

Impact of an Integrated Health System Specialty Pharmacy on Clinical and Operational Outcomes in Cystic Fibrosis Patients



SCAN ME

Vi Nguyen, PharmD; Martha Stutsky, PharmD; Michelle Argueta, CPhT; Sarah Kubiak, PharmD

BACKGROUND

Cystic fibrosis (CF) is a complex, chronic condition that requires comprehensive management. Pharmacists are essential in optimizing CF care through collaborative drug therapy management (CDTM) programs and an integrated health system specialty pharmacy (HSSP) also allows for coordinated care between pharmacists, providers, and clinic staff. Through a CDTM, pharmacists have the authority to initiate, adjust, or discontinue medications in collaboration with healthcare providers, leading to more timely and personalized treatment adjustments. The Cystic Fibrosis Foundation (CFF) has updated its guidelines to designate pharmacists as core members of CF care teams, effective 2024, mandating their presence in accredited centers.¹ This update follows the 2015 designation of pharmacists as “suggested” members, highlighting their increasing importance in managing therapies like CFTR modulators. Despite these benefits, the impact of a HSSP model paired with a pharmacist-led CDTM program on CF patient outcomes has not been well-studied.

Figure 1: Benefits of an Integrated CF Pharmacist

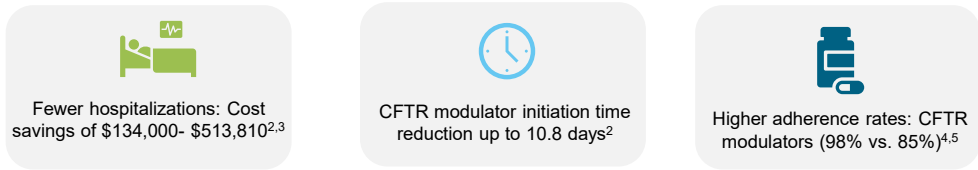
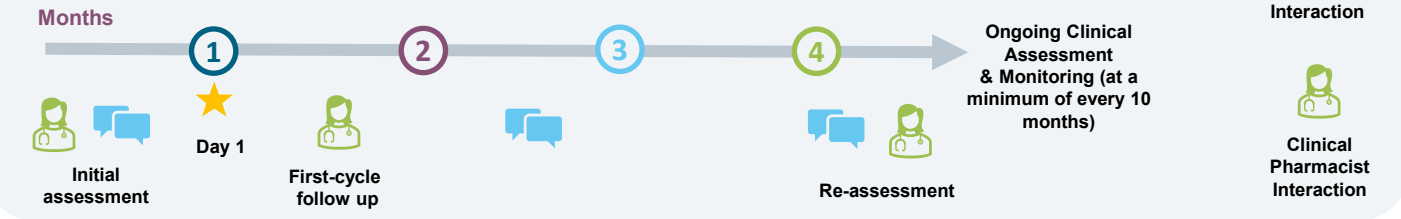


Table 1: Benefits of Integrated Health System Specialty Pharmacy Services

Category	Traditional Specialty Pharmacy	Integrated HSSP
Clinical Monitoring	No EMR access	Specialized pharmacist review with direct EMR access
Clinical Outcomes Reporting	Limited to patient-reported outcomes	Broad reporting on clinical/EMR data, PROs, operational data
Benefits Investigation	Limited due to lack of EMR access	Prior authorization support for all patients
Turnaround Time	Average 7-10 days	Average <2 days
Financial Support	Limited/Variable	Comprehensive copay assistance
Patient Education	Variable	Comprehensive with integrated clinical pharmacist
Role of Clinical Pharmacists	Pharmacist operates separately from the clinical care team, with no direct interaction with patients	Pharmacist is a member of the clinical care team, integrated in clinic, assessing patients during multidisciplinary outpatient visits
Care Coordination/Communication	Disjointed communication	Streamlined care coordination with EMR integration and pharmacist as part of the care team

OBJECTIVE

To assess the impact of a HSSP paired with a pharmacist-led CDTM program on clinical outcomes, medication adherence, and patient satisfaction in CF patients at Boston Children's Hospital (BCH).



