Measure by measure

The Carter report on productivity calls for 'constant analysis' of performance to identify opportunities to improve. Steve Brown reviews a few of the metrics that are about to take centre stage

There is significant unwarranted variation across all of the main resource areas in the English NHS. This was the conclusion of Lord Carter of Coles in his summary of his review of NHS productivity, which reported in February. There are lots of examples of good practice but 'no one hospital is good at everything'.

There is a possible prize of £5bn attached to eliminating this variation (see page 16). But Lord Carter was clear that before they can access this, trusts need to know what they are looking for and where to look. Currently, the report claims, 'leadership teams report they often do not know whether individual parts of their hospital are operating at high quality and efficiency'. The result is 'planning based on scattered and often anecdotal information'.

'Highlighting variation requires the right metrics with detailed guidance on what good looks like,' the report concludes.

The need for good-quality data to inform decision-making is a common theme of the report. In some cases it is about getting managers to start using existing metrics to inform decision-making. In others it is about making comparable data more widely available so that organisations can see where they stand compared with their peers. But there are also completely new metrics, such as the weighted activity unit and adjusted treatment cost.

In fact, Lord Carter wants to pull all this data into a model hospital creating a 'single version of the truth on what good looks like from board to ward'. The model hospital, which NHS Improvement has been tasked with continuing to develop along with its underlying metrics, would appear to be envisaged as a form of interrogate-able dashboard – or in reality a series of linked dashboards.

Different layers of management would be able to access different levels of the model, with boards gaining high-level assurance of performance, while senior or operational managers could drill down into greater levels of detail. Organisations would be able to compare performance against internal plans, peer benchmarks and the views of NHS experts – the report says.

Although the Carter review has got the ball rolling, setting out the basic anatomy of the model (see above) and identifying or developing some of the metrics to be used, there is a considerable body of work here for NHS Improvement, particularly as the first 'full phase of development' is due to complete in April 2017.

Building on this model, the Carter report also calls for an integrated performance framework to be developed incorporating a 'set reporting cycle from ward to board to drive efficiency, productivity and care improvements.

The report is clear that analysing metrics 'will not in itself deliver improvements'. But it is the starting point. And without the data, much of the potential improvement and savings will stay off-limits.

Metric 1: care hours per patient day

The Carter report calls for care hours per patient day (CHPPD) to be adopted to provide a 'single consistent way of recording and reporting deployment of staff'. There is nothing very new about this – many may have referred to it as nursing hours per patient day. But the Carter proposals are for the metric to be given a much higher profile and for providers to start using the metric in a more hands-on way to manage staffing levels – both from a planning perspective and in matching actual day-to-day staffing levels to fluctuating demand.

It is derived by adding the hours of registered nurses to the hours of healthcare support workers and dividing by the total number of inpatient admissions in a 24-hour period (see box below). As with other metrics, it borrows from metrics used in Australia, New Zealand and the US to keep a 'firmer grip on staff productivity'.

It effectively builds on NICE's safe staffing guidance for acute wards, which had called for the acuity of patients to be taken into account when setting ward establishments. But it also called for trusts to monitor actual staffing levels on a day-to-day basis against not just these establishment totals but against real-time assessments of the nursing needs of patients.

In fact, calculating the average nursing needs of patients in hours per patient day is the first step in the NICE process for setting ward requirements. But rather than being a hidden – or implied – figure within a calculation for setting staff levels, Carter wants it to become the key metric, with 'efficiency reviewed within a CHPPD range,' and providers checking 'variation at ward level on a daily basis'.

In addition, NHS Improvement, working with the Royal College of Nursing among others, has been tasked with defining 'staffing ranges for different types of wards as a guide for trusts to help them meet their quality and efficiency requirements'. The lack of reference to 'safe' staffing levels appears to underline that it is impossible to be definitive about the actual level of staffing that will be needed. However, providers that are outside of a range – or outlying compared with their peers – should want to understand why.

There are different methodologies that will help providers factor in acuity and dependency so that they can then calculate their actual and required CHPPD based on patient need.

The Safer Nursing Care Tool (SNCT) is perhaps the most widely used within general adult ward settings – particularly for setting establishment levels. While this provides an approach for taking account of the acuity of patients in setting their care hours' needs, some believe it fails to recognise patient dependency adequately – with specialling (one-to-one care) being an extreme example.

