2016/17 Reference costs benchmarking tool

Financial Planning Team

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1. Introduction
1.1 Data
Introduction - Data

- The benchmarking tool has been produced using the 2016/17 reference costs published data. National and peer comparators include data from both NHS trusts and NHS foundation trusts. All of the data contained in the tool is publicly available. No data cleansing has been performed on this data set.

- The tool allows the user to select Finished Consultant Episode (FCE) data for inpatients and include all other points of delivery collected. Ambulance trusts have been excluded from this publication as ambulance trust reference costs data is limited and other benchmarking sources are available.

- For a detailed breakdown of the reference cost data included in the benchmarking tool and the units of activity please see Appendix 1.

- There is a toggle button on the ‘Main’ tab which allows you to select either the data adjusted for the Market Forces Factor (MFF) or the data which is not adjusted for the MFF. The methodology for adjusting by the MFF is explained in here in Other Useful Information.

- Peer groups have been updated from the SAFE benchmarking tool that was previously published by the Department of Health and have been updated to reflect changes in the ERIC data published by NHS Digital. NHS Improvement has also updated some peer groupings due to feedback from users. Please contact NHS Improvement to suggest an alternative peer group if it would give a better comparison in future versions.

Trusts with large data sets may find that the tool takes some time to recalculate. Please be patient as there are a significant number of calculations.
1.2 Tool
Introduction - Tool

NHS Improvement have produced an individual spreadsheet tool for each trust which contains the reference costs data submitted by that trust for acute, community and mental health services as well as peer and national comparators. The tool compares costs, activity and other selected operational measures.

There are several tabs within the benchmarking tool that display different selections of data and are shown or hidden by making different view selections on the main tab. Each view can be individually selected and relates to the type of patient care. A view is only available if the organisation has reported costs and activity against a currency included in the view. The available views are:

- Accident and Emergency (AE)
- Community
- Inpatients – FCE
- Mental Health clusters
- Mental Health other
- Other Acute
- Outpatients

Please note that, because of the formulas and formatting used, the benchmarking tool will not work in Microsoft Excel 2003 or earlier versions.

All averages referred to within this document and calculated within the spreadsheet are mean averages unless stated otherwise.
1.3 Feedback/Issues
Feedback/Issues

If any trusts would like to provide feedback, or experience any problems when using the tool, please contact the financial planning team: nhsi.finplan@nhs.net
2. Instructions for Use
2.1 ‘Introduction’ tab
‘Introduction’ tab

This is the only tab which is available when first opening the Benchmarking Tool and provides a brief introduction to the features.

After reading the information provided, click ‘Continue’ to begin using the tool.

A warning message will appear if any other excel workbooks are open, it is recommended that other excel files are closed prior to using the benchmarker tool as performance may slow considerably if other excel files are in use.
2.2 ‘Main’ tab
‘Main’ tab

The ‘Main’ tab is the trust’s dashboard, showing high level indicators. At the top of the tab the trust name is shown, along with the selected worksheet (highlighted in blue) and the other currently available tabs.

The ‘select view’ list in rows 39 to 45 allows selection from the seven possible views outlined in the Introduction. If the trust has not submitted any data for a particular view then it will not be available to select.

Selecting different views will automatically change the data included in each tab. Selecting ‘Community’ or ‘Mental health’, if available, will unhide additional worksheets only available in these views.

- A Market Forces Factor (MFF) switch button is available underneath the tab selection buttons, row 11, column M, which gives the option of displaying MFF adjusted or non-adjusted data. The red text next to the switch will show whether the view is MFF adjusted or non-adjusted data. The tool opens with the data MFF adjusted as default.

- This switch adjusts all the financial data throughout the tool regardless of which view is selected. It may take a few minutes to update all the data.

For more information on the MFF adjustment and a worked example click here.
‘Main’ tab (continued)

• The ‘RCI – Organisation wide’ graph (figure 2.2.2), included in A13:G26, plots the published Reference Cost Index (RCI) based on finished consultant episodes (FCE) for the trust alongside all other organisations’ indices. The national average index equals 100.

• The benchmarking tool uses the FCE indices, inclusive of excess bed days as published by NHS Improvement. The underlying data in the spreadsheet can be manipulated to generate the published RCI figure.

• The published RCI should be comparable to the total financial opportunity shown on the ‘Main’ tab. This opportunity is a net value for the organisation. For information on how this compares with the Carter efficiency metrics, see Operational Productivity (Carter) Comparison in the ‘Other Useful Information’ section of this document.

