

## **Benefit of Pharmacy-conducted Medication Histories on 7-day, 30-day Readmissions and ED Visits.**

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# Benefit of Pharmacy-conducted Medication Histories on 7-day, 30-day Readmissions and ED Visits

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## PURPOSE

The objective of this study was to assess accuracy of pharmacy-conducted medication histories compared to medication histories completed by other healthcare providers and its impact on medication discrepancies upon discharge.

## BACKGROUND

Lehigh Valley Hospital (LVH) in Allentown, PA is a 793-bed medical and surgical facility with over 40,000 annual admissions. In 2014, LVH had 198 medication errors due to inaccurate medication reconciliation accounting for 12.8% of all medication errors. A medication reconciliation technician (MRT) program was implemented, however, only 25-35% of all patient admissions are able to be seen by an MRT due to staffing restraints. An accurate medication history has been demonstrated to reduce medication errors and is essential to properly evaluate a patient's pharmacotherapy and select future treatment options.<sup>1-3</sup> Obtaining medication histories helps to prevent medication errors and confusion to the patient and other providers during transitions of care points.<sup>2</sup> Pharmacists have been proven to provide a more comprehensive and precise medication history than other healthcare providers.<sup>1-3</sup>

## METHODS

A retrospective, observational study of medication histories on one hospital unit for five weeks was conducted by a pharmacy student. Each patient's medication history was evaluated for completeness, accuracy (incorrect medication, missing medication, wrong/no medication dose, duplicate medication, medications not updated, controlled medications not verified with pharmacy, and unspecified medications), and the provider who conducted the medication history interview upon admission. Providers who performed the medication history where documented as registered nurse (RN), MRT, or prescriber (MD, DO, PA-C, CRNP). If an error was found in the medication history or the medication history not completed, the student would then conduct a medication history interview and record changes in the electronic medical record. Types and amounts of medication history errors were recorded as well as who performed the medication history. Patients were not interviewed if the patient was unable to provide the medication history or the patient was discharged before the student was able to conduct the interview.

One month after the patient's admission, the patient's medical record was reviewed to determine if the patient had a seven day readmission, 30 day readmission, or any emergency department (ED) visits. The review also evaluated if the patient had any medication discrepancies upon follow-up at an outside clinic, readmission, or ED visit.

## RESULTS

A total of 200 patients were observed over the five week time period. Out of the 200 medication histories completed, MRTs completed 70 (35%), RNs completed 103 (51.5%), prescribers completed 19 (9.5%), and 8 (4%) were incomplete. The total errors in the medication histories were 102 (51%). Prescribers had an 89.5 % (17/19) error rate, RNs had a 72.8% (75/103) error rate, and MRTs had a 0% (0/70) error rate. The most common errors upon admission medication histories were not fully updating patient's medications, not verifying controlled medications with the pharmacy or provider, incorrect medications entered, and missing medications from medication list. Interviews to correct the medication history by the pharmacy student were conducted on 49 (48%) patients with an error in their medication history.