Allocate Software supplies e-rostering systems with an integrated safe care staffing module. Its director of healthcare, Paul Scandrett, says the recommendation for the metric is sound. 'If we can get CHPPD used routinely, factoring in models such as SNCT and, of course, alongside other metrics like skill mix, it will be a great help,' he says.

Experience in the US – where a similar approach is used including a working hours per unit of service metric – suggested having a single number that deals with care and cost can really help engagement between finance and clinical teams, he adds. 'You know that if you are running too rich, you may be incurring unnecessary cost and too lean might mean you have safety issues,' he says.

It can make some decisions easier. For example, if a trust had enough staff to meet demand and then needed to open another bed, it knows at a glance from a budget perspective, how many extra care hours it needs to support that bed on average.

Mr Scandrett says local knowledge and experience will always be important, but more consistent, informed decision-making has to make sense. Providers also needed to understand their establishment and actual figures in much more detail.

'For example, you need to know how many specials your establishment can deal with and what occupancy levels were in the calculation,' he says. 'Changes to these or to the acuity/dependency on a particular day would have an impact on the required CHPPD, which would have an impact on the staffing levels you need.'

The CHPPD metric would be used to monitor trends in planned (establishment), required (daily demand for care) and actual (the staff actually on the ward on a given day) care hours. The report calls for NHS Improvement to start collecting CHPPD data on a monthly basis from this April and aim for a daily basis by April 2017.

$$\textbf{Care hours per patient day} = \frac{\text{hours of registered nurses + hours of healthcare support workers}}{\text{Total number of inpatients}}$$

Metrics 2 and 3: weighted activity unit and adjusted treatment cost

To assess efficiency, you need a common currency to measure hospital output. So says the Carter report. Enter the weighted activity unit (WAU) – a unit of activity equivalent to an average elective inpatient stay.

Procurement metrics

A new purchasing price index will enable trusts to compare their performance in terms of price and volume on a basket of about 100 products.

With collection starting more or less immediately, the Carter team wants the index to develop this year, with more products added and monthly reporting.

Three separate sub-indices would focus on common goods, clinical consumables and high-cost medical devices.

The report also envisages NHS Improvement holding trusts to account on their performance against the index from this April. Within one to two years, a national analytics and reporting system would have emerged giving trusts full visibility of what and how much they buy and what they pay, and how this compares with their peers.

Other metrics specifically highlighted by Carter in the procurement arena include

- Percentage transaction volume on a catalogue with a purchase order
- Percentage transaction volume with a purchase order
- Percentage transaction volume with a contract
- Inventory volume.

Carter recommends that all trusts should be operating with 80% of transaction volume through an e-catalogue by September 2017, by which time 90% of volume should also be covered by electronic purchase orders.

The WAU – or more precisely the cost per WAU (pronounced 'wow') – will complement other productivity measures including the adjusted treatment cost (ATC) (introduced in Carter's interim report) and area-specific metrics such as the new proposed purchasing price index. Providers will be encouraged to triangulate the results to draw conclusions.

Again the WAU borrows from abroad. Australia's national weighted activity unit, used with a national efficient price to fund hospitals, and the cruder US adjusted admissions are the key influences.

Although the WAU is presented as a separate metric from the ATC, the two are inextricably linked and both effectively repackage reference cost data into formats that may be more engaging for clinicians, non-executives and managers. The aim is to get the data out and raise its profile so that organisations start comparing, asking questions, understanding variations and identifying opportunities for cost improvement.

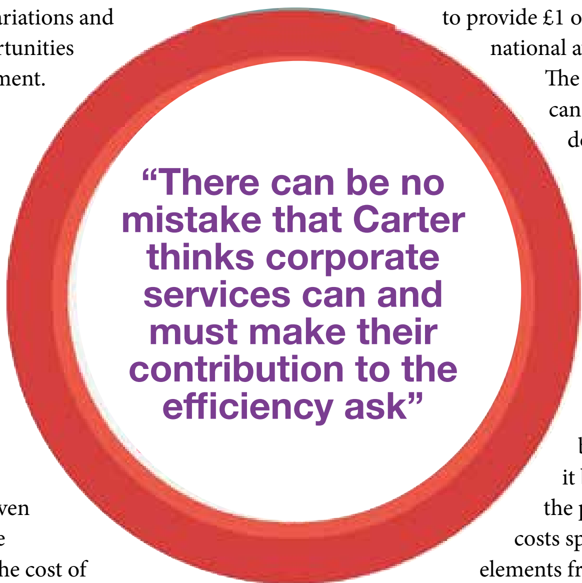
'They are two equivalent measures of productivity and calculated in much the same way,' the report points out in a footnote. 'The cost per WAU represents the cost of providing £3,500 worth of healthcare at a given trust, whereas the ATC represents the cost of providing £1 worth of healthcare in that trust. Trusts with a high total cost per WAU (>£3,500) will have an ATC index over £1 and trusts with a low cost per WAU (<£3,500) will have an ATC less than £1.'

