Evaluation of a Dynamic System List Tool to Optimize Patient Care Prioritization

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FSHP 107

BACKGROUND

- Before implementation of a new EPIC scoring system, the Dynamic System List (DSL), pharmacists used multiple patient lists, leading to workflow inefficiencies, inconsistent prioritization, and missed interventions
- DSL consolidates patient clinical data and alerts into a unified, prioritized list that supports timely assessment, improves communication, standardizes pharmacist-driven functions, reduces redundancy, and strengthens shift-to-shift handoffs[1]
- This study aims to evaluate the impact of DSL on pharmacist workflow efficiency and patient-care prioritization, as well as to assess pharmacists' perceptions of its clinical utility and usability

RESEARCH QUESTION

What is the impact of the Dynamic System List tool on optimizing pharmacist

OBJECTIVES

PRIMARY OBJECTIVE

- Assess the impact of the DSL on inpatient pharmacist clinical workflow and patient prioritization before and after implementation

SECONDARY OBJECTIVES

- Evaluate inpatient pharmacist perception of the clinical workflow before and after DSL implementation
- Identify opportunities for tool enhancement and standardization across inpatient practice areas

OUTCOMES

PRIMARY OUTCOME MEASURE

- Number of documented I-vents (Pharmacist documented intervention) before and after DSL implementation

SECONDARY OUTCOME MEASURES

- Change in number of I-vents per category
- Pharmacist survey results on the impact of DSL on workflow

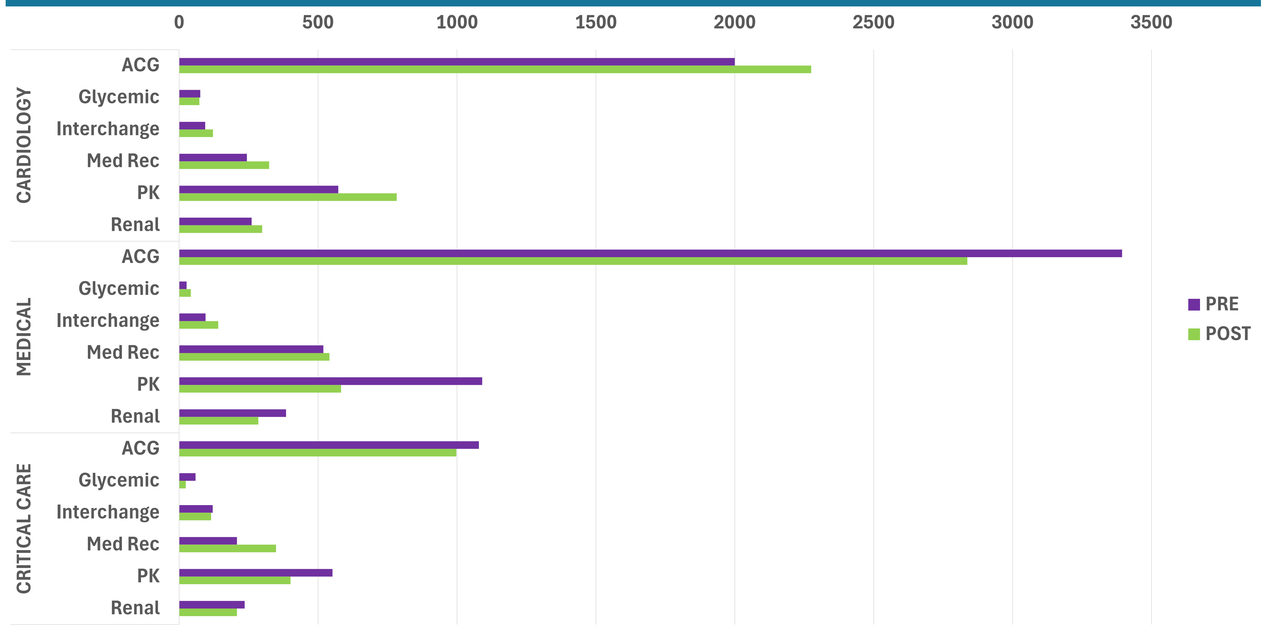
INCLUSION AND EXCLUSION

Inclusion Criteria	• Adult patients (≥18 years) with documented I-Vents • I-Vent documentations from MRH's intensive care units (ICU), cardiology, and medical units
Exclusion Criteria	• I-vent types not related to medication interchange, admission medication reconciliation, anticoagulation monitoring, pharmacokinetic monitoring, glycemic review, and renal dose adjustments

