Costing Regional Forum: South Region

07 March 2018
Agenda

10:00 – 10:15  Chair’s introduction

10:15 – 10:30  NHS Improvement update
   Jack Hardman, Costing Lead, NHS Improvement

10:30 – 11:15  Putting the ‘I’ in PLICS
   Jack Hardman, Costing Lead, NHS Improvement

11:15 – 11:45  Break – refreshments served in the break out area

11:45 – 12:15  Some current projects exploring the PLICS data
   Sinéad Dwyer, Economist, Chris Tran, Economic Analyst & Hasina Begum, Economic Analyst, NHS Improvement

12:15 – 13:15  Lunch - refreshments served in the break out area

13:15 – 13:45  Structured networking session

13:45 – 14:30  Case study: Costing obesity and reporting to the All Party Parliamentary Group
   Patrick McGinley, Head of Costing and SLR, Maidstone & Tunbridge Wells NHS Trust

14:30 – 14:45  Comfort Break - refreshments served in the break out area

14:45 – 15:15  Q&A session: Learnings from audits and implementing PLICS
   Donna Pannell, Costing Improvements Manager, NHS Improvement

15:15 – 15:30  Closing remarks

15:30  Close
Welcome, introduction and housekeeping

Patrick McGinley, Head of Costing and SLR
Maidstone & Tunbridge Wells NHS Trust
NHS Improvement update

Jack Hardman, Costing Lead

NHS Improvement
Changes between draft and final cost collection guidance

Episodes collected for acute PLICS submissions

- Feedback supported the change for acute trusts to submit complete and incomplete episodes in 2019.
- The standards process explains how to cost the 4 episode types
- All 4 types will be collected in 2019
- The field named ‘Consultant episode completed indicator code’ detailed in IR1.2 in the technical document will be collected. This field is a year 1 requirement.
- Community and Mental Health trusts should continue to cost completed episodes only

Legally sensitive data

- The guidance on how to identify legally sensitive data in PLICS is still being worked through by NHS Improvement and NHS Digital.
- Once we are certain there will be no changes to the legal restrictions around coding of episodes we will produce a technical update.
- Legally restricted codes lie in sensitive services
  - Gender reassignment
  - Sexual health services
  - HIV/AIDS patients
  - Reproductive medicine

Chemotherapy

- There is no change to the collection of chemotherapy delivery or procurement for 2019
Submission schedule

Reference cost only submissions

• The deadline for Community, Mental health and Ambulance Reference Costs return is the week ending 26th July 2019.

PLICS and Reference Costs submission

• For the acute sector, we will be scheduling your submissions in weekly slots
• You will be asked to select a week in which you wish to submit on a first come, first served basis
• You will be expected to submit your PLICS XML files and your final signed off National Cost Collection workbook on the same day within your chosen week.
• If you submit your signed off PLICS and NCC workbook early, you will have the option to request to submit again within the collection window, if you find a substantial error when internally validating your submission.
• The resubmission period will be between the 14th and the 25th of October 2019.
• Resubmissions will be on request by NHS Improvement only.
• MH/IAPT/Community submissions will run from 16th Sept-18th Oct
National Cost Collection Support

Call Surgeries

In 2019 the National Cost Collection Team will support practitioners by holding a call surgery to help with queries on the cost collection

• Weekly on Wednesdays up to and including 12th June, 2-5pm
• Then daily from 17th June 2-3pm
• The telephone number to use will be announced from the cost collection OLP course next week.

OLP

The National Cost Collection Team will launch the 2019 National Cost Collection course on the OLP on the 4th March.

If you were enrolled on the 2018 course you will be automatically enrolled on the 2019 course.

If you need to be enrolled on the course please email your request to costing@improvement.nhs.uk
New PLICS portal launched

- 9 TFCs present 48% of the total opportunity
- 45% the opportunity in NES POD setting
- 5 HRGs present 30% of the total opportunity
V2 to launch summer 2019
Putting the ‘I’ in PLICS

Jack Hardman, Costing Lead

NHS Improvement
Contents

• National Cost Collection PLICS – a brief overview
• Identifying efficiencies using the NCC PLICS data
• The power of NCC PLICS
• Any questions?
NCC PLICS – A brief overview

• Patient level costing (PLICS) has existed for a long time in the NHS.

• The NHS I costing transformation programme (CTP) is working towards producing a full, standardised national collection of cost and activity data for the whole of the NHS by summer 2020/21.

• Reference Costs (RC), will be phased out over the next 4 years.

• We will refer to this collection as the National Cost Collection, this will be the name from 2018-19 and includes reference costs and PLICS data until the reference costs data is phased out.

