

The Implementation of a Clinical Inventory Management System and the Reduction of Deviations Related to Missed Tests

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1. Background

Organized and effective management of clinical trial materials is essential for collecting required pharmacokinetic samples within the scope of a clinical trial protocol. At the University of Arizona Cancer Center Clinical Trials Office (CTO), the Slope inventory management system was implemented in 2022 to improve the tracking of clinical trial kit inventory. Prior to implementation, pen and paper was used to track and reorder supplies. This method was ineffective due to the inability to evaluate a large volume of kits, place orders, and centralize inventory tracking.

2. Goals

Our primary goal was to decrease missed patient assessments and associated deviations due to insufficient inventory or expired kits. Our secondary goal was to improve clinical trial data for safety and efficacy by collecting all assets required in the protocol.

3. Solutions and Methods

We implemented the inventory management system within the Slope platform to manage biospecimen lifecycle materials. All material inventory was entered into the system and categorized by oncology disease type. Additional information included Protocol name, kit type (example screening, C1D1), quantity received, expiration date, and physical storage area. Alerts for expiring and low inventory were set at 15-, 30-, 45-, 60- or 90-day increments and quantity of items remaining, which generated alerts. Reordering details included supplier name, link, and reorder notes. As kits were used by staff for patient assessment, they were automatically subtracted from the inventory making real-time inventory data readily available to all staff.

4. Outcomes

Data on scheduled test related deviations reported during the year prior to implementation of Slope were compared to those during the year of implementation and the year following implementation. This showed a 44 percent reduction in scheduled test deviations from year 2021 to year 2023. Although we cannot quantify all scheduled test deviation reductions being associated with kit availability, the trend is favorable as other interventions were not implemented.

5. Lessons Learned and Future Directions

We learned our clinical trial materials increase in volume and complexity every year. Closely tracking their availability decreases our missed test deviations and contributes valuable data to the clinical trial. Monthly reports generated from Slope allow us to replenish our supply and predict supply demand and storage needs. Slope has introduced a sample management system that we will be evaluating and beta testing at our site.

Figure

