

CASE STUDY

HOW WE REINVENTED THE SUPPLY CHAIN AT KING'S COLLEGE HOSPITAL



SUMMARY

KFM is a provider of healthcare support services. The purpose of KFM is to partner with and support healthcare providers in providing world class patient care, with all profits reinvested in the NHS. KFM provides a fully-managed service across all clinical areas which includes providing all required clinical supplies and equipment along with maintenance, training and technical support, endoscopy decontamination, sterile services, renal dialysis support, outpatients pharmacy and radiology IT. KFM also runs a procurement and contract management service for all departments.

An efficient and agile supply chain is a fundamental building block for the services which KFM delivers, in order to maximise productivity, efficiency and responsiveness and minimise delay, waste, cost and cash flow requirements.

Over the past year, KFM has initiated a comprehensive change programme to fundamentally re-engineer its supply chain operation in order to provide an enhanced service to King's College Hospital NHS Foundation Trust (KCH) which has released valuable clinical time to focus on patient care and provided better value for money.

The challenge: delays affecting patients, staff and increasing hospital costs

The legacy supply chain operation that KFM inherited from KCH had several weaknesses - its processes had never been reviewed, redesigned or optimised. Over the years, very few technology enhancements had been deployed to help manage operational activities within the service. This meant there were many inefficiencies. For example, KCH staff were spending a significant amount of time raising manual orders. There was also a reactive approach to inventory management which either led to staff expediting orders due to insufficient

stock, or disposing of excess stock which had passed its expiry date. This situation was compounded by the fact that deliveries were often misplaced, and inventory was not always in the correct location when required. The legacy ordering system also resulted in late or non-payment to suppliers who would often put KCH on hold. The knock-on effect of these issues with stock availability meant that on occasion clinical procedures were delayed or cancelled.

Timely clinical equipment supplies are critical to delivering quality care to patients, especially as KCH is one of London's major trauma centres. The consequences of delays can be wide

reaching, as Paul Chandler, Deputy Director of Operations at King's College Hospital, explains.

"Some patients wait a long a time for surgery, and when you have made yourself physically and mentally ready for life-changing surgery only to find out on the day that it is being postponed, it can be devastating. We were having to use future theatre capacity for these patients. You also have to remember that hospitals do not get paid for cancelled surgeries." The disruption was also having an impact on KCH staff morale, says Paul. "When you can't get the basics right then staff disengage and are less likely to fill operating lists. It was a pivotal issue for us."

The solution: improvements to processes deliver tangible changes

KFM initiated a lean six sigma rapid improvement programme which began by observing and mapping the existing supply chain processes, and gathering data, to identify target areas for improvement. As a result, changes were made over a six-month period in operational systems, processes and staffing.

The receipt and distribution centre and storage areas were reorganised and reconfigured to optimise the flow of inbound and outbound deliveries.

To increase operational efficiency a real-time customer service desk and ticketing system were introduced as were several technology enhancements. A new Microsoft Dynamics 365 purchase to pay IT solution with a fully integrated end-to-end track and trace capability was



implemented. The system also included the implementation of a new e-catalogue and optical character recognition (OCR). Supply chain staff were equipped with tablets and smartphones to give them the ability to work on the move with direct real-time access to this new system and instant team communication.

A standardisation committee was set up to reduce and optimise the range of clinical

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supplies being purchased. Just in time (JIT) outbound deliveries were introduced. Operational handover processes between procurement and supply chain were formalised to deal with product switches and substitutions. In addition, a central contracts register, and proactive tiered commercial contract management was also implemented to enable holding suppliers to contractual obligations.

Responsibility for ordering, receipting, delivery and inventory management across all clinical areas and wards in KCH was transferred to KFM releasing clinician and nursing time. To ensure a smooth transfer a concerted effort was made to improve the relationship between KFM and KCH at both executive and operational levels. KFM supply chain staff and clinicians now work closely together and are integrated into each other's teams.

The partnership between KFM and KCH also focussed on training, developing and motivating staff with mandatory online Omnicell training for KCH staff and the launch of a KFM Academy. Staffing schedules were redesigned to improve efficiency and productivity including the introduction of overnight working across the busiest areas such as theatres. One of the most obvious changes was that new uniforms were introduced to make identification of supply chain staff easier and provide a smarter more professional appearance.

New purchase to pay system

A key enabler of the enhanced supply chain service was the deployment of a new purchase to pay system with improved workflows:

Microsoft Azure
Microsoft Dynamics 365 Finance and Operations
Microsoft Dynamics 365 CRM along with field services mobile for track and trace
Readsoft for automated Invoice input to D365 (including machine learning enabled optical character recognition and EDI)

Benefits:

- The time required to receipt goods received from suppliers has reduced by 70%
- The time required to place orders has reduced by 25% and the time required to approve orders by 70%.
- Up to 80% of invoices are now processed automatically without any manual intervention.
- Resource reductions have been made in the KFM accounts payable team despite a 41% increase in invoice volumes due to new business growth.
- Financial grip and control of stock and ordering has been tightened and waste reduced.
- Financial processes have been streamlined and accounting accuracy has improved
- A number of manual and paper based processes were eliminated saving time and cost.
- Real time stock visibility and digital signatures have improved the ability of the service to respond quickly to continually changing demand patterns.
- Supply chain staff were provided with tablets so they can work with Dynamics 365 on the move and further improve productivity.