• There will be challenges along the way, but they are outweighed by the potential benefits of having this dataset.
**NCC PLICS – A brief overview**

<table>
<thead>
<tr>
<th>Sector</th>
<th>2016-17</th>
<th>2017-18</th>
<th>2018-19</th>
<th>2019-20</th>
<th>2020-21</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute</td>
<td>Voluntary</td>
<td>Voluntary</td>
<td>Mandatory</td>
<td>Mandatory</td>
<td>Mandatory</td>
</tr>
<tr>
<td>Ambulance</td>
<td>Pilot</td>
<td>Voluntary</td>
<td>Voluntary</td>
<td>Mandatory</td>
<td>Mandatory</td>
</tr>
<tr>
<td>Mental Health</td>
<td>Pilot</td>
<td>Voluntary</td>
<td>Voluntary</td>
<td>Mandatory</td>
<td>Mandatory</td>
</tr>
<tr>
<td>Community</td>
<td>Pilot</td>
<td>Voluntary</td>
<td>Voluntary</td>
<td>Mandatory*</td>
<td></td>
</tr>
</tbody>
</table>

*Still undergoing consultation

- We will still be carrying out a full national cost collection of the non-mandated services/sectors, via reference costs, throughout this period.
Identifying efficiencies using the NCC PLICS data

- The tables below are from 2017-18 NCC PLICS data and are the basis of the first case study that I am developing to identify efficiencies and data quality improvements in hip replacements

<table>
<thead>
<tr>
<th>Point of Delivery</th>
<th>Treatment Function Code</th>
<th>Healthcare Resource Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEL</td>
<td>110</td>
<td>HT12D and HT13D</td>
</tr>
<tr>
<td>Non-Elective, Long Stay</td>
<td>Trauma and Orthopaedics</td>
<td>Major and Very Major Hip Procedures with Trauma, CC score 3-5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>All trusts</th>
<th>Trust A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Cost (£)</td>
<td>66,101,325</td>
<td>518,198</td>
</tr>
<tr>
<td>Total Episodes</td>
<td>8,181</td>
<td>56</td>
</tr>
<tr>
<td>Unit Cost (£)</td>
<td>8,080</td>
<td>9,254</td>
</tr>
</tbody>
</table>

- At the highest level, this shows a potential recurrent saving of £1,174 per episode, or £65,718, for trust A
- Using NCC PLICS data we can dig deeper into the possible reasons for this inefficiency

<table>
<thead>
<tr>
<th>NCC Resources</th>
<th>All trusts</th>
<th>Trust A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Cost (£)</td>
<td>66,101,325</td>
<td>1,404,858</td>
</tr>
<tr>
<td>Devices, implants and prostheses</td>
<td>3,103,899</td>
<td>34,980</td>
</tr>
<tr>
<td>Supplies and services</td>
<td>5,762,456</td>
<td>39,836</td>
</tr>
<tr>
<td>Support costs</td>
<td>16,772,914</td>
<td>142,067</td>
</tr>
</tbody>
</table>

- This table suggests that the biggest areas for potential savings are in prosthesis and support cost resources
Identifying efficiencies using the NCC PLICS data

• Focussed on the cost per unit of activity or resource in NCC PLICS and found that the highest potential savings in trust A were in the ward care activity and the nurses resource.

<table>
<thead>
<tr>
<th>NCC Activity</th>
<th>All trusts</th>
<th>Trust A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Count</td>
<td>Ave Cost (£) per unit</td>
</tr>
<tr>
<td>Ward Care</td>
<td>61,339</td>
<td>467.83</td>
</tr>
<tr>
<td>NCC Resource</td>
<td>Count</td>
<td>Ave Cost (£) per unit</td>
</tr>
<tr>
<td>Nurses</td>
<td>71,027</td>
<td>273.77</td>
</tr>
</tbody>
</table>

• The high overall cost could therefore be attributed primarily to the care given by nurses on wards as each instance of these activities and resources cost more than the national average.

<table>
<thead>
<tr>
<th>Total Episodes</th>
<th>All trusts</th>
<th>Trust A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8,181</td>
<td>56</td>
</tr>
<tr>
<td>Age data</td>
<td>LoS data</td>
<td>Age data</td>
</tr>
<tr>
<td>Lower Quartile</td>
<td>77</td>
<td>7</td>
</tr>
<tr>
<td>Median</td>
<td>84</td>
<td>10</td>
</tr>
<tr>
<td>Upper Quartile</td>
<td>89</td>
<td>15</td>
</tr>
</tbody>
</table>

• When considering the longer lengths of stay in trust A, alongside the high nursing and ward care costs we can start to see the possible reasons for the high overall costs.
Identifying efficiencies using the NCC PLICS data

• We looked, on request from a trust, at Geriatric NCC PLICS data as they had found via the model hospital that they were a high cost trust.

• On looking at the data we found that their greatest opportunity was in the setting, TFC and HRG as per the table below.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Treatment Function Code</th>
<th>Healthcare Resource Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEL</td>
<td>430</td>
<td>WJ06H</td>
</tr>
<tr>
<td>Non-Elective, Long Stay</td>
<td>Geriatric Medicine</td>
<td>Sepsis without interventions, with CC score 5-8</td>
</tr>
</tbody>
</table>

• We identified 5 trusts with a reasonable amount of data in a similar geographical location.

• The graphs on the next slide show some of the views of data we can generate using NCC PLICS data and are all based on the setting, TFC and HRG as per the table above.
Identifying efficiencies using the NCC PLICS data

**Trust cost per episode**

- Trust A: NCC Ave cost
- Trust B: Average (5 trusts)
- Trust C: Average (national)

**Age of patients**

Nat Ave. age - 85

**Length of Stay**

Nat Ave. LoS – 6 days

**Multiple episodes per patient**

Trust E: 6%
Trust D: 9%
Trust C: 8%
Trust B: 21%
Trust A: 12%
Identifying efficiencies using the NCC PLICS data

- We found that the 2 closest trusts, in terms of activity were trust A and trust B and trust B was a significantly lower cost per episode so we did some more deep dive analysis into these two trusts.

