Clinical Trial Operation Turbo Speed - Progress and current opportunities in decreasing study start-up timelines

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Objective:

Evaluate study start-up (SSU) metrics from 2022 – 2024. Investigate best practices and opportunities for interdisciplinary collaborative change and metrics to evaluate success.

Background:

Efficient clinical trial SSU is critical to execution, innovation, and patient care[1,2,3]. In 2022, Masonic Cancer Center Clinical Trials Office (CTO) began an initiative to decrease SSU timelines. Interdisciplinary workgroups identified the need for real-time communication, transparency, and standardized practices. SSU timeline was established as a key milestone towards improving this metric. Several process changes were implemented to adapt to the CTO's evolving needs.

New project management software.

Established fast-track study start-up benchmarks

Designated SSU clinical teams to allocate resources

Data-driven communication & priority alignment

Results:
Average start up time decreased by 100 days since 2022

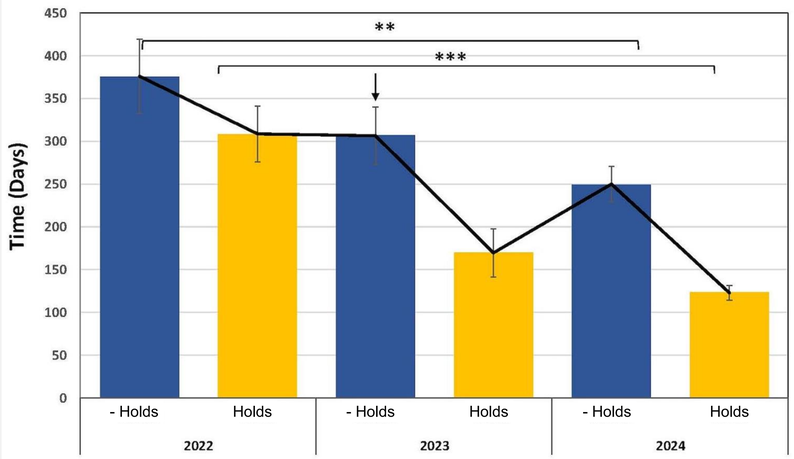


Fig 1. Comparison of timelines with and without holds. A hold is when the timeline "clock" is stopped to exclude delays outside the control of the Cancer Center (i.e. budget and contracting). This evaluated therapeutics studies only. In both cases, average timelines decreased by over 100 days which was highly significant. Full start-up times decreased from an average of 376 days in 2022 to 250 in 2024. Timelines including holds decreased from 309 days in 2022 to 123 in 2024. The arrow indicates when SmartSheet management software was implemented.
2022 vs 2024 (Actual): ** P<.005. 2022 vs 2024 (Holds). *** P<.001 (1e-10)

Interdisciplinary Strategic Prioritization

- **The Program Manager team:** developed a customized SmartSheet instance for the CTO to improve transparency and real time access to SSU milestone data. Additionally, in 2023, a template email was created and sent to sponsors to communicate expectations and assist in streamlining start up activities such as process and timeline information and required documents during feasibility phase.
- **Cancer Protocol Review Committee (CPRC):** revised the process of scientific review to eliminate the number of major stipulations given to sponsors. This change allowed studies to continue with IRB review while addressing concerns and improved time to IRB approval.
- **Clinical Team:** created a start up team to focus specifically on the work needed to open a study to accrual and free up resources for other key clinical work such as prescreening patients.
- **Regulatory:** utilized Smartsheet timelines to prioritize consent revisions and study submissions to IRB and ancillary reviewers. Communication strategies were adopted to inform all stake holders of timeline goals to align task completion. Enhanced communication facilitated faster responses to stipulations and gaining approvals.

Fast Track Program:

In 2022 a Fast Track clinical trial SSU program was rolled out. In this, the goal timeline from CPRC submission deadline to site activation is 90 days compared to a standard 120 day timeline. The fast track designation helps streamline study start up processes, allocate resources, and reduce bottle necks in scientific review and regulatory approvals.

