The Impact of EHR-embedded Drug Substitution and Clinical Decision Support (CDS) in Oncology Care: A Case Study Highlighting Successful Implementation of a New EHR at The START Center for Cancer Care in San Antonio, TX

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Background

- Therapeutic substitutions play a significant role in pharmacy operations and have evolved in type, complexity and volume over the years
- Biosimilars account for 53% of market share in their respective categories and have reduced drug costs by 53% after 5 years of competition[1]
- Drug Substitution Groups in the Electronic Health Record (EHR), OncoEMR, enable the automatic replacement of biosimilar and 505(b)2 drugs within a regimen based on practice-defined rules, including practice preferences and insurer overrides, which can be updated centrally as often as needed
- Flatiron Assist is a customizable CDS tool embedded in the EHR to facilitate selection and documentation of National Comprehensive Cancer Network (NCCN)-concordant treatment regimens, undergoes monthly updates aligned with NCCN Guidelines, and has been shown to expedite adoption of new clinical guidelines[2], increase payer pathway adherence[3], and reduce variation in care[4]
- Providers who place orders in the CDS tool select a preferred treatment regimen around 90% of the time when available[5], demonstrating its ability to drive ordering patterns by influencing treatment decision
- The START Center for Cancer Care transitioned from an EHR without either functionality to the new EHR on April 2, 2024
- This case study aims to highlight their successful implementation of both drug substitution and authoring of custom regimen preferences within the CDS tool

Methods

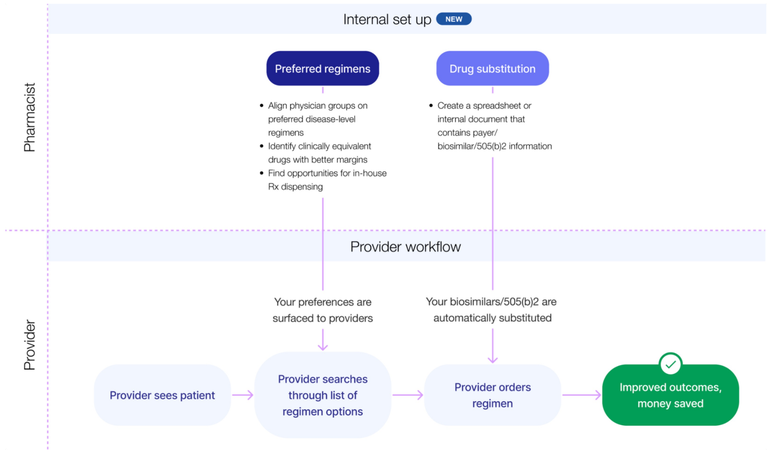
Flatiron Assist Preference Authoring

- The Director of Pharmacy leads the pharmacy and therapeutics (P&T) committee where practice-level preferences are identified based on clinical efficacy, patient tolerability, drug margins, and availability
- When clinical equipoise exists without physician preference, the Director of Pharmacy identifies a preference based on optimal reimbursement
- Oral oncolytics available for dispensing from their medically integrated retail pharmacy, rather than an external specialty pharmacy, present opportunities for reimbursement optimization
- Preferred regimens are tagged within the CDS tool Admin Console, and once published, providers will see the “STOH Preferred” label (South Texas Oncology and Hematology, PLLC) in addition to NCCN preferences when selecting regimen orders in the CDS tool
- As providers add clinical information about their patient in the CDS tool, regimens filter based on patient characteristics, highlighting STOH Preferred regimens among NCCN-concordant options at the point of care
- The CDS tool is updated monthly in alignment with NCCN guidelines, and the Director of Pharmacy can centrally update preferences based on new evidence as needed
- As of March 7, 2025, START has authored 157 regimens as STOH Preferred across 17 diseases, with providers ordering a preferred regimen 91% of the time when available

Drug Substitution Workflow

- The Director of Pharmacy collaborates with revenue cycle management (RCM) to create and maintain a crosswalk of biosimilars and 505(b)2 drugs, including Medicare and commercial payer preferences
- Practice-level preferences are established by the P&T committee based on clinical efficacy, patient tolerability, drug margins and availability
- Drug substitution groups are created in the EHR leveraging the spreadsheet information, and the Director of Pharmacy updates them as needed, typically on a monthly basis
- Substitution happens automatically upon flowsheet generation when a regimen containing the reference product is ordered, prioritizing payer preference over practice-level preference
- In scenarios where there are no payer preferences, the practice-preferred drug is substituted
- START currently has 7 biosimilar groups and 9 505(b)2 groups, each with a mix of practice and payer preferences

Figure 1. Preference Authoring and Drug Substitution Workflow



Results

Automatic Drug Substitution Replaced Manual Interventions on ~1400 orders

- From April 2, 2024, through December 31, 2024, there were 1,263 automatic biosimilar substitutions and 123 505(b)2 substitutions in the EHR
- Biosimilar substitution was available for the entire duration, and 505(b)2 substitution was introduced in September 2024
- When using the previous EHR, 100% of these substitutions were performed manually by pharmacy staff

CDS Tool Preferred Labels Positively Impacted Ordering Patterns

- Custom preferred labels steered clinicians towards the value-driven choice, Drug A, over Drug B where clinical equipoise exists across multiple disease states (eg, checkpoint inhibitors)
- Drug A was labeled as preferred for 4 diseases (ESO, GAS, MEL, NSCLC)
  - Result: Drug A was ordered 5x more than Drug B
- Drug A was not labeled as preferred for 1 disease (RCC) but clinical equipoise still exists compared to Drug B in that disease state
  - Result: Drug A was ordered at the same rate as Drug B

Figure 2. Orders Substituted Per Month

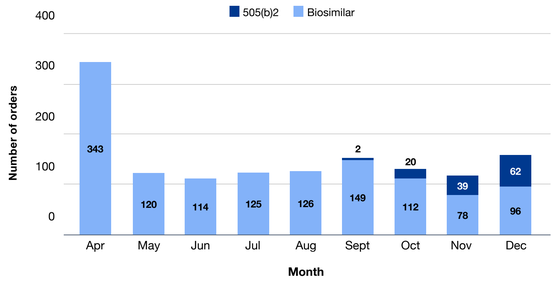
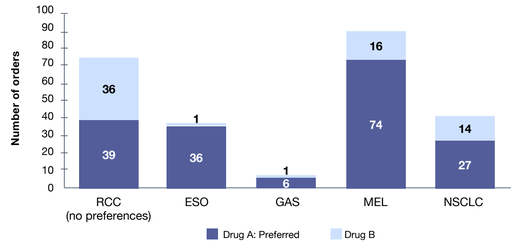


Figure 3. Orders Post CDS Embedded Preferences



Abbreviations: RCC, renal cell carcinoma; ESO, esophageal cancer; GAS, gastric cancer; MEL, melanoma; NSCLC, non-small cell lung cancer.

Conclusions

- EHR-embedded tools for **automatic drug substitution** and **highlighting preferred regimens** at the point of care can drive measurable quality, efficiency, and financial outcomes for a cancer center.
- The oncology treatment landscape is **rapidly growing in complexity** and relying on manual intervention **will become unsustainable** for pharmacy staff.

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Disclosure
This study was sponsored by Flatiron Health, Inc.—an independent member of the Roche Group. During the study period, RM, AB, KR, and RG reported employment with Flatiron Health, Inc. and stock ownership in Roche. Data first presented at NCODA in Denver, CO on April 24-25, 2025.

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