<table>
<thead>
<tr>
<th>Trust</th>
<th>NCC Activity</th>
<th>NCC unit cost</th>
<th>Total Cost</th>
<th>Total cost at Trust B UC</th>
<th>Potential opportunity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust A</td>
<td>348</td>
<td>6,182</td>
<td>2,151,246</td>
<td>1,086,134</td>
<td>1,065,112</td>
</tr>
<tr>
<td>Trust B</td>
<td>432</td>
<td>3,121</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NCC Activity - Resource combination</th>
<th>Trust A Ave Cost</th>
<th>Trust B Ave Cost</th>
<th>Trust A Opportunity vs Trust B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ward care - Consultants</td>
<td>366.88</td>
<td>153.02</td>
<td>74,424</td>
</tr>
<tr>
<td>Ward care - Nurses</td>
<td>2,423.61</td>
<td>1,209.14</td>
<td>422,637</td>
</tr>
<tr>
<td>Ward care - Other doctors</td>
<td>496.66</td>
<td>147.95</td>
<td>121,351</td>
</tr>
<tr>
<td>Ward care - Support costs</td>
<td>1,303.98</td>
<td>1,164.51</td>
<td>48,534</td>
</tr>
</tbody>
</table>
Identifying efficiencies using the NCC PLICS data

- A couple of quick examples that highlight some other types of analysis that can be done using NCC PLICS data.
- The following examples are from two different trusts, and relate to the setting, TFC and HRG combination shown below.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Treatment Function Code</th>
<th>Healthcare Resource Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC</td>
<td>130</td>
<td>BZ34C</td>
</tr>
<tr>
<td>Day Case</td>
<td></td>
<td>Ophthalmology</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cataract extraction and lens implant, CC score 0-1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Activity</th>
<th>Average Cost</th>
<th>Activity</th>
<th>Average Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midweek</td>
<td>1,986</td>
<td>2,298</td>
<td>576</td>
</tr>
<tr>
<td></td>
<td>576</td>
<td>881</td>
<td></td>
</tr>
<tr>
<td>Weekend</td>
<td>22</td>
<td>107</td>
<td>428</td>
</tr>
<tr>
<td></td>
<td>428</td>
<td>622</td>
<td></td>
</tr>
</tbody>
</table>

Activity vs Unit Cost - Consultant level

Average cost - Midweek vs Weekend
Identifying efficiencies using the NCC PLICS data – next steps

- Even with the initial areas I’ve looked at (Hips, Cataracts and COPD) I have seen patterns emerging in the data that point to clinical variance or differing costing practices across trusts.

- I have lined up conversations with clinicians across the country to look at the following areas in the next few months:
  - Cataracts
  - Breast Surgery
  - Pneumonia
  - Interventional Radiology and
  - Diabetes (secondary care pathway costing)

- I’ve also been able to identify areas of poor data quality, this is being fed back into collections and standards colleagues in NHS I to improve future collections.
The power of NCC PLICS

- Scope of data for an individual patient:
  - 39 trusts and 113 interventions between 06/04/17 & 13/03/18
  - A&E - 61, admitted patient care - 48 and outpatient appointments - 4
  - A number of A&E attendances led to a non-elective admission
  - Total cost (for the 80 trusts that submitted NCC PLICS data) £78,325

- The general pattern seems to be that this patient visits multiple A&E departments (with low levels of investigations and treatments) in a short number of days until being admitted, in most cases for 'unspecified chest pain' and for one day.

- Additionally, there are a few admissions for mental health related issues, both personality disorder and drug and alcohol related.

<table>
<thead>
<tr>
<th>Trust</th>
<th>Dept</th>
<th>Treatment Type</th>
<th>Cost</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust A</td>
<td>AE</td>
<td>Emergency Medicine, Category 2 Investigation with Category 1 Treatment</td>
<td>131.12</td>
<td>12/7/17</td>
</tr>
<tr>
<td>Trust B</td>
<td>AE</td>
<td>Emergency Medicine, Category 2 Investigation with Category 2 Treatment</td>
<td>164.17</td>
<td>13/7/17</td>
</tr>
<tr>
<td>Trust C</td>
<td>AE</td>
<td>Emergency Medicine, Category 1 Investigation with Category 1-2 Treatment</td>
<td>138.61</td>
<td>13/7/17</td>
</tr>
<tr>
<td></td>
<td>NES</td>
<td>Unspecified Chest Pain with CC Score 0-4</td>
<td>152.57</td>
<td>13/7/17</td>
</tr>
<tr>
<td>Trust D</td>
<td>AE</td>
<td>Emergency Medicine, Category 2 Investigation with Category 1 Treatment</td>
<td>191.27</td>
<td>13/5/17</td>
</tr>
<tr>
<td>Trust E</td>
<td>AE</td>
<td>Emergency Medicine, Category 2 Investigation with Category 2 Treatment</td>
<td>217.61</td>
<td>17/5/17</td>
</tr>
<tr>
<td>Trust F</td>
<td>AE</td>
<td>Emergency Medicine, Category 2 Investigation with Category 1 Treatment</td>
<td>134.29</td>
<td>18/5/17</td>
</tr>
<tr>
<td></td>
<td>NEL</td>
<td>Personality Disorders, treated by a Non-Specialist Mental Health Service Provider</td>
<td>371.17</td>
<td>18/5/17</td>
</tr>
</tbody>
</table>
Total Cost by trust

