Strengthening the Links Across the Clinical Trial Supply Chain: A Collaborative Meeting

Successful delivery of clinical trials depends on many factors, not the least of which is having an effective clinical trial supply chain for investigational products. This aspect of clinical trial delivery is inherently complex, with different specialists working on different stages of the chain. There are those in manufacturing, labelling, packaging, inventory management, project management, the clinical research associates, as well as site staff, with the supply passing through numerous hands between those directly handling the products, and equally between individuals working on the various systems underpinning the operability of the supply chain. Yet, rarely do the professionals undertaking these varying roles have the opportunity to talk to each other, and understand how decisions made in one aspect of the clinical trial chain can impact on downstream processes.

In November 2017, two UK-based professional groups, the Clinical Supplies Discussion Group (CSDG) and the National Pharmacy Clinical Trials Advisory Group (NPCTAG), met in London to bring together industry and study site specialists for an interactive workshop to share experiences and ideas, with the aim of driving improvements and efficiencies in the clinical trial supply chain for the mutual benefit of clinical trial sites, sponsors, and ultimately the patients who participate in clinical trials.

Aim:

- For clinical trial supply professionals to understand the needs and reality of clinical study sites.
- For pharmacy staff, working on clinical trials, to better understand the challenges faced by industry professionals.
- To identify practical solutions to real-life problems via interactive workshops.
- To identify ways to maintain a long-term collaboration and so develop further, longer-term, solutions.

Sharing experiences was the focus of the morning session. Cross-function teams were formed giving all the participants the opportunity to contribute to all four topic areas. Successes and challenges experienced by those on either side of the supply chain were openly discussed, and soon lists were emerging showing where we are getting things right, but also some of the more problematic subjects. It was interesting to see the same items appearing in both successes and challenges, suggesting harmonisation of processes across the industry may help to drive improvement. Below are some examples from each of the workshop areas.

Labels, Packaging & Kit Design

Successes

- Clearly labelled blister packs, drug / trial name
- Side-labelled cartons
- Large font sized labels
- Blinding / randomisation process
- Full aseptic prep kit
- Photos of kits
- Patient focus groups designing kits
- Peel-off labels / tear-off labels with trial info
- Programme label booklets
- Barcoding

Challenges

- Label information
- Label type / design
- Expiry dates
- Kit sizes – they are often very large
- Technology
- Managing change
- Multiple trials from the same companies

Record-keeping, Information and Data-sharing

Successes

- Clear and timely information
- Documentation which reflects pathway for materials
- Standard documentation
- Fewer consolidated systems/ deliveries
- Reduced delivery accounting errors
- Home studies and direct to patient
- Electronic trial master files
- One-stop shop for all clinical trial documentation
- Clear processes for temperature excursion reporting
- Increasing use of smart technology by patients
- Pharmacy manuals needing uniformity of information

Challenges

- Temperature excursion handling
- Standardisation of pharmacy manuals
- Defining a standard data set
- for reporting site excursions
- Discrepancies between manual and automatic records

Ordering, Delivery, Storage, Collection, Transport

Successes

- Drug now turns up in core hours
- Automated triggers for resupply
- Many different temperature control options
- Less excursions
- Can manipulate IRT to suit sites
- Better packaging leads to undamaged stock
- Easier to get transport to suit site
- Returnable boxes

Challenges

- Documentation
- Balance frequency vs volume shipment
- Waste packaging
- Temperature excursions
- Destruction
- Expiry updates
- IVRS
- Packaging outer label
- Manual receiving

Communications

Successes

- Standardisation
- Clear escalation pathways
- Technology integration
- Early pharmacy involvement
- Photos of packaging, information, pharma manuals
- Clinical research associate assigned early
- Timely site qualification visits (not too early, not too late!!!)
- Videos available (example drug prep methods)

Challenges

- Training
- Communication of timelines
- Communication of contact information

- Notification of shipment / pharmacy opening times
- CRA challenges
- Provision of emergency contact number
- Temperature excursion communication
- Multiple IRT systems
- Terminology and jargon
- NHS technology
- Principal investigators speaking on behalf of the pharmacy
- Notification of changes

The afternoon session began with participants voting on the priority issue in each of the four topic areas, and forming groups to further explore potential solutions and obstacles in addressing these major issues.

E-labelling was voted as a priority for discussion, and this generated some mixed reactions from participants. Potential areas of concern were identified, including regulatory requirements, variations of barcode type, technology failure, and stakeholder engagement. On the other hand, there was support in the group for the development of industry standards for e-labelling systems, and label specifications to facilitate the implementation of this new technology. As such, it was agreed that the CSDG will follow up on the TransCelerate eLabels initiative which aims to support the industry to progress on the journey to digitally supported, patient-centric clinical supply chains.

