



**Capture, control,
analyse and share**
High quality care
through strategic
supply chains

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Five levers to improve supply chain management

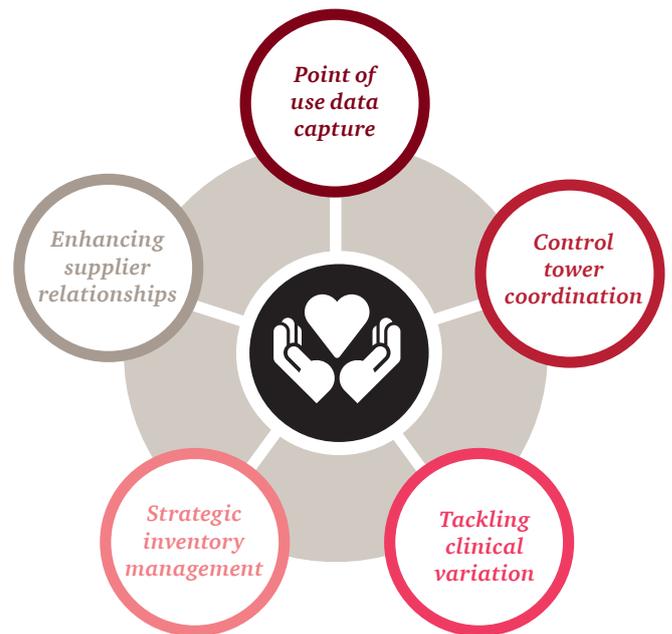
The pressure of increasing demand alongside financial challenges in the NHS is well known. The population is ageing and living longer with more chronic diseases while the sophistication of diagnostic and therapeutic technologies is increasing. Healthcare leaders are facing harder and harder choices about how to prioritise their resources and are struggling to guarantee safety and quality of care. The health and social care system needs to significantly transform to address these challenges so that resources can be freed up and targeted on securing the best possible patient outcomes.

Lord Carter's report on operational productivity in acute hospitals identified potential efficiencies in many areas including supply chain management. Until now it has not been seen as a priority within the NHS and its benefits have not been widely understood. But that is changing as the healthcare sector is beginning to learn the lessons of other industries such as retail or automotive where supply chain systems ensure availability, effective use of supply and analysis of future requirements. Approximately 30% of a hospital's total budget is spent on supply chain activities, hence a step-change in performance is not simply a 'nice to have', it is crucial to deliver the savings that trusts need to return to financial sustainability. And the benefits are not only monetary – through data tracking and analysis, there is also the potential to improve overall quality of care.

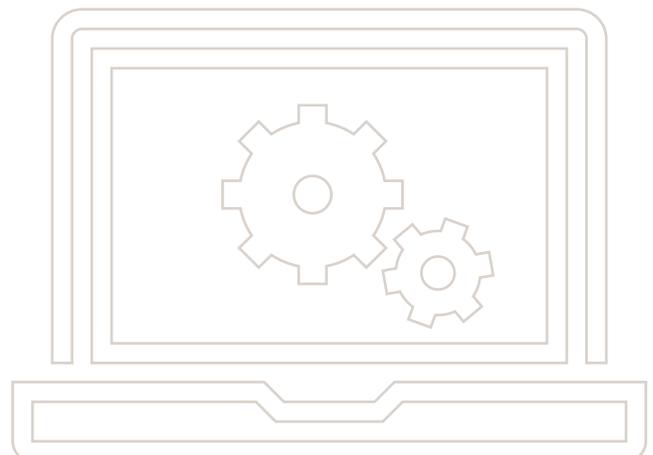
Through our experience working with NHS organisations we have identified five levers which we believe will impact the supply chain and allow hospitals to transform systems and benefit from overall care improvements.

Hospitals can no longer afford to make purchasing decisions solely based on cost. Efficient and strategic supply chain management is more important than ever before.

Five levers of a strategic supply chain



Around 30% of a hospital's budget is spent on supply chain activities.



