The Hospital Medicine Supply Chain – Why Get Carter?

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Abstract

Title
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Summary
The report ‘Operational Productivity and Performance in English NHS Acute Hospitals: Unwarranted Variations’ (Carter report) that was published in February 2016 by Lord Carter of Coles, reviewed a series of benchmarking key performance indicator (KPI) data from a number of hospital trusts. It made reference to the procurement of medicines within the hospital sector, amongst other areas of the pharmacy service.

After summarising the key principles of benchmarking products and services, this article considers the supply chain KPIs as they relate to e-trading, stockholding, wholesalers and supply chain management. It considers general contracting issues and outlines what constitutes effective contracting. It is intended to assist those who are involved with implementing the outcomes of the report in understanding the complex issues involved.

Keywords: key performance indicators, contracting, procurement

Introduction

The report ‘Operational Productivity and Performance in English NHS Acute Hospitals: Unwarranted Variations’ (Carter report) reviewed a series of benchmarking key performance indicator (KPI) data from a number of hospital trusts.

A small section of the report focused on the procurement of medicines within the hospital sector. This paper is intended to review the findings of the report, focussing on the medicine supply KPI aspects specifically and exploring the issues more widely.

Background

Medicines normally comprise between 7-10% of a UK hospital’s total expenditure with approximately 4 million packs being supplied per annum (in a typical teaching hospital) to hundreds of different cost centres. Most major hospitals will purchase over 4,000 product lines with a significant number of them being unlicensed medicines (approximately 5%) which will require careful quality management. The prices of medicines, their suppliers and usage levels often change frequently and, therefore, careful management of the systems and data used is a necessity.

Hospital patients have the expectation to receive the right medicines, with the right formulation, right quality, right quantity and at the right time. An efficient medicine supply service is therefore essential and should be the ‘core’ of any hospital or community pharmacy service both now and in the future. Hospital medicines procurement leads are, however, constantly challenged to ensure close to 100% internal supply chain compliance to support clinical pharmacy services despite the fact that the performance of external suppliers is closer to 90-95% and their own resources are limited. The effective procurement and supply of medicines to patients is therefore a critical success factor for a hospital trust. Despite all actions taken to date, pharmacy procurement staff continue to have significant problems managing medicines in short supply with potentially over 200 lines being unavailable at any single moment in time.

Apart from providing all the patients’ treatment requirements, significant savings can often be obtained by the use of the national NHS contracting arrangements and this forms the main platform for many pharmacy/Trust cost improvement programmes.

Key principles of benchmarking

The Carter Report used the principles of ‘benchmarking’ both (a) medicinal products and (b) pharmacy services as its key focus.

Medicinal products: Benchmarking product prices for a selected range of medicines with savings potential can be achieved with the IT systems we currently have available e.g. Define, Pharmex. Indeed, the regional procurement specialists may already circulate similar data from the outcomes of the four regional brand/therapeutic tenders administered by the Commercial Medicines Unit (CMU) in England, which contains comparable information. Care will need to be taken to ensure that any pricing data collected and circulated is...
accurate e.g. same time period, same pack size, same VAT status. Incentives to make therapeutic switches following the contract, whether a carrot or stick, will inevitably play a critical role in terms of speed and breadth of uptake. Well planned and effectively communicated targeted products together with evidenced support packages will assist the process further.

Pharmacy services: It is important to note that medicinal products are different to pharmaceutical services. There are inherent difficulties in benchmarking pharmacy services or indeed any service. The benchmarking of services, as opposed to products, can vary from day-to-day and can come in many different guises. For example, many hospital trusts are now more diversified and do not provide the same clinical pharmacy services as others. Some Trusts are also more complicated, multi-site institutions spread over large distances offering different ranges of local and regional specialties e.g. Leeds NHS Hospital Trust, University College London NHS Hospital Trust. The result of this diversification is that the business and operating processes will become vastly different for each pharmacy service.