### Of patients with discharge errors:

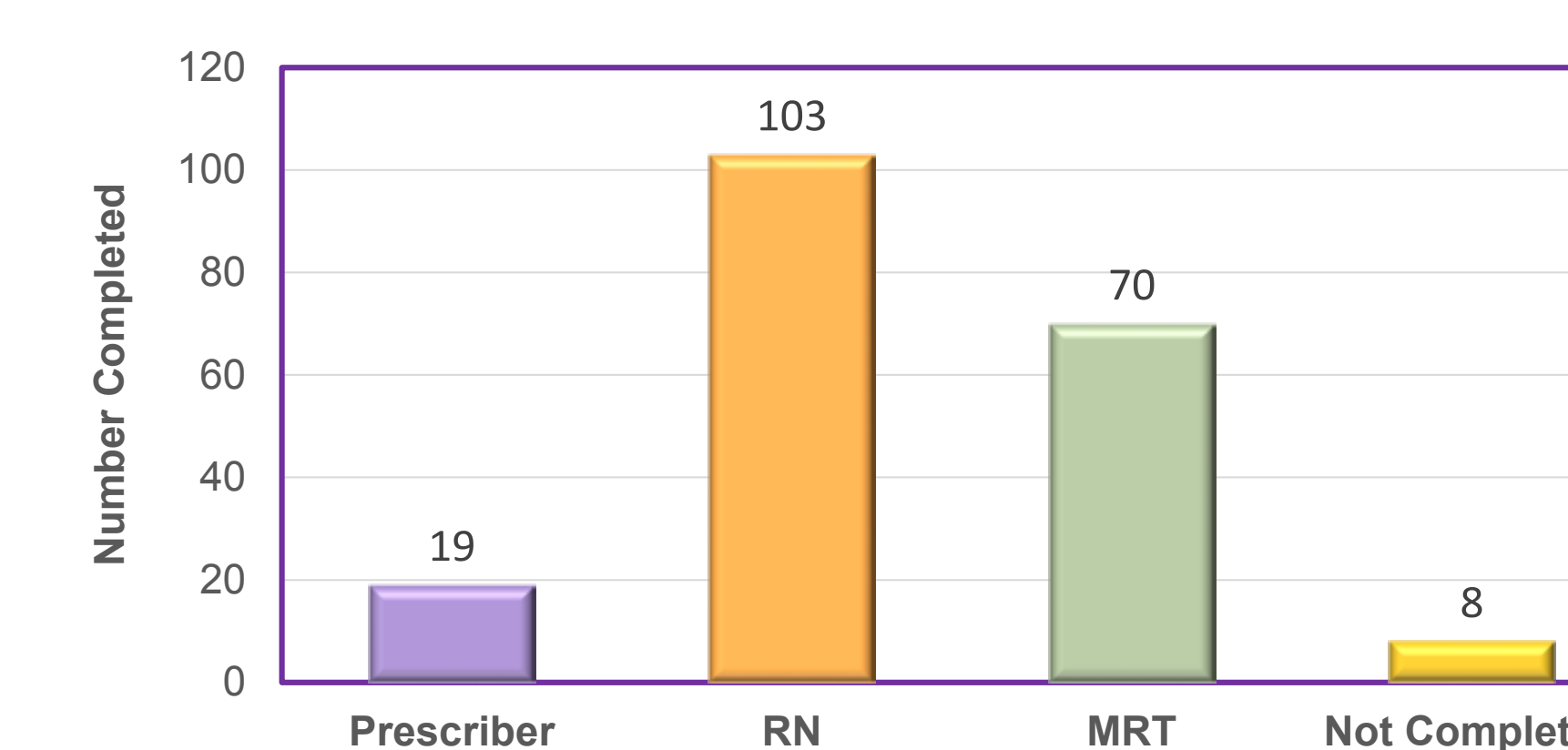
- 14% had a 7-day readmission
- 36% had a 30-day readmission
- 45% had an ED visit.

