

Improvement of Medication Error Rate in a Transition of Care Clinic Setting

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Introduction

Erroneous transition of care (TOC) is associated with decreased quality of care, increased mortality and morbidity, and higher hospital re-admission rates. The process of TOC involves medication reconciliation done at admission and discharge. At our IM residency program, resident clinic patients who have been discharged from hospital, are seen in a TOC clinic by a resident and pharmacist. The pharmacist reviews patient's discharge medications and addresses any discrepancies which are also documented in the notes. Upon date review, an average of 3.4 errors per patient was noted.

Background

A QI project was being implemented in our residency TOC clinic looking at re-admission rates. This was led by pharmacy residents and included a thorough review of medications. During this process, a large number of medications errors were observed. Discrepancies in the after visit summary (AVS) and discharge summary, as well as unnecessary medications being started upon discharge, were noted to be particularly frequent errors. This was viewed as a significant area of improvement for the residency program.

Acknowledgements

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Program support by Associate Program Director Kalpan Desai, MD

Goal

The aim of our quality improvement project was to decrease medication errors by 80% over a 12 month period

Methods

We adopted interventions in a Plan-Do-Study-Act cycle format, and these included: regular resident education; implementation and use of new discharge summary and H&P templates; and addition of an After Visit Summary (AVS) tab to the discharge reconciliation window. Resident education entailed brief teaching sessions to interns at the beginning of each month. The new discharge summary template included a section requiring the resident to document reasons for changes made on any of the medications. The new AVS tab allowed for comparison of the discharge medication list and AVS medication list, prior to discharge, to highlight and eliminate discrepancies. The new H&P template included a section to specify method of admission medication reconciliation (i.e. was information received from patient, family, in-patient pharmacist or outpatient pharmacy).

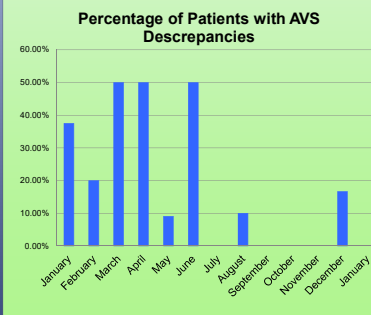
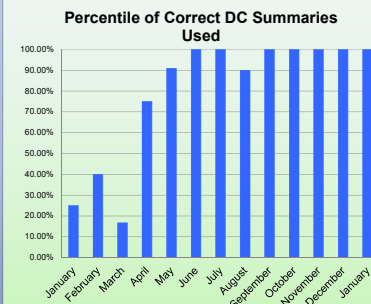
Timeline



Data

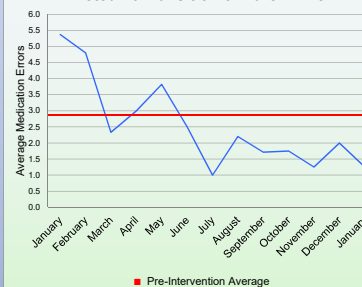
Pre-Intervention Data:

- 3.4 errors per patient noted in 2016
- 80 patients seen in TOC clinic
- 270 interventions made

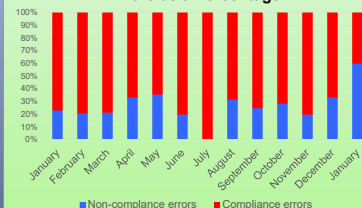


Data

Average Number of Medications Errors Noted At Transition of Care Clinic



Non-compliance vs Compliance Errors as a Percentage



There is a statistically significant difference in medications errors due to the discharge interventions. The average difference is 2.02 errors per discharge (95% CI= 1.42,2.61, $p < 0.0005$) which is a decrease of 60%.

Data Summary

From January 2017 to January 2018, during which our interventions were implemented, the medication error rate decreased from 3.4 to 1.25. Between June 2017 to January 2018, the error rate has been consistently below 2.5. Additionally, since July 2017, the average percentage of patients seen in the TOC clinic with the correct discharge summary was 98.5%, while the average percentage with AVS discrepancies was 3.8%.

Limitations

Despite having TOC appointments made for all clinic patients being discharged, the show rate for the clinic is only 70%. Additionally, only resident clinic patient's are being tracked, although the implementations have been made for all resident managed patients. Using such a small subpopulation of all managed patients may therefore not accurately reflect the current state of medication reconciliation.

Conclusion

Medication reconciliation is an area that is traditionally poorly taught yet an important component of TOC. By making these small interventions, with an emphasis toward education, the medication error rate was decreased, even though the goal was not met. In order to achieve the project aim, future directions include creating personalized feedback about errors encountered in the TOC clinic.

References

- Mickelson AD, McArthur AJ, Stein DA. Effectiveness of pharmacist-led medication reconciliation programs on clinical outcomes at hospital transitions: a systematic review and meta-analysis. *Ann Intern Med*. 2016;164(10):693-701.
- Improving Transitions of Care: Findings and Recommendations of the "Voice of the Patient" Transition of Care Committee. *National Transitions of Care Committee*. Sept 2015.
- Using medication reconciliation to prevent errors. *The Joint Commission*. 2006; Issue 15.