Point of use data capture

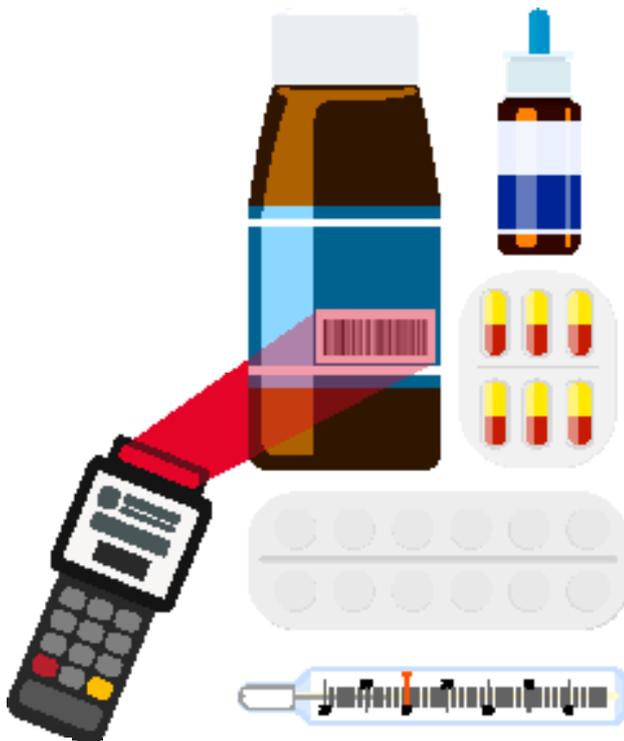
Hospitals currently have a lack of insight into stock levels, excess stock or a proper understanding of how stock is being consumed. Most buying decisions are made after manual checks on stock locations rather than demand driven forecasts or schedules, especially when schedules for elective procedures are known 4-6 weeks in advance. There is also limited understanding of product preference or how well different products contribute to the best utilisation of clinical resources.

This contrasts with other demand driven sectors such as retail, fast-moving consumer goods (FMCG) and the automotive industry where there is complete visibility on inventory as well as data capture on consumption/sales in order to predict future needs, ensure supply but not oversupply and identify which best products are best performing. Many hospitals do not have the right systems, tools or methods in place resulting in overspending and inventory waste often on high value products. There is then no capacity to evaluate quality of care vs cost of a product or clinical activity.

Technology can enable hospitals to unlock the value in supply chains. Already they need to comply with GS1 barcode standards and Scan4Safety initiatives so that information is easily accessible, shareable and products are traceable across the value chain. Capturing data at point of use means hospitals can:

- **Know the costs and productivity at the point of care** – step one is the adoption of Point of use technologies to GS1 standards.
- **Make live demand forecasting and purchasing decisions** – hospitals will need to invest in developing analytics to harness data and create insight and utilise elective procedure schedules for forecasting.
- **Improve cost management and quality of care** – hospitals can make the right resource decisions for operating procedures with more effective use of consultants and nurses.
- **Improving patient safety** – through product traceability and usage.

Capturing data closer to the point of delivery and investing in point of use technologies is key to unlocking further supply chain and procurement improvements.



Trust uses point of use technology to track and improve theatre productivity

A leading teaching Trust implemented point of use technology enabling the hospital to track patient level costing, procedure times and demand. The investment in a point of use GS1 compliant barcode system, implemented across theatres, enabled capturing patient data at the point of care to track cost, demand for clinical time and resources used by procedures. This not only helped the Trust to have better control over inventory, but also increase theatre output and have outcomes based product selection decisions. This improvement in stock management resulted in around £300,000 of savings (after costs) and reduced weekly clinical staff time for ordering from 3 hours to around 20 minutes.

Control tower coordination

Few hospitals are able to view their supply chain from end to end. They have no central and collated overview of inventory levels, purchase orders or the productivity of their workforce. Decisions are made in silos and only in the interest of a department not the hospital as a whole. As a result hospitals are unable track performance, forward plan or make decisions based on demand and supply. Opportunities to share resources across specialties, sites or even hospitals are lost and the ability to make cost savings is severely diminished.

