Costing Regional Forum: London

08 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 Economics Update
               Matt Skellern, Economist, NHS Improvement
               Dimitris Pipinis, Economist, 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 Costing and Model Hospital progress at King’s College Hospital
               Gary Alltimes, SLR Operational Manager, King’s College Hospital NHS Foundation 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
               Jack Hardman, Costing Lead, NHS Improvement
15:15 – 15:30 Closing remarks
15:30          Close
Welcome, introduction and housekeeping

Gary Alltimes, SLR Operational Manager
King’s College Hospital NHS Foundation 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 26\textsuperscript{th} 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 14\textsuperscript{th} and the 25\textsuperscript{th} of October 2019.
• Resubmissions will be on request by NHS Improvement only.
• MH/IAPT/Community submissions will run from 16\textsuperscript{th} Sept-18\textsuperscript{th} 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.

### Identifying efficiencies using the NCC PLICS data

- 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.

### NCC Resources

<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>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>
<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.

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**Put the ‘I’ in PLICS**
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></td>
<td></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></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Age data</td>
<td>LoS data</td>
</tr>
<tr>
<td>Total Episodes</td>
<td>8,181</td>
<td>56</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**

<table>
<thead>
<tr>
<th></th>
<th>NCC Ave cost</th>
<th>Average (5 trusts)</th>
<th>Average (national)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust D</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust E</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Age of patients**

<table>
<thead>
<tr>
<th>Trust</th>
<th>Age - Upper Q</th>
<th>Age - Median</th>
<th>Age - Lower Q</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust D</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust A</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Length of Stay**

<table>
<thead>
<tr>
<th>Trust</th>
<th>LoS Upper - Q</th>
<th>LoS - Median</th>
<th>LoS - Lower Q</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust D</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust A</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Multiple episodes per patient**

<table>
<thead>
<tr>
<th>Trust</th>
<th>Patients</th>
<th>Episodes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust E</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust D</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Nat Ave. LoS – 6 days

Nat Ave. age - 85

Putting the ‘I’ in PLICS
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></th>
<th>Trust A</th>
<th>Trust B</th>
<th>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>Opthalmology</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>Setting</th>
<th>Trust A</th>
<th>Average Cost</th>
<th>Trust B</th>
<th>Average Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midweek</td>
<td>1,986</td>
<td>576</td>
<td>2,298</td>
<td>881</td>
</tr>
<tr>
<td>Weekend</td>
<td>22</td>
<td>428</td>
<td>107</td>
<td>622</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.

<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>Trust C</td>
<td>NES</td>
<td>Unspecified Chest Pain with CC Score 0-4</td>
<td>152.57</td>
<td>13/7/17</td>
</tr>
</tbody>
</table>

• 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 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>Trust F</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
Timelapse

14/03/2018

NHS Improvement
The power of NCC PLICS

• 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
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?

Average cost of first appointment (£)

- Lower GI
- Lung
- Prostate

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

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

- Patient has a type 1 A&E attendance
- Departs A&E 9:00 - 16:00 Mon - Sat

HES A&E

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)

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

Patient flagged as having received SDEC.

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.
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

Length of Stay

Average cost
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.
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

Gary Alltimes, Senior Cost Accountant, King’s College Hospital NHS Foundation 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?
Costing & Model Hospital progress at King’s College Hospital

Gary Alltimes
Senior Cost Accountant, KCH
Chair, NHSI London Costing Regional Forum
Primary Finance-Based Reporting Tools Utilised By KCH

- National Cost Collections
  - Model Hospital
  - PLICS Portal

- ESR
  - Financial Oversight Meeting (FOM) pack

- PLICS
  - Patient Cost Benchmarking

- GL

- SLR

- Hospital Optimisation Benchmarking
Main Users of Finance-Based Reporting Tools At KCH

**Service Line Reporting (SLR)**
- Strategy
- Finance Managers
- Service Managers
- Costing

**Patient-Level Information Costing System (PLICS)**
- Costing
- Strategy
- Financial Improvement Team
- Service Managers

**Model Hospital**
- Strategy
- Financial Improvement Team

**Patient Cost Benchmarking / Hospital Optimisation Benchmarking**
- Costing
- Strategy
- Financial Improvement Team

**Finance Oversight Meeting pack (Financial Performance & CIP)**
- Finance Managers
- Service Managers
Patient Level Costing At KCH

