

The Downstream Effects of Fractured Medication Data

Getting a complete view into a patient's prescribed medication therapy is the first challenge. Understanding and improving their adherence is what follows.

In a time of EHRs, e-prescribing, and cloud-based storage, it's hard to believe that a patient's medication history isn't readily available to providers within their clinical workflows. Fractured data sources, inconsistent terminology, and unnecessary manual entry all define the inefficient process of medication reconciliation today.



UPSTREAM CHALLENGES:

Clinical staff are frustrated while patients experience preventable ADEs and hospital readmissions.



Inefficiency:

- **20 minutes** collecting, validating, and documenting a patient's med history, **plus 6 minutes** calling pharmacies, providers, and family¹
- **84%** of EHR prescription data needs to be **manually edited** or entered by staff²



Errors:

- **85%** of inpatient medication **errors** originate from med history collected **during admission**³
- **Almost 1%** of all medication errors result in an **ADE-related readmission**⁴
- **8 errors** in med histories collected by nursing and hospitalist staff **per high-risk patient**⁵
- **70%** of patients admitted through the ED have **errors on home medication lists**⁶

DOWNSTREAM CHALLENGES:

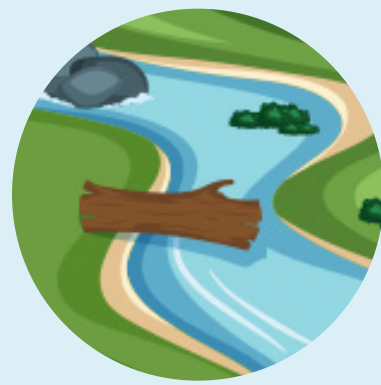
Just as understanding a patient's medication history is critical **before** prescribing, having visibility into a patient's adherence **after** they're discharged is equally important. Non-adherent patients represent a significant economic burden on hospitals and health systems.

Medication Non-Adherence:

- **25%** of new prescriptions are **never filled** by a patient⁷
- Medications are not taken as prescribed **50% of the time**⁸
- Up to **25% of admissions** to hospitals and long-term care facilities are **due to non-adherence**⁹
- Non-adherent hypertension patients are **5x more likely** to be hospitalized¹⁰
- **125,000 avoidable deaths** attributed to non-adherence per year¹¹

Economic Impact:

- **Readmission costs:** \$11,000 average readmission cost per patient¹²
- **Medication non-adherence:** \$290 billion per year cost to the U.S. healthcare system¹³



Sources:

1. Results from DrFirst's Med Rec Excellence Program where 283 individual hospital systems were surveyed
2. Zheng Y, Jiang, Y, Dorsch MP, et al. Work Eort, Readability and Quality of Pharmacy Transcription of Patient Directions from Electronic Prescriptions: A Retrospective Observational Cohort Analysis. *BMJ Quality & Safety* 2021;30:311-319.
3. Results of the Medications At Transitions and Clinical Handoffs (MATCH) Study: An Analysis of Medication Reconciliation Errors and Risk Factors at Hospital Admission found that one-third of inpatient orders contain errors, with 85% of these originating from the medication history collected during the admission process. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2855002>
4. Bates DW, Boyle DL, Vander Vliet MB, Schneider J, Leape L. Relationship Between Medication Errors and Adverse Drug Events. *J Gen Intern Med.* 1995;10:199-205. <https://pubmed.ncbi.nlm.nih.gov/7790981>
5. Improving admission medication reconciliation with pharmacists or pharmacy technicians in the emergency department identified that medication histories collected by nursing and hospitalist staff for high-risk patients have an average of eight medication errors by the time the patient is transitioned from the ED to inpatient care <https://qualitysafety.bmj.com/content/27/7/5128>

6. Unintended Medication Discrepancies at the Time of Hospital Admission notes that up to 70% of patients have errors on their medication list when admitted to the hospital through the ED, and up to 59% of these errors can cause harm. <https://pubmed.ncbi.nlm.nih.gov/15738372>
7. Reasons for Nonadherence to Medications, <https://www.empr.com/home/news/drug-news/8-reasons-for-nonadherence-to-medications>
8. Why You Need to Take Your Medications as Prescribed or Instructed, <https://www.fda.gov/drugs/special-features/why-you-need-to-take-your-medications-prescribed-or-instructed>
9. New England Health Institute (2001); WHO (2003), Adherence to Long Term Therapies
10. American Heart Association (2014), "A Tough Pill to Swallow. Medication Adherence and Cardiovascular Disease"
11. New England Journal of Medicine (Aug 4, 2005)
12. Medication Reconciliation Model ROI. Society of Hospital Medicine. <https://www.hospitalmedicine.org/clinical-topics/medication-reconciliation>
13. Annual Reviews Pharmacology and Toxicology (2019)