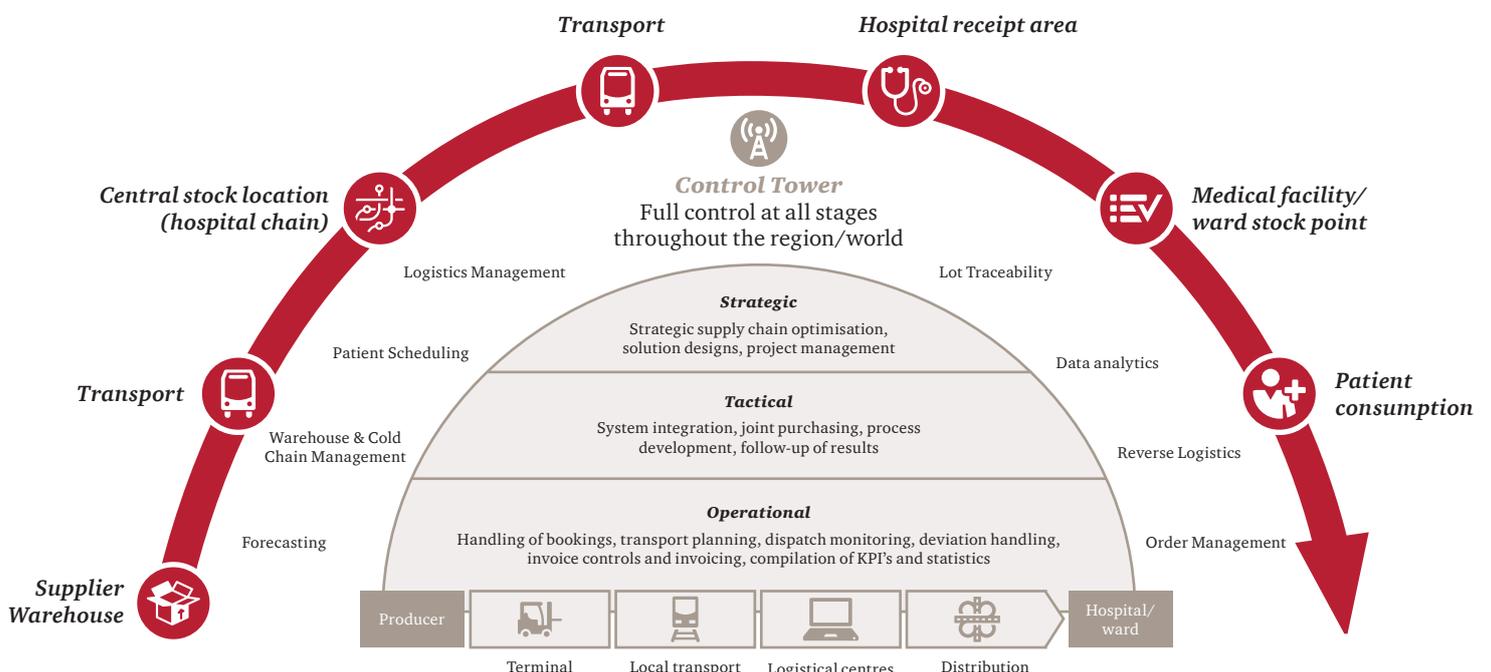
The concept of having a centralised, end to end view of supply chain operations has become an increasingly popular concept with the pharmaceutical and retail industries in recent years. These control towers act as a central point of coordination with multiple capabilities including logistics, contract management, data analytics and forecasting and allow for complete visibility across all these functions. This concept can be easily replicated by hospitals allowing for a single point of reference with a hub of information across all key capabilities. Teams can introduce statistical forecasting capabilities, coordinate different supply chain activities, oversee order management and schedule patient visits. The control tower acts as a reference point for senior management, individual specialties or clinical teams to access standardised data and

ensure ways of working are applied across the hospital. Hospitals can then spend less time fire fighting or undertaking processes manually, refocusing resources on strategic planning.

Control towers become more effective as services are scaled or shared between organisations. These benefits can be used to improve collaboration across hospital chains and/or to support the delivery of 'Sustainability and Transformation Plans' within local partnerships and generate more value through economies of scale.

Global medical devices company using control tower to coordinate logistics

Seeking to reduce the cost of supply chain and improve service, a global medical devices company partnered with a logistics provider to establish a control tower to manage logistics and warehousing activity across its global distributions. This provided real time visibility of supply chain activities and coordination. Along with the centralisation of inventory, this partnership expects to reduce distribution costs by 15-20% within 12-18 months.

