# Guest Editorial: Transitioning from reference costs to patient-level costing

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## The history of costing in the NHS

Secondary care providers have been submitting a reference cost return since 1998 and the National Schedule of Reference Costs (NSRC), (NHS Improvement, 2018) has been compiled annually as a result. Reference costs record the average (aggregated) unit cost to the trust of providing defined services to NHS patients in a given financial year. While comprehensive in terms of its coverage of the sector, it has been criticised for:

- not providing sufficiently granular cost data to lead to changes in sector financial efficiency and transformation, due to the level of aggregation required to make a submission
- a lack of clear instruction and guidance on how to prepare costing returns, leading to inconsistency in the methodology applied by providers
- an absence of clinical engagement in assuring the reference cost returns are an accurate representation of the real pathway costs.

The processes for submitting reference costs – and their accuracy – vary considerably between trusts. Between 2013 and 2015, audits commissioned by NHS Improvement found that more than 50 per cent of acute trusts' submissions were materially inaccurate (Monitor, 2014 & 2015). While more recent audits suggest the quality of reference costs submitted by acute trusts has improved, the fundamental underlying issues remain the same.

Since 2012, NHS England and NHS Improvement has advocated mandating patient-level costs (known as PLICS) rather than reference costs as PLICS offers a much richer source of cost data, linkable at patient level, to improve value in the NHS. A consultation in 2014 (GOV.UK, 2014) covered a detailed plan and timetable for their adoption, and it received positive feedback. In addition, Lord Carter's Review of Operational Productivity (Department of Health, 2016) identified the need for PLICS to support the elimination of unwarranted variation.

## The transition in costing methodologies

As a result of this, in 2015, NHS England and NHS Improvement, in partnership with NHS Digital, created the Costing Transformation Programme to address the criticisms levelled at reference costs. The aim was to improve the quality of costing information in the NHS through costing individual patient episodes using a single annual cost collection held in early Summer 2021.

The six-year plan to migrate aggregated costs to patient-level includes the following workstreams:

- **stakeholder engagement (including clinicians)** to educate the wider audience to the uses of costing data and promote the transformation project in all sectors. This will ensure voluntary uptake and support the improvement of data collection and quality.
- **mandating** to ensure consistency in costing methodologies which align across providers to ensure system-level decisions are based on costs from within a clear baseline framework and for the system to understand the impact on providers of the move from aggregation to patient-level costing.
- **developing and implementing costing standards** to reduce the provider inconsistencies through producing fit for purpose costing standards on time and to the quality required and therefore deliver mandatory regulatory framework for costing.
- **single cost collection** transitional voluntary collections to run alongside roadmap and voluntary collections to prepare for a single integrated collection by 2021. This will enable providers who deliver care to more than one sector to undertake one collection, regardless of services being offered.

- **data quality and assurance** to align with the costing standards and mandation process. The programme focused on quality of costing across the sector through cost assurance programme.
- **data outputs and uses** to produce end state products which meet the user's needs for cost data, including NHS England and NHS Improvement statutory powers relating to pricing and the national tariff, Model Hospital, use of resources and Getting It Right First Time (GIRFT). In addition, supporting the provider sector to use PLICS to benchmark costs and drive service improvement and transformation.

The work streams were shaped to counter the critiques levelled at the reference cost collection and to make better use of data/digital technology.

## Key synergies with other NHS strategies

Initially, the roll out programme for PLICS was a key enabler of *Five Year Forward View*, (NHS, 2014) enabling providers to more accurately understand their cost bases and therefore support the sustainable delivery of high-quality patient care. However, with the publication of the *NHS Long Term Plan* (NHS, 2019) it is now vital contributors address:

- the creation of new services models through more joined up care and improvements in overall population health (Chapter 1)
- the improvement of outcomes driven through understanding unwarranted variation (Chapter 3)
- the changes required to the workforce pressures through new staffing models (Chapter 4)
- the return to a sustainable financial balance for the NHS through getting the most out of tax payer investment in the NHS (Chapter 6).

Importantly, the move away from aggregation supports the *NHS Long Term Plan* in the following ways:

- PLICS allows consistent, linkable, cost data at patient-level and through that, a single view of the resources consumed in delivering secondary care, to help design more efficient and effective ways of meeting patient needs
- PLICS is the biggest data collection in the NHS and, once fully rolled out, will provide a powerful resource for individual trusts but more crucially across provider boundaries enabling integrated care organisations to understand the whole patient pathway within secondary care.

