

Research Executive Summaries Series
Decision Making in Health Care:
Exploring Cost Variability

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Executive Summary

A copy of the full report is available for download from the CIMA website; www.cimaglobal.com

Based on the original CIMA funded research project 'Benchmarking in Health Care: Analysing Cost Variability (2003) and 'The ladder of success' in healthcare: the UK national reference costing index' Management Accounting Research 14 (2003) 51-66 by Professor Deryl Northcott, The Auckland University of Technology and Professor Sue Llewellyn, University of Leicester.

1. Overview

NHS Trusts are now acutely aware that reference cost variability sends messages about efficiency and that resource allocation will, in the future, be driven by such messages. This will mean that more money will be available to hospitals that can demonstrate efficiency in cost terms.

Relative performance evaluation (RPE) is a form of benchmarking that operates through ranking institutions in comparative league tables. RPE has been introduced to benchmark UK hospital costs via an approach known as 'The National Reference Cost Exercise' (NRCE). The resulting Index (NRCI) ranks Trusts on their relative cost efficiency, therefore pegging NHS Trusts against each other.

Worryingly, variability of the costing data continues to be a problem, especially given that the NHS Executive has stated that they will use the Index to guide resource allocation and to establish differential targets for efficiency improvements. In addition, these costs are now to form the basis for setting standard price tariffs for health care purchasing.

Yet before NRCE information can be used for these purposes, the authors of the research propose that the causes of cost variability should be clearly understood to ensure that inappropriate decisions are not made.

The research paper, by Deryl Northcott and Sue Llewellyn is a CIMA sponsored study, and aims to identify, explore and elucidate the factors that contribute to cost variability within the NRCE. The research indicates that many complex and diverse factors contribute to cost variability within the NHS. It also considers the usefulness of the index and its associated reference costs for benchmarking purposes in the UK NHS.

2. Introduction

The NRCE (National Reference Costing Exercise) imposes a requirement on all English NHS acute hospital trusts to report their costs, on a consistent basis, for a wide range of healthcare activities. The scope and detail of costed healthcare resource group (HRG) data presented as reference costs has been expanding since its introduction in 1998. It is intended that by 2004 the NRCE will provide comprehensive cost data across all non-primary health care activities within any mode of service delivery (e.g. elective and emergency inpatients, day cases, outpatients, critical care, accident and emergency, community care). The NRCE will then constitute the largest cost information resource ever made available to support NHS benchmarking, cost management and decision making.

In order to compute the index, healthcare activities are categorised within HRGs, the costs of which are calculated retrospectively, based on actual costs incurred by trusts. HRGs group together treatments that are clinically similar, consume similar quantities of resources and are likely to be similar in cost.

Yet the research shows that the reliability and comparability of reference cost data and, hence, its usefulness for benchmarking, remains in question. Reference cost schedules published to date reveal wide variations in unit costs for almost every HRG, but the sources and significance of this variability are poorly understood. Within this context, the research paper explores the potential for the index to inform NHS benchmarking, particularly from the perspective of purchasers in the commissioning process, and also identifies the issues that have, so far, impeded its usefulness in RPE terms.

3. The index

The NRCI presents a single figure for each NHS trust that 'compares the actual cost for its case-mix with the same case-mix calculated using the national average'. An index score of 100 is interpreted as 'average' cost performance, whereas scores above or below 100 suggest above or below average cost performance. For example, a score of 102 indicates costs that are 2% above the average whereas a score of 98 may indicate a somewhat more efficient hospital performance. The single figure is to measure the overall technical efficiency of a trust. As table 1 demonstrates, the league table is a slippery one! There have been some surprising year-on-year movements. For example, North Hampshire shot up to first place in the 2000 results, an astonishing 'jump' from the previous year when it was virtually at the bottom of the table, and the Royal National Hospital for Rheumatic Diseases - a presentable 28th on the 1999 ranking - dropped to 118th in 2000. Overall, the rankings demonstrate extreme instability in reported performances. What do these 'jumps' and 'falls' mean? Is the index a compelling benchmarking tool that leads hospitals to focus so intently on improving their rating that they are able to achieve remarkable results in one year only, or is the data quality so poor that 'leaping' and 'falling' hospitals appear as mere artefacts of the data collection process? Some more light is shed on these alternatives in the following sections by considering further the data that underlies the index.