Benchmarking services often lead to reviewing the time/resource spent on a service measured and not the actual effectiveness of the service. Since service outcomes are more difficult to quantify a benchmarking tool is less useful. Using models, such as the ‘weighted activity units’, may help if there is strong evidence to suggest that they can be applied to pharmacy services with some degree of accuracy. Because of the limited resources currently available any benchmarking data should be:

- clear and simple to define
- easy to measure and collect, preferably as part of the current day-to-day work in order not to add work pressure
- easily identifiable
- unambiguous so ‘like’ can be compared with ‘like’
- meaningful/have a useful impact e.g. savings can be achieved rather than being theoretical
- be a measure of the ‘pharmacy service’ performance and not a clinical service
- limited in number to the most essential.

Supply chain KPIs should, in theory, be easier to use than most other KPIs because they fulfil many of the criteria above and can be obtained from the various pharmacy IT systems in use currently. However, even these KPIs may be difficult to use and benchmark effectively by managers of the service unless they are fully understood.

1) E-trading

In contrast, many trusts still have local pharmacy buying offices, stores and distribution services and we found significant variation in their efficiency, for example, with the adoption of e-ordering some trusts are still placing orders via telephone or fax. More efficient trusts, such as Plymouth make good use of e-ordering and invoicing facilities to reduce staff time in both pharmacy and finance departments.’ (p32)
So far, despite the apparent benefits of e-commerce, the experience from many Trusts has only seen limited resources being saved from the introduction of e-commerce arrangements. Those limited resource savings are often required to be reallocated to tackling the myriad of other procurement tasks needed, rather than resulting in savings by a decrease in establishment. Furthermore, limitations of IT systems and reluctance of all pharmaceutical suppliers are usually a greater deterrent to embracing this practice than reticence among NHS staff.

It is clearly important for Trusts to engage more fully in both e-ordering and invoicing to achieve operational benefits. The benefits obtained from these procurement activities should, however, be put into a much wider context within the range of other tasks that are required to be completed.

In reality, medicine procurement staff use most of their time managing other activities such as:

- chasing out of stocks – including proposing alternative medicines
- resolving medicines shortages
- resolving invoice queries (rather than matching invoices)
- managing homecare services
- creating orders after review of levels
- liaising with suppliers and customers services
- sourcing product
- managing unlicensed medicines process
- stock management
- obtaining clawbacks from failed contracts
- liaising with pharmaceutical company representatives
- updating contracts
- strategic formulary advice including new products/suppliers and patent changes
- managing and monitoring savings.

It is therefore helpful to appreciate the role of this KPI in terms of the medicine supply service as a whole.

2) Stockholding

“We also found significant variation in medicines stockholding. Data for 120 acute trusts showed stockholding variance of between 11 and 36 days, with the average of 20 days. We estimate at 20 days, NHS Trusts are holding £200m of stock at any one time.’ (p32)

The number of days that medicines should be stocked has always been a difficult number to agree nationally. The report found that the average medicine stock holding for Trusts is 20 days. The London Medicines Procurement Consortium Chair’s Committee, for example, have historically agreed that the optimum stock holding is between 14-18 days.

Whichever standard is adopted, it should take into account the pros and cons of holding stock as described below:

**Pros of reducing stock**
e.g. one-off cash saving, reducing space required, reduced risk of expired stock

**Cons of reducing stock**
e.g. increased number of orders and invoices to manage, increase invoice queries to resolve, more resources used for stock rotation, increase risk of stock outs due to lower stock levels, reduced stock to manage when a medicine shortage occurs.

The report has concluded that 15 days should be the national target perhaps based purely on one of the benefits of a one-off ‘cash releasing’ saving. In reality, many finance managers may see ‘stock’ as ‘cash’ and do not see stock management as ‘cash releasing’ therefore negating any savings benefit, even if the stock holding value can be reduced. More research and a consensus view with experts is perhaps required in order to obtain a fuller understanding of the advantages and disadvantages prior to changing any status quo.

