Full Spectrum Clinical Services – From Strategic Souring to Responsive Supply Chain

PEER REVIEWED

Introduction
With the growth of comparative effectiveness research (CER) and the need for large volumes of active comparator medicines comes an increased demand for effective sourcing and distribution of investigational medicinal products (IMPs). Furthermore, the increasing complexity and global scale of clinical research drives a demand for more creative and responsive clinical trial supply chains. These trends have led to an increase in both the range and reach of specialist clinical services and trial supplies companies, requiring them to up their game to respond to new demands and emerging challenges.

In the past, the primary advantage of outsourcing the supply of comparator medication was to leverage savings on acquisition costs of these IMPs. Whilst this is still an important factor (especially given the increase in price of some comparators – notably biologics), leading clinical supply companies are evolving their offerings into a more strategic, service-led provision and less so the transactional approach of old. In this way customers can get the benefits of cost-effective IMP supply plus efficient and creative trial supply-chain support.

This article serves to explore this trend and sets out the benefits of long-term, strategic partnering. We also explore the most valuable and impactful of these value-added services and aim to quantify potential long-term savings which can accrue from strategic sourcing.

The scope of strategic partnering in trial supply service can be covered across three broad sections:

- Effective and secure sourcing
- Responsive and rapid supply chain management
- Added-value services, fit for the future

Effective and Secure Sourcing of IMPs

The clinical trial supply sector has expanded as the need for research companies (bio-pharma and CROs) to quickly and cost-effectively procure active comparator medicines has grown. As with many outsourced services, the initial factors driving this growth were the need for acquisition of comparator drugs at as low a price as possible. This led to some companies turning to wholesalers to purchase comparators from available stocks, but also to the emergence of specialist supplies agencies such as Clinigen CTS and Idis, to name but two. Due to recent trends such as concerns over falsified medicines, new regulations on temperature excursions and the need for more responsive trial supply chains, these focused organisations have gained an increasing share of the trial supplies market.

However, despite the increasing complexities, cost-effective procurement remains at the core of these services and this must be achieved without compromising security or integrity of supply. Therefore, companies who have established working relationships with manufacturers and alternative suppliers are those which are best placed to effectively manage these new demands. The ability to procure enough product with an appropriate shelf life, for large-scale, long-term studies from a single source is also crucial. Historical transactional approaches with different wholesalers supplying different markets are not really adequate in this new environment. The potential waste and cost of variability of supply (due for example, to mixed lots), from time-pressured transactions is a great risk to clinical consistency, with serious ramifications for development programmes and, ultimately, profitability. Moreover, with the growth in number and scale of multinational trials, it is important that sourcing companies combine effective local and regional procurement with secure international distribution.

Reputable expert sourcing companies such as Clinigen CTS have ensured that skilled procurement and sound negotiation remain pivotal to their offering, whilst at the same time expanding their knowledge base, expert advice and customer solutions into new areas. These added-value services are explored in the next section. Table one sets out the ideal combination of core and added-value services expected from a contemporary, global strategic supplies partner.

What to look for in a strategic partner for comparator sourcing and supply	
Core services	**Added-value services**
• Cost-effective procurement and negotiation expertise • Established relationships with manufacturers • Ability to single source • State-of the art logistics and secure supply chain • Fully audited supply chains • Global distribution networks	• Technical consultancy and regulatory excellence • Local customs, compliance and regulatory insight • Just-in-time / demand-driven labelling capabilities • Global direct to site (D2S) / direct to patient (D2P) reach • Coordinated smart supply (kitting etc.)

Table 1: The ideal sourcing partner will have effective and proven core services coupled with the ability to provide added-value, responsive strategic solutions

Strategic Partnering and Responsive Supply Chain Management

Assuming that the core benefits of single-supply (batch/lot consistency), high-volume and good-value procurement is in place, then strategic solutions and added-value services come in to play when selecting a supplies partner. As noted above, many of the strategic services now being offered by specialist suppliers have been driven by regulatory changes or concerns over consistency and quality of supply. At a minimum, your trial supplies partner must have a thorough appreciation of product documentation, customs and specialist handling criteria needs and regulations. Qualified persons, up-to-the-minute regulatory governance and technical

expertise are also essential in order to provide this level of security and reassurance. This high level of knowledge and expertise is typically not available within wholesalers or small, local transactional suppliers. Larger companies with, for example, their own specialist pharmaceutical product divisions have the scale, knowledge base and in-house expertise to keep ahead of global and regional changes to the benefit of their customers.

The other major change which strategic partnering agencies are bringing to bear in this sector is the development of responsive supply chain management, exemplified by 'just-in-time' delivery (and associated rapid response systems). Such tailor-made, reactive systems are almost a pre-requisite for modern day trial design and the demands of multinational study programmes. Table 2 gives a flavour of the nature and range of these services.

Added-value Services, Fit for the Future

We have already indicated how, through responsive technologies and global reach, strategic partnering goes beyond just procurement and the provision of a secure and reliable supply chain. However, genuinely strategic supplies services companies also look to add value for their customers in other ways. This may be through the procurement of non-investigational medicinal products (NIMPs) such as rescue medication and ancillary supplies that are required in conjunction with investigational trial medication. It is more efficient and cost-effective to work with a single supplier who can, through coordinated smart supply systems, procure and distribute all trial supply requirements, by region, by study and by site.

