Automating the Prescreening Process for Clinical Trials at an NCI Designated Comprehensive Cancer Center

NYU Langone Health

Perlmutter Cancer Center
An NCI-designated Comprehensive Cancer Center

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Work in Progress

Background

In 2022, the American Society of Clinical Oncology (ASCO) and Association for Community Cancer Centers (ACCC) released recommendations to increase equity, diversity, and inclusion, noting in part, "Clinical practices and research sites should screen every patient for clinical trials"[1]. At the Perlmutter Cancer Center (PCC), patients are prescreened for clinical trials if and when an engaged physician, usually a trialist themselves, presents a patient referral. In that instance, Clinical Trials Office (CTO) personnel engage in a cumbersome and lengthy process to manually prescreen the patient and match them to an appropriate trial. Routine prescreening of patients outside of this process is not common practice due to resource limitations.

Goals

1. Broaden the patient population that is prescreened for clinical trials, ultimately increasing patient access to the best possible treatment options.
2. Assess technology solutions meant to automate and accelerate the prescreening process.
3. Formulate metrics to evaluate the potential technology solution.

Solutions and Methods

The CTO assigned a project manager to evaluate potential technology solutions. Vendors were evaluated by the CTO based on user interface, ease of trial set up, and enhancement of work flow. The IT department evaluated the technology and ability to integrate with our EMR. Advice and experience was also sought from AACI colleagues.

The CTO Medical Director presented the need for a technology solution to the Cancer Center IT Steering Committee. Evaluation metrics and goals were defined in the following categories:

- Increase access and participation, including for traditionally underserved patients
- Decrease screen failure rate
- Increase physician participation and referrals
- Decrease the rate of underperforming studies by analyzing patient population prior to study activation

Outcomes

Although several vendors purport to be experts in this space, we only encountered one that could confirm they have implemented their platform at a client site. Unfortunately, we eliminated that vendor from our search after receiving feedback about the detailed query setup required for each trial. Another vendor was eliminated after receiving a poor review from a site that had been working to implement the system for a year or more without success.

Eventually, we did identify a potential technology partner. Contracting and IT system reviews are still ongoing. Some compelling features of this vendor include: a large language model (LLM) fine-tuned with medical knowledge; an in-house clinical team who leads the process of converting protocol eligibility criteria into machine friendly queries; complete and borderline matches are produced, with the ability to track patients that could be trial eligible at a later date; all EMR data stays within the healthcare system's firewall.

Lessons Learned and Future Directions

The scope of the project will need to be defined. The NYU IT department is in favor of a one-year limited partnership in order to assess this bleeding edge technology. With this in mind, the CTO is advocating to include the entirety of trials from one disease group in the scope. This will allow staff from the Disease Management Group to fully incorporate new workflows and processes and better enable us to evaluate goals.

References

1. Randall A. Oyer et al., Increasing Racial and Ethnic Diversity in Cancer Clinical Trials: An American Society of Clinical Oncology and Association of Community Cancer Centers Joint Research Statement. *JCO* **40**, 2163-2171(2022). DOI:10.1200/JCO.22.00754