Taking a less technology-centred approach, our industry colleagues also welcomed the practical ideas suggested by pharmacy staff on ways to improve current labelling, such as: clear display of storage condition on product label can alert patients and site staff to avoid potential excursions; label orientation with consideration of how the product will be stored on pharmacy racks can greatly facilitate the identification of product during storage, distribution and use; and label design taking into account material used, as well as ensuring sufficient space is available for the addition of required information at dispensing.

Under the topic on record-keeping, information and data-sharing, temperature excursion management was prioritised as an area of concern. There was a call from both industry specialists and site staff for a more risk-proportionate approach to defining and reporting of temperature excursions to avoid preventable delays in patient visits. In the past, they had found internal resistance to writing IMP management/pharmacy manuals but felt that if they could capture data to show how this reduces workload, they could show that investment up front would reduce time later on. It was agreed that adopting a patient-centric approach and agreeing best practice amongst a group of practitioners which could be shared with other parties would be a major step forwards. They suggested that each and every protocol has a pharmacy manual, which could have a standardised format allowing for input from all parties including the pharmacy personnel.

The third group working on ordering, delivery, storage, collection, and transport took on the challenge of shipping containers. Shipment frequency and size of shipment are often not optimised, compromising the safe handling of these containers at sites. Innovative solutions balancing thermal performance with packaging efficiency are needed. Shipping boxes could be optimised to be a better size fit for the number of medication packs that are contained in the shipment. Participants agreed that manufacturer and sites should work together with the CRO to optimise. We need a more efficient supply strategy and to have site input when creating this, allowing the end user to input into the process.

The final group identified training as the top challenge to resolve within the topic of communication. It is crucial to establish roles and responsibilities at the site (site vs. pharmacy user) for IRT use. Additionally, it would be beneficial for an IRT company to visit a clinical site so they can better understand the communication flow, number of staff involved and challenges experienced within a hospital, such as access to computers for real-time dispensing of IMP. The team identified that it is important that the CRA has sufficient time to allow for a pharmacy visit during any feasibility or site selection visits to ensure the pharmacy can handle the IMP, and any constraints can be communicated to the clinical trial supply team at an early stage in the project. Finally, it was agreed that a better understanding of other parts of the clinical supply chain and the roles of other participants were needed. There needs to be more training of clinical staff, pharmacy staff and the CRA about clinical trial supply and vice versa. Cross-functional training between industry and the NHS would improve our working together.

It was always the intent that a large part of this first meeting would be dedicated to getting to know people and identifying common ground. Everyone agreed that having the opportunity to understand other job functions and responsibilities was key, and just talking to people working on a different aspect had given them a better understanding, opened up contacts and given a way forward to improve communications lines. This was a very collaborative and solutions-focussed meeting. Both sides are keen to continue working together and to see resulting process improvements.

Going forward, the two organisations aim to create a small number of work streams per topic. Although the working groups and topics are still in the process of being defined, the following topics have been provisionally identified from the outputs of the Winter Event:

- Labels (leading onto e-labels in the future)
- Pharmacy manual
- Temperature excursions
- Boxes (better filled)
- Publications re. roles and responsibilities

Watch this space for progress updates and the date of future meetings. The next joint CSDG/NPCTAG event is likely to be held in 2019.

The Clinical Supplies Discussion Group (CSDG) is a group of industrial pharmaceutical specialists with an interest in clinical trial supplies; members include pharmacists, IMP packaging, IVR specialists and logistics project leaders and quality assurance/control representatives. Twice yearly, we hold a one-day event where we discuss and share information on the important topics of the day, for the benefit of all. The CSDG network also facilitates the flow of relevant information throughout the year.

http://www.csdg.co.uk

The National Pharmacy Clinical Trials Advisory Group (NPCTAG), originally a subgroup of the National Pharmaceutical Quality Assurance Committee, was established in its current form in 2010. Membership of NPCTAG includes representatives from a range of hospital pharmacy disciplines and other relevant specialist groups, MHRA and the National Institute of Health Research. The group's objectives are to provide advice to NHS pharmacy services, to the National Institute of Health Research Clinical Research Networks Coordinating Centre, to support education and training of pharmacy staff, and to provide a forum for communication with MHRA about clinical trial issues.

Sue Lee

A healthcare supply chain professional with extensive experience shipping clinical and specialty commercial drug, and clinical samples, with over 25 years of GxP process development and application, utilising risk management and logistics planning with business experience to produce practical solutions.

Email: sue@hexagonsupplychain.com