### Out of patients without discharge errors:

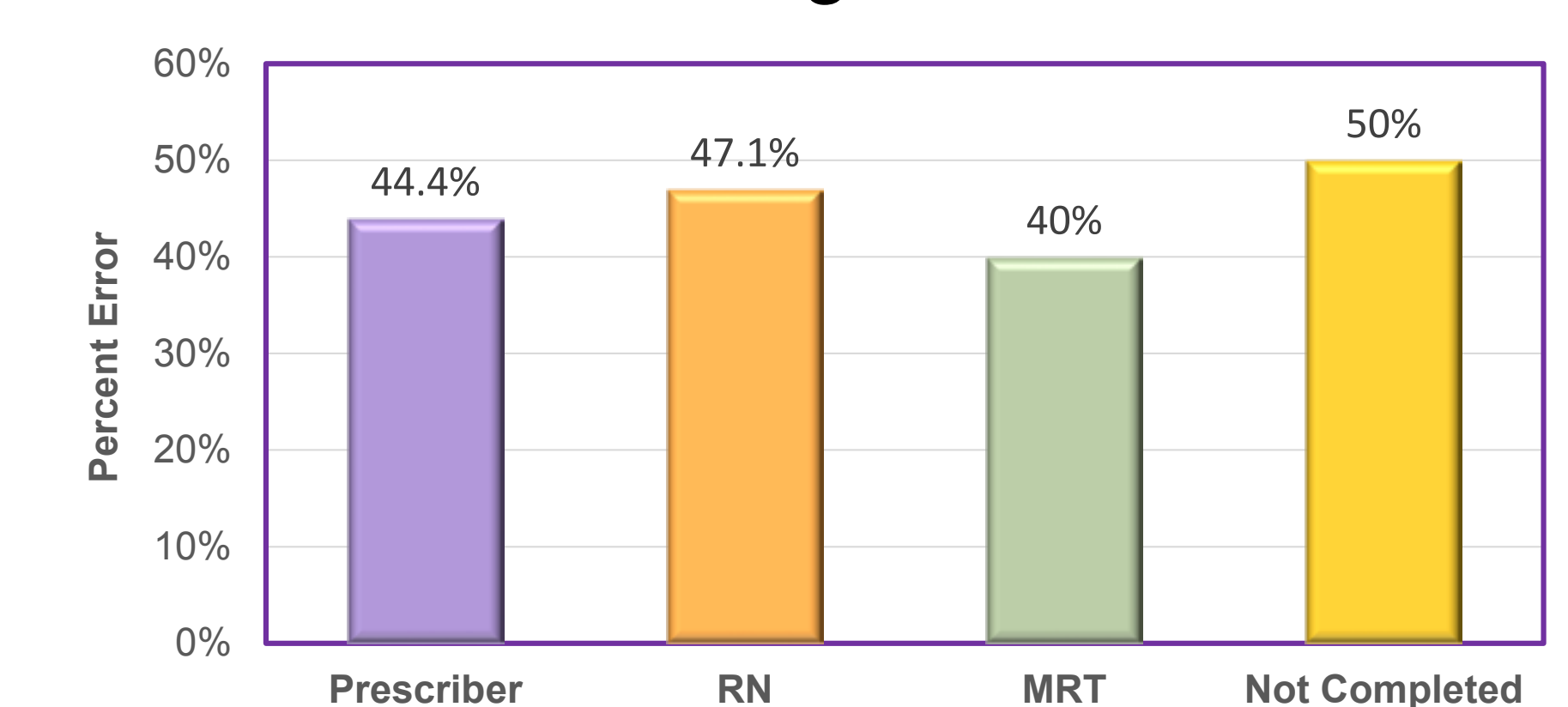
- 10% had a 7-day readmission
- 13% had a 30-day readmission
- 17% had an ED visit.

Performance of medication history interviews varied amongst patients with discharge errors and readmission or ED visit rates. MRT's performed 38% of medication histories while RNs performed 33% of medication histories of patients with discharge errors leading to a seven-day readmission. However, MRTs performed 27%, RNs performed 37%, and prescribers performed 12% of medication histories of patients with discharge errors leading to a 30-day readmission. Of patients who had an ED visit with discharge errors, 32% of these patients had a medication history conducted by an MRT, 39% had a medication history conducted by an RN and 10% had a medication history conducted by a prescriber. Eighteen percent of medication histories of the total discharge errors were observed to have a readmission or ED visit had an intervention by the pharmacy student to correct medication history errors.

