CASE STUDY

NCI-Designated Cancer Center Successfully Curtailed Inventory Chaos Using Slope

Leveraging a centralized, comprehensive inventory management platform translated to better accountability of lab kits, waste prevention, and more informed decision-making

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CUSTOMER PROFILE

The University of Pittsburgh Medical Center Hillman Cancer Center (UPMC HCC) is one of only three NCI-designated comprehensive cancer centers in the state of Pennsylvania.

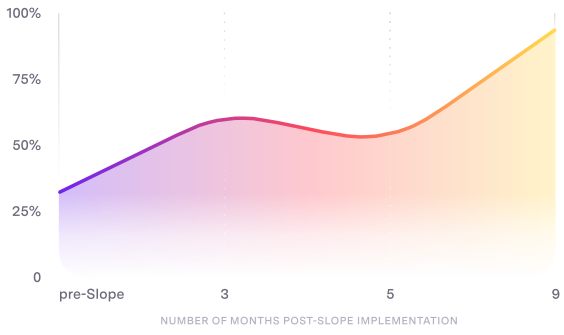
The Challenge

UPMC HCC had an inventory problem.

As an epicenter for clinical research in the Mid-Atlantic, this large, world-renowned academic medical center (AMC) is a bustling hub for lab kits and other supplies. The dilemma, however, was that they did not have an efficient logistical infrastructure to support the high volume of inventory that was circulating through their disease centers.

To understand how this lack of a process was a precursor to chaos, it's important to address the extenuating circumstances that worsened UPMC HCC's predicament. Working with numerous trial sponsors across countless studies, UPMC HCC fields a constant barrage of inbound supply shipments. Trial sponsors coordinate with central labs and other kitting vendors to provide their sites with sufficient lab kits that have been custom-made for use during specific patient visits on specific studies. In a well-meaning effort to minimize the risk of missed collections, delayed patient visits, protocol deviations,

After 9 months on Slope, this disease center took its on-site, unexpired clinical inventory from just 32% to **93% accounted for, traceable, and ready to use.**



and other high-stakes scenarios that can have a negative impact on patients, sponsors will often supply their sites with as many as 25-50% more kits than needed for site initiation. At UPMC HCC, this was only exacerbated by time-driven resupply schemes that were managed by sponsors and kit manufacturers, oftentimes providing staff with minimal oversight or input in the supplies that they were receiving at any given time.

Under an ever-growing mountain of lab kits, UPMC HCC's processes became increasingly

unsustainable. As study designs and kitting schemes intensified in complexity, sponsors and CROs required more documentation for clinical research site processes, including inventory records. Until recently, site staff followed inconsistent processes for managing and storing their inventory, with some coordinators using Excel spreadsheets to track quantity and location, while others had to keep lab kits at their desks or create makeshift storage areas across their facilities. Juggling competing priorities with limited resources, UPMC HCC personnel simply didn't have the capacity to manually monitor their supplies.

Without a centralized process to manage the excessive quantities of supplies coming through their doors, UPMC HCC's clinical inventory was getting out of control. Expiration dates and in-stock inventory were difficult to track, leaving site staff with no option but to redundantly order supplies that may have already been in their facilities, but couldn't be accounted for. Conversely, operating under an assumption that certain lab kits were in stock could have translated to patient visit risks or delays.

The Solution

UPMC HCC needed a way to organize their clinical inventory in order to mitigate kit waste, maximize efficiency, and better utilize their storage space, while still being able to treat their patients.

Slope's inventory management platform gives clinical research sites a quick snapshot into what they have on site, where it's stored, and when it expires. Using a centralized system, site staff can abandon their inefficient manual processes, error-prone written logs, and shared spreadsheets in order to dramatically improve their operations, organize their facilities, and drastically reduce clinical supply waste.

> **"In the beginning, we hadn't seen anything like Slope before. Once we saw what it could do, it was an easy decision to give it a try. Now, having used Slope for so long, it is hard to imagine our trials without it."**
>
> **Jamie Voyten**
> Sr. Clinical Research Lab Manager
> UPMC Hillman Cancer Center

As a data-driven organization, UPMC HCC needed to assess whether Slope would be beneficial to their disease teams, and to what extent. More specifically, UPMC HCC was particularly interested in comparing different disease centers — each with different needs — to evaluate if Slope would be a viable solution to implement across the entire organization.