[Map of the United Kingdom with hotspots indicated]
Timelapse

14/03/2018
Potential uses of this type of data:
- Better data sharing could lead to reduced re-admissions or offers of more appropriate support
- Care pathway costing and pricing, particularly if we can eventually add primary care data
- By working with clinicians to examine the lower level detail we may be able to ‘test’ clinical practices to see if costs are directly linked to patient outcomes
- Policy decisions – could the current policies (i.e. A&E LoS) be driving perverse behaviours

Limitations of this data:
- Currently only held for 80 acute trusts and we won’t have a full national dataset covering all sectors until 2020/21
- Currently only collected annually, with data available for analysis/sharing around six months after the financial year it relates too
- It is just data – further local intelligence and clinical support required to truly understand what happened over this year
Any questions?

Is there anything you have seen today that you think would be useful to see in the portal?

Is there anything you’re doing locally that you think it might be useful for us to replicate nationally?

Having submitted NCC PLICS data, are there any way’s you’d like to see us use the data?
Break
(11:15 – 11:45)
Current Economics projects using PLICS data

NHS Improvement Economics Team

April 2019
Plan for session

- Introduction to the Economics team
- Our interest in PLICs
- Current and planned PLICs projects:
  - Cancer pathways
  - Same Day Emergency Care
  - Length of Stay
- Questions

We’re looking for any thoughts, comments, ideas, or issues you can see with our proposed analysis

If you’re interested in these areas, please get in touch!
What is the Economics team?

Core economics team sitting together within Strategy Directorate

- One of the largest group of professional economists in government
- Practical, project-based team, applying economics to problems in NHS
PLICS and health economics

PLICS is an exciting development for NHS economists, giving new possibilities for economic analysis of provider performance:

- Data on *marginal costs* not just average costs.
  - Efficient level of hospital activity is where additional revenue from one more patient = additional cost from one more patient.
  - Reference costs do not allow for estimation – PLICS does.
- PLICS enables examination of *full distribution of costs* within service lines.
- Influence of *patient characteristics* on costs.
  - Cost influenced by consumer characteristics, not just firm efficiency.
  - Are high cost hospitals inefficient, or do they just have sicker patients?
- PLICS enables control for patient health status at individual patient level.
- Influence of *outputs* on costs.
  - Are high cost hospitals inefficient, or are they generating better outcomes?
  - Much more powerful to examine relationship between costs and outcomes at individual patient level than at aggregate hospital level.
Faster diagnosis and treatment of cancer: What can we do and how much will it cost?
Details of our approach

**Patient-centred approach**
Track individual cancer patients along pathway from initial referral to first definitive treatment using HES and PLICS.

- **2WW**: All patients referred for suspected cancer: first outpatient appt in 14 days
- **62 days**: All patients diagnosed with cancer on 2WW pathway should receive first treatment within 62 days.

We look at …

- **Total pathway cost** for all suspected cancer patients
- **Cost of first appointment** for all suspected cancer pts
- **Cost of first definitive treatment** for patients diagnosed with cancer
- Identify **drivers of variation** in costs.
- Quantify cost of faster diagnosis & treatment

We refer to …

- **Referral** → **Entered onto waiting list / PTL** → **1st outpatient appointment** → **Diagnostics / further appointments** → **1st definitive treatment**
PLICs data

Data features

- PLICS data capture variation in the costs of providing healthcare at the patient/episode level
- Break down the cost of patient care at the activity level
- For each activity, information on costs resources used is reported
- Outpatient appointment costs reflect differences in actual consultant costs
- Theatre operations costs reflect actual medical/non-medical staff costs

What they allow us to do:

- Patient level detail allows us to look at drivers of costs at patient/episode level
- Separate between costs of consultations and diagnostic tests (e.g. X-ray, CT)
- Separately identify the costs of drugs, nurses, consultants, devices etc used in each activity
- Examine variation in costs within a hospital resulting from the use of more expensive medical staff or overtime
- Examine variation in cost of operation that may result from the use of more expensive staff or overtime
Project questions

Matching 2017/18 PLICS with HES data:

Is there a cost difference in meeting NHS waiting time standards (2WW and 62 day) compared to not meeting these standards?

What are the different cost profiles between those diagnosed with cancer and those not?

a) What is the difference in average total pathway cost between those diagnosed with cancer and those not?

b) What are the direct cancer cost implications to providers?

What are the main drivers of costs (e.g. waiting times, pathways) for the cancer pathways identified?
Is there a cost difference in meeting the 2WW target?

Needs further investigation and understanding!
Is there a cost difference in meeting the 62 day target?

 Needs further investigation and understanding!
Do pathway costs differ for those diagnosed with cancer?

