Perioperative Implementation of Continuous Subcutaneous Insulin Pumps

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BACKGROUND

- At least 1,500 patients with continuous subcutaneous insulin infusion (CSII) pumps are managed at JHH
- Challenges in caring for this population were highlighted in a case study at JHH[1]
- Resultant quality improvement initiatives were recommended: updated CSII Roadmap evaluation, HERO report monitoring, QI database creation, and EPIC documentation assessment
- Implementation and assessment of these initiatives needs to be addressed

STUDY OBJECTIVE

- Determine the updated CSII roadmap usability coupled with an educational intervention
- Further characterize the management of this patient population

METHODS

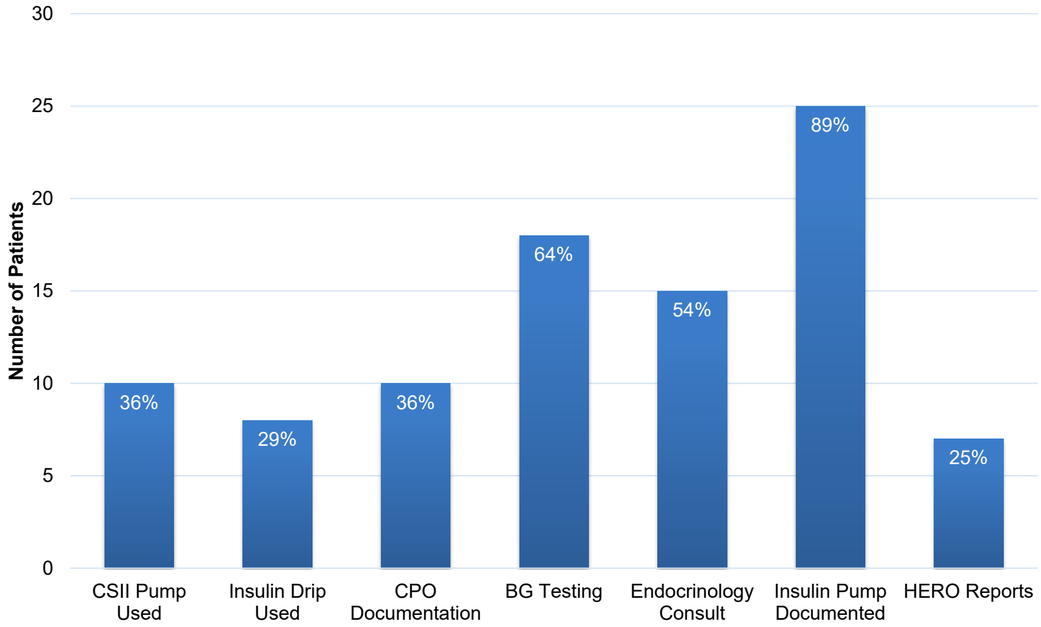
- Study Design
  - Quality Improvement Project
- Setting
  - Weinberg operating rooms and Preop/PACU
- Population
  - Anesthesia Providers and Preop/PACU RNs in Weinberg Operating Rooms
  - QI database included 26 unique patients with the following inclusion criteria: CSII pump use, perioperative encounter, at Johns Hopkins Hospital from 2020-2022
- Data Collection
  - Pre- and post-intervention survey via Likert-type scale
  - Medical Record Abstraction
- Statistical Analyses
  - Two-sided independent sample t-test for roadmap usability

RESULTS

Table 1: Patient Characteristics

Demographics		Mean or %
Age		51
Gender		
	Female	62%
	Male	38%
Race		
	White	62%
	Black	23%
	Hispanic	11%
	Asian	4%

Figure 1: Quality Improvement Database



Provider Roadmap Usability Score

- There was a nonsignificant change in CSII roadmap usability (p=0.295) with a 95% confidence interval of -2.631, 0.810
- 27% increase in awareness of roadmap
- 17% increase in accessibility to roadmap

CONCLUSIONS

- This project has taken promising steps in characterizing the trends in perioperative care of patients with CSII pumps
- The interventions involved have improved accessibility and knowledge of available resources thus far

LIMITATIONS

- There were 100 respondents to the CSII usability survey pre-intervention and 35 respondents post-intervention.
- Small patient sample size limits analyses and generalizability

IMPLICATIONS

- Next steps include reviewing this data with multidisciplinary teams to streamline future care
- Plan to add elements in the QI database such as CSII pump manufacturer/type and length of CSII pump use before surgery

REFERENCES

1. 2019 Presenter, ACCM Patient-Centered Problem Based Learning Discussion and Patient-Centered Grand Rounds: Perioperative Management of a Challenging Brittle Diabetic Patient