• There are two ‘Expenditure by Summary Department’ pie charts (figure 2.2.3), one in H13:M24, and the other in M13:O24. The first chart shows the trust’s total expenditure included in the benchmarking tool. This will equal the overall total reference cost quantum submitted by the trust in the REFC workbook. The second chart shows the total peer group expenditure, which will provide a high level expenditure comparison between the trust and its peer organisations.
‘Main’ tab (continued 2)

The section for ‘Other KPIs’ (figure 2.2.4), in H26:O32, includes metrics that can be used to compare the trust with the national average:

- **Actual vs. expected cost:** This is calculated by multiplying the trust activity by their unit cost and comparing this with the national average unit cost rounded to £ million. A positive value means that on average, the trust unit costs are above the national average cost for their mix of activity.

- **Follow up to first ratio vs. expected:** This uses ratios calculated in the outpatient tab. A positive value means that the trust is conducting more follow ups than the average. This might indicate that the trust has a different clinical practice in place which may impact on costs.

Figure 2.2.4: ‘Other KPIs’ section
‘Main’ tab (continued 3)

- The graph (figure 2.2.5), in I33:J41, shows the total calculated opportunity, split by department. The greatest opportunity, indicated in blue, may indicate an area for further investigation. If no opportunities can be seen at this high level there are likely to be opportunities at the currency level, viewable in the drill down worksheet. This graph uses national mean comparisons to show net opportunity by department. In the ‘Drill Down’ tab, you can choose peer and upper quartile comparisons to identify further opportunities.

- The graph in B48:K61 (figure 2.2.6), changes automatically when different view options are selected (from the select view options in B39:F45 (figure 2.2.7). It shows the percentage split of total costs between different departments, by national, peer and trust.

- For example if ‘Inpatients – FCE’ is selected from the select view options, the split of costs between Elective, Non-elective and Day cases will be shown.

- The graph compares the trust with both the peer and national average.
‘Main’ tab (continued 4)

- The graph in L33:O61 (figure 2.2.8) shows the top 30 opportunities by specialty. This allows trusts to quickly identify the largest potential opportunities in their organisation which can then be investigated in more detail using the drill down functionality of the tool. It is worth noting that it only shows the top 30, and there may be significant savings which aren’t in the top 30.

- The box in B33:G36 (figure 2.2.9) contains the trust cost per weighted activity unit (CpWAU) which is used by the Model Hospital work. It is a metric used for acute trusts only, and the message “Non Acute” will display if your organisation is not an acute trust. More guidance on this can be found in the CpWAU section of ‘Other Useful Information’ within this document.
2.3 ‘Organisations’ tab
‘Organisations’ tab

- This tab is available when any of the following view options are selected on the main tab: Inpatients (FCEs), AE, Outpatients or Other Acute.

- This tab includes a list of the 234 organisations, whose data is included in the total data set, along with their peer grouping, region, organisation type, total expenditure, MFF and RCI. It is possible to filter this list to show which organisations are in the same peer group, by using the filter arrows for each of the headers in row 26.

- The ‘Trust info’ in rows 16 to 24, columns A to C, details the peer group of the trust, their overall expenditure and a count of how many organisations are included in the peer group.

- This list is sorted by RCI (Column I).
2.4 ‘Drill Down’ tab
‘Drill Down’ tab - Filters

This tab includes the majority of the detailed analysis of data to analyse and drill through. It is available in all user selectable views, and the data available here will be reflective of the ‘Select View’ chosen in the ‘Main’ tab.

The blue box (figure 2.4.2) in the top left of the tab (cell B13), allows selection of the required data from either department or service all the way down to currency code. The filters can be used in any order and may be limited based on what has already been selected. Using the filters will change the data displayed in the main data table below.

Clicking on the white text, to the left of the drop down filters, will show all the data at this level. It will turn green once clicked to indicate which level of data is being presented.

For example clicking ‘Currency Code’ will show all of the data at a currency level. If this data is filtered by either chapter or subchapter using the drop down options, then the currency level code data underneath this will be shown when this option has been selected.
‘Drill Down’ tab – Data Table

The main data table (figure 2.4.3) is situated towards the bottom of the tab (row 36) and can be sorted by clicking the arrows at the top of the columns in row 37. The table is sorted by opportunity as a default option.

Code descriptions are shown by default in the data table and can be hidden by clicking the ‘Hide Names’ button on the table, in B36.

The ‘Opportunity’ in column E of the table includes colour coded bars. A blue bar indicates a positive opportunity (trust costs are greater than the comparator) and a grey bar indicates a negative opportunity (trust costs are less than the comparator). The size of the bars will be relative to the size of the opportunity. This feature is not fully supported in Microsoft Excel 2007.

Drilling down to a lower level of the hierarchy will show the opportunity at a more detailed level.

If inpatient data is selected on the ‘Main’ tab, an orange input box (cell P34) becomes available to enter the trust estimated cost per bed day. This will then calculate an opportunity, based on the cost input and the number of bed days over the average. This is not an additional opportunity, as the cost of additional bed days will already be included in the overall opportunity shown.
‘Drill Down’ tab – Graphs

The graph (figure 2.4.4) shown to the right of the filters box, C13:H27, will update when the filter and drill down functions are used, to display what is shown in the data table. Select the data to be presented in the graph using the drop down menu in row 14.