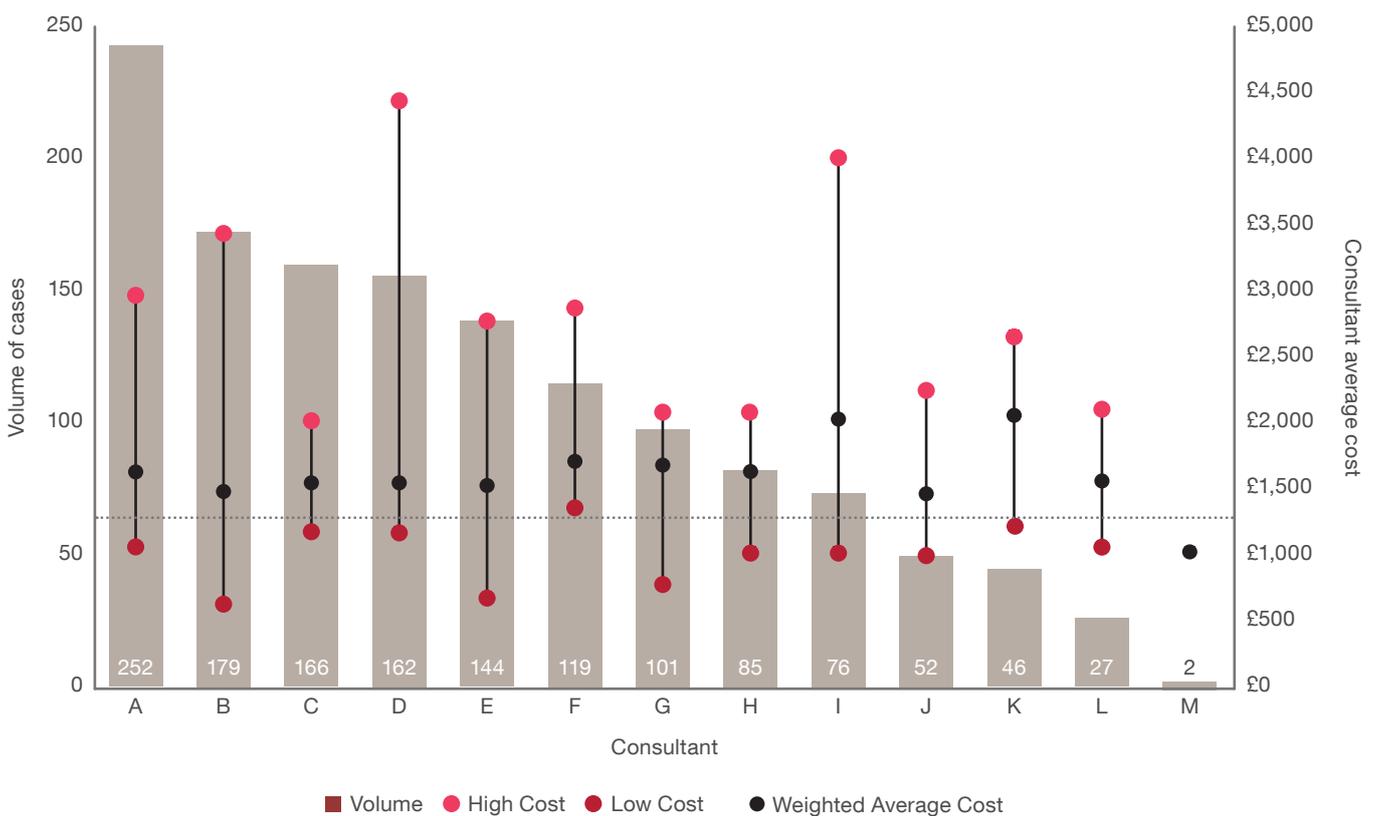


Tackling clinical variation

Understanding clinical variation in medical practice is an important step to measuring efficiency and effectiveness in care delivery. Clinical variation in hospitals across the specialty areas and healthcare facilities is a significant cost driver. The Carter Report suggests hospitals have a variance of 11-65%* in the usage of medical supplies and the system cost of implants for hip replacements can vary between £600 and £5,000 (Getting It Right First Time report).

In PwC's analysis of hip systems consumed in a UK hospital (theatres), we have observed significant variance to an average cost per clinician which was slightly above £1,500, as illustrated in the graph below. This indicated that clinical choice of supplier and type of fixation is a primary cost driver for variance in cost, with an opportunity to reduce the average cost by 40%.

Hip systems cost variance by consultant in a UK hospital – PwC analysis



Hospitals are currently trying to reduce costs through standardisation of usage and price negotiations. However these activities are not supported by evidence as data is not routinely collected. In addition, limited clinical involvement in these decisions make sustainable change more unlikely.

These four actions can go some of the way to reducing clinical variation:

- **Capture spend and product preference** – capturing clinical preference and creating awareness on the cost of devices is the key first step to understanding the variance.
- **Use data to evaluate and accelerate innovation** – understanding data on patient outcomes for a particular device, drug or pathway will enable the evaluation of innovative products and ensure decisions are based on value versus cost.
- **Establish Clinical Reference Groups** – using information on supply chain, clinically-led product selection groups can combine clinical expertise with commercial information to determine which products give most value for money.

