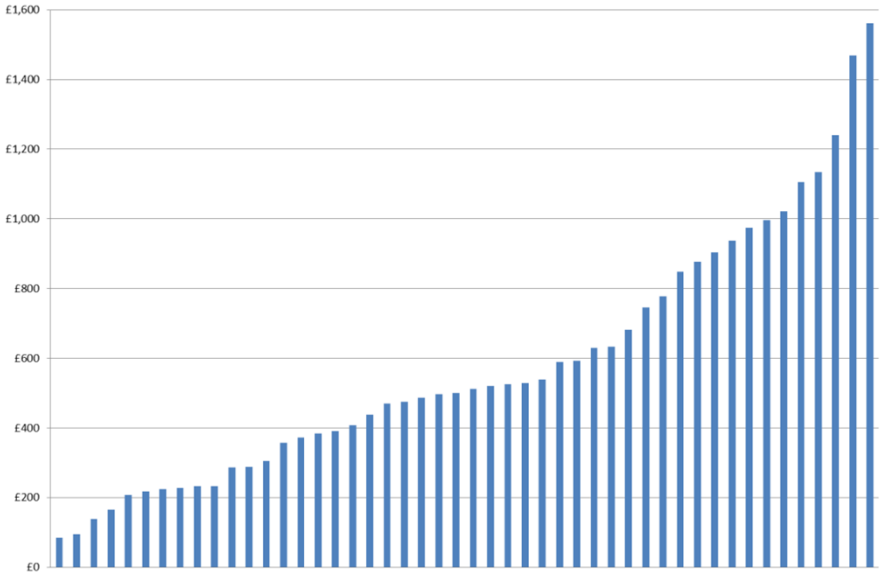
Cost Quantum per Linac - Peer Group 3



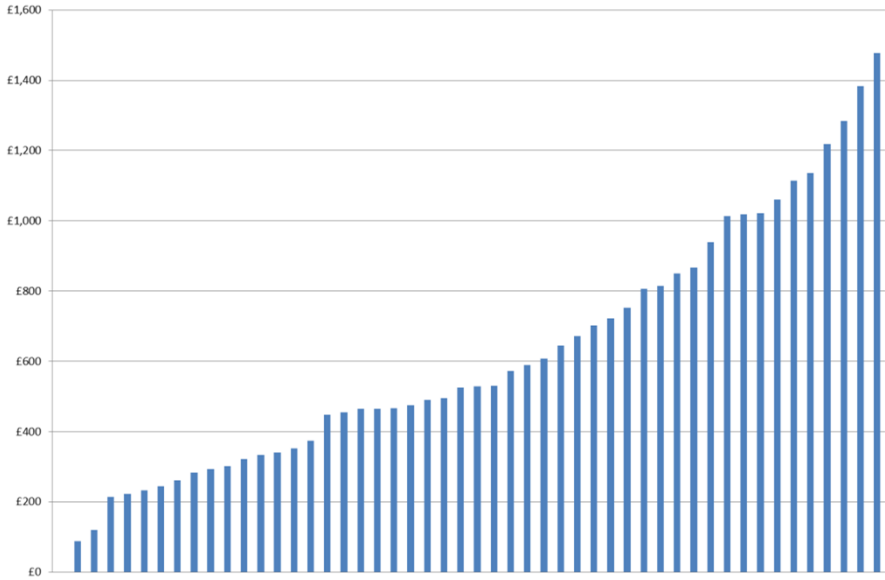
Comparison 2009/10 v 2008/09

Planning Events

2008/09



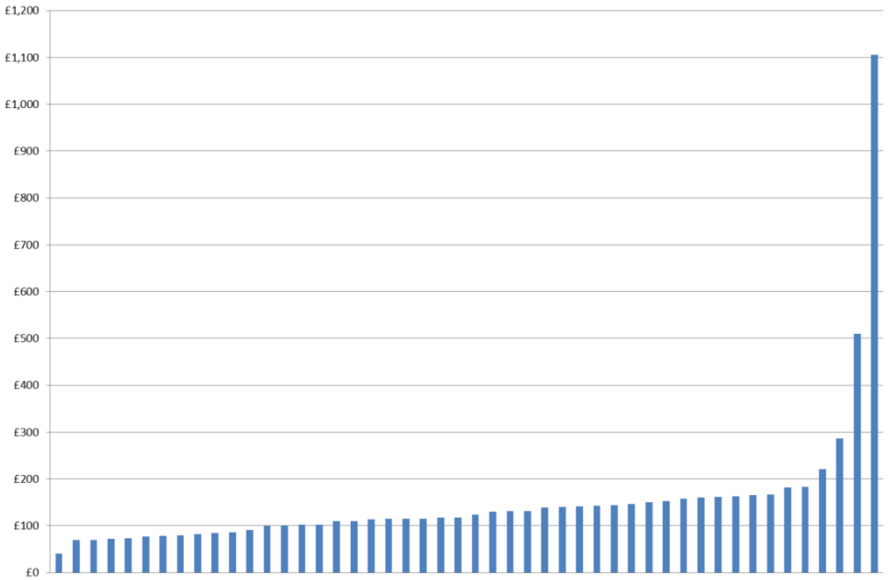
2009/10



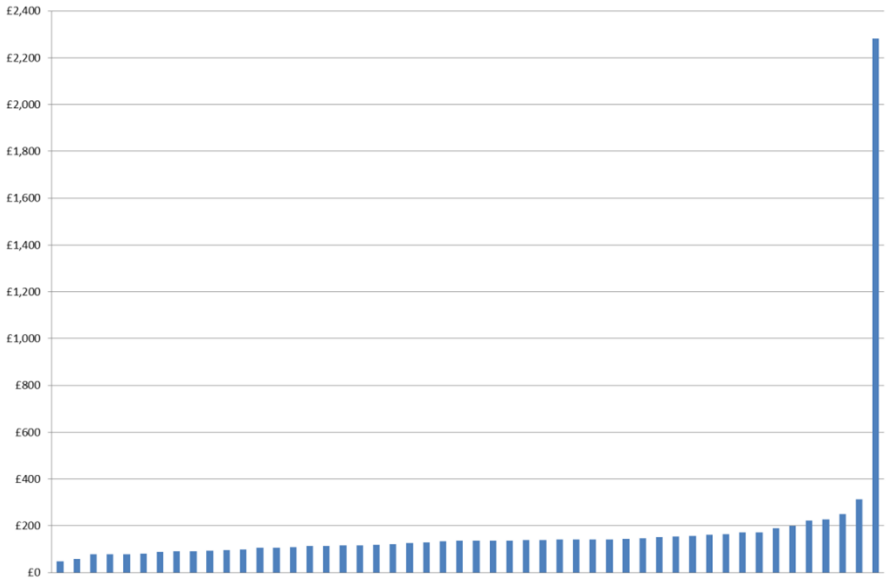
Comparison 2008/09 v 2009/10

Treatment Fractions

2008/09



2009/10



Comparison 2009/10 v 2008/09

Planning: marginal improvement

	2008/09	2009/10
Average	£533	£574
Range	£1,477	£1,390
IQ Range	£494	£505
Std Deviation	£351	£345

Treatment: noticeable improvement

	2008/09	2009/10
Average	£123	£126
Range	£1,065	£263
IQ Range	£57	£43
Std Deviation	£155	£47

(2009/10 excludes outlier)

Outcomes from meetings with providers

Counting and Recording Activity

* Historically inconsistent counting and recording across England
* Radiotherapy Data Set (RTDS) introduced from 1 April 2009
* Evidence & feedback that this has encouraged more systematic approach to counting and recording

Activity – what we found…

* Counting treatment fractions relatively straightforward from systems
* Number of issues with counting planning events – different currencies and inconsistent guidance
* RT data systems often not integrated with mainstream systems such as PAS
* Most HRG grouping done manually

Activity – what we recommended…

* Continue to improve collection of RTDS as this encourages systematic counting
* Agree clear definition of planning "event" and reconcile RTDS guidance with Reference Costs/CfH guidance
* Be aware of national guidance on recording and try to be consistent

Costing Radiotherapy

* Reference Costs collection undertaken annually each June
* Costing process governed by NHS Costing Manual
* Many providers now developing service line reporting and patient-level costing systems

Costing – what we found…

- Most providers have well developed costing systems in place
- However, radiotherapy can suffer as a relatively small cost pool in the cost base of the Trust
- Requires close working required between:
  - Service manager/staff
  - Management accountants
  - Reference Costs lead

Costing – key issues raised…

- Staff costs:
  - Apportioning medical time
  - Indirect costs e.g. physics and maintenance
- Fixed assets:
  - Up-to-date and accurate asset register