The graph (figure 2.4.5) below the filters box, B28:C35, displays the ratio of activity for the trust as well as peer and national averages at the top level of drill down (department or service). This compares the trust’s activity profile with its peer and national averages.

If either community or mental health is selected in the ‘Main’ tab, a third graph (figure 2.4.6) will also become available, in C28:H35. This graph shows the individual peer organisations’ unit costs and activity and may be used to assess the comparability of the peer averages. Alternatively it can be used to identify individual trusts that have similar activity and lower cost. The bars on this graph relate to costs and the lines relate to activity.
2.5 Community
Community

Selecting ‘Community’ on the ‘Select View’ option on the ‘Main’ tab will allow two new tabs to be viewed. These are accessible from the menu bar at the top the page:

‘Community Peer Selection’ tab

The ‘Community Peer Selection’ tab allows you to select a custom peer group for comparison when benchmarking community services expenditure. This customisation option is not available for Acute services due to the dataset being too large.

‘Community Analysis’ tab

This tab contains costs and ratios of activity across currencies and within subservices. It can be used to identify differences in activity profile when compared with peers.

‘Community Peer Selection’ and ‘Community Analysis’ tabs will only appear when ‘Community’ is selected on the ‘Main’ tab.
‘Community Peer Selection’ tab

This tab is only available when the ‘Community’ view is selected on the ‘Main’ tab.

This tab allows you to select the organisations to include in the peer comparison for Community services. This can be done either by:

- typing ‘Yes’ into column E onwards (highlighted in orange), next to the organisations that the trust would like to compare with;

- using the quick selection buttons in rows 16 to 23, column E, to quickly select peers from pre-defined groups.

The quick selection buttons will allow selection of peers based on: former SHA cluster, Region and organisation type, total expenditure, community expenditure and community expenditure as a % of total spend.

This tab includes the list of organisations that have community services expenditure with their peer grouping, region, organisation type, total expenditure, total spend by service, MFF and RCI. It is possible to filter this list by using the header filters in row 26, to show which organisations are in the same peer group.
2.1 ‘Introduction’ tab

2.2 ‘Main’ tab

2.3 ‘Organisations’ tab

2.4 ‘Drill Down’ tab

2.5 Community

2.6 Mental Health

‘Community Analysis’ tab

This tab is only available when the ‘Community’ view has been selected from the ‘Main’ tab select view options and contains costs and ratios of activity across currencies and within sub-services.

The graph (figure 2.5.3) at the top of the page, C13:I28, displays the RCI for the Community dataset for the trust’s compared with national average and all trusts.

Ratios at the bottom of the graph, rows 29 onwards, are shown for the splits between face to face and non-face to face activity, group and one-to-one sessions, and adult and child activity.

Trusts can use the ‘Community Analysis’ tab to identify differences in their activity profile, compared to their peers. The trust can change the tolerances using the ‘Tolerances for highlighter’ in row 29. By changing these tolerances it is possible to highlight where the trust is different from national/peer averages by this tolerance.

Services will only be shown where the trust has recorded data within that particular community service. Data shown is like-for-like so only trusts with comparable currency level data will be included in the figures.
2.6 Mental Health
Mental Health

Selecting ‘MH Clusters’ on the ‘Select View’ option on the ‘Main’ tab will allow two new tabs to be viewed. These are accessible from the menu bar at the top the page:

‘Mental Health Peer Selection’ tab

The ‘Mental Health Peer Selection’ tab allows you to select a custom peer group for comparison when benchmarking mental health services expenditure. This customisation option is not available for Acute services due to the dataset being too large.

‘Mental Health Analysis’ tab

This tab is only available when ‘MH Clusters’ is selected. Please be aware that the RCI graph on this tab can appear as a jagged line, which can be rectified by toggling the MFF switch. There is an RCI above 400 in the reference cost data set which will skew the graph too.

‘Mental Health Peer Selection’ tab will only appear when ‘MH Clusters’ or ‘MH Other’ is selected on the ‘Main’ tab. 'Mental Health Analysis’ tab will only appear when ‘MH Clusters’ is selected on the ‘Main’ tab. It does not appear when ‘MH Other’ is selected.
‘Mental Health Peer Selection’ tab

This tab is only available when either ‘MH Clusters’ or ‘MH Other’ are selected on the ‘Main’ tab.

This tab allows trusts to select the organisations to include in the peer comparison for Mental Health services. This can be done by either:

- typing ‘Yes’ into column E onwards (highlighted in orange), next to the organisations that you would like to compare with;
- using the quick selection buttons in rows 16 to 22, column E, to quickly select peers from pre-defined groups

The quick selection buttons will allow selection of peers based on: Former SHA cluster, cluster Region and organisation type, total expenditure, mental health expenditure and mental health expenditure as a % of total spend.