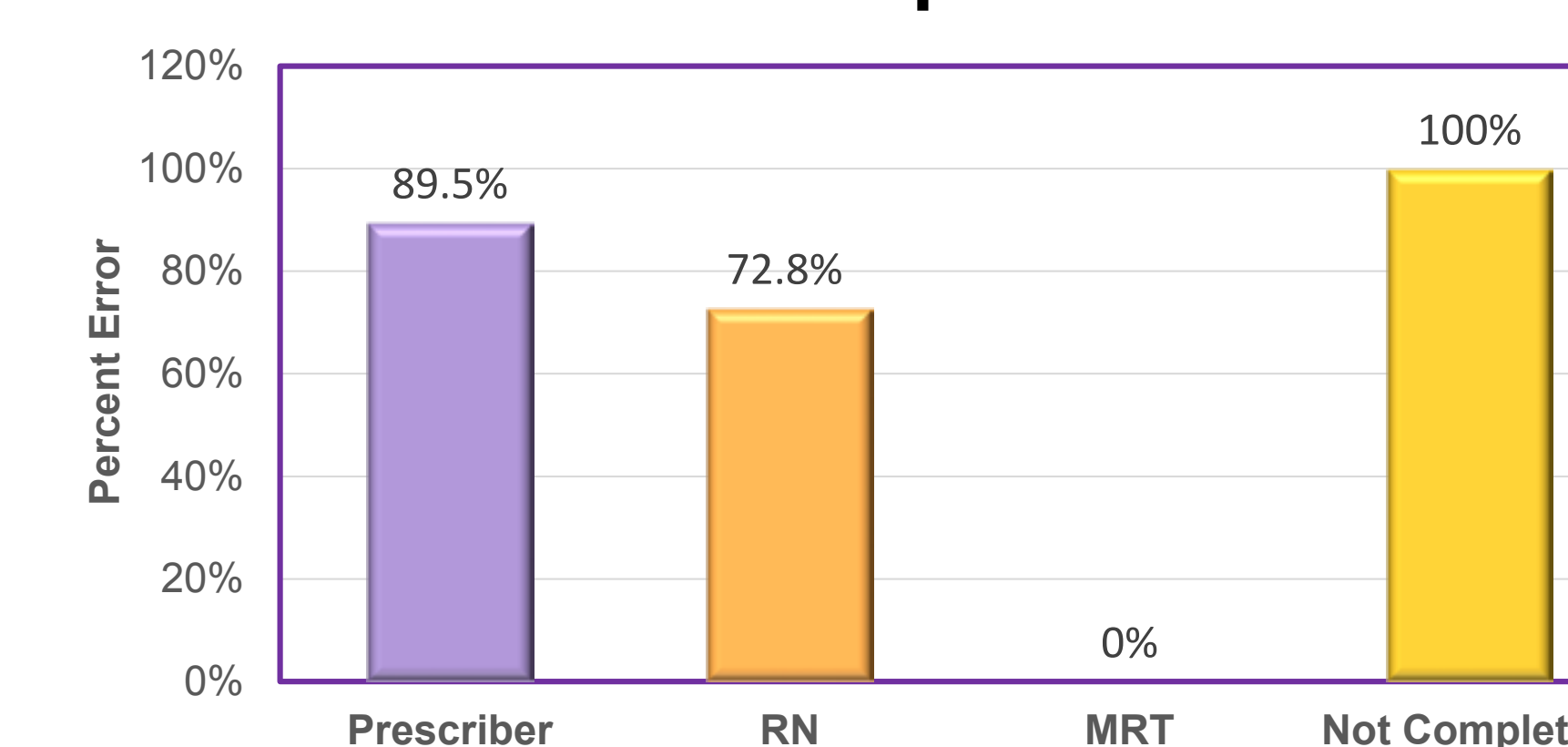
Medication Reconciliation Performance