The benefits: right place at the right time

Paul says the changes have been hugely positive. "Now that we know the equipment is there, theatres have become much more productive and we get operations done when they are scheduled. There have been instances where we are able to do four cases on the list rather than three. Theatre time is expensive, and we are making better use of resources."

Clinical teams are now able to focus their complete attention on providing world class patient care as they spend less time undertaking supply chain activities. There is also much better financial and operational grip and control over stock and spend. A further benefit of just in time deliveries is that there are fewer cages on corridors.

Paul says that, previously, he would be regularly contacted about clinical supplies running out, but this now rarely happens. "With basic needs taken care of, I'm able to focus on bigger tasks. Things have definitely improved, clinically and financially."

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There has been **much better integration clinically** between **KFM** and **the Trust** and by working closely together we have a better focus on making sure the **right products are available** in the **right place at the right time**. Supply Chain's **increased presence** on the wards means there is a **much more integrated team working** on a day to day basis. ”

Professor Nicola Ranger, Chief Nurse and Executive Director of Midwifery, King's College Hospital:

Annual recurring financial benefits: £m

Released clinical time (PWC)	3.0
Cost savings	3.5
KCH efficiency gains	0.6
KFM efficiency gains	0.3
Working capital released	3.0
TOTAL	10.4

Performance metrics:

% stock items available per day	99.60%
% Omnicell compliance	97.0%
% Omnicell users trained	90%
Transactions on e-Catalogue	92%
Annual stock turns	12
Value delivery per employee	£971k
Employee absence/sickness	1.24%
Reduction in clinical products on catalogue by standardisation	47%



TESTIMONIALS

• I have always found King's FM Supply Chain to be very helpful, positive and good communicators. Now that the top-up ordering is in place at Orpington and Beckenham Beacon it has freed up some of the time I was spending on ordering. This means there is more time for managers like me to use for other PT related duties. Because minimum top up levels have been agreed and will be maintained this means no more last-minute panic as we should always have the correct quantity of supplies available and as a result we are less likely to have to cut a clinic. The team is great; they are always really helpful, supportive and proactive.

Deborah Bettesworth, Lead Sonographer, PRUH

• KFM has reduced the clinical staff workload by not having to place orders on a weekly basis. Since KFM came into existence we rarely run out of consumables like we did before. When this does happen occasionally, a member of the team will get whatever it is without having to phone round all the dialysis units which can be time consuming. This system has reduced the pressure on the clinical staff, tidiness of the store room and provides easy access to materials to carry on with the job. Thank you for this well-structured initiative.

Finda Kamara, Senior Sister, Sydenham Renal Dialysis

• I am very happy with this service at the moment. At present the team will order our weekly top up stores and order my non-stock items. The Plaster Room department has undergone many changes and increases of stock in the last few years and I have been relying on the stores team to add these items to my profile helping me to order quickly and effectively on a weekly basis. The team will always inform me if an item is not available, or will take longer to arrive than expected, enabling me to use alternate stock which has proved very helpful. I have not had any problems working with the team and feel that all my store needs have been successfully fulfilled. The team is always

friendly and professional and are always insuring that my stock needs are met. We have set up a system now that is working well with this department.

Marianne Hutchinson, Senior Orthopaedic Practitioner, PRUH

• The new ordering system is an excellent way to save clinical staff time. The great thing about the new system is that the communication and correspondence is excellent, and the first delivery has been very prompt for which our teams wish to thank the procurement team. Thank you for making the system easier overall and less time consuming.

Phidelma Lisowska, Community Senior Dental Officer, Community Dental

• Working with Kings FM is very effective and efficient. It has improved our service delivery as all the consumables are now easily accessible and well-labelled. The unit has not experienced any shortage of consumables since King's FM took over. The nursing team now has the time to focus on patient care and not spend time chasing orders. The King's FM staff in DSU are very efficient and hard working. They make sure that the unit is well equipped and are very dedicated to the service. The team has good interpersonal skills as well as being effective communicators; they are good ambassadors for the company.

Joyce Anoquah, Unit Manager, Dulwich Satellite Unit

• I have found the switch to KFM Enhanced supply chain to have been a positive experience. It has reduced the amount of time I spend creating orders, as well as the time spent chasing orders up. A further benefit is the increased peace of mind that our temperature-sensitive items will be delivered to the lab in a timely fashion, which ensures they are stored at the correct temperature as quickly as possible.

Natalie Bolton, Biomedical Scientist, DMH