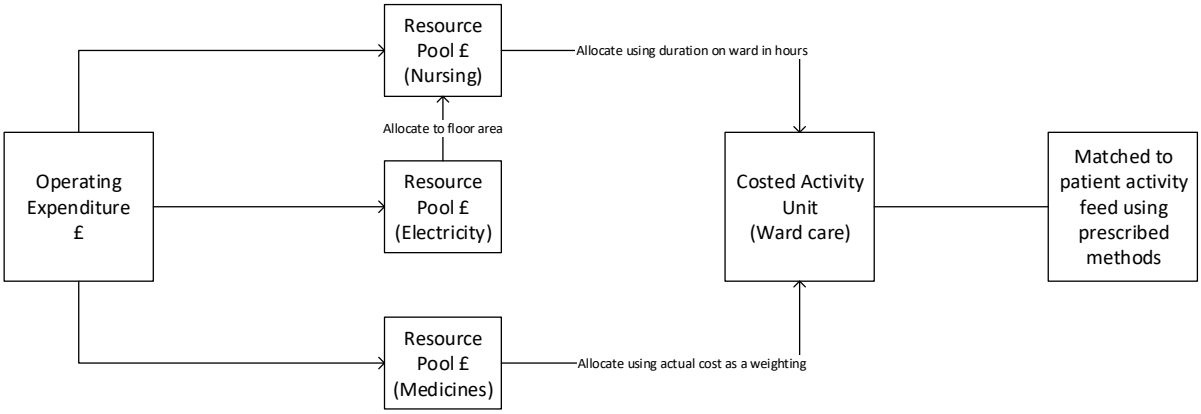
The programme is expected to see benefits earlier than 2021, as data collected in 2019 will support the operational productivity programme, including the Model Hospital, and its rollout to ambulance, mental health and community health services. More granular and transparent costs will support the future development of national tariff prices and currencies.

## The theory of patient-level costing (2019)

The important difference between reference costs and patient-level costing is the linkage to a number of key master and supporting information feeds to get a unique cost per patient, dependant on their individual experience within the care setting. Each pound within the general ledger is linked to prescribed resources (ie: drugs, specialist nursing, consultant) using defined allocation methods[1] to link it to prescribed activities (ie: ward care, MRI, wheelchair issue). These costed activities are then matched to master activities (ie: unique inpatient episode) to create an individual patient level cost which can be analysed in a variety of different ways.

The figure below outlines a simplified version of PLICS in practice:

[1] Defined as "The process of distributing costs from a high-level pool of costs to a specific department, activity or patient, using a predetermined method." Prescribed methods include headcount, cost, usage and time.




On a simplified level, PLICS breakdown a providers operating expenditure into resource pools where the costs are similar in nature for example, nursing.This is then linked to the activity unit which drives the expenditure of this resource. In this example of ward care, it would be allocated across all the occupied bed hours on the ward. This hourly cost would then be linked to the patient on the ward for each day of their length of stay.

There is an expectation that by year 3 of the transition plan all activities in provider organisations will have patient level feeds available to enable a cost model fully costed using Costing Transformation Programme methodology. Information on patient level feeds, allocation methods and transition paths can be found on the NHS England and NHS Improvement website (NHS Improvement, 2019).

| Term | Definition |
|---|---|
| Activity | A measurable amount of work performed using resources to deliver the services required by patients to achieve desired outcomes; e.g. a procedure in theatre, pathology test or therapy contact. |
| Resources | Components used to deliver activities, such as staff, equipment or consumable. The cost ledger is mapped to a prescriptive list of resources provided by NHS Improvement in the costing standards technical document. |

The programme is managing a significant volume of data to produce granularity in the final product. In 2017/18, there were 6 million records for the collection of reference costs across the secondary care sector. In comparison, for the 80 acute trusts submitting voluntary patient-level cost data, there were approximately 3 billion records.

As a result, the programme is looking to use technological improvements to enable providers to access a much more granular level of data through an online portal. This is in addition to aggregated data being available on the NHS England and NHS Improvement website. This will empower the end users of the data to produce stronger benchmarking, enabling them to mould the datasets to meet individual unique criteria.