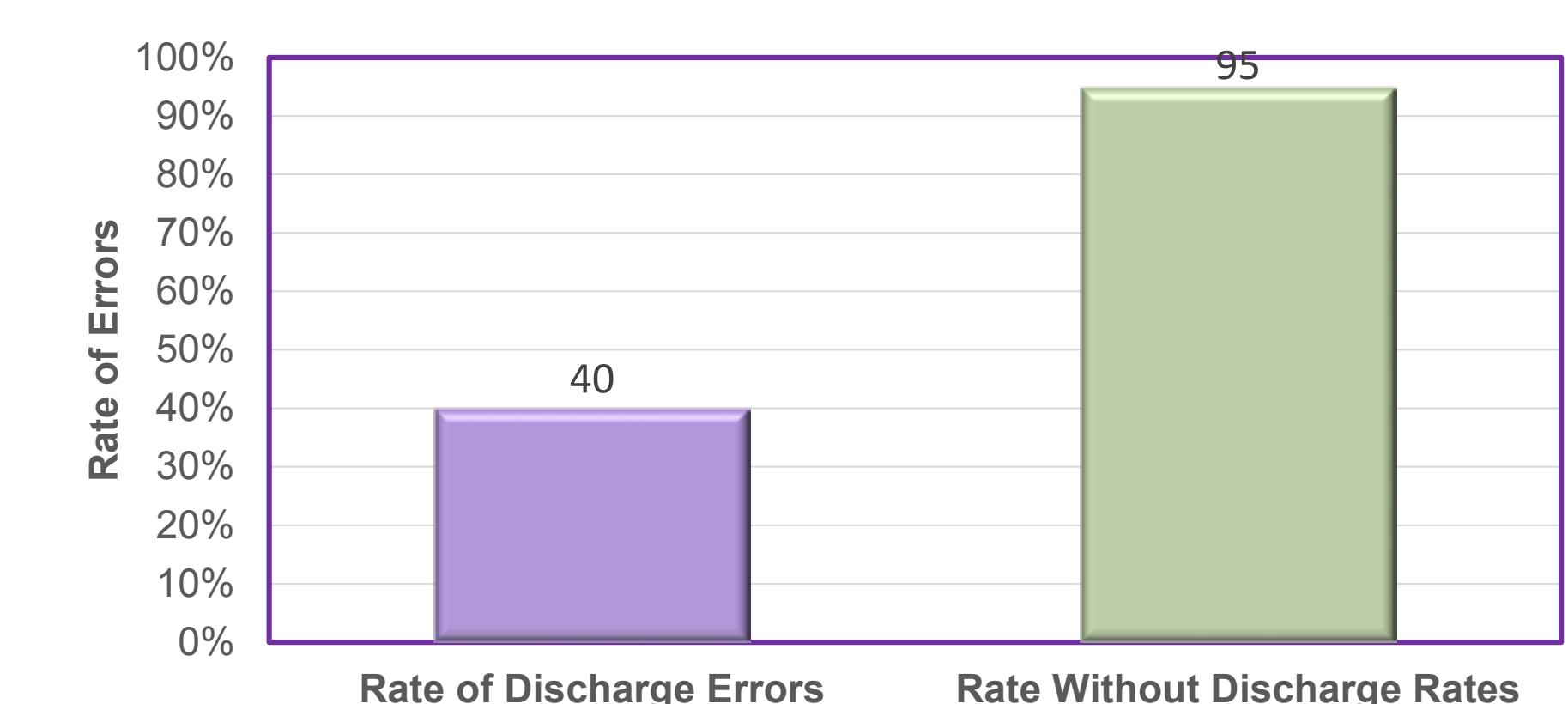
Discharge Error Rate