Effect of diagnosis on total pathway cost

Total cost burden of 2WW referrals

Note: Total pathway cost includes first treatment cost for diagnosed excluding chemo and radiotherapy
Same Day Emergency Care (SDEC): Using PLICS to identify cost
SDEC patient identification method

- SDEC amendable conditions from Directory of Ambulatory Emergency Care for Adults (version 6).
- Work is ongoing across NHSE&I and NHSD to more precisely define SDEC – the following analysis is interim and presented as-is.

**SDEC patient identification method**

1. **Patient has a type 1 A&E attendance**
2. **Departs A&E 9:00 - 16:00 Mon - Sat**
3. **HES A&E**
4. **HES APC**
   - Admitted from A&E at same trust on A&E departure date
   - With SDEC amenable primary diagnosis
   - Discharged on same day (i.e. 0 LOS)
5. **HES OP**
   - Has outpatient appointment at same trust on A&E departure date
   - Is first appointment, not a follow-up
   - Attends the appointment
   - Source of referral is A&E
6. **Patient flagged as having received SDEC.**
Economic case for SDEC

Why are we interested?

- To understand the cost implications from expanding SDEC capacity.
- This analysis could be used by trusts to form a business case.

Our method

- We identify SDEC and potential SDEC spells using admitted patient data from PLICS in 2017/18 which covers 64 acute trusts (ignore OP SDECs).
- Costs include both APC spell cost and AE attendance cost.
Large cost differences as LOS increases

- Cost per patient increases as length of stay increases.
Cost composition varies by LOS

As LOS increases:

- Emergency care and support services make up a smaller proportion of costs.
- Critical care and ward care make up a larger proportion of costs.
Cost split by resource identification

- Devices, implants and prostheses
- Blood and blood products
- Specialist nurses
- Professional & Technical Staff
- Drugs
- Supplies and services
- Department costs
- Consultants
- Other doctors
- Nurses
- Support costs

ILUSTRATIVE
Length of stay: Using PLICS to look at cost implications of different patient LOS
LOS project overview

Our key question: how can we best help trusts to reduce clinically unnecessary stays in hospital for physical acute patients?

Aim

To build evidence where it is lacking, by focusing on:
1. How LOS varies for particular patient cohorts
2. The wider benefits (and disbenefits) of LOS reductions
3. Trust-level drivers of LOS

Data

- Plan to use a combination of HES APC and PLICS data for our analysis.
- Will involve mapping patient pathways and using initial results to develop a theoretical model of drivers of patient level LOS.
LOS project overview

PLICS

Initial exploration of PLICS data has allowed us to identify potential questions that could be investigated:

• For specific patient groups, is there a relationship between resources consumed by day and days spent in hospital?

• On average, do patients with a 21+ LOS tend to have lower costs per bed day than similar patients who are discharged quicker?

• Does this tell us anything about potentially clinically unnecessary stays?

• How does cost vary across treatment? Patient pathways?
Questions/Feedback

General questions

• Is this analysis of interest? Any feedback about our findings/ methods?
• What is your main interest in PLICs analysis?
  • Evidence to plug into business case?
  • Policy case evidence?
  • Improvement evidence?
• Are you aware of any other similar analysis using PLICs?
• Suggestions for new analysis areas using PLICs?
• Is there anything that could be done at national level to help trust-level analysis?

More specific questions

• How granular is staff costing information for outpatient appointments and theatre operations (e.g. actual staff cost for specific consultant vs average for clinic)?
• How well do staff costs capture variation in the use of agency staff or overtime?
• What methods do they use to apportion overhead costs to patients / episodes?
Lunch
Structured Networking session

Patrick McGinley, Head of Costing and SLR
Maidstone & Tunbridge Wells NHS Trust
In your relevant groups, please discuss the below and note down your ideas…you have 30 minutes!!!!

1. With the earlier PLICS presentation in mind, what areas of your organisation would you investigate?

2. With Integrated Care Systems the vision for the NHS in England: a) how do you see your role changing and b) how are you/would you support your ICS?

3. NHSI are considering costing education materials, training and other support for groups such as clinicians, NEDs and CEOs. Which audiences should we prioritise and what do you feel they need to know/need support on?

4. How do you think your PLICS data should be used by the wider NHSI teams (eg Pricing/Model Hospital/Op Prod/GIRFT/Use of Resources) – and what would you hope for from the results?
Case study: Costing obesity and reporting to the All Party Parliamentary Group

Patrick McGinley, Head of Costing and SLR
Maidstone & Tunbridge Wells NHS Trust
Aims of the APPG project

• **A national obesity strategy** for both adult and childhood obesity should be developed and implemented by the Government, with input from key stakeholders. This should look to strengthen existing services and replicate best practice across the country.

• **Obesity/weight management training should be introduced into medical school syllabuses** to ensure GPs and other healthcare practitioners feel able and comfortable to raise and discuss a person’s weight, without any stigma or discrimination.

• The Government should implement a 9pm watershed on advertising of food and drinks high in fat, sugar and salt to protect children during family viewing time.

• The Government should lead or support efforts by the clinical community to **investigate whether obesity should be classified as a disease in the UK**, and what this would mean for the NHS and other services.