This tab includes the list of organisations that have some Mental Health services spend expenditure along with their peer grouping, total expenditure, MFF and RCI. It is possible to filter this list by using the header filters in row 26, to show which organisations are in the same peer group.
‘Mental Health Analysis’ tab - Graphs

This is only shown when ‘MH Clusters’ has been selected in the ‘Main’ tab, select view options. The Care Cluster data from the 2015/16 reference costs submission as well as the 2016/17 reference costs submission has been included within this tab in order to see movements from one submission to the next.

There are four analytical graphs on the mental health analysis tab:

- RCI Mental Health graph, in B13:D27, shows the published RCI for Mental Health services and ranks the trust against national average and all other trusts.

- The Review Days vs. Expected graph, in E13:H27, shows the review days reported by the trust, peer and national averages compared with the expected maximum.

- The care cluster expenditure graph, in H13:N28, shows split by initial assessments, admitted care and non-admitted care, this expenditure is further split by super class.

- Cost by cluster graph, in O13:AC63 shows the cost split by cluster and compared with peer and national averages. The maximum review days used for each cluster are set as a national standard and can be seen in Appendix 6.
‘Mental Health Analysis’ tab - Movements

Movements in the non-clustered activity (cluster 99) and the variance cluster (cluster 00) in the ‘Comparison vs prior year’ are highlighted in the section below the graphs. All prior year figures are adjusted using the 2015/16 MFF.

Trusts should see a reduction in cluster 99 over time as patients are able to be clustered more effectively. The trust position is compared with both peer and national averages. An RCI is calculated for each care cluster which enables movements in relative cost between organisations to be shown at a cluster level. The three largest increases and the three largest decreases in index by cluster are highlighted.

A detailed year-on-year analysis section is in rows 41 onwards. A drop down menu is available in row 44, to select individual super-classes, classes or clusters for year on year comparison. The following metrics are included:

- Overall Cluster RCI
- Initial assessment unit costs
- Admitted unit costs
- Non-admitted unit costs
- Admitted care cost %
- Non-admitted care cost %.

These metrics are compared with both peer and national averages. The arrows provide an indication of how the figures have moved between the years.

- Red arrows: a negative movement of 5% or more
- Amber arrows: the movement is positive/negative by less than 5%
- Green arrows: the movement is positive by 5% or more.
3. Other Useful Information
3.1 Fields
Fields Used in Main Data Table

This section provides understanding as to the origin of the data used and calculations performed on the data. The fields are listed in the order in which they would appear in the main data table if all data is shown.

**Department/Chapter/Subchapter/Root HRG/ Currency Code** are the codes used to record costs and activity against in the reference cost submission. The department is consistent across all HRGs and the drill downs can be used in a hierarchy from Chapter to HRG code.

**Department/Chapter/Subchapter/Root HRG/Currency Description** are the text descriptions to match the codes given. Some of the descriptions are too long to fit in the cell but the whole description can be seen by clicking on the cell containing the name. These descriptions can be hidden using the button in cell B36 to make the table easier to review or print if required.

**RCI** is a calculated field which divides the total cost submitted by the trust by the national average expected cost. This effectively gives a RCI at all data levels.

**Opportunity** is a calculated field which uses the cost data. It calculates the total cost submitted by the trust less the equivalent national/peer expected cost. It is calculated at currency code level and summed up. For example:

> Trust submits cost and activity data for ten day cases. Five are HRG X costing £100 and five are HRG Y costing £150. The national averages are £70 for X and £110 for Y. Therefore the financial opportunity at day case level is 5 x (100 - 70) + 5 x (150 - 110) which gives £350.

**Total cost** is the total cost reported by the trust in their reference cost workbooks (or average if at a level higher than currency) alongside the national or peer comparator.

**Activity** is the total activity figure reported by the trust and for inpatients this should reconcile to activity figures reported in HES.
Fields Used in Main Data Table - Continued

**Unit cost** is the average unit cost reported by the trust and the comparable national/peer average. The expected cost is the national/peer average unit cost multiplied by the trust’s activity.

**KPI** will change depending on which view has been selected. For inpatients this will show the overall percentage of day cases. For A&E this will show the percentage of admitted activity. For mental health clusters this will show the percentage of admitted cluster days and for outpatients this will show the percentage of attendances that are consultant led.

**LOS KPI** takes the total bed days reported by the trust less the expected bed days from the national average and multiplies this by a default cost per bed day (£100). Trusts may wish to amend this figure for a more accurate local estimate and this can be done in cell P34. Please note that this is not supposed to indicate an additional opportunity, the opportunity (if any) should already be included in the overall financial opportunity as the unit costs are fully absorbed.

**Length of stay - inlier** is relevant to the inpatients dataset. This is in absolute terms (the total number of bed days) and a peer/national comparator is given.