In addition to NIMPs and ancillary materials, strategic service providers are constantly looking to develop novel solutions to enhance efficiency, improve trial performance and stay ahead of regulatory or legal changes. For example, investigator-initiated trials (IITs) are now receiving extra attention and getting the 'added-value treatment' from companies such as Clinigen CTS (see box). Technical and regulatory consultancy is

SERVICE	SUMMARY OF SERVICE	BENEFITS TO THE TRIAL SPONSOR
Demand-driven labelling and distribution (DDLD)	A new, rapid reaction service which enables fast turnaround on an order being placed and correctly labelled supplies being delivered D2S (or D2P). Requires state-of-the-art storage and labelling facilities along with regulatory know-how, QP release and global risk mitigation insight.	• Allows deployment of supply to be matched to site-specific demand (driven by local enrolment rates) • Reduces wastage due to expiration and over-ordering • Rapid global oversight by dedicated and experienced Project Managers • Overview reports provide visibility of demand and strategic insight • Global reach through central, regional or local supply options • Reduction of storage burden at each clinical site
Direct-to-site (D2S)	The secure distribution of IMPs, ancillaries and non-IMPs to multiple trial sites across the world. D2S enables the benefits of rapid procurement (and can be combined with DDLD) and distribution all the way to site, seamlessly across large-scale multinational clinical trials	• Speeds the distribution process • Reassures investigators and trial teams that they will not have any stock-out scenarios • Improves the efficiency of distribution of trial supplies (and ancillary materials) • Brings the combined benefits of central sourcing and regional distribution together
Direct-to-patient (D2P)	An even more efficient and focused service than D2S, D2P takes this principle a step further and delivers the exact supplies needed to the trial patient's home (or nominated local institution/HCP).	• Speeds the distribution process • Specifically tailored to those studies that may need in-home care or where patients are very widely distributed and unable to travel

Table 2: Responsive supply chain services and solutions being pioneered by strategic partnering companies

another additional and highly valuable service which larger agencies can provide. Strategic partners have a wide range of skills and teams with a wealth of directly relevant, dedicated experience in the clinical research and supply chain sector – expertise which can be brought to bear in the planning and execution phase of any trial programme. Partnering with a specialist clinical services provider early in the trial planning phase therefore brings many benefits beyond predictability and security of IMP supply. Provided, that is, your chosen supplier has the breadth and depth of knowledge, regulatory insight and the global reach to deliver in our increasingly complex ecosystem.

Valuing the Added Value – Evidence for the Tangible Impact of Strategic Partnering

The overall impact of improving cost-effectiveness of IMP sourcing and general management of clinical trials is something that can occasionally only be seen across study programmes or at certain magnitudes (e.g. EDC). The evidence for the tangible benefits of strategic partnering for the supply of medicines throughout a study, however, is rife, and can be seen at the individual study level and also across programmes. That said, these strategic savings are often not set against the backdrop of the "base price" of a single IMP. In order to rectify this data gap, Clinigen CTS recently commissioned some objective research with Datamonitor Healthcare. This research was designed to assess and model specifically the impact of strategic sourcing on trial efficiencies compared with more transactional or tactical methodologies. The findings from this analysis are summarised in Table 3. As can be seen from these data, major savings can accrue from taking the strategic sourcing approach – and it should be noted that the assumptions used were deliberately conservative. Cost savings and time savings for certain large-scale studies can be far greater than those shown.

Approach or factor	Average time or costs associated with Phase III studies	
	Transactional	Strategic
Global single sourcing	$2 million	$ 1.2million
Wastage of IMPs	$840K	$100K
Resource cost of placing an order	$4500	$1000
Temperature excursion resolution	14 days	2 days
Effective import management	Up to 60 days	1-3 days
Reduced resource requirements	30 orders, multiple vendors	One order, one partner

Table 3: Contrasting costs and time delays associated with transactional versus strategic sourcing and supply

When taken as a whole, the differences noted in Table 3 can deliver potential total savings of over $5-7 million per study – on study costs alone. If the long-term impact of delays due to a transactional approach are extrapolated into launch delays, the lost opportunity cost (ie impact on peak sales and product profitability) could run into hundreds of millions of dollars. Therefore, taking a transactional approach to comparator drug sourcing can lead to very costly, long-term consequences. On the other hand, strategic sourcing and partnering gives companies the peace of mind that they have chosen a supplier which has both the experience and wherewithal to deliver efficient, secure and compliant supply with the added bonus of major cost savings. Coupled with the active development of added-value services and novel approaches, specifically designed to help customers overcome newly emerging challenges and regulatory change, it is easy to see why comparator medicine supply has grown into a pivotal link in the drug development and clinical research chain.

The rise and rise of Investigator Initiated Trials

Investigator Initiated Trials or IIT's, alternatively described as Investigator Sponsored Studies, are an important part of the research ecosystem through which independent researchers explore new uses of established medicines, novel combinations and effects in new patient populations. Such studies are on the increase but can be challenging for Pharma companies to support with budget and resources when, by definition, they are not themselves the sponsors.

The levels of support provided by the originating company of the products undergoing IIT's vary but one thing they all have in common is the provision (usually free of charge) of the investigational medicine. Due to the variability, in terms of doses needed and patient numbers, of these unique studies, coupled with their highly localized nature supply chain needs rarely fit in the normal distribution model. This is where specialist supply companies can have a role to play and some are developing a tailored-made IIT capability. This service brings with it many benefits – not least reassurance that IITs supplies will be handled with the same efficiency and security as industry sponsored studies, without detracting from a focus on core business. Furthermore, a centralized outsourced approach saves time and money within the originating company (through operational and opportunity cost savings), plus it brings economies of scale since the specialist agency can speedily and cost-effectively supply multiple sites.

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