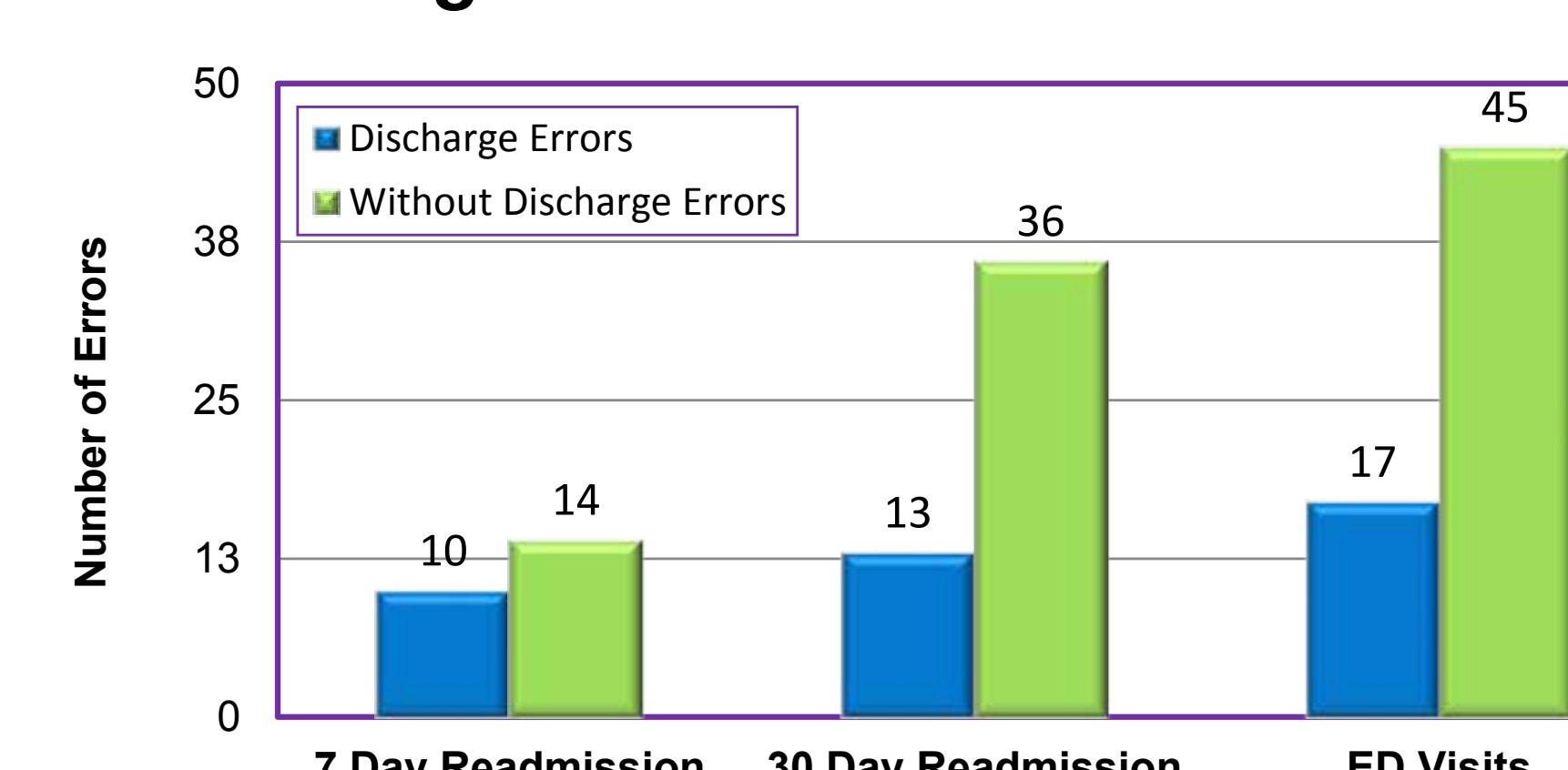
Percent Error in Medication Histories Completed