**Length of stay - excess** is relevant to the inpatients dataset. This is in absolute terms (the total number of excess bed days) and a peer/national comparator is given.

**Length of stay – total** is the sum of the inlier and excess bed days and is relevant to the inpatients dataset. This is in absolute terms (the total number of bed days) and a peer/national comparator is given.

**Follow-up to first ratio** is only applicable to consultant led and non-consultant led outpatients. It is only shown at the department and service level and is calculated by dividing the total number of follow-ups by the total number of firsts.

**Average Review Period** is only applicable to mental health care cluster data and compares the trust with national averages and the recommended maximum review period which is a national standard and is shown in Appendix 6.
3.2 MFF
The MFF adjustment is recalculated using Tariff MFF scaled to greater than or equal to 1.00. The adjustment will therefore reduce the overall cost reported by your trust. For more details about the 2016/17 MFF and its calculation please see Monitor and NHS England’s guidance on PbR and the MFF. The scaled values can be found alongside the published Reference Cost Indices (RCIs).

There is an example calculated in Figure 3.2 to demonstrate the MFF adjustment in practice. The steps are detailed below:

1. Organisation and peer costs are adjusted by respective MFF values to give an adjusted unit cost.
2. The adjusted unit costs are multiplied up by activity to give MFF adjusted actual costs
3. Peers’ MFF adjusted costs and activity are totalled and then total costs are divided by total activity to give an expected unit cost
4. This expected cost unit is multiplied by trust’s activity to give the expected total cost
5. Finally expected total cost is taken away from the trust cost to give overall MFF adjusted opportunity
3.3 Quartiles
Quartiles

Users of the benchmarking tool can see opportunity against mean average values or quartiles. Switching between the two options is via the button in the blue box on the 'Drill Down' tab. Organisations with few opportunities showing using the mean comparison may wish to use the quartile comparison which will highlight further opportunities available compared with the top quartile performers.

The quartiles have been calculated by using the cost associated with the lowest cost 25% of activity, an example of this is shown in figure 3.3. The steps are as follows:

- The first step is to work out the activity value at which 25% of the activity is lower cost. In the example given the total activity is 52,609 and 25% of this is 13,152.

- The next step is to sort the data by cost so that the lowest cost activity comes first.

- The final step is to find the cost of the 13,152nd lowest cost unit of activity and in this instance the unit cost comes out at £165. This is considerably lower than the mean of £249. Trusts are likely to show very large opportunities when comparing themselves to quartiles.
3.4 Operational Productivity (Carter) Comparison
Comparison to the Operational Productivity (Carter) Efficiency Metrics

The Carter Review highlights potential savings opportunities within NHS organisations. The Carter review developed the Adjusted Treatment Cost (ATC) metric, based on costs submitted by trusts in the 2014/15 Reference Cost Collection. Opportunities are identified where trusts appear to be spending more than the national average for a specialty and department combination.

The Reference Cost Benchmarking Tool will show similar savings opportunities as those indicated by the Carter review (updated for 16/17), when the data is analysed at the Department and Specialty level in the drill down data tab using MFF comparison data. The actual value of those savings opportunities will vary slightly from the values indicated by the Carter review due to a number of differences in calculation shown in Table 1. Most significantly; the ‘Main’ tab in the reference cost benchmarking tool shows the net opportunity whereas the Carter model shows only the positive opportunity.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Operational Productivity (Carter) methodology</th>
<th>Reference Cost Benchmarking Tool</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comparators</td>
<td>National and Peer Comparison (various peers can be selected)</td>
<td>National OR peer comparison (peers are fixed for acute costing data and can be selected for community and mental health)</td>
</tr>
<tr>
<td>Cap on potential opportunity</td>
<td>Caps the potential savings for any department and specialty at 50% of the original cost (of that department and specialty).</td>
<td>No such cap is applied in the Benchmarking Tool, which is designed to highlight all areas of variance, positive and negative, that the trust may wish to investigate</td>
</tr>
<tr>
<td>CpWAU</td>
<td>CpWau is calculated at a headline/overall level and also within ‘clinical Service Lines’/ Estimations of different staff group cost per WAU are also made.</td>
<td>Measured at any level (permitted by reference cost data) including; aggregate trust, speciality level, point of delivery or individual HRG</td>
</tr>
</tbody>
</table>

While the above calculations will result in the potential savings opportunity being slightly different between the two methods, the Benchmarking Tool still presents a good opportunity for trusts to explore the drivers behind the opportunities highlighted by the Carter review.
3.5 Cost per Weighted Activity Unit (CpWAU)
Cost per Weighted Activity Unity (CpWAU)

The benchmarking tool has been updated to include the CpWAU measure included within the Model Hospital. The CpWAU is produced using the 2016/17 (MFF – adjusted) reference costs published data. Cost per WAU is a measure of a provider’s cost of output compared with the national average cost of the same output. It is effectively an alternative way of presenting the Reference Cost Index (RCI).