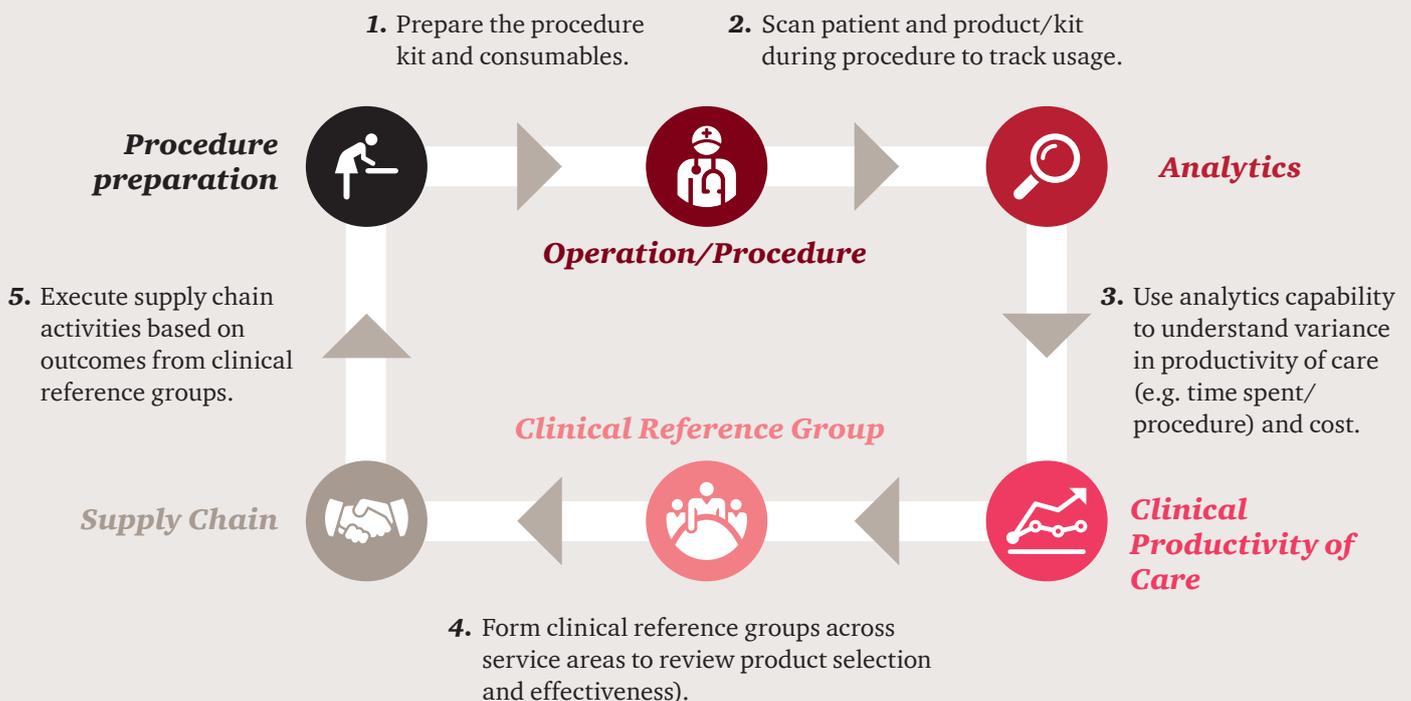
- **Restructuring kits based on procedural needs** – kits should be reviewed to ensure they only contain medical tools specific for that procedure. This will reduce clinical variation as well as the costs of sterilisation and decontamination operations.

As well as making financial savings, clinical teams will be able to share information on devices and make informed decisions on cost versus value. Hospitals will be able to minimise wastage while at the same time improving overall outcomes.

US health system tackles clinical variation

In 2013, Ochsner Health System wanted to tackle unwarranted clinical variation to provide the highest quality of care at an affordable cost. Within the locality, average cost per case in Orthopaedics was reduced by 20% as a result of focusing on reducing clinician variation. This was achieved by focusing on the largest cost drivers, literature reviews and decision-making with clinicians. The health system has been able to reduce costs by engaging with the right stakeholders and focusing on improving the quality and standardisation of care where possible.

Creating the information feedback through point-of-use systems



Strategic inventory management

Hospitals need to have more strategic control on managing their inventory in order to release cash and control spend. The Carter Review suggests that in medicine cabinets, stockholding varies from 11-36 days. The report suggests that if all Trusts could reduce this to 15 days, this would save £50m.

The most common hospital supply chain is to have a decentralised footprint of inventory locations within the institution with medical supplies ordered and monitored close to the delivery of care. This leads to significant excess in medical supply often with similar products held in multiple sites within a hospital or across hospital chains. Our analysis from working with multiple Trusts shows some hospitals holding up to 8-12 weeks of inventory in some medical facilities. One of the key drivers of this is the placement of orders at local healthcare facilities (e.g. theatres) where staff do not have visibility of the overall stock availability of the hospital.