• The Government should commission or support the development of a **thorough, peer-reviewed cost benefit analysis of earlier intervention and treatment** of people with obesity.
Aims of the project

• Secondly, to update and assess some of the impacts on NHS and other services

• At presentation to Matt Hancock in January, 2019, the following were accepted as starting point;

• According to research by the House of Commons Library:
  • Currently 27% of adults and 20% of children (aged 10-11) in England have obesity. Prevalence is predicted to increase, alongside the numerous associated physical and mental health conditions, and reduced life expectancy.
  • The cost of obesity is highly uncertain but the latest estimate of the annual cost to the NHS in England is £5.1 billion, projected to reach £9.7 billion by 2050. This is only the cost to the health service; the total cost to the economy will be greater.
Aims of the my involvement in project

• Primarily to have Obesity classified as a disease, not a condition.
• This reflects scientific thinking, that there is a genetic link between Obesity and Depression, and a “thin gene”
• Hugely unpopular politically (”P” and “p”)
  – Challenges 2 stage norm (Eat less, Move more)
  – Challenges the need to take “personal responsibility” – Matt Hancock, 14/1/2019
Stilts project
Development of the project

• Costing start point
• Assess cost per year, episode numbers, length of stay and Trusts
• Acute benchmarking
  – Downloaded data from PCB where Obesity is recorded (secondary diagnosis) over 7 year period
• Segment the data for unforeseen linkages
Benchmarking Findings

• Total of >838,000 rows of data from PCB
• Total cost over period £3.4 bn
• By year, the figures move most significantly in terms of activity (reflecting perceived value of benchmarking and impact of preparing for CTP)
• Move least in terms of average cost per episode.
### Benchmarking Findings

#### Summary cost per year

<table>
<thead>
<tr>
<th>Year</th>
<th>Episodes in year</th>
<th>Cost (£)</th>
<th>Average Cost per Episode (£)</th>
<th>Trust returns</th>
<th>Cost per Trust (£)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010-11</td>
<td>29,876</td>
<td>89,536,508</td>
<td>2,996.94</td>
<td>19</td>
<td>4,712,448</td>
</tr>
<tr>
<td>2011-12</td>
<td>73,809</td>
<td>195,869,418</td>
<td>2,653.73</td>
<td>41</td>
<td>4,777,303</td>
</tr>
<tr>
<td>2012-13</td>
<td>135,637</td>
<td>349,098,282</td>
<td>2,573.77</td>
<td>68</td>
<td>5,133,798</td>
</tr>
<tr>
<td>2013-14</td>
<td>163,194</td>
<td>410,486,080</td>
<td>2,515.33</td>
<td>69</td>
<td>5,949,074</td>
</tr>
<tr>
<td>2014-15</td>
<td>250,179</td>
<td>622,735,489</td>
<td>2,489.16</td>
<td>83</td>
<td>7,502,837</td>
</tr>
<tr>
<td>2015-16</td>
<td>298,410</td>
<td>722,723,901</td>
<td>2,421.92</td>
<td>86</td>
<td>8,403,766</td>
</tr>
<tr>
<td>2016-17</td>
<td>296,770</td>
<td>706,865,544</td>
<td>2,381.86</td>
<td>68</td>
<td>10,395,082</td>
</tr>
<tr>
<td>2017-18</td>
<td>127,404</td>
<td>306,299,518</td>
<td>2,404.16</td>
<td>31</td>
<td>9,880,630</td>
</tr>
<tr>
<td><strong>Sub total</strong></td>
<td><strong>1,375,279</strong></td>
<td><strong>3,403,614,740</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td></td>
<td></td>
<td><strong>2,555</strong></td>
<td></td>
<td><strong>7,094,367</strong></td>
</tr>
</tbody>
</table>
Benchmarking Findings

• Example of segmentation was to focus on people with obesity that have had a fall and been admitted.
• An attempt to look wider than known Diabetes, Cardiac, Cancer linkage
• Obvious focus on Non Elective activity.
• Data was analysed for and primary/secondary code of fall, and secondary diagnosis of Obesity.
• Significant spread of HRGs.
## Benchmarking Findings

### Summary Falls with Obesity

<table>
<thead>
<tr>
<th>Year</th>
<th>Episodes in year</th>
<th>Cost (£)</th>
<th>LOS</th>
<th>Average Cost per Episode (£)</th>
<th>HRG spread</th>
<th>ALOS (£)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010-11</td>
<td>43</td>
<td>100,684</td>
<td>301</td>
<td>2,341.49</td>
<td>25</td>
<td>7.00</td>
</tr>
<tr>
<td>2011-12</td>
<td>129</td>
<td>416,856</td>
<td>835</td>
<td>3,231.44</td>
<td>70</td>
<td>6.47</td>
</tr>
<tr>
<td>2012-13</td>
<td>1,521</td>
<td>4,658,721</td>
<td>11,445</td>
<td>3,062.93</td>
<td>231</td>
<td>7.52</td>
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<tr>
<td>2013-14</td>
<td>2,454</td>
<td>6,813,511</td>
<td>16,962</td>
<td>2,776.49</td>
<td>275</td>
<td>6.91</td>
</tr>
<tr>
<td>2014-15</td>
<td>4,017</td>
<td>10,877,289</td>
<td>25,716</td>
<td>2,707.81</td>
<td>325</td>
<td>6.40</td>
</tr>
<tr>
<td>2015-16</td>
<td>458</td>
<td>1,646,395</td>
<td>2,587</td>
<td>3,594.75</td>
<td>150</td>
<td>5.65</td>
</tr>
<tr>
<td>2016-17</td>
<td>479</td>
<td>1,718,548</td>
<td>2,765</td>
<td>3,587.78</td>
<td>144</td>
<td>5.77</td>
</tr>
<tr>
<td>2017-18</td>
<td>352</td>
<td>1,390,490</td>
<td>2,149</td>
<td>3,950.26</td>
<td>162</td>
<td>6.11</td>
</tr>
<tr>
<td><strong>Sub total</strong></td>
<td><strong>9,453</strong></td>
<td><strong>27,622,494</strong></td>
<td><strong>2,149</strong></td>
<td><strong>3,950.26</strong></td>
<td><strong>162</strong></td>
<td><strong>6.11</strong></td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>3,157</strong></td>
<td></td>
<td><strong>6.48</strong></td>
</tr>
</tbody>
</table>

