

## BACKGROUND

- Compliance in using smart infusion pumps and their libraries is key towards effectively preventing errors.
- A systematic review of benefits and risks associated with use of smart pumps revealed the expected effect of reducing infusion errors but also noted that the compliance rate with drug library use varied widely from 62% to 98% in 22 published studies.
- An audit of smart pump library use at our institution exposed an opportunity for improvement with a compliance rate of 35-47% from January – June 2020.

## OBJECTIVES

- Understand the perceived barriers associated with use of our drug library
- Determine if practice longevity impacts perceived barriers to library use

## METHODS

- Over a 4- week period, consented interviews were conducted among nurses infusing intravenous medications to identify barriers to drug library use.
- Data collected specific to the administering nurse included years of practice and stated reason(s) that prevented drug library use.
- Reason provided were categorized and analyzed for themes.
- Descriptive statistics were applied to determine theme frequencies.
- The association between years of practice and themes of barriers was analyzed using a chi-square test or Fisher’s exact test.
- Analyses were performed with SAS version 9.4.

## INCLUSION/ EXCLUSION CRITERIA

### Included

- Nurses administering intravenous infusions via a smart pump to adult patients in inpatient and post- operative care units (PACUs) and procedural areas

### Excluded

- Nurses administering intravenous infusions via a smart pump in operating rooms or to those patients with isolation protocols

## RESULTS

- 110 nurses participated in the interviews with 104 included in the final analysis.
- 116 responses to the question “what prevents you from using the drug library” were received.
- Six (6) themes were identified:
  1. Medication not available or cannot be located in the library
  2. Drug or fluid specific concern with library entry
  3. No barriers with programming
  4. Significant time in programming
  5. Lack of education regarding use or library contents
  6. Other
- No association between years in nursing practice and themes were identified

### Distribution of Barriers Reported by Study Participants

Theme*	Total (n=116)
	n (%)
<b>Medication not available or cannot be located in the library</b>	<b>37 (31.9)</b>
<b>Drug or fluid specific concern</b>	<b>24 (20.7)</b>
<b>No barriers</b>	<b>20 (17.2)</b>
Lack of education regarding use or library contents	14 (12.1)
Significant time in programming	12 (10.3)
Other	9 (7.8)

\* Multiple Response Questionnaire (MRQ) generated by single-item analysis module

## Median Years in Nursing Practice

Years in Practice	Total (n=104)
Median (IQR)	4.5 (2,7)
	n (%)
< 2 years	20 (19.2)
2 ≤ years of practice <5	34 (32.7)
5 ≤ years of practice <7	23 (22.1)
≥7 years	27 (26)

## CONCLUSIONS

- Our study did not identify an association between years of nursing practice and the perceived barriers to drug library use, eliminating the need for targeted interventions based on service longevity.
- Over half of the barriers cited were related to medication availability in the library or specific concerns regarding the library entry.
- As a result, continued education on library use and extensive changes to the library are planned, including expansion of the medications contained in the library with re-evaluation of the impact on compliance.

## REFERENCES

Giuliano KK, Su WT, Degan DD, et al. Intravenous smart pump drug library compliance: a descriptive study off 44 hospitals. *J Patient Saf.* 2018 ec; 14(4):e76-e82. doi: 10.1097/PTS.0000000000000383. PMID: 28574959.

## DISCLOSURES

- Presenting author contact: Agnes Ann Feemster-afeemster@rx.umaryland.edu
- The authors have nothing to disclose.