This can be overcome by centralising inventory and optimising the usage of procedure kits. Some ways to deliver this are:

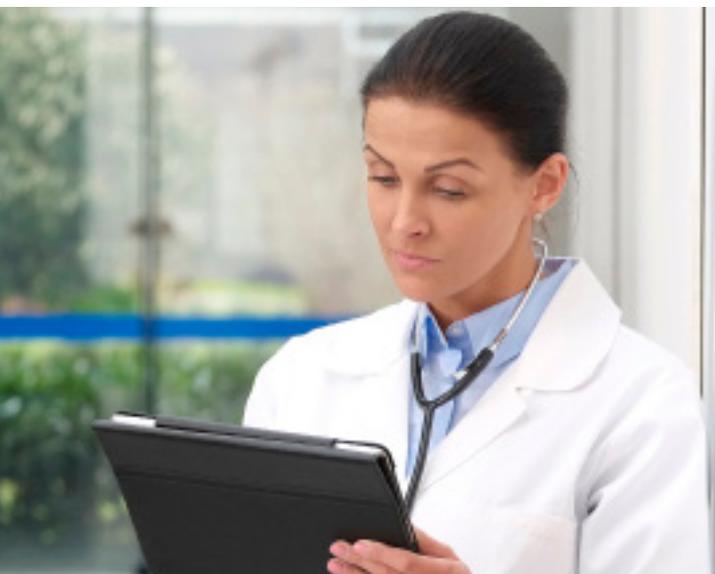
- **Pooling inventory risk for better availability** – limited stock can be kept close to the point of care for emergency use with the majority of healthcare facilities being serviced from a central supply point. This decreases the risk of stockouts and obsolete inventory.

- **Readily available procedure carts** – can be delivered to the point of use everyday from a central location. Working jointly with the control tower, the supply chain teams would be in a position to prepare daily deliveries to sites, facilitate returns and sterilisation and share inventory across healthcare facilities.
- **Inventory and order management rules** – clearly understood and consistently applied as they will be managed by a central team and shared across the hospital sites.
- **Clinical burden** – can be reduced as a central supply chain teams will be fully responsible for managing the stock up to the delivery of the case carts and returns.

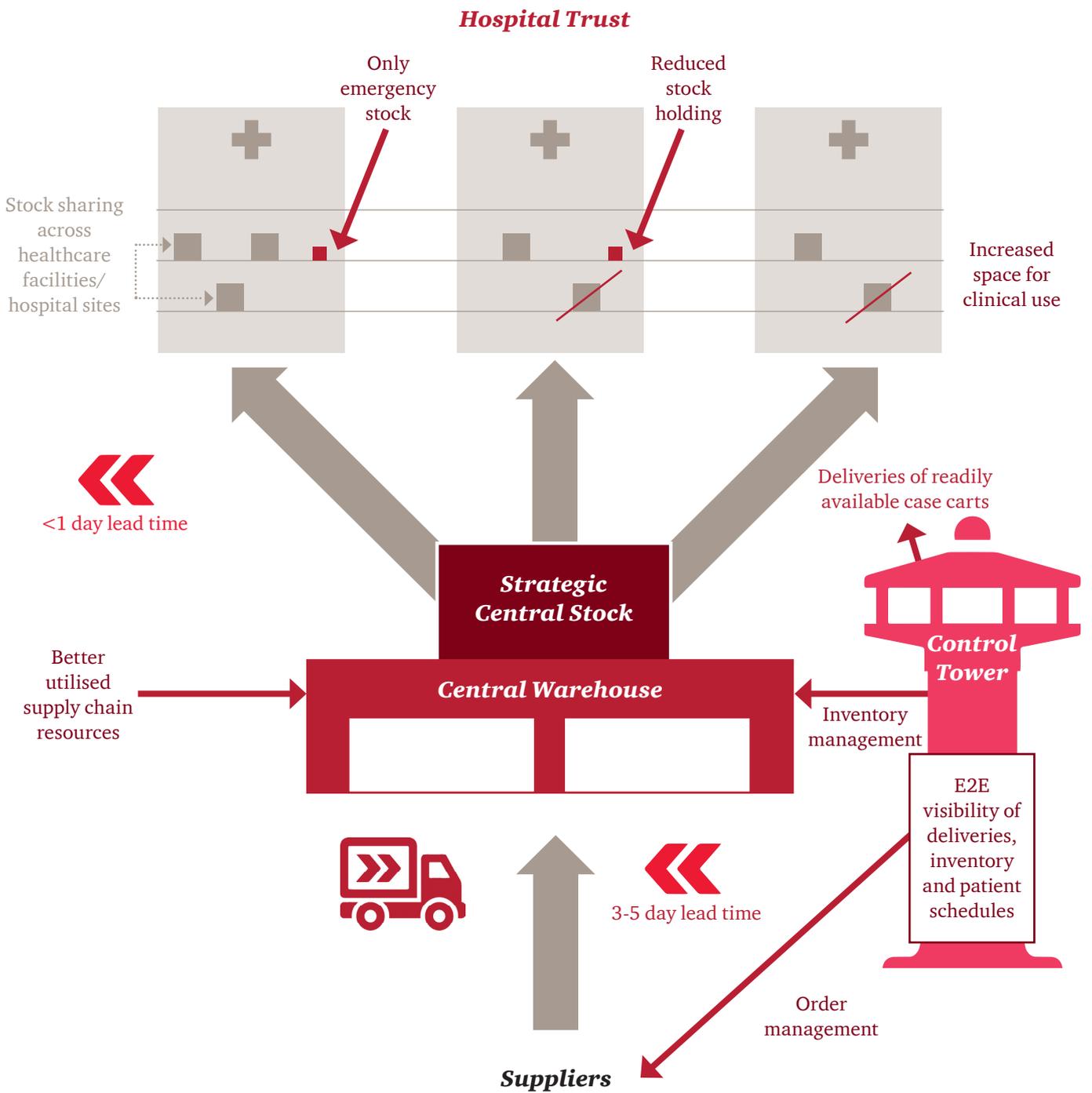
Strategic management can reduce inventory by **25-40%** while eliminating waste and reducing the burden on clinical teams from supply chain activities. This could have the potential to improve the cash position of a c. £1bn revenue Trust by at least £2-3m.