Cost weighted Activity Units (WAUs) are a way of expressing the amount of NHS clinical activity performed by a trust as a standardised cost – weighted output. This has the advantage of being able to aggregate different types of activity and thus make output comparisons across services and organisations. The total cost - weighted output is the total value of clinical activity reported by a trust at the national average cost for the like activity. One weighted activity unit (WAU) is the equivalent to £3,500 of cost weighted output, the equivalent to the average cost of an elective inpatient episode (in 2014/15). The total number of WAUs produced is therefore the cost - weighted output divided by £3,514.55 (in 2016/17). The costs used in the CpWAU calculation are the actual 16/17 provider cost of clinical output recorded within the reference cost submission (MFF- adjusted).

The CpWAU is calculated by dividing the cost of clinical activity by the number of WAUs the clinical activity represents. This can be calculated at any level within the Reference Cost benchmarking Tool (as permitted by the reference cost data) including; aggregate trust, speciality level, point of delivery, or individual HRG. However users are advised to use caution and consideration of data quality issues when using this measure at a granular level.

Within the Model Hospital additional analysis is available linking cost data from annual accounts such as pay costs and non pay costs to the output WAUs from reference costs. This enables providers to compare the different types of costs of output to those of other organisations at a high level.

NHS Improvement is currently developing a system to measure the change in productivity in - year. This will be fed from different data sources.
3.6 Excess Bed Days
Excess Bed Days

The view on the drill down tab includes excess bed days in the activity. It is possible to see the data split by FCE and Excess Bed Days to get the separate unit costs. To do this, you need to sort the data by Department and then pick a Currency Code. I.e. Click on the ‘Department’ text and it will go green, and then pick currency code from drop down.

This then gives the view where it shows the split between FCE and excess bed days, and the unit costs are more accurately reflected.

The length of stay opportunity for a FCE is calculated using only the inlier bed days.
Appendices
Appendices

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Appendix 1
# Appendix 1 - Data Included in Reference Costs Benchmarking Tool

<table>
<thead>
<tr>
<th>Data View</th>
<th>Department Code</th>
<th>Department Description</th>
<th>Currency units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inpatients - FCE</td>
<td>DC</td>
<td>Daycase</td>
<td>FCE</td>
</tr>
<tr>
<td>Inpatients - FCE</td>
<td>EL</td>
<td>Elective Inpatients</td>
<td>FCE</td>
</tr>
<tr>
<td>Inpatients - FCE</td>
<td>EL_XS</td>
<td>Elective Inpatients- Excess Bed Day</td>
<td>Bed Day</td>
</tr>
<tr>
<td>Inpatients - FCE</td>
<td>NEL</td>
<td>Non-Elective Inpatient - Long Stay</td>
<td>FCE</td>
</tr>
<tr>
<td>Inpatients - FCE</td>
<td>NEL_XS</td>
<td>Non-Elective Inpatient - Long Stay Excess Bed Day</td>
<td>Bed Day</td>
</tr>
<tr>
<td>Inpatients - FCE</td>
<td>NES</td>
<td>Non-Elective Inpatient - Short Stay</td>
<td>FCE</td>
</tr>
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<td>Outpatients</td>
<td>CL</td>
<td>Consultant Led</td>
<td>Attendance</td>
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<tr>
<td>Outpatients</td>
<td>CMDT</td>
<td>Cancer multi-disciplinary team meetings</td>
<td>Patient Treatment Plans Discussed</td>
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<td>NCL</td>
<td>Non Consultant Led</td>
<td>Attendance</td>
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<td>OPROC</td>
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<td>Procedure</td>
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<td>EM</td>
<td>Accident and Emergency</td>
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<td>AMB</td>
<td>Ambulance Services</td>
<td>Call/Patient/Incident</td>
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<tr>
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<td>CC</td>
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<td>Bed Day</td>
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<tr>
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<td>CF</td>
<td>Cystic Fibrosis</td>
<td>Year of Care</td>
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<td>CHEMP</td>
<td>Chemotherapy Procurement</td>
<td>Treatment Cycle</td>
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<td>Attendance</td>
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<td>Tests</td>
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<td>DIAGIMDA</td>
<td>Diagnostic Imaging: Direct Access</td>
<td>Examination</td>
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<tr>
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<td>DIAGIMOP</td>
<td>Diagnostic Imaging: Outpatient</td>
<td>Examination</td>
</tr>
<tr>
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<td>DIAGMOTH</td>
<td>Diagnostic Imaging: Other</td>
<td>Examination</td>
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<td>Other Acute</td>
<td>HCD</td>
<td>High Cost Drugs</td>
<td>Spell/Attendance</td>
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<td>IMAGDA</td>
<td>Imaging: Direct Access</td>
<td>Examination</td>
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<tr>
<td>Other Acute</td>
<td>IMAGOP</td>
<td>Imaging: Outpatient</td>
<td>Examination</td>
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### Appendix 1 - Data Included in Reference Costs Benchmarking Tool - continued