For 2019, the programme is running its first mandated patient-level collection with the acute sector for attendances in accident and emergency, outpatients and for episodes within admitted patient care.

It does however remain a mixed methodology for the acute trusts' collection, with several key areas outside of the scope of PLICS collection. The primary areas outside of the scope are high cost drugs, blood and devices, critical care and unbundled outpatient imaging. The programme envisages this to be collected from 2020 at patient-level as part of the overall transition plan to achieve a single national cost collection in 2021.

## Patient-level costing in practice (2019)

NHS England and NHS Improvement have worked with providers to generate a series of case studies. These highlight ways that the new rich patient-level cost data can be used to identify unwarranted variation in patient care leading to improved patient care which is also more cost-effective.

These case studies are expected to be published on the NHS England and NHS Improvement website and will aim to give providers a framework to use when benchmarking against and working with each other to improve consistency of care across the country. It expected that the use of these case studies as frameworks will deliver improved patient care and national cost efficiencies.

An example of where patient-level data has been used to deliver improved patient care and a reduction in costs is spinal injections. A trust in the South East (Provider A) were concerned that they were making significant losses when delivering spinal injections under admitted patient care in Trauma and Orthopaedics (T&O).

Nationally, a greater proportion of spinal injections are delivered in Pain Management (PM) and PLICS demonstrated that spinal injections administered in PM are more cost-effective than those administered in T&O.

**Provider A delivered most of the service in T&O:**

| | **T&O** | | | | **PM** | | | |
|---|---|---|---|---|---|---|---|---|
| | Total cost | **Average cost** | **Activity** | **Proportion of total** | **Total cost** | **Average cost** | **Activity** | **Proportion of total** |
| **Provider A** | £1,158,047 | £624 | 1,856 | 71% | £417,274 | £550 | 758 | 29% |
| **All other trusts** | £6,371,912 | £888 | 7,177 | 21% | £19,140,645 | £725 | 26411 | 79% |

By revising the service location to be more aligned to the national delivery picture; Provider A found a realistic saving opportunity of c£95,000.

| | **Total cost** | **Average cost** | **TC Variance** |
|---|---|---|---|
| **Current position** | £1,575,321 | £603 | |
| **All in T&O** | £1,630,999 | £624 | £55,678 |
| **All in PM** | £1,438,991 | £624 | (£136,330) |
| **Provider A using national deliver picture** | £1,480,019 | £566 | (£95,302) |

Further opportunities can also be identified by using the new activities and resources to scope the underlying costs of clinical variation. Providers can therefore consider the difference in costs depending on when the episode occurred. For example, the table below shows that the cost of delivering spinal injections in T&O in Provider A is lower per episode when carried out at the weekend. Combining this information with the activities and resources means the provider can understand which elements of the service are carried out during the week.

| | **Provider A – T&O** | | |
|---|---|---|---|
| | **Cost** | **Average Cost** | **Activity** |
| **Midweek** | £903,334 | £652 | 1,386 |
| **Weekend** | £261,461 | £547 | 478 |

Another provider (Provider B) in the same region as Provider A carried out around half of their spinal injections as an outpatient procedure at 20 per cent of the cost of the same procedure in day case. As part of the case study process, NHS England and NHS Improvement have connected costing and clinical colleagues at the two providers to work together to understand whether Provider A could move their services away from admitted patient care, leading to additional potential savings opportunities.

| | **Provider B** | | |
|---|---|---|---|
| | **Total cost** | **Average cost** | **Total activity** |
| **Day case** | £395,828 | £636 | £622 |
| **Outpatient procedure** | £79,575 | £122 | £653 |

Using patient-level cost data, Provider A (supported by the case study analysis prepared by NHS England and NHS Improvement) has re-organised its spinal injections service and is working with Provider B to understand if it can be further improved by moving the appropriate workload into outpatient procedures. The change driven by patient-level costing data has been communicated across the organisation, with the Deputy Medical Director stating *"The spinal service has engaged with the results of your work and are changing their service. Many thanks again for your work on this – it will make a big difference to overall patient care & quality"*.

**Full details of this and the other case studies can be found on the NHS England and NHS Improvement website (https://www.england.nhs.uk/publication/).**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