The £3,500 figure is basically the national average cost for an inpatient episode (based on 2014/15 reference costs and rounded up). The number of WAUs within each provider is calculated by adding together all the different types of activity weighted according to the national average cost of providing that activity.

All types of activity counted in reference costs are included, such as non-elective work, outpatients and diagnostic tests, and elective admissions. For example, where one outpatient appointment costs on average £120, about 30 outpatient appointments count as one WAU.

Each trust's own cost per WAU can be calculated by dividing its total costs (its reference costs quantum) by this weighted activity. So if a trust carries out 100 units of a certain HRG that has a national average cost of £4,000, the cost weighted output assigned to the trust for that work would be 100 x £4,000 = £400,000 (about 114 WAUs). If that trust spent £500,000 delivering those units of activity, their cost per WAU would be £500,000/114 = £4,375 per WAU. The same trust's ATC for that output would be £500,000/£400,000 = 1.25.

The ATC was billed in the interim report as combining reference costs and total expenditure from the annual accounts. This spending is then adjusted to be equivalent to the quantum in reference costs – making the ATC a mirror image of the reference costs index (with a provider having an RCI or ATC of 100 exhibiting national average costs). The tweak to the final Carter report is to move from being an index to being based round £1 – how much does it cost this trust to provide £1 of healthcare at national average cost.



The cost per WAU can also be broken down into the amounts within this total spent on, for example, labour, non-labour, nursing, consultants and medicine. This is not a precise breakdown as it basically takes the proportion of costs spent on these elements from the accounts and adjusts this in line with the overall 'accounts to reference costs quantum' adjustment. But, again, the point is to get organisations asking questions and drilling further. Further breakdown of the cost per WAU will be possible over time and increased use of these datasets is expected to drive improved data quality and consistent coding.

The ATC is also being used to calculate potential savings for non-specialist acute trusts – this is completely new. This basically looks at the savings that could be made by a trust if it brought the HRGs where it is higher than average cost down to the average (with some capping rules where differences are very large). So while the headline ATC, WAU and reference costs give a net view, this focuses just on savings potential. It makes big assumptions (that cost allocations are correct and costs in other areas wouldn't rise if over-cost areas reduced costs), but it may help focus attention.

Metric 4: corporate costs

Back-office costs may be more of an absolute control than a management metric, but a proposed cap on corporate and administration costs was perhaps the big surprise of the final Carter report. In most areas, the broad approach of the review has been to make more comparable data available and get organisations to start asking questions about their relative performance. But for the back office, the review has gone beyond this and recommended all trusts' corporate and administration function costs be constrained to 7% of income by April 2018 and 6% by 2020.

This is accompanied by a major push on the use of shared services, with organisations expected to test existing services against shared solutions and where savings of 5% or more are available 'these savings should be delivered'.

The report found that acute trusts attribute £4.3bn of workforce spend to corporate back-office and operational administration costs. Corporate accounts for some £2bn, with administration the other £2.3bn. This incorporates 137,100 budgeted whole-time equivalents – 53,500 corporate and 83,600 administration.

Variation in combined costs ran from 6% to 11% with a mean of 8% of trust income. Getting all trusts to 7% would save an estimated £300m, the report said. The range for corporate costs was 1% to 6% and 3% to 8% for administration.

Currently, trusts do not officially report corporate or administration costs. The figures used in the Carter report appear to be extracts from the electronic staff record, which classifies staff by occupational code and by the services they work in.

However, it is hard to see how a rigid rule on corporate or administration costs could be sensitive to different local situations. For example, a provider running services such as payroll for multiple organisations might legitimately exhibit higher support costs.

It is not clear how this control will be taken forward and how local context may be taken into account. However, it seems at odds with other sections of the Carter report, where the approach is to be transparent with data and encourage providers to challenge, justify or reduce costs as appropriate.

There can be no mistake that Carter thinks corporate services can and must make their contribution to the efficiency ask – regardless of the fact that much of the rest of the report seems to imply a bigger role for management in providing clinical support and supporting transformation.

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