NHS Trust	Market force factor adjusted trimmed index			
	2000 index		1999 index	
	Score	Ranking	Score	Ranking
The 2000 'top five' trusts				
North Hampshire London Community	63	1st	150	228th
Moorfields Eye Hospital	71	2nd	88	88
Weston Area Health	73	3rd	80	7th
Nottingham City Hospital	74	4th	100	113th
Countess of Chester Hospital	74	5th	75	3rd
The 2000 'average' trusts				
Portsmouth Hospitals	99	150th	97	85th
Grantham and District Hospital	100	151st	108	168th
City Hospitals (Birmingham)	100	151st	92	49th
Salford Royal Hospitals	100	151st	113	188th
North Hampshire Hospitals	100	151st	96	74th
East Kent Acute	100	151st	N/A	N/A
Tameside & Glossop Community and Priority Services	10	156th	106	152nd
The 2000 'bottom five' trusts				
Royal National Orthopaedic Hospital	134	117th	154	232nd
Royal National Hospital for Rheumatic Diseases	145	118th	91	28th
Preston Acute Hospitals	148	119th	103	129th
Great Ormond Street Hospital for Children	164	220th	117	202nd
Birmingham Children's Hospital	174	221st	134	226th

Table 1.

Table 1. The 'ladder of success' for NHS trusts, from 'The ladder of success' in healthcare: the UK national reference costing index' Management Accounting Research 14 (2003) 51-66 by Deryl Northcott and Sue Llewellyn.

4. Benchmarking potentialities for the NRCI

Despite the problems, NHS actors recognise a need for comparative cost information. Clinicians and managers alike have noted their desire to use cost information for benchmarking and highlighting potential cost savings. Health Authorities want some means of comparing the efficiency of the Trusts from whom they commission services. The government wants improved accountability for health expenditure, and sees cost visibility as an important element in achieving this control.

5. Benchmarking problems with the NRCI

There are presently considerable question marks over the credibility of the reference costs for benchmarking. Case study and survey evidence reveal three key issues that confound the use of the index for RPE:

1. The absence of an accepted benchmark for RPE;
2. Problems relating to institutions that consider themselves exceptional; and
3. Difficulties in ensuring that the costs are produced in comparable ways across the trusts.

These issues are discussed, in turn, below.

5.1. Absence of standards

The biggest problem with the index for benchmarking purposes is the lack of a benchmark! In the absence of such a benchmark (or standard), trusts aim for an average or 'normal' performance. The norm then becomes the standard aimed for.

'Everyone wants to be at 100 on the index rather than being 120 or 80, so everyone is clustering around the norm, rather than trying to aim for a standard'.
(Interview: Clinical Director, a South East NHS trust)

There is no indication of what an excellent performance would be. Is a low index a superlative outcome? Equally, is having the highest index a worrying matter, or is it indicative of being a high quality (and, hence, high cost) centre of excellence?

In the absence of both a benchmark for excellence and a definition of unacceptable performance, trusts are free to offer their own interpretations of their index scores.

'A low index score means you're efficient, but a high index score means that your quality must be excellent!'
(Interview: Cost Accountant, a South West NHS trust)

Maybe the benchmark or standard does not equate to an excellent performance but a 'good enough' one - the trusts are confused!

5.2. Issues relating to 'exceptional' cases

For benchmarking to be seen as legitimate, the basis on which trusts are compared must be as similar as possible in the relevant respects. How then do we compare trusts with different emphases, such as a paediatric specialist hospital and a geriatric facility?

Such trusts consider that their case-mix makes them worthy of special consideration. For example, a specialist trust or teaching hospital may take on more complex cases than those dealt with by a general district hospital within the same procedure code and/or HRG.

This aside, inherent characteristics of a trust's own local population (e.g. social deprivation and/or demographic characteristics) can impact on case-mix at even non-specialist hospitals.

The most obvious aspect of determining cost efficiency is to assess the costs incurred by a trust in running its facilities and providing healthcare to its patients. NHS personnel noted that substantive differences do exist in the costs incurred by different trusts. In particular, the age, sophistication and location of a trust's facilities influence fixed costs such as capital charges and depreciation.

Fixed costs are not the only contentious issue. Some direct costs, in particular labour costs, are geographically dissimilar, with London and South East trusts generally incurring higher costs than other trusts.

The fact that such inherent cost differences exist, and are so difficult to adjust for, suggests that they must impact on reference cost variability. The important issue here is whether such inherent cost differences are indicative of efficiency. In the long-term, it might be possible for some NHS trusts to rationalise their services or move to more cost-effective locations. But the potential for reducing many costs in the short-term is clearly limited.

All of these instances of 'exceptional circumstances' imply that costs for one trust cannot easily be interpreted alongside those for other trusts. The transparency and comparability of the NRCE index is therefore reduced at best, and its usefulness for RPE (relative performance evaluation) purposes is brought into question.