<table>
<thead>
<tr>
<th>Data View</th>
<th>Department Code</th>
<th>Department Description</th>
<th>Currency units</th>
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<td>Other Acute</td>
<td>IMAGOTH</td>
<td>Imaging: Other</td>
<td>Examination</td>
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<tr>
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<td>RADO</td>
<td>Radiotherapy Inpatients</td>
<td>Admission</td>
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<td>RADP</td>
<td>Radiotherapy Planning</td>
<td>Treatment</td>
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<td>RADSDA</td>
<td>Radiotherapy Same Day</td>
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<td>Radiotherapy Treatment</td>
<td>Fraction</td>
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<td>REHABL2</td>
<td>Specialist rehabilitation services level 2</td>
<td>Bed Day/Attendance</td>
</tr>
<tr>
<td>Other Acute</td>
<td>REHABL3</td>
<td>Non-specialist rehabilitation services level 3</td>
<td>Bed Day/Attendance</td>
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<td>RENALAKI</td>
<td>Renal dialysis for acute kidney injury</td>
<td>Session</td>
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<tr>
<td>Other Acute</td>
<td>RENALCKD</td>
<td>Renal dialysis for chronic kidney disease</td>
<td>Session</td>
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<tr>
<td>Other Acute</td>
<td>RP</td>
<td>Regular Day or Night Admissions</td>
<td>FCE</td>
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<td>SPAL</td>
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<td>Allied Health Professionals</td>
<td>Care Contact/No. of people per group/Procedure</td>
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<td>CHSAUD</td>
<td>Audiology</td>
<td>Fitting/Hearing Aid/Attendance/Episode of Aftercare/Care Contact/Group Session</td>
</tr>
<tr>
<td>Community</td>
<td>CHSCRT</td>
<td>Community Rehabilitation Teams</td>
<td>Team Contact</td>
</tr>
<tr>
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<td>CHSDCFRAD</td>
<td>Day Care Facilities Regular Attendances</td>
<td>Team Contact</td>
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<tr>
<td>Community</td>
<td>CHSHVM</td>
<td>Health Visiting and Midwifery</td>
<td>Patient Days</td>
</tr>
<tr>
<td>Community</td>
<td>CHSIC</td>
<td>Intermediate Care</td>
<td>Service User/Care Contact/Care Contact/Bed Day</td>
</tr>
<tr>
<td>Community</td>
<td>CHSMC</td>
<td>Medical and Dental</td>
<td>Care Contact/Attendance</td>
</tr>
<tr>
<td>Community</td>
<td>CHSNURS</td>
<td>Nursing</td>
<td>Care Contact/Vaccination</td>
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<tr>
<td>Community</td>
<td>CHSWCA</td>
<td>Wheelchair Services Adults</td>
<td>Episode of Care/Chair/Registered User/Review/Item</td>
</tr>
<tr>
<td>Community</td>
<td>CHSWCC</td>
<td>Wheelchair Services Children</td>
<td>Episode of Care/Chair/Registered User/Review/Item</td>
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<tr>
<td>MH Clusters</td>
<td>MHCC</td>
<td>Mental Health Care Clusters</td>
<td>Cluster Day</td>
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<td>MH Clusters</td>
<td>MHCCIA</td>
<td>Mental Health Care Clusters Initial Assessments</td>
<td>Initial Assessment</td>
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<tr>
<td>MH Other</td>
<td>MH</td>
<td>Mental Health Other Services</td>
<td>Various units of activity</td>
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</tbody>
</table>
Appendix 2
Appendix 2 – Annotated Example of ‘Main’ Tab

- Graph of published Reference Cost Indices (RCIs)
- CpWAU comparable to Model Hospital
- View selection options (maximum of seven options)
- NHS Trust, peer group and national costs split by next level of drill down (usually department)
- NHS Trust opportunity by summary department
- Tab selection buttons with selected tab in blue
- Market Forces Factor (MFF) toggle switch
- High level KPIs with performance indicator (green/red)
- Top 30 Opportunities by speciality and department
- NHS Trust and peer group total expenditure split by summary department
Appendix 3
Appendix 3 - Annotated Example of ‘Drill Down’ Tab

Green buttons to change comparison between National and Peer and Means and Upper Quartiles

Blue box including filters and drill down selections. Filters are in the drop down boxes and data can be drilled down through by clicking the text

NHS Trust, peer group and national splits of activity by service code

Main data table displaying the results of the selections made in the blue filters box.

Top 10 total costs by service showing the selected output in the drop down list.

Unit costs and activity by organisation in the peer group.