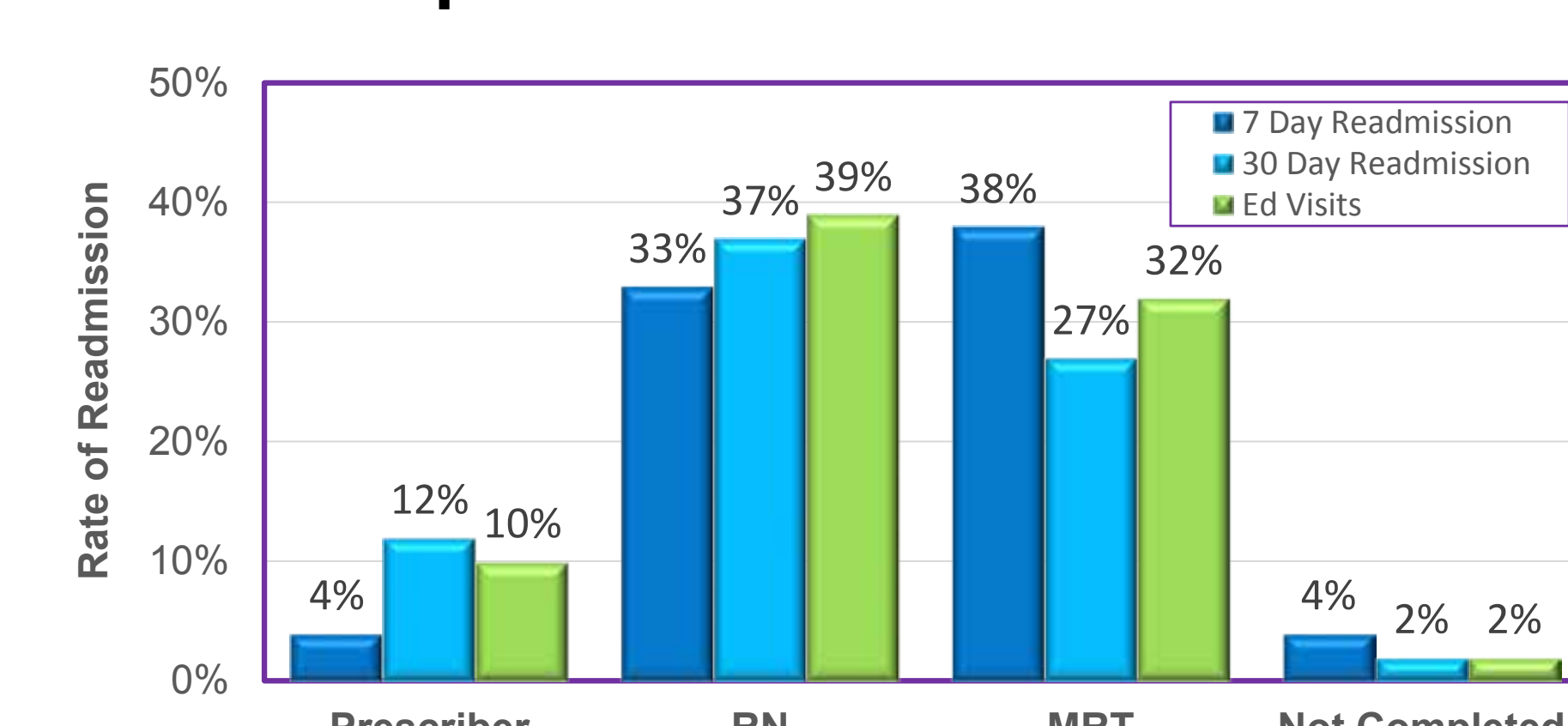
Rate of Readmission/ED Visits



Comparison of Discharge Errors vs. No Discharge Errors on Readmissions/ED Visits



Rate of Readmissions/ED Visits by Who Completed Medication Reconciliation



## LIMITATIONS

Several limitations were identified throughout this study.

- This study had a small patient population that was observed on one hospital unit, insufficient to demonstrate statistical significance.
- Not every patient was able to be seen since there was only one pharmacy student conducting all interventions.

### References:

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2. Dalton K, Byrne S. Role of the pharmacist in reducing healthcare costs: Current insights. *Dovepress*. 2017;6:37-46.
3. Reeder TA, Mutnick A. Pharmacist- versus physician-obtained medication histories. *Am J Health Syst Phar*. 2008;65(9):857-60.

### Disclosures:

- Aubrie Eaton - Nothing to disclose

## CONCLUSION

Patients who had pharmacy-conducted medication histories were observed to have a lower error rate in their medication histories when compared to other providers. Lower rates of readmissions and ED visits were also observed in patients who had a pharmacy-led medication history. Further research needs to be conducted to evaluate medication errors leading to readmissions and ED visits.

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