

Measuring the Impact of Multiple Strategies to Increase Enrollment in Molecular Targeted Trials

L. Wall, K. Paydary, W. M. Stadler, K. Kipping-Johnson, V. Seseri, K. Cabrera, B. Pieke, A. Larkin, M. D'Souza, D. Sulakhe, S. Moellering, A. Spratt

The University of Chicago Medicine Comprehensive Cancer Center

1. Background

Optimal patient accrual to cancer clinical trials is increasingly hampered by molecular inclusion criteria that characterize rare populations. Furthermore, patients may have internal molecular testing (IMT), or external molecular testing (EMT) through a third-party vendor (i.e., Foundation One, Tempus, etc.) at various time points in their care. EMT results are uploaded into the electronic medical records (EMR); however, results are difficult to extract in a meaningful way.

2. Goals

Given the complexity of the trial design and the data siloes, we implemented multiple strategies to increase enrollment to molecularly targeted trials and measured the impact of each strategy.

3. Solutions and Methods

Strategy 1- Matching based on External Molecular Testing (EMT)

We partnered with Tempus to increase enrollment in a rare SETD2 mutation trial. Ordering providers that had a patient identified as having an applicable mutation who resided within 50 miles from our center or were receiving treatment at pre-specified clinical sites received written notification regarding the potential trial eligibility. Additional outreach, including reasons for not pursuing the trial, was conducted.

Strategy 2 – Matching based on Internal Molecular Testing (IMT)

We partnered with our internal Clinical Research Informatics (CRI) team to develop an algorithm that would identify potentially eligible patients with IMT testing and other select criteria (i.e., age, prior treatments, last visit, etc.).

Strategy 3 – Integration of trial eligibility into standard-of-care pathways

We partnered with our hospital to integrate specific clinical trials into our electronic standard of care pathways (Clinpath) that clinicians need to utilize for documenting any change in therapy and compliance with peer-reviewed standards of care.

Strategy 4 – Clinical Research Staff Manual Pre-Screening

The fourth strategy included a manual process where our Gynecology Oncology Clinical Research Coordinators (CRCs) pre-screened patients who presented to the clinic on a weekly basis. All new patients or patients who progressed and needed a new treatment plan recommendation were flagged and manually screened for molecularly targeted trial eligibility.

4. Outcomes

We looked at 34 protocols that required genomic variants as part of eligibility. The variants included SET2, EGFR, ERBB2, ERBB3, ERBB4, KRAS, NRAS, BRAF, V600E, V600K, MRE11, NBN, RAD50, HER2, HER3, MSI, MSS, TnMUC1+, MAGEA4, WEE1, FGFR2, B7H4, and FR α _positivity. A total of 290 patients were identified and pre-screened across the four strategies, and 31 patients were enrolled (Table). The primary factor leading to non-enrollment was clinical situations precluding trial participation. Other

factors comprised unresponsiveness from healthcare providers, lack of interest from the patient, and the dynamic nature of the trials, including cohort closures and protocol amendments that revise the eligibility criteria (Figure).

5. Lessons Learned and Future Directions

The four strategies represented an independent approach to augmenting enrollment in molecularly targeted trials. To effectively increase enrollment in these trials, a comprehensive approach that incorporates multiple strategies is necessary. These strategies require an investment in specialized oncology bioinformatics personnel, the establishment of a robust data warehouse, and dedicated clinical research staff. Future directions include enhancing the data warehouse to obtain access to IMT and EMT uniformly, training additional research staff to perform manual pre-screening, and increasing the number of trials and the number of physicians using the integrated pathways tool. The role of enhanced patient outreach in order to minimize dependency on physician-based trial recruitment is also being investigated.

Figures/Tables:

Enrollment Results

	# of Patients Identified and Pre-Screened w/Genomic Variant	# of Patients w/Genomic Variants Consented	# of Patients w/Genomic Variants Enrolled	% of Patients Enrolled w/ Genomic Variants
Strategy 1	38	0	0	0%
Strategy 2	83	1	1	1%
Strategy 3	113	18	18	16%
Strategy 4	56	13	12	21%
Total	290	32	31	11%

Reasons for Not Enrolling