3) Wholesalers

“In addition, around 50% of medicines deliveries come from a small number of wholesalers, but the other 50% come direct from manufacturers. This can mean that an acute Trust will receive up to 30 medicines deliveries every day which is time consuming for staff.’ (p32)

The distribution of medicines is perhaps more complicated and strategically important than first appears. The medicines market has changed considerably over the past decade. For example, historically many branded medicines were priced at approximately £30.00 per pack (e.g. Losec, Zocor, Innovace) which included a percentage on-cost added by wholesalers to cover their distributions costs and margins. These commonly used branded medicines, distributed mainly to community pharmacies, have now lost their patents and are generic. As generics they are often sold at prices in the region of £1.00 per pack or even lower. The percentage on-cost distribution model is struggling to survive for many of the medicinal products in this market segment with accompanying much lower prices.

“It is clearly important for Trusts to engage more fully in both e-ordering and invoicing to achieve operational benefits.”
The market has now changed. The average price of branded medicines of today now tends to be much more expensive than the £30.00 per pack average of years ago. The majority of new medicines are now biological in origin and tend to be prescribed for more specialist conditions. The distribution of these new medicines should therefore be simpler, as manufacturers markets are limited to secondary/tertiary care with their associated few hundred delivery points, rather than the traditional thousands of community pharmacies outlets in primary care.

As the new branded medicines command much higher prices, the tendency now is to distribute using a percentage on-cost model through either homecare providers (approximately £1.5 billion per annum) or via a limited distributor contract with a fee per pack on-cost. Others may use the services of distributors such as Movianto or UDG who aggregate Pharma orders and deliver the next day in order to minimise costs and improve picking accuracy. Pharmaceutical wholesalers are now not being used in the old traditional manner as pharmaceutical manufacturers direct their orders through contracts and with specific distributors. Many pharmaceutical manufacturers have developed a single distributor strategy. Some manufacturers may want to distribute their products themselves in order to reduce costs and maintain total control of their stock and because of the limited number of hospital purchase points the logistic arrangements may not be seen as particularly arduous.

Pharmaceutical manufacturers, in summary, now recognise the growing importance of controlling their valuable medicinal stock through service contracts which limit their costs, improve performance to their customers and also reduce the risk of exports and counterfeit products. Also, the NHS may want to consider the strategic influence and risk on medicine prices if the distribution channels are perhaps controlled by monopoly providers.

The NHS will therefore need to carefully reflect on these dynamics and how the strategic management of medicine distribution channels and their performance through its KPIs could impact on the price of goods and then the NHS as a whole.

4) Supply chain management

“We believe there is scope for improving supply chain management, though [sic] more effective collaboration at local, regional and national levels. Some trusts have developed more efficient centralised arrangements and some are working with pharmacy wholesalers to consolidate buying and reduce the number of daily medicine deliveries to hospitals. Closer working with manufacturers and pharmacy wholesalers, should lead to consolidation of the medicines supply chain, making full use of e-ordering and invoicing and aggregating and rationalising deliveries – preferably ready for use and to the ward. This would significantly reduce the number of daily deliveries to hospitals to less than five, thereby reducing stock holding (a reduction to 15 days would generate a £50m one-off saving to the NHS in-year) as well as reducing pharmacy supply chain costs. We also believe that buying and supply services do not need to be delivered by NHS employed staff.’ (p32)

The effective contacting of medicines is a complex process and takes into account a range of other variables as well as price. Many other factors should be considered in parallel, such as competition in the market place, supplier performance, quality of product, etc. One of the most important success factors is the ‘aggregation of usage volumes’ by Trusts collaborating together at regional or national level, which has realised significant discounts of many millions of pounds over the years. The aggregation of medicine usage to national or regional level enables individual Trusts to increase their purchasing power, adhere to European Union (EU) procurement regulation, whilst reducing their administration burden/costs. The aggregation process enables expert input from the Commercial Medicines Unit (CMU), regional pharmacy quality control specialists and regional pharmacy procurement specialists which currently enhance the robustness of any contract award.