The Transformative Impact of Slope on UPMC HCC's Inventory Management Practices

In order to measure the impact of Slope's inventory management platform on site efficiency, UPMC HCC created a snapshot of their baseline inventory in two departmental disease centers. The pilot program focused on a high-accruing Phase I disease center (DC 1), and an established disease center with steady and predictable recruitment (DC2). Each disease center was divided into various locations and zones, with cabinets and shelves labeled by protocol.

A neutral party of lab staff logged existing inventory by performing a comprehensive walkthrough of each disease center. Inventory was assessed and placed into one of three categories: unexpired inventory that was known to site staff; expired inventory that was known

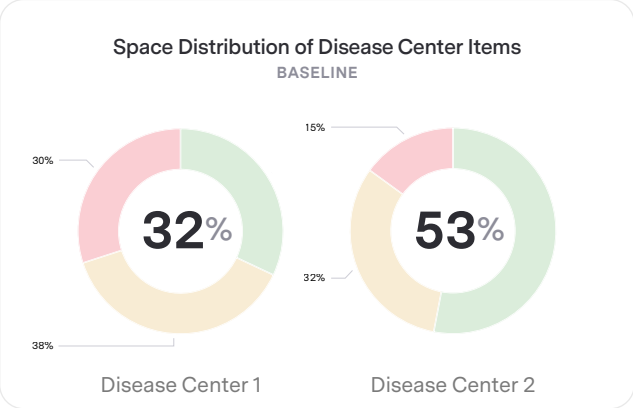
to site staff; or inventory that was unknown to site staff. Known inventory was cataloged in Slope and compiled with unknown supplies in a spreadsheet.

KNOWN ITEMS, UNEXPIRED

KNOWN ITEMS, EXPIRED

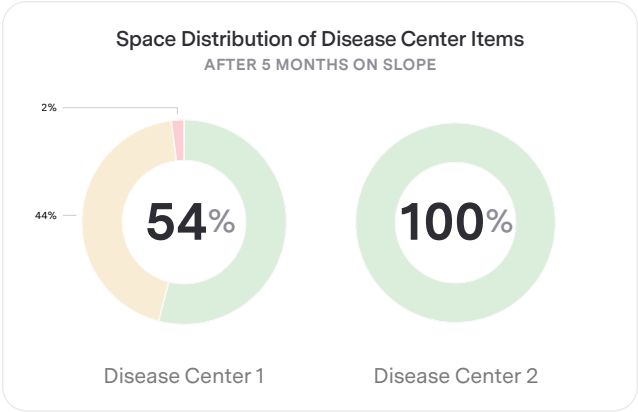
UNKNOWN ITEMS, MIXED EXPIRY

Disease center staff were then tasked with discarding 5 expired kits per day out of the known inventory, and then spending 2 hours per week going through the unknown inventory to either dispose of expired supplies or document them as unexpired in Slope.



More Organized Inventory

In a large and active medical center like the one at UPMC HCC, lab kits and other supplies were easily lost or unaccounted for when they didn't have an organized process in place for managing kits. After 5 months of using Slope, DC1 had nearly all of their inventory accounted for, while DC2 was able to account for 100% of their inventory. Expired supplies could be discarded, which opened up some unused space that could then be leveraged by another disease center in need, based on trial volume.



Less Clinical Supply Waste

By using Slope to track inventory, UPMC HCC became more aware of supplies they already had, where they were, and when they expired. This visibility to inventory enabled UPMC HCC to identify studies and sponsors that were oversupplying lab kits through time-driven resupply, and prevented the unnecessary ordering of supplies that were already on site.

> "One of the big trends we saw was that our people actually knew what they had now. They stopped ordering so many kits, and we saw more communication amongst the teams in terms of where these kits lived."

Seamless Handoffs between Research Associates

At UPMC HCC, staff turnover, vacations, remote work, and study transitions made inventory difficult to track. The ability to catalog inventory in Slope eliminated the need for back-and-forth between site personnel about where to find study-specific and visit-specific lab kits.