Average ALOS: 6.48
Limitations of Benchmarking

- Sample data, not all Trusts in all years, and not necessarily full years
- Admitted care only where diagnosis has been recorded
- No OP activity
- No A&E activity
- No Chemo, Rx, Unbundled, HCD
- No Primary Care
- No Community Care
- No Mental Health
- No Ambulance service
For the future

• Obesity calculated from BMI, but BMI does not generate the ICD 10 codes.
• Clinicians do not use “Obese” or “Probably Obese” routinely enough. Do record BMIs a lot.
• MTW now has approved local coding policy that BMIs > 30 or > 40 will be coded “Obese” or “Morbidly Obese”.
For the future

Obesity is normally defined as having a BMI of 30+

- Underweight: 18.5
- Normal Weight: 25
- Overweight: 30

27% of adults in England are obese. A further 36% are overweight.
For the future

• Multiplying up Acute data for Trusts that didn’t contribute.
• Assess gap to 27% of adults.
• Link to other organisations. MTW is looking identifying pregnant women who present with obesity and link these to users of Mother and Baby unit in Mental Health trust. Try and replicate across STP.
• Look to drive forward at patient level?!
For the future

• Beyond NHS, Kent & Medway STP are linking with Darlington council to compare/contrast impact of “place” and environment on combatting disease. Can design help limit effect of disease?
• Assess cost of stigma in people with obesity in wider economic terms.
• Looking to develop research with Kent University on the immunological impact of obesity on Breast Cancer.
• This may help develop better diagnostic tools than BMI
• Can only meet objective of assessing value based intervention if we know the start point.
For the future

• Produce a more robust cost base for NHS and other sectors than £5.1 billion per annum. Impact on jobs, income, growth, pensions, productivity, built environment.
• Provide further incentive to support change in treatment pathways away from surgical intervention.
• What is cost to NHS of obesity within staff? Do we employ more or less than prevalence rate?
• Healthier workplace environment
For the future
Conclusion for Costing

• “You follow drugs, you get drug addicts and drug dealers. But you start to follow the money, and you don’t know where the f*** it’s gonna take you.”

  • Det. Lester Freamon, “The Wire” Series 1, Episode 9
International Conference at Portcullis House
Any questions?
Comfort break
(14:30 – 14:45)
Learnings from Audits and implementing PLICS

Donna Pannell, Costing Improvements Manager
NHS Improvement
Contents

- Learnings from the audits
- Implementing PLICS
- A little help....
Virtuous Cycle of Improvement: Improving the Quality of Your Costing
Year 1 Costing Process and Reference Cost Reviews 2016/17 – Themes Identified

High Risks: 68
Medium Risks: 131
Low Risks: 198
Improvement Opportunities: 95

492 Recommendations

Themes:
- Acute
- Clinical & Wider Team Engagement
- Job Plans
- Data Matching & Quality
- Programme Management
- Pharmacy Data
- Documentation
- Emergency Department
- Board Level Advocacy
Year 2 Early Implementers PLICS submissions 2017/18 - Themes Identified

Costing Assurance Programme Reporting Dashboard

30/30 Reports Completed

140 Findings
26 High Risks
41 Medium Risks
67 Low Risks
6 Improvement Opportunity

Onsite Audit Themes

- Limited clinical and wider engagement
- Incomplete patient-level information
- Limited or incomplete costing documentation
- Allocations based on national tariff
- GL to CL mapping not completed, partially completed, or not approved
- Inconsistent approach in preparing the CAT
- Inaccurate completion of the CAT
- Lack of uniform understanding of the purpose of the CAT
Year 3 - Non PLICS Providers Review
2018 Themes Identified

YEAR 3 INSIGHT DASHBOARD

**HIGH RISK**

- **Emergency Department (ED)**
  Costs are allocated to patients based on time spent in the department with no weightings in place.

- **Critical Care Allocations**
  Weightings often based on national averages rather than a measure of nursing acuity based on treatment procedures.

- **Accuracy of Theatre Costs**
  Costs are based on estimations for session times and resource allocations, and prosthesis costs are based on an average costs.

- **Medical Staffing Costs**
  Medical staffing costs are not appropriately apportioned based on accurate job plans, especially for junior doctors.