  - Land and buildings used
- Apportioning overheads and income
- Provider to provider charges

Costing – what we recommended…

* Need to ensure sufficient resources are devoted to costing radiotherapy
* Close working between service leads, management accountants and RC leads
* More benchmarking and sharing data would improve understanding of cost drivers
* If block contracts are to be phased out, understanding cost base v income available is critical

What caused cost variations – Linacs/Capital

* Cost profile:
  - Purchased v donated v leased
  - PFI/MES contracts
  - Age profile of equipment
* Utilisation of available Linac capacity:
  - Service efficiency machines
  - Non-operational machines
  - Hours per day in operation
  - Average delivery time per fraction

What caused cost variations – Other

* Any contribution from external income, e.g. private patients, R&D
* Staff skill mix employed across various tasks – difficult to quantify without lower level benchmarking
* Rapid technological advancements, e.g. IMRT, are more costly

Implications for a tariff

* Current PbR policy assumes providers manage cost variations within fixed tariff, except for clearly defined exceptions
* Radiotherapy perhaps more susceptible to cost variation than other tariff services, because of the level of capital?
* Risk that tariff hinders development of service
* So what issues should any tariff be sensitive to?

Tariff…
what we recommended

- Majority of cost drivers are manageable by providers within current PbR rules
- But DH should consider:
  - Paediatrics and co-morbidities – if evidenced by data
  - Tariff exclusions for new treatments not yet included in base year's Reference Costs – tariff "lags behind"
  - Best practice tariffs to ensure quality maintained?
  - Consider local flexibility when Linacs replaced with brand new equipment?

Final conclusions…

* Continue the progress around RTDS and more consistent counting
* Continue to improve costing by linking service managers with finance managers
* Promote guidance to increase national consistency
* Benchmarking with similar providers
* Understand differences from the average AND
* Share your findings with commissioners and networks

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