Impact of Pharmacist Clinical Decision Support System Alerts on Pharmacist Interventions

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BACKGROUND

- Clinical decision support systems (CDSS) represent a shift in healthcare with many health systems looking to increase the quality of patient care.
- A CDSS is a promising approach to the aggregation and use of patient data to identify patients who would most benefit from interventions by a pharmacist.
- Trellis Rx is the first health system specialty pharmacy services provider to implement CDSS logic into our specialty pharmacy technology platform, Arbor®.
- This allows us to integrate evidence-based clinical guidelines into the delivery of high-quality patient care by auto triggering a pharmacist intervention based on medication specific lab values that would deem a medication as requiring additional clinical pharmacist review.

OBJECTIVES

This study is aimed at describing the clinical outcome impacts of a pharmacist clinical decision support system on pharmacist interventions.

METHODS

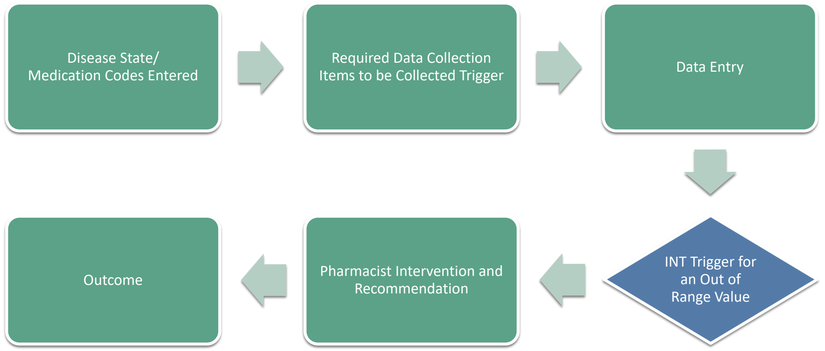
Study Design

- This is a 9-month, multicenter, retrospective review of this system and the impact of the interventions triggered and then completed by a clinical pharmacist.

Methods:

- A CDSS was implemented in September 2020. A pharmacist intervention would auto-trigger when pre-determined out of range lab values were entered by a pharmacist upon medication initiation or continuation.
- This intervention would be reviewed by the pharmacist to then determine the safety, efficacy, and overall appropriateness of the medication.

CDSS PROCESS

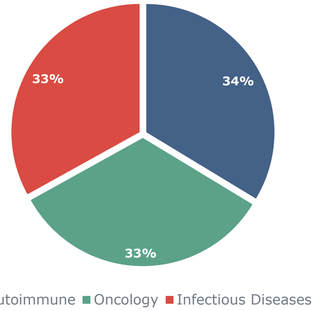


RESULTS

INTERVENTIONS TRIGGERED

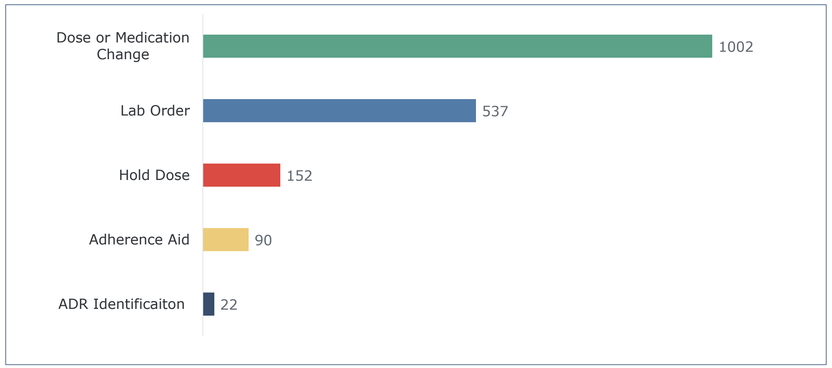
A total of 2583 interventions were auto-triggered and responded to based on lab value logic entered.

The top three disease states accounting for these interventions were autoimmune (n=607), oncology (n=600), and infectious diseases (n=596).



INTERVENTION OUTCOMES

- 1002 (55.6%) resulted in a pharmacist recommending a dose or medication change
- 537 (30%) resulted in ordering of additional labs to ensure safety
- 152 (8.4%) resulted in holding a future dose
- 90 (5%)resulted in patient adherence aids
- 22 (1%) resulted in identification of an adverse drug reaction



CONCLUSIONS

Novel Finding

- Trellis Rx is the first health system specialty pharmacy that has characterized the impact of clinical decision support systems on pharmacist clinical interventions and their impact on optimizing appropriate medication use.

Safe Medication Use

- Based on our findings, this approach has resulted in the safe and appropriate initiation and continuation of a specialty medication.
- Dose changes, medication changes, and holds all were appropriately recommended based on CDSS intervention triggers.
- ADRs were identified based on CDSS intervention triggers.
- Adherence aids were recommended based on CDSS intervention triggers.

Optimized Patient Care

- Based on our findings, this approach has resulted in optimized patient care.
- Patients in need of additional intervention are highlighted and the impact of the pharmacist intervention has resulted in safer and more efficacious medication use.

Clinical Decision Support Systems provide an excellent means of augmenting a pharmacist's workflow in a variety of patient care tasks. In our model, it has ensured the delivery of consistent quality patient care, a vital component of any specialty pharmacy model to improve patient outcomes.

REFERENCES

1.Osheroff, J. et al. Improving Outcomes with Clinical Decision Support: An Implementer's Guide. (HIMSS Publishing, 2012).

2..Sutton, R.T., Pincock, D., Baumgart, D.C. et al. An overview of clinical decision support systems: benefits, risks, and strategies for success. npj Digit. Med. 3, 17 (2020). https://doi.org/10.1038/s41746-020-0221-y