**IMPROVEMENT OPP**

- **Non-Admitted Patient Care**
  Allocations are based on estimations for first/follow-up attendances, rather than on actual duration of attendance.

- **Clinical Engagement**
  No processes to obtain clinical engagement at the Trust to validate allocations, inputs or outputs in the costing process.

- **Unmatched Activity**
  High percentage of unmatched activity, and allocation of unmatched activity across all matched activity.

- **Project Management**
  Project plans have not been developed for the 2018/19 CTP submission, especially to address any data quality gaps.

23/23 Reports Drafted
2. Improvements observed from Year 1 to Year 3

- **Board-level engagement**
  - Increased appreciation of the importance of costing.
  - Improved desire to use PLICS data to drive strategic and operational decisions.

- **Improved relationships with costing system suppliers**
  - Greater co-operation between Costing Teams and system suppliers.

- **Better understanding of data quality issues**
  - Improvements have been made in patient-level matching results – for example, increased proportion of positive matches, and development of more stringent matching rules.
  - When data quality issues arise these are investigated and remediated in a timely manner.

- **Greater co-ordination between Costing and Information teams**
  - Costing and Information teams are increasingly working together to share knowledge and expertise.
  - This enhances the accuracy of information used in costing.
3. Common areas for development identified Year 1 to Year 3

- **Clinical Engagement**
  - Limited engagement with clinical services across key services.
  - Lack of clinical involvement in the validation of cost inputs or outputs.
    - **Data Matching**
  - Low levels of data matching for Pharmacy, Pathology and Radiology.
  - Data quality issues are restricting the ability to accurately allocate costs directly to a patient.
    - **Cost allocations based on National Average and National Tariff**
  - Cost allocations for A&E, Critical Care and Pathology have been weighted based on National Average or National Tariff.
  - Not compliant with the Healthcare Costing Standards; not an accurate reflection of actual resource consumption.
    - **Allocation of Medical Staffing costs**
  - Use of job plans is not consistently applied, or information contained in them is not up-to-date.
4. Other factors affecting costing

- **Quality of costing following transactions**
  - Loss of high quality costing processes that have been developed over a number of years.

- **Issues faced in promoting costing when operating under a managed service contract**
  - Trusts are unable to achieve consistent engagement and support in validating costing information.
  - No access to audit trail and system/process notes.

- **Material issues identified within Reference Cost Reconciliations**
  - Increase in the number of material errors identified within Reference Cost Reconciliations.

- **Lack of forward planning to comply with technical standards**
  - Insufficient programme management – for example, lack of project plans detailing key milestones and relevant action owners.
Other learnings

NHSI Desktop review - looks at a couple of things

• Board Assurance
  – report/s to fulfil

• Previous CAP reports
  – required to be followed up by your Audit Committee
  – Want to see progress is being monitored
Other learnings

Quantum review
• Reconciliation to audited accounts
  – Check key entries such as
    • Operating expenses
    • Other operating income

• Exclusions
  – are they reasonable/expected

• Other adjustments
  – Approved
Other learnings…

• Make sure specific items agree to audited accounts – especially other operating income!

• Consider getting financial accounts to review and sign off – but with the guidance!

• Review exclusions and adjustments

• We will again send out a quantum to accounts link
  – showing main codes and sub codes in accounts
  – Will also include hints (i.e. if you have private patients costs expect these to be less than income)
## Implementing PLICS - timetable

<table>
<thead>
<tr>
<th>Main service</th>
<th>Acute services</th>
<th>Mental Health services (inc IAPT)</th>
<th>Ambulance 999 services</th>
<th>Community services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute</td>
<td>2018/19</td>
<td>2019/20</td>
<td>2019/20</td>
<td>2020/21 (TBC)</td>
</tr>
<tr>
<td>Mental Health (inc IAPT)</td>
<td>2019/20</td>
<td>2019/20</td>
<td>N/A</td>
<td>2020/21 (TBC)</td>
</tr>
<tr>
<td>Ambulance</td>
<td>2019/20</td>
<td>N/A</td>
<td>2019/20</td>
<td>2020/21 (TBC)</td>
</tr>
<tr>
<td>Community</td>
<td>2020/21</td>
<td>2020/21</td>
<td>N/A</td>
<td>2020/21 (TBC)</td>
</tr>
</tbody>
</table>
Community services

• Mandation project starting at Easter
• Most acute (131) provide community services
• Therefore we will be looking for acutes, mental health and community providers to be involved in mandation project
• Plan is to undertake and complete with sign off by November/December 2019
• Would then be mandated from 2020/21 (collection in 2021)
Required to follow up impact assessment from 2017/18 on acute

How accurate were our costs

• We will be sending a questionnaire on
  – System costs (generic)
  – Cost of any IT upgrades for trusts
  – Staffing and associated costs
  – Both implementation and estimated annual costs

Also be any additional
• Benefits of implementing PLICS
• Threats and issues with/to implementing PLICS
....how will it be used

To assess whether we got the “cost” estimated were correct

• Community impact assessment assumptions
• Any future changes around regularity of collection
  – Possible but would require another impact assessment
• Understand any unexpected benefits or issues
  – Also use to support Case for Change 2!
  – Feed into our work for future collections
Closing remarks
Thank you for attending

Please complete the feedback form online

email: Costing@improvement.nhs.net