Fast track studies opened 90 days faster on average than standard timelines between 2022 and 2023

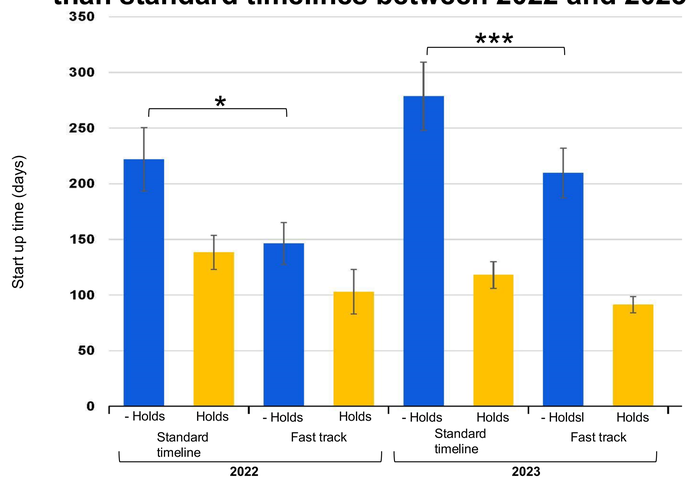


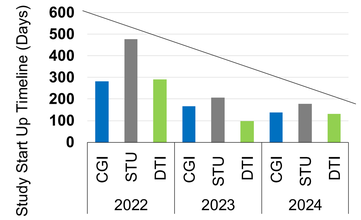
Fig 2 Comparison of studies opened on the standard 120 day start-up timeline vs a 90 day fast track timeline. A fast track designation decreased SSU by an average of 90.6 days (Blue bars: Timelines with holds removed, yellow bars: timeline with holds that paused the clock). The difference between standard and fast track start up was 75.5 days in 2022 and 105.7 days in 2023. This suggests that the improvement continued over time.
Standard vs Fast Track: 2022: * P<.05, 2023: *** P=.005

Clinical Outcomes 2022 vs 2024

SSU Timelines ⬇ across all disease teams

Patient accruals increased by 20%

A



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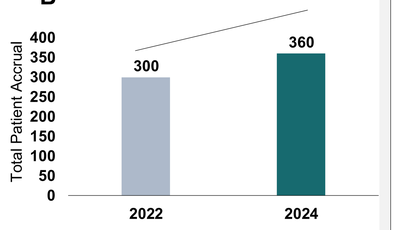

C 80% of studies enrolled the first patient in < 90 days

Year	2022	% studies	2023	% studies	2024	% studies
# studies with first patient enrolled in <90 days	25	81	20	80	31	79
# studies with first patient enrolled 100-200 days	4	13	3	12	6	15
# studies with first patients enrolled >200 days	2	6	2	8	2	5
Total number of studies	31	100	25	100	39	100

Fig 3. Evaluation of the relationship between timeline and clinical activities. **A.** Timelines decreased to ≤ 200 days for all trials types (cell therapy (CGI), solid tumor (STU), & Developmental Therapeutics (DTI)). **B.** Total patient accruals increased. **C.** 80% of trials enrolled a patient ≤ 90 days after opening.

Discussion

- SSU timelines improved from increasing transparency about study needs, promoting accountability of task completion, and utilizing performance data & evaluation metrics to drive results. A fast-track designation further improved timelines, likely due to prioritization.
- Patient accruals increased 20% since implementing the SSU initiative. Creation of a start up clinical team freed resources for activities such as prescreening patients. Faster SSU improved chances of competitive patient slots. However, the SSU timeline currently lacks a segment directly assessing clinical efficiency; therefore, more data is needed.
- Patients were consistently enrolled ≤ 90 days of a study opening to accrual. Delays were due to complex eligibility criteria, rare tumor types, FDA holds, protocol amendments, drug shortages, and other reasons outside the control of the CTO.

Conclusions

1. **Implementation of Smartsheet proved to be a key tool to direct start up processes.**
2. **Future improvement opportunities include visualizing the length of time for budget and contracting and other reasons for delays directly.**
3. **A designated start up team enhance outcomes, but due to inherent variability of clinical research, more data is needed to evaluate the impact of improved SSU timelines on clinical efficiency.**

References

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2. Lawrence, C. E., Bruce, V. N. M., Salberg, L. D., Edwards, T., Morales, C., Palm, M., & Bernard, G. R. (2023). Quantitative assessment of the impact of standard agreement templates on multisite clinical trial start up time. *Journal of clinical and translational science*, *7*(1), e204.
3. Ratnayake, I., Do, A. T., Gajewski, D., Pepper, S., Ige, O., Streeter, N., Lin, T. L., McGuirk, M., Gajewski, B., & Mudaranthakam, D. P. (2024). Evaluating the impact of delayed study startup on accrual in cancer studies. *Research square*, rs.3.rs-366

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