Also, suppliers often want to use the most economic method of distribution for their products. This will limit their costs and therefore reduce their price to the NHS without affecting their profit margins. Such an economic plan may result in direct deliveries by a manufacturer rather than the wholesaler route and so increase the number of deliveries per day to the Trust. If this maximum of five deliveries/day indicator is considered ‘key’ then persuading manufacturers to forego their favoured supply chain route may adversely impact on medicine prices. This is the direct opposite of the objective of the report as medicine prices may rise.

General contracting issues for medicines

‘Contracting for medicines takes place at national and regional levels only; however, we found that not all trusts make best use of these arrangements.’ (p32)
The medicines contracting process also involves the separate tendering of both generic and branded medicines and is implemented in a phased manner to ensure optimum duration of a contract whilst allowing new supplier entrants (...or more competition) to participate when ready. This strategic approach to medicines procurement is often quoted as best practice within the NHS as not only is the methodology sound, but all Trusts are included in the adjudication process to enhance contract compliance. The involvement of Trust pharmacy procurement staff in the adjudication process gains their support as they become part of a much wider team in helping ensure that the NHS achieves the best value for money.

The CMU uplifts monthly purchasing data (Pharmex system) from pharmacy computer systems and reports back to Trusts any non-adherence to agreed NHS medicine contracts via their regional procurement specialist. Overall, there appears to be a satisfactory compliance /commitment rate, which is normally well above 95%. The few failures found by regional pharmacy specialists, who regular monitor performance are often due to medicine shortages and the subsequent need for Trusts to buy off-contract. All those involved in the medicines supply chain across the country work closely as a team and support each other, as best as they are able, when needs arise.

“We believe the nationally coordinated approach is well organised and is most likely achieving good prices, although this needs to be checked.’ (p33)

A management consultancy company undertook a benchmarking review of a group of hospital medicine prices with the support of the NHS Federation in 1994. Although this work may be dated, the lessons learnt then about benchmarking medicine prices continue to apply today. A key point found was that, due to a range of factors which need to be taken into account, the benchmarking of medicine prices was more difficult to achieve accurately than it first appeared. These factors included, for example, the timing of contracts, size of tender (volume of packs/£), single/multiple award, length of contract, free of charge stock, accuracy of data, VAT, pack size variations of product, national distribution system, reimbursement processes, price control methods and data entry error. It will, therefore, be even more difficult to compare the effectiveness of the prices from the current national co-ordinated approach with other countries, especially where there is the additional factor of the large differences in systems and processes in healthcare systems.

What does effective contracting look like?

For some readers of the Carter Report who are not familiar with contracting, an ‘effective contract’ will only be one that delivers the lowest price. However, for many products such as medicines, achieving the lowest price through continuous competition may reduce the number of suppliers in a market and increase the risk of shortages or cause rebound price rises. A carefully managed balance is required in order to meet all the objectives that the NHS wants, particularly for generic products.

a) Generic Medicines Contracting

England has a European-wide reputation for having a robust generic market with low and competitive prices. Generic manufacturers have, however, stated many times that England is an attractive market for them because of the aggregated national tendering method currently in place. One simple and easy successful tender by a single person within a pharmaceutical company can result in an award of a product line to all hospitals in England with the resulting financial benefits to that supplier. Suppliers will of course be under continual pressure to review their profit margins in order to gain a market share.

This contracting process makes the English market attractive to suppliers and has enabled competitive prices to be available to the NHS hospital sector.