Care Liaison Interaction



Clinical Pharmacist Interaction

METHODS

Study Design: This is a single-center, retrospective, observational cohort study.

Inclusion Criteria: CF patients filling a specialty medication through the associated HSSP and enrolled in pharmacist CDTM services from 9/2023 – 9/2024

Primary Outcome:

- **Time-to-medication-initiation** for new-start patients

Secondary Outcomes:

- **Adherence:** Proportion of days covered (PDC)
- **Operational Metrics:** number of prior authorizations (PAs), financial assistance applications (FAs), number of FAs secured, and patient out-of-pocket cost
- **Clinical Outcomes:** Frequency of pulmonary exacerbations, overall healthcare utilization, unplanned inpatient admissions and emergency department visits
- **Patient satisfaction and QOL:** PRTE (patient reported treatment efficacy) and absenteeism (missed days of work, school, or planned activity)

PRELIMINARY RESULTS

Table 2: Baseline characteristics of patients filling at the BCH Specialty Pharmacy

Characteristic	N
Average Age (years)	23.6
Sex (n, %)	191 (100)
M	99 (51.8)
F	92 (48.2)
Insurance Type (n, %)	200 (100)
Commercial	92 (46)
Managed Medicaid	72 (36)
FFS Medicaid	10 (5)
Medicare	8 (4)
Unknown/Other	18 (9)
Medication (n, %)	286 (100)
Elexacaftor/Tezacaftor/Ivacaftor	125 (43.7)
Dornase Alfa	68 (23.8)
Tobramycin	46 (16.1)
Pancrelipase	22 (7.7)
Ivacaftor	19 (6.6)
Lumacaftor/Ivacaftor	3 (1.0)
Tezacaftor/Ivacaftor	2 (0.7)
Colistin	1 (0.3)

FUTURE DIRECTIONS

- **Completion of Data Collection:** Continue collecting clinical and operational data to capture the full scope of patient outcomes
- **Comprehensive Data Analysis:** Assess effectiveness of integrated HSSP model paired with the pharmacist-led CDTM program as resulted in primary and secondary outcomes
- **Dissemination and Next Steps:** Publish findings in a peer-reviewed journal and present at future conferences
- **Model Expansion:** Future studies may explore the application of this integrated HSSP and pharmacist-led CDTM model in other disease states or health systems to validate its efficacy across different patient populations and settings.

REFERENCES

1. Brown, R. F., Close, C. T., Mailles, M. G., Gonzalez, L. J., Goetz, D. M., Filigno, S. S., Preslar, R., Tran, Q. T., Hempstead, S. E., Lomas, P., Brown, A. W., & Flume, P. A. (2024). Cystic Fibrosis Foundation Position Paper: Redefining the cystic fibrosis care team. *Journal of Cystic Fibrosis*. <https://doi.org/10.1016/j.jcf.2024.09.011>
2. Zobeil J, Williams M, Hays A, et al. Impact of Pharmacy Services on Time to Elexacaftor-Tezacaftor-Ivacaftor Initiation for Cystic Fibrosis. *J Manag Care Spec Pharm*. 2022;28(9):989-997. doi:10.18553/jmcp.2022.28.9.989.
3. NewsRx. University of Kansas Health System Reports Findings in Cystic Fibrosis (Impact of Pharmacy Services On Time To Elexacaftor-tezacaftor-ivacaftor Initiation). *Health & Medicine Week*. September 30, 2022. p. 8242. Accessed August 16, 2024.
4. Kormelink L, Platt T, Autry E, Rossoll S, Kuhn R. Impact of total care pharmacy services provided by a health system specialty pharmacy on long-term medication adherence in people with cystic fibrosis. *J Cyst Fibros*. 2023;2253
5. Sherwood S, O'Dell K, Hemsley T. Integrated clinic partnership with health system specialty pharmacy shows statistically greater adherence to CFTR modulator than usual care. *J Cyst Fibros*. 2021;2052.