US hospital centralising inventory and kitting activities

Vanderbilt University Medical Centre have a central off-site warehouse for preparing case carts and sterilising kits. This has improved supply chain management of local inventory and minimised clinician input into the supply chain. The Centre manages \$2.4m in inventory and prepares an average of 2,400 case carts per month. The centre supports the preparation of case carts and sterilising kits for 83 operating theatres and over 50,000 cases annually. The introduction of this off-site centre has improved supply chain planning, reducing last minute kitting and ultimately reducing costs for the University. This centre, amongst other supply chain initiatives, has contributed to cost reduction of between \$10-15m per year.



Central and strategic inventory management



Enhancing supplier relationships

Historically, relationships between suppliers and hospital procurement teams have been transactional and based on short-term gains, with limited partnerships based on win-win principles.

The short-term benefits focus of the hospitals have driven disparate managed service contracts across different healthcare facilities and specialties where gains from such agreements were offset by long term cost increases and expensive exit clauses.

In addition, the transactional relationships have mainly focused on volume, price reductions or product availability as opposed to delivering value such as patient outcomes or continuous improvement through long-lasting partnerships. For example, in some instances, suppliers are willing to share the risk of inventory via consignment stock. However, hospitals are not working closely with suppliers to select the right consignment supplies and effectively manage the stock. This can often result in higher costs and decreases supply chain efficiency.

As payment mechanisms are shifting, focusing on patient outcomes, hospitals are having to consider revising their relationships with suppliers towards a shared ownership and effective risk sharing model. Armed with the right data and technology, hospitals are in a position to shift these tactical relationships to strategic partnerships leading to greater transparency and collaboration in their supplier relationships.

Hospitals should:

- **Develop a supplier relationship management framework and capability** – determining which suppliers are critical and where to invest in strategic relationships, driven by evidence and data.
- **Share demand signals with suppliers** – to shift towards a pull based supply chain, with suppliers carrying out deliveries based on patient schedules to have better control of stock levels at the hospital. This also enables suppliers to reduce waste.
- **Pursue an outcomes based approach** – to facilitate effective risk-sharing as both parties focus on improving patient outcomes and suppliers will be held accountable for the value of their supplies rather than the volume.

Moving supplier relationships towards a more strategic focus will enable hospitals to ultimately find the right supplier, pay the right price and create partnerships for the right patient outcomes.

Homecare distribution as a win-win partnership model with pharmaceutical manufacturers

A global pharmaceutical company started creating partnerships with hospitals to introduce homecare for one of their products. This was implemented with a benefits sharing model allowing the hospital cost savings on distribution, reduced burden on acute care as well as increased adherence to the treatment by 5-10%.