5.3. Difficulties in ensuring that the costs are produced in comparable ways

If the costs that underpin the index are not compiled in comparable ways, then the cost variability that results may merely reflect different costing practices rather than varying levels of cost efficiency. In such circumstances use of these costs for benchmarking will result at best in scepticism, at worst in misleading information. In order to cost HRGs, trusts produce 'costed care profiles'.

The use of costed care profiles is closely related to the issue of cost allocation, and presents another complicating factor in compiling reference costs. Since it is impossible to measure the actual cost of every procedure performed in a hospital, costed care profiles are used to identify a standard cost per unit (or per finished consultant episode (FCE)) for a healthcare procedure. There are usually several procedures grouped together within any one HRG code, so an HRG reference cost comprises a weighted-average of the procedure costs (i.e. costed care profiles) within that HRG category. In constructing each costed care profile, any identifiable direct cost is traced 'bottom up' to the procedure (e.g. the cost of expensive prostheses), while other costs are pooled and apportioned to the procedure based on the consumption of cost driving activities (e.g. patient length of stay). The more sophisticated the 'bottom-up' costing approach, the more an HRG (reference) cost can be thought of as reflecting direct cost causality rather than an arbitrary process of cost allocation.

Overall, cost practices have not been sufficiently standardised to allow for confidence in the robustness of reference costs. Variations both in cost allocation practices and in 'bottom-up' costing are contributing to reference cost variability, and are confounding trust managers' attempts to compare their costs to those of other trusts (as external reference cost benchmarks) in order to inform cost control measures. Lack of rigour in the costing that underpins the index is undermining the validity of the index for benchmarking.

6. Conclusions and a way forward

The findings of the research paper suggest that this benchmarking exercise has not, so far, been an altogether workable NHS initiative.

The study revealed that the NRCE initiative failed to identify either a benchmark for excellence or a standard of acceptable cost efficiency. Further consideration needs to be given to locating NRCE targets. In the absence of these, the 'target' equates to a moving, 'default' norm of the 100% index average. The meaning of achieving 'average' cost efficiency remains undefined, yet presently this is what the trusts are aiming for.

An important further question is how cost efficiency measures are to be balanced against indicators of quality and service performance.

In addition to the lack of convincing benchmark standards, there is the difficulty of judging different institutions against each other. Costing practices for HRGs in the hospitals that feature in the index are not sufficiently standardised to ensure confidence that varying costs really reflect different levels of efficiency rather than different cost allocation methods. There is also the question of how to evaluate those who define themselves as exceptional.

All of these difficulties negate the achievement of the central pillars of benchmarking: continuous improvement; measurement against a referent other, and rigour.

The participants in the study desired continuous improvement, but the index was not yet thought to be enabling improvement in any substantive way.

In an era when the government is increasingly relying on performance rankings, the index occupies a leading place in performance benchmarking, the findings of this study indicate that significant legitimate concerns exist regarding the use of the NRCI in a 'naming and shaming' competitive context. However, purchasers see potential for the database that underlies the index to enhance their role. And, the index does provide NHS trust managers with comparative cost information against which they can benchmark their own trust's results and from which they can launch more detailed investigations.

The NRCE has been acknowledged by the NHS Executive and by managers in Trusts and Health Authorities as a work in progress. As users of NRCI data gain experience in interpreting the different indices produced, this database of comparative cost data has the potential to provide a useful resource for Trusts in benchmarking their relative positions and identifying cost efficiency trends over time. For now, however, the findings of the study suggest that a broad range of NHS actors harbour reservations about the current usefulness of the NRCE.

A question posed by the researchers is 'can the index be developed so as to overcome some of its associated difficulties, whilst retaining its political attraction as a focus for 'naming and shaming'?'

First, a distinction could be made between direct and indirect costs. Comparisons on a direct cost basis alone would avoid the problems associated with cost allocation. Second, benchmarking could be focused on carefully identified comparable 'clusters' of trusts with similar clinical/geographic/cost characteristics.

Third, further consideration should be given to identifying reference cost target outcomes for trusts (or clusters of trusts), rather than having a moving 'default' target of the 100% index average. Fourth, the comprehensive scope of the index across clinical activities could be narrowed and the ambitious government target of including all services by 2004 abandoned, in recognition that accurate costing is inherently more difficult for certain areas of activity (e.g. outpatients).

However, it seems doubtful that any of these measures will be introduced, as they would result in either multiple indices, incomplete coverage, or a range of target measures. If any of these were adopted, the power of a single comprehensive measure that attaches one - and only one - number to each trust would be lost. The significance of these issues will be explored, in the follow-up study to be completed later this year - 'Clinical activity data as a source of reported healthcare cost variability'.

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