

NHS Blood and Transplant Healthcare

- **New supply chain planning system for United Kingdom's blood supply**
- **Transitioned from a push approach to a demand-driven 'pull' model**
- **Ability to respond faster and support patients with complex requirements**

Project and Objectives

In the UK, patients' lives depend on a supply of about 35,000 whole blood and platelets being available every week. Donations are processed and stored across the NHS (National Health Service) Blood & Transplant's 5 manufacturing sites and 15 Stock Holding Units which service hospitals across England.

Planning the end-to-end supply chain for these blood donations and deliveries is complicated by factors including:

- **Supply and demand variability** - Supply and demand for each blood type varies significantly and can at peak period result in short supply of certain blood products
- **Perishability** - Perishability of blood components - red cells, white cells, platelets and plasma -- varies significantly and shelf life can be as short as seven days
- **Storage and transport** - Blood products must be stored and transported in temperature-controlled, sterile environments in compliance with strict regulations
- **Demand spikes** - a single incident like a major accident, fire or terrorist attack can create a demand spike, straining the whole system. Even a single patient requiring a very specific blood product can cause a significant short-term demand spike.

This complexity meant that NHSBT's old system - a collection of manually-intensive databases and spreadsheets - grew increasingly unfit to support decisions like determining the optimal blood inventory mix for a specific hospital, or performing 'what-if' calculations to prepare for different crisis scenarios. It was a sub-optimal process that could not respond to the future needs of its customers.

NHS Blood and Transplant (NHSBT) is a joint England and Wales Special Health Authority. Its remit includes the provision of a reliable, efficient supply of blood and associated services to the NHS in England. It is also the organ donor organization for the UK and is responsible for matching and allocating donated organs.



The system needed was the very manifestation of “mission critical”. Gerry Gogarty, NHSBT’s assistant director of business development and strategy, commented in an interview with Diginomica: “If there’s no yogurt on the supermarket shelf – well, that’s unfortunate. The customer will have to pick something else. If there’s no blood on the hospital shelf, the consequences are very, very different. The level of risk we’re dealing with here is the big difference. We simply can’t afford for blood not to be available for patients, when they need it and where they need it. Whichever way you look at it, blood is a life-saving product.”

After an exhaustive selection process and a successful proof-of concept using live data, NHSBT selected ToolsGroup’s SO99+ supply chain planning software and commenced roll-out. ToolsGroup met the performance and functional requirements to handle the significant complexity associated with the blood supply chain.

Day-to-day

NHSBT’s new Planning and Control System, powered by SO99+, is now live nationally and is being used to forecast demand at blood product, type and group level on a hospital-by-hospital basis. This additional level of granularity also enables the NHS Blood & Transplant supply chain team to respond rapidly to potential shortages and ensure that additional donors can be contacted to maintain healthy stocks of all blood products nationally and locally.

In addition, a stock management (Vendor Managed Replenishment) solution is in place at eight hospitals currently to further improve availability and replenish hospital blood banks automatically, 24/7. This solution, which integrates directly with hospital blood fridges and laboratory systems, is being rolled out to 12 more hospitals.

The system covers blood components of all kinds, thousands of SKU-Locations and 24x7 demand. It starts with electronic signals that communicate near real-time stock levels every 30 minutes from hospitals, which is then translated into a pull signal back through distribution, manufacturing, collection and supply, creating a comprehensive and scalable “vein-to vein” system.

Using ToolsGroup, NHSBT transformed its supply chain from a ‘push’ to a ‘pull’ model so that all its work is aligned with meeting specific patient requirements, in specific parts of the country. It now has the information to route blood supplies to the areas where they are most needed.

Results

The new approach has relieved hospitals of the time-consuming effort to order, manage and replenish blood supplies, which is now all handled by a highly automated system. In addition, in just the first few months, participating hospitals reported delivery costs reduced by 20% and waste from overstocked perishables reduced by as much as 30%. The end result is a highly efficient patient-focused service that insures a safe and stable blood supply for all of England.

According to Justin Baker, Accountable Executive PCS Project, NHS Blood & Transplant, “While the project offers great benefits to NHS hospitals and the taxpayer, nothing matters more than it’s potential to improve patient outcomes through improved blood availability. Our new ToolsGroup system allows us to respond faster to crises and support patients with complex requirements, like those that need multiple transfusions or have rare blood types.”

About ToolsGroup

ToolsGroup is an innovation partner for companies who want to achieve highly accurate forecasts, outstanding customer-service levels and less global inventory. An expert in “Powerfully Simple” supply chain planning, we offer software that analyzes demand history across multiple dimensions so you can achieve the most reliable forecast and inventory targets for mastering demand volatility and delivering service level excellence.

Our innovative and advanced technologies enable you to improve and automate your planning processes. Our solutions span key supply chain planning areas such as Demand Planning, Demand Sensing, Promotion Forecasting and Inventory Optimization.

We have more than 300 customers worldwide and one of the highest customer retention rates in our industry. Our experience includes manufacturers, wholesale distributors and retailers in a wide range of demand and inventory driven industries.

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