‘?’ button shows calculation steps when clicked.
Appendix 4
## Appendix 4 - Hierarchies in Community Services Reference Costs Benchmarking Tool

<table>
<thead>
<tr>
<th>Service</th>
<th>Sub-service</th>
<th>Filter 1</th>
<th>Filter 2</th>
<th>Filter 3</th>
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</thead>
<tbody>
<tr>
<td>Allied Health Professionals (CHSAHP)</td>
<td>Dietitian (A03)</td>
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<tr>
<td></td>
<td>Podiatrist (A09)</td>
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<tr>
<td></td>
<td>Other Therapist (A01)</td>
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</tr>
<tr>
<td></td>
<td>Occupational Therapist (A06)</td>
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<tr>
<td></td>
<td>Physiotherapist (A08)</td>
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<tr>
<td></td>
<td>Speech and Language Therapist (A13)</td>
<td>Adult/Child (A/C)</td>
<td>Group/One to one (G/1)</td>
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<tr>
<td>Audiology (AUD)</td>
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<td>Community Medical and Dental (CHSMD)</td>
<td>Community Dentist (M01)</td>
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<td></td>
<td>Community Paediatrics (M02)</td>
<td>Face-to-face/Non-Face-to Face (F/N)</td>
<td>Child Public Health, Statutory Work for Education, Safeguarding etc.</td>
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<td>Day Care Facilities Regular Attendances (DCFRAD)</td>
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<tr>
<td>Health Visiting and Midwifery (HVM)</td>
<td>Community Midwife (N01)</td>
<td>Ante Natal Visits/Post Natal Visits (A/P)</td>
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<td></td>
<td>Health Visitor (N03)</td>
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<tr>
<td></td>
<td>Midwifery (NZ)</td>
<td>Ante-natal Routine Observation, Ante-natal Complex Disorders, Normal Delivery, Assisted Delivery etc.</td>
<td>Score (A/B/C/D)</td>
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<td>Obstetrics Medicine</td>
<td>Normal Delivery with Epidural, Induction and Post-Partum Surgical Intervention</td>
<td>Score (0/1/2+)</td>
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</table>
## Appendix 4 - Hierarchies in Community Services Reference Costs Benchmarking Tool - continued

<table>
<thead>
<tr>
<th>Service</th>
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<th>Filter 1</th>
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<th>Filter 3</th>
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<td>Medical and Dental (MD)</td>
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<td>Wheelchair Services Adults (WCA)</td>
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<td>Face-to-face/Non-Face-to Face (F/N)</td>
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<td>Nursing services for children (N12)</td>
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<td>Group/One to one (G/O)</td>
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<td>Adult/Child (A/C)</td>
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<td>Stroke Community Rehabilitation teams</td>
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Appendix 5
Appendix 5 - Care Cluster Hierarchy

Appendix 2 Mental Health Clustering Booklet, Monitor, 
Appendix 6
## Appendix 6 - Maximum Review Period Length per Care Cluster

<table>
<thead>
<tr>
<th>Cluster number</th>
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<tr>
<td>0</td>
<td>Variance</td>
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<tr>
<td>1</td>
<td>Common Mental Health Problems (low severity)</td>
<td>12 weeks</td>
</tr>
<tr>
<td>2</td>
<td>Common Mental Health Problems (low severity with greater need)</td>
<td>15 weeks</td>
</tr>
<tr>
<td>3</td>
<td>Non-psychotic (moderate severity)</td>
<td>6 months</td>
</tr>
<tr>
<td>4</td>
<td>Non-psychotic (severe)</td>
<td>6 months</td>
</tr>
<tr>
<td>5</td>
<td>Non-psychotic disorders (very severe)</td>
<td>6 months</td>
</tr>
<tr>
<td>6</td>
<td>Non-psychotic disorder of over-valued ideas</td>
<td>6 months</td>
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<tr>
<td>7</td>
<td>Enduring non-psychotic disorders (high disability)</td>
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<tr>
<td>8</td>
<td>Non-psychotic chaotic and challenging disorders</td>
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<td>9</td>
<td>Blank cluster</td>
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<td>10</td>
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<td>Ongoing recurrent psychosis (low symptoms)</td>
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</tr>
<tr>
<td>12</td>
<td>Ongoing or recurrent psychosis (high disability)</td>
<td>Annual</td>
</tr>
<tr>
<td>13</td>
<td>Ongoing or recurrent psychosis (high symptom &amp; disability)</td>
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<td>Psychosis &amp; affective disorder (high substance misuse &amp; engagement)</td>
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<td>17</td>
<td>Psychosis and affective disorder - difficult to engage</td>
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<td>Cognitive impairment or dementia complicated (moderate need)</td>
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</tr>
<tr>
<td>20</td>
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</tr>
<tr>
<td>21</td>
<td>Cognitive impairment or dementia (high physical or engagement)</td>
<td>6 months</td>
</tr>
</tbody>
</table>

Guidance on mental health currencies and payment - Monitor