Category: Cross-cutting Innovation and Collaboration – Work in Progress

Increasing Clinical Trial Efficiency and Visibility Through an Internal Data Analytics Platform

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1. Background

Supporting a Clinical Trial Organization (CTO) which utilizes data-driven decision-making processes requires the ability to view data at various points along the clinical trial continuum. Historically, unique requests from teams within the CTO were completed on an ad-hoc basis by members of the Clinical Trial Analytics (CTA) team or by staff within the CTO. This required CTO staff to provide advance notice of data needs to allow for sufficient time for fulfillment. Crucially, the lack of readily available and usable data hindered the ability of CTO leadership to make strategic data-driven decisions efficiently.

2. Goals

This initiative aims to make relevant information readily available to CTO staff and leadership through a robust data analytics platform allowing for self-service access to custom and frequently requested data. Data tables, charts and graphs that are interactive, dynamic, live, and downloadable, are made available through user-friendly dashboards and automated reports.

3. Solutions and Methods

Workflow: CTO users submit requests for new and updated data applications through a ticketing system, allowing for clear communication of data needs and goals, and organization and product prioritization within the CTA. The CTA then identifies whether existing data products can be leveraged to meet the request and meets with the requesting CTO user to discuss a plan.

Product development: Data products bring together information from multiple sources including: OnCore, EPIC and REDCap, primarily using SQL and R. Custom data applications are published to Sidney Kimmel Comprehensive Cancer Centers (SKCCC) local Posit Connect instance. Access to each product is granted to authorized users. While each application supports actionable insights tailored to the given request, common elements include interactive, filterable data tables and visualizations that can be downloaded and shared. Highly utilized dashboards include:

- Protocol QC: dashboard that lists out all studies that are flagged for review by study teams based on a set of rules to ensure timely data entry and completeness
- Accrual Monitoring: graphs that track accrual over time and can be broken down by variables of interest
- Effort Tracking: dashboard that can be filtered easily by managers to see how many hours their staff logged in prior weeks and how those hours were filled

4. Outcomes

A new workflow for data product requests has improved communication between the CTO and CTA teams leading to the production of data tools that support reporting and monitoring requirements. Currently, 47 applications are accessed approximately 100 times a week by 78 CTO users across Clinical Operations, Research Support Services, Regulatory, Quality Assurance, and Community Outreach. These CTO teams now have easy access to the data they need in a format that best serves them.

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5. Learned and Future Directions

Collaboration between CTA and CTO teams lead to innovative applications and increased efficiency. We will continue developing applications and reports and holding collaborative meetings to create products that will further enhance staff ability to track metrics and perform analysis. Additionally, as repetitive data requests have significantly decreased with the implementation of this workflow, our teams are now able to discuss and implement bigger picture collaborative products to support the cancer center more broadly.