How we can help

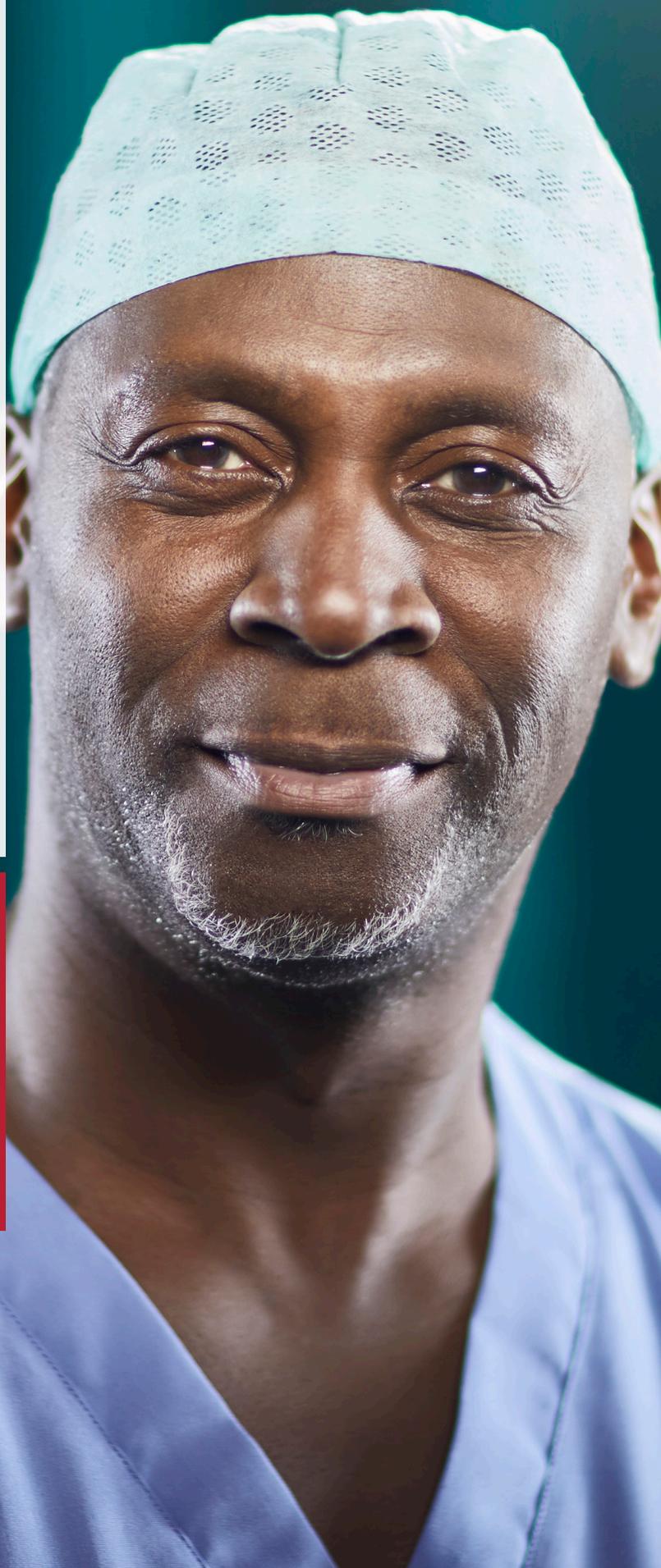
The opportunity to make savings and improve clinical outcomes through a more strategic approach to supply chain management are huge. The biggest opportunities are at a local level, whether that is individual hospitals, STP footprints or hospital chains. A centralised, national approach to sourcing in healthcare can deliver reductions in unit price up to a point.

However, hospitals have a greater potential to use money more effectively by placing supply chain as a strategic enabler, driving sustainable behavioural and cultural change within their organisation, forming long term partnerships and effective managed services and setting up the systems that support that change. This can help hospitals to improve access to more capital, resources and capabilities in driving clinical innovation and better outcomes.

Our team are skilled and experienced at working in hospitals enabling them to develop practical solutions that can scale and adjust to meet changing requirements. We operate across the Healthcare value chain from Pharmaceutical Manufacturers to Wholesalers and bring extensive supply chain expertise to hospitals.

We can help you to:

- Identify the opportunities that exist within your hospital.
- Understand how the recommendations in this paper can help drive better and cost effective care.
- Model the recommendations to determine the cost and impact of proposed changes.
- Support you all the way through to implementation and realisation of benefits.



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We would be delighted to hear from you to discuss this further.



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Health industries

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Healthcare matters to us and it matters to our clients. We all want better healthcare, sooner and the potential is there to make it happen. New technology, new breakthroughs, new ideas. But while there are opportunities, there are challenges too: constrained budgets, an ageing population and an increase in chronic conditions. At PwC we're working with clients to steer a course to success in this new health economy so we help improve healthcare for all. We're working with the NHS, nationally and locally, as well as the private sector and the pharmaceutical and life sciences sector to deliver real, workable solutions to today's challenges. We're delivering transformation and integration projects with patient outcomes at their heart. And we're supporting organisations through testing financial times, often developing bespoke operational and digital systems. We give strategic support to organisations across healthcare and pride ourselves on convening different parts of the system to solve problems. We also bring insight and expertise to healthcare as well as engaging in the public policy debate.

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