Category: Cross-cutting Innovation and Collaboration – Completed project

Breaking Boundaries: Enhancing Infusion Chair Utilization in Phase I Research

K. Pavlik, C. Wiess, C. Servodidio, S. Marshall-Wray, M. Fradkin, T. Carafeno

Yale Cancer Center, Yale School of Medicine

1. Background

With new global cancer cases predicted to increase 77 percent from 2022 to 20501, patient volume threatens to overwhelm cancer center resources, including infusion chairs. This is further exacerbated by the demands of clinical research protocols.

Over the last 10 years, clinical trial complexity has increased across all phase 2s, notably in phase I studies which require additional assessments to determine the drugs' safety profile and dosing regimen. Assessments often extend beyond the administration of drug, and due to lack of alternative options, the infusion chair is utilized for the entirety of the visit. This challenge presented an opportunity for optimization to increase patient capacity.

At Yale Cancer Center (YCC), clinical research participants are treated in standard infusion clinics across the YCC enterprise, with the exception of a Phase I Clinical Research Unit (PICRU). The PICRU is an infusion unit dedicated specifically to Phase I and similar high acuity clinical trials. Due to the increasing complexity of Phase I clinical trials, notably with post-dose assessments, the PICRU was targeted as the location for a novel pilot workflow.

2. Goals

This pilot aimed to improve infusion chair availability by reducing the time a chair is utilized beyond the drug administration. Success was measured by staff feedback and hours of chair time recovered following drug administration. Furthermore, the objective of this pilot was to assess whether its expansion is justified.

3. Solutions and Methods

A collaborative approach between hospital and research leadership led to the development of a Respite Care Chair (RCC). An existing patient care room was repurposed within the research-specific Phase I Infusion Unit, inclusive of its own scheduling template. Research patients were booked into this template following the successful administration of drug to complete post-dose assessments such as research lab draws or ECGs. Patients deemed high risk for acute toxicity (e.g. CRS) were exempt from this option and remained in infusion for the duration of their post-dose assessments. Patients receiving oral drug were also considered for RCC to optimize infusion chair utilization, and all RCC appointments were reflected in MyChart for patient visibility.

4. Outcomes

From May to November 2024, 32 patients were scheduled into the RCC. Feedback from nursing, and research staff was collected throughout the pilot period. Initial feedback was promising with one nurse stating, "Optimizing infusion chair utilization in phase 1 ensured that every patient receives timely efficient care, reducing wait times and improving overall treatment access." Primary reasons for using the RCC included oral drug treatment, post-dose PKs and ECGs. Approximately 59 infusion chair hours were recovered by utilizing the RCC during this pilot period.

Category: Cross-cutting Innovation and Collaboration – Completed project

5. Learned and Future Directions

Expansion plans were initiated following the preliminary success of the pilot. Hospital and research leadership are currently designing a research-only observation unit within the PICRU. The expanded unit will allow multiple concurrent patients to receive post-dose research assessments outside of their infusion chair. Further expansion of this workflow optimizes infusion chair utilization, improves patient scheduling, and increases hospital revenue by maximizing patient throughput. Additional applicability in standard infusion clinics should be considered where feasible to fully optimize infusion chair utilization.