Continued contracting can put pressure on prices for some products. This may reduce the attractiveness of the market and create difficulties in maintaining multiple suppliers, thus reducing competition and increasing the risk of further medicine shortages. Changes to the public procurement regulations in 2015 has facilitated a change in contracting which allowed the strategic market management of generic contracts to sustain multiple suppliers – often with price variation by region. The benefits of wider benchmarking to seek even lower national prices for generic medicines may not, therefore, result in any benefit if the best strategic option for our patients is to obtain 100% supplier performance and continued competition.

b) Branded Medicines Contracting

Branded medicines prices in England are controlled under the Department of
Health (DH) Pharmaceutical Price Regulation Scheme (PPRS) process or by a confidential agreed patient access scheme in discussion with the National Institute for Health and Care Excellence (NICE). Other countries similarly control and set their branded medicines prices or, alternatively, use a reference pricing method instead. Hospitals in England have limited ability to obtain further discounts for branded medicines because of this government-led arrangement. The only effective additional method for branded contracting by the hospital sector is currently limited to the use of regional contracts for a range of branded medicines with similar therapeutic action. Leverage is achieved due to the possibility of switching treatments by local prescribers.

Conclusions

The objectives expected to be delivered within the Carter report were aimed at improving productivity and performance thus achieving savings. The report focussed on a range of areas including the medicine supply chain. It was surprising to note that it omitted most of the outputs of the Department of Health document called ‘NHS Standards of Procurement’ to which it refers. This landmark document, first issued in May 2012,3 and its later editions were produced specifically with the intention of describing best practice standards in hospital procurement has not achieved the same notoriety as the Carter report. ‘NHS Standards of Procurement’ report describes what constitutes an effective procurement organisation. The main theme is the 100+ performance standards that were identified. The ‘NHS Standards of Procurement’ report appears to be more comprehensive and robust than the Carter Report in explaining the intricacies of the procurement process and may therefore be a more effective tool for Trusts that want to monitor and manage their performance. The Carter report, instead, focussed on a small list of KPIs for the medicine supply chain rather than demonstrating what are the key principles. There appears to be little explanation of why these specific medicine supply chain KPIs were selected, although the assumption is that by using them they would release appreciable savings for the NHS.

A close review of each of the KPIs above demonstrates the complexity of those selected and the need to fully understand what they mean to patients and Trusts, both locally and nationally. Each of the KPIs has its own peculiarities and complexities associated with it. From what has been identified so far, it is clear that more work in understanding the KPIs is needed. More importantly, the individual KPI benefits and strategic impact should be detailed before a Trust uses their scarce resources in altering their practices.

The Carter report sadly did not recognise that pharmacy procurement departments are ‘core services’ and are also able to offer many other value added professional services. These services should be seen in a wider context and require equal consideration and resourcing as they also offer further financial benefit and improvement patient care. These beneficial services include:

- ensuring medicinal products meet quality specifications and internal quality assurance processes for patient safety e.g. unlicensed medicines, dose banded products
- reducing the number of ‘stock outs’ to patients and failed treatments
- reducing the number of missed/erroneous deliveries by suppliers which increases cost
- effective management of medicines shortages including obtaining clinically agreed substitutes where possible
- claiming claw backs from suppliers for failure to comply with contracts which could be as much as £100K+ pa.
- increasing savings through Quality, Efficiency and Productivity (QEP) and procurement initiatives

- implementation of savings through patient access schemes
- the effective management of patient homecare services which releases VAT on medicines prices
- resolving invoice queries which ensure adherence to Standing Financial Instructions (SFIs) and prevents inappropriate payment
- using product knowledge to negotiate with pharmaceutical sales representatives to obtain value added benefits
- ensuring local, regional and national medicine contract adherence and maximising the benefits from National contracts
- updating drug medicine product and supplier files according to contract changes
- developing systems to integrate medicines procurement and issue with finance systems such as hospital charging systems which will ensure effective reimbursement to the Trust.

However, rather disappointingly, it appears that those who are directly involved in medicines procurement may now have little alternative but to focus their attention on a few random KPIs that are difficult to interpret and will not deliver the report’s important objectives.

Declaration of interests

The author has nothing to declare.

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