METHODOLOGY

Study Design	Retrospective chart review of pharmacist I-vents; Pre-DSL data: March 1–April 30, 2023; Post-DSL data: March 1–April 30, 2025; IRB exempt
Intervention Groups	Pharmacist I-vent documentation for patients requiring medication interchange, admission medication reconciliation, anticoagulation monitoring, pharmacokinetic monitoring, glycemic review, or renal dose adjustments was collected from MRH's ICU, Cardiology, and Med-Surg units
Statistical Analysis	Descriptive statistics, unpaired t-test, and paired t-test

RESULTS



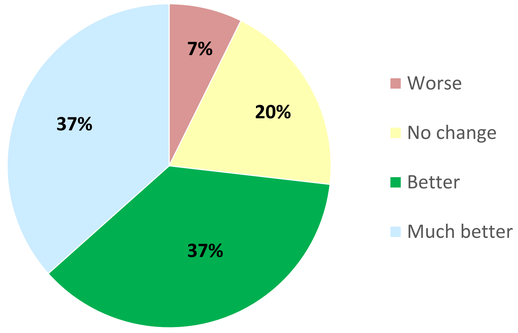
Intervention by Specialty

Unit	Before	After	p-value
Medical	5511	4429	0.78
Cardiology	3248	3876	0.81
ICU	2255	2095	0.86
Overall	11014	10400	0.82

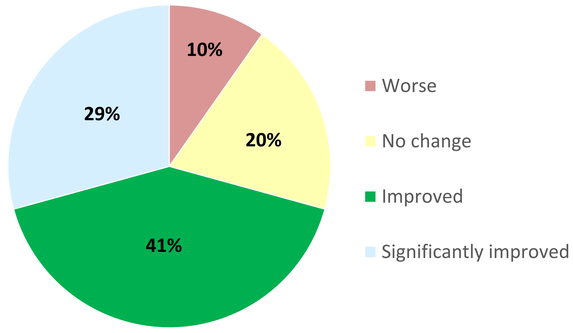
Intervention by Clinical Activity

Category	Before	After	Mean Change	p-value
Anticoagulation	6473	6110	-121.0	0.71
Glycemic	162	139	-7.7	0.67
Interchanges	310	378	+22.7	0.39
Med Rec	971	1214	+81.0	0.11
PK	2216	1767	-149.7	0.60
Renal	882	792	-30.0	0.56

Survey Result: Perceived Improvement on Patient Care Prioritization

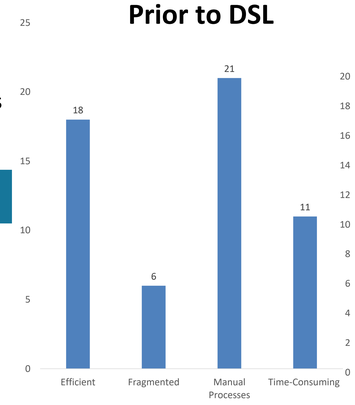


Survey Result: Overall Workflow Improvement with DSL

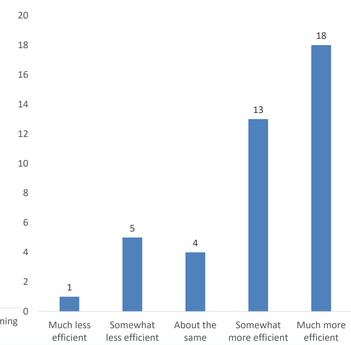


RESULTS

Workflow Concerns Prior to DSL



Improvement After DSL



DISCUSSION

- DSL implementation optimized pharmacist workflow without increasing overall intervention volume ($p > 0.05$)
- Demonstrated a shift toward high-impact clinical activities, with ↑ medication reconciliation and ↓ pharmacokinetic interventions
- Unit-specific improvements observed:
  - Med-Surg: ↑ efficiency, ↓ lower-yield tasks
  - Cardiology: ↑ intervention capture in high-acuity setting
  - ICU: +67.8% medication reconciliation → enhanced prioritization in critical care
- Pharmacist perception strongly supported DSL impact, with improved workflow efficiency, prioritization, and high user satisfaction

CONCLUSION

- The DSL effectively optimized pharmacist workflow by improving clinical prioritization and redistributing effort toward higher-impact interventions without increasing overall workload.
- The tool demonstrated consistent benefits across multiple practice settings, including enhanced efficiency, improved intervention targeting, and strong user acceptance.
- Overall, the DSL represents a scalable and practical approach to standardizing pharmacist workflow, with the potential to improve medication safety and patient care outcomes
- Future efforts should focus evaluating the DSL's impact on objective clinical and operational outcomes

DISCLOSURE

The authors of this presentation have no financial disclosures or conflicts of interest to any poster material

REFERENCES

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