Better Insight into Data Trends

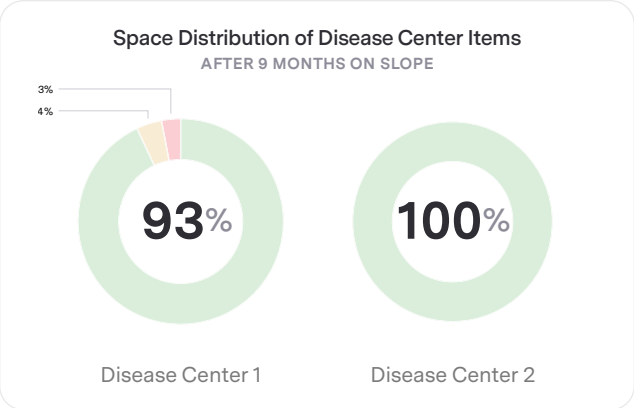
Having the ability to look at inventory data on a macroscopic level enabled UPMC HCC to make more informed decisions about lab kits and other clinical supplies. This data proved especially valuable during protocol amendments, changes in enrollment rates, and during conversations with internal and external stakeholders over the life of a study.

> **"You're also able to look at trends more easily. If multiple studies have patients coming off and on, or a lot of lab manual amendments are coming out and the sponsor is adjusting the kits, you have all that data at your fingertips. You're then able to have better conversations with people who might be running the study externally, or even internally."**

Using Inventory Management to Optimize Sample Management

Site challenges extend beyond inventory management — downstream operations, like sample management and data reconciliation, are also adversely affected by inefficient and error-prone processes. Without a comprehensive solution that addresses all of these stages of the clinical trial life cycle, stakeholders are hindered, data integrity is undermined, and the patient experience is put in jeopardy.

One of Slope's guiding principles is that inventory management and sample management are one cohesive ecosystem, with every kit becoming one or more samples. Building on the foundation of inventory management, Slope now enables clinical research sites to bring their lab manuals to life through software-guided workflows that map lab kit components to specific details around sample collection, processing, storage, and shipping.



When clinical research sites configure lab kits in Slope's *site-led sample management* platform, they create workflows that can be used for all patients that participate in that study-specific visit. Once this one-time configuration step is performed, site users can collect and register samples directly in the platform, using the guardrails that were defined during setup in order to optimize efficiency and compliance. This framework is flexible in nature, enabling clinicians to seamlessly integrate study changes — including protocol amendments — into their processes.

Slope also provides real-time visibility to the sample journey. Audit trails and chain of custody details are automatically captured in the platform, reducing queries and simplifying data reconciliation.

Key Takeaways

Leveraging Slope curbs excessive supply waste through visibility to inventory data

Implementing Slope streamlines clinical research site processes and eliminates the need for paperwork and spreadsheets

Slope's inventory management platform lays the foundation for better sample management

DATA SOURCE

AACI CRI Poster: The research reported in **this poster** was supported by National Cancer Institute of the National Institutes of Health under award number P30CA047904.

CASE STUDY CONTRIBUTOR

Jamie Voyten is a Senior Clinical Research Laboratory Manager for UPMC Clinical Research Services with over 15 years of experience in laboratory science, and over 10 years' experience in GMP, GCLP, and Clinical Research Laboratory science. She oversees over 300 clinical trial protocols' correlatives and ensures staff are adequately trained in correlative sample collection and processing to allow clinical trial protocols to meet their objectives. Jamie is the mom of two highly energetic young boys and one not-so-energetic cat.

SLOPE

ABOUT SLOPE

Slope is a global provider of biospecimen lifecycle software, data, and services for clinical trials. With a focus on tech-enabling the full biospecimen lifecycle, Slope offers expertise that empowers sponsors to make informed decisions using high-quality, real-time sample data. Slope has supported thousands of the most complex, sample-intensive trials worldwide and has been adopted by 79% of NCI-designated cancer centers.

For more information, visit SlopeClinical.com

DATA SOURCES & REFERENCES

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