- Operational in various guises for 10+ years
- Information previously presented in Business Objects and via Excel-based reporting tool
- KCH installed software to enable CTP compliance in early 2018
- Submitted to non-mandatory PLICS collection in 2018
- Allocations developing in line with Costing standards and SLR mapping
- Full income allocation model built into costing model in December 2018
- Bespoke PowerBI dashboards being created for internal use:
  - Initial dashboards created
  - Reports range from Trust headline totals to individual patient cost item detail
  - New phase in development following consultation with primary users
    - Strategy team, Finance Managers, Service Managers, Clinicians
  - Continued development of reports planned alongside Trust-wide roll-out
Model Hospital Utilisation At KCH

- Model Hospital is currently primarily used by the Strategy and Finance Improvement Teams
- Used to identify opportunities for financial improvements and in development of CIPs
- Overview and findings presented at divisional financial recovery meetings

Positives from users

- Used as an indicative tool to focus limited managerial bandwidth on looking for opportunities in the areas with the largest potential impact
- Effectively benchmark to establish areas of good or poor performance against a pre-selected group of peers
- This can be used in tandem with more granular PLICS tool to really bottom out the reason behind the indicative opportunities

Negatives from users

- Does not provide indicators as to how opportunities can be realised
- Needs to be used in conjunction with PLICS data to provide effective context
- The data is not site specific. Further data requests to BIU/Finance in some cases to get the data to see whether they are a contributor. This also skews peer groups for some sites.
- The Cost per WAU is not easily replicable by the Trust.
- No income information
Group Discussion

- Which Trusts are activity using Model Hospital at present?
  - How is this current being used?
  - Has this work led to greater clinical engagement?

- Is any other work being done to improve clinical engagement within Trusts?

- For Trusts not doing so, what is the main barrier to using Model Hospital at present?
King’s Analytical Forum

Chaired by the Head of Business Information, King’s Analytical Forum aims to form a community for analytical minded members of the KCH for the benefit of the Trust.

Formed of staff from Information, Strategy, IT, Finance, Clinical Systems and other analytical teams with the following aims:

- Harness collectively our analytical expertise and skills that exist across our organisation, highlighting King’s analytics and bridging existing silos that stifle innovation

- Share ideas and innovation around new analytical techniques and technology that emerges to deliver the greatest impact on enhanced health and care delivery

- Discuss, share and enhance emerging analytical skills that are prevalent, and that require developing in existing workforce teams and those being recruited

- Share knowledge, and the use and understanding of emerging technology so that the greatest impact with the resources available can be achieved

- Reduce duplication of effort by increasing focus on analytical project topics, that each of the member’s teams (and potentially wider) are focusing on

- Inform and engage on data sources available that maybe utilised with analytical techniques to bring about health and care benefit
Any questions?
Comfort break
(14:30 – 14:45)
Learnings from Audits and implementing PLICS

Jack Hardman, Costing Lead, NHS Improvement
Contents

- Learnings from the audits
- Implementing PLICS
- A little help….
Year 1 Costing Process and Reference Cost Reviews 2016/17 – Themes Identified

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

Themes Identified:
- Clinical & Wider Team Engagement
- Job Plans
- Data Matching & Quality
- Programme Management
- Documentation
- Emergency Department
- Board Level Advocacy

Recommendations: 492
Year 2 Early Implementers PLICS submissions 2017/18 - Themes Identified

Costing Assurance Programme Reporting Dashboard

30/30 Reports Completed

140 Findings

11 High Risks
41 Medium Risks
67 Low Risks
6 Improvement Opportunity

Limited clinical and wider engagement
Incomplete patient-level information
Limited or incomplete costing documentation
GL to CL mapping not completed, partially completed, or not approved
Allocations based on national tariff
Limited governance around data quality/data matching

CAT Tool Observations

Inconsistent approach in preparing the CAT
Inaccurate completion of the CAT
Lack of uniform understanding of the purpose of the CAT

Onsite Audit Themes

On Track
Partially On Track
Not On Track
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 are 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 cost.

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

**MEDIUM RISK**

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

**WORD CLOUD**

Unmatched Activity, Clinical Engagement, Shift Level, WIP, Sessional Costing, Job Plans, Project Plan, Data Matching, Data Quality, Treatment Procedures.
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>
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</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>
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<td>2020/21</td>
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<td>2020/21 (TBC)</td>
</tr>
</tbody>
</table>
Implementing PLICS…CHS

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)
A little help…..

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

e-mail: Costing@improvement.nhs.net