Timing of Pharmacist Interventions Across the Medication Journey Within Health-System Specialty Pharmacies

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Background

- Health-system specialty pharmacies (HSSPs) provide high-touch care with ongoing patient engagement, enabling pharmacists to identify and address issues early, either independently or in collaboration with prescribers.[1]
- While pharmacist-led interventions are known to improve clinical outcomes, treatment persistence, and drug adherence, little is known about when those interventions occur during the medication journey.[2,3]
- Understanding the timing of pharmacist interventions could help develop more proactive and targeted strategies to optimize patient care.

Objectives

To describe when pharmacist interventions occur across predefined timing windows following therapy initiation.

Methods

- **Design**: This multicenter retrospective cohort study evaluated the timing of pharmacist interventions documented between July 2019 and November 2025 across 21 health systems.
- **Inclusion**: Adult patients who (1) dispensed medication through a CPS-managed HSSP, (2) remained on therapy for ≥180 days, and (3) had ≥1 documented pharmacist intervention during the study period.

Table 1: Intervention Timing Windows

Timing Window	Phase of Medication Journey
0-30 days	Therapy initiation and early tolerability
31-90 days	Early persistence as adherence patterns emerge
91-180 days	Mid-term stabilization to assess effectiveness
>180 days	Long-term maintenance with continued support needs

Table 2: Definitions of Intervention Types

Intervention Type	Definition
Adverse Drug Reaction (ADR)	Management of medication-related adverse effects
Adherence	Support for medication-taking behavior
Care Coordination	Facilitating access to and continuity of care, including patient referrals
Clinical Support	Providing clinical support for medication therapy management
Drug Utilization Review (DUR)	Assessment of appropriateness, interactions, or duplication
Regimen	Modification or optimization of drug therapy
Safety/Risk Management	Monitoring or response to safety events and risk mitigation strategies
Other	Addressing unclassified or product-related issues

Results

A total of 51,855 interventions were completed for 25,189 unique patients.

Table 3: Patient and Treatment Characteristics (N=25,189)

Patient age (years), Mean±SD	58.6±17.7
Female gender, n(%)	15,662 (62)
Prescribed therapeutic drug class, n(%)	
- Cardiometabolic or Endocrine	7,632 (30)
- Hematology or Rare Diseases	4,850 (19)
- Neurology	4,275 (17)
- Oncology	3,662 (15)
- Infectious Diseases	1,599 (6)
- Pulmonary	1,404 (6)
- Other	1,767 (7)

Figure 1: Distribution of Pharmacist Interventions by Timing Window

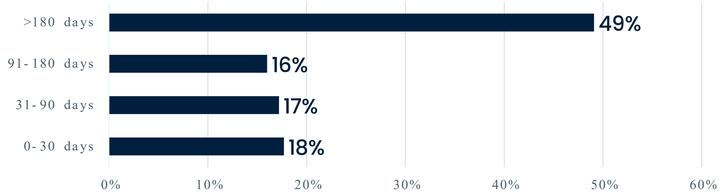


Figure 2: Overall Distribution of Pharmacist Interventions by Type

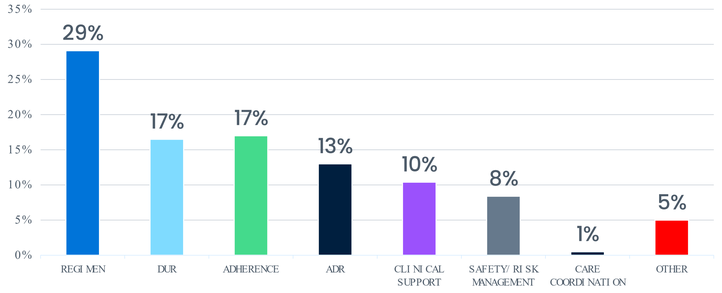
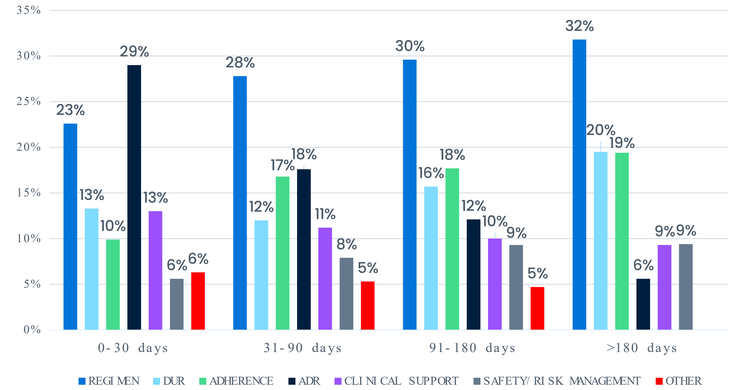


Figure 3: Pharmacist Intervention Types by Timing Window*



*Care coordination interventions accounted for <1% of interventions across all timing windows and are not displayed.

Discussion & Conclusion

- Findings highlight that patients' needs evolved over time, transitioning from early safety management to long-term regimen optimization and adherence support.
- While nearly half of interventions occurred after 180 days, this likely reflects longer follow-up time and cohort design, reinforcing the need for sustained pharmacist engagement to support long-term treatment success.
- Aligning clinical resources with observed timing patterns may improve pharmacy workflow efficiency and better match pharmacist services to evolving patient needs.

References

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2. St James GJ, Duckworth DL, Bochenek SH, et al. Effect on medication adherence of applying a specialty pharmacy care model to nonspecialty medications. *Am J Health Syst Pharm*. 2023;80(Suppl 4):S135-S142.
3. Smith-Ray R, Feng L, Singh T, et al. Pharmacists as clinical care partners: how a pharmacist-led intervention is associated with improved medication adherence in older adults with common chronic conditions. *J Manag Care Spec Pharm*. 2024;30(4):345-351.