

Let Us Eat! Reducing Time on NPO Status at AtlantiCare

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Introduction

- Restricting patients' diets to NPO ("nothing by mouth") prior to procedures is done with the intent of lowering the risk of aspiration. However, due to the unpredictability in OR scheduling, complexity of implementing NPO orders, and other factors, patients at AtlantiCare are often placed on NPO status from midnight preceding their procedure.
- While standardizing all NPO statuses to begin at midnight, simplifies orders for healthcare providers, this universal action unnecessarily and negatively impacts the patient's quality of life while increasing the risk for post procedure dehydration, hypotension, and delirium¹.
- Previous literature review after 1984 has shown no reported aspiration-related deaths in children and ASA 1 or 2 (healthy/mild systemic disease) adults, with just nine cases reported in ASA 3 or above (severe systemic disease)².
- There may be benefit to updating NPO protocols with risk stratification measures allowing low-risk patients shorter fasting times². Current fasting guidelines vary based on country and on patient age³.

Mission/Aim

- This project aims to investigate current NPO times for patients undergoing cardiac catheterization at AtlantiCare to assist in improved NPO protocol standards.
- AIM: Reduce time spent for cardiac catheterization patients at AtlantiCare Mainland on NPO by 25% over the 3-month period from August to October 2024.

Methods

- Data was collected from 1611 patients who underwent a cardiac catheterization at AtlantiCare Regional Medical Center during the year of 2023.
- EMR was used to locate each patient's preoperative report for the date and time that the patient became NPO.
- Patients were separated into three categories: definitive (cases where the preoperative report was filled out correctly and gave a clear NPO start time), emergent, or unspecified (cases where preoperative reports were missing, ambiguous, or filled out incorrectly).
- NPO times from the definitive cases were averaged.
- Variance between data collectors was assessed by independent T-test between all pairs of collectors.

Figures

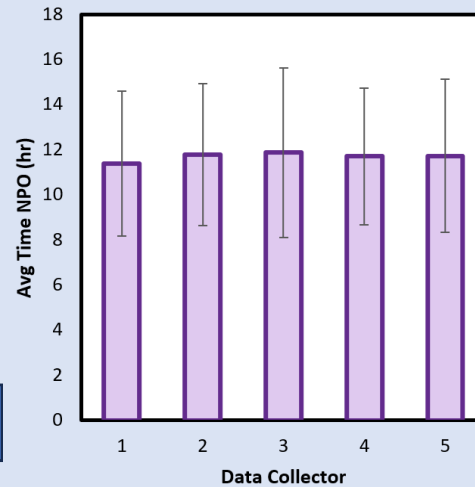


Figure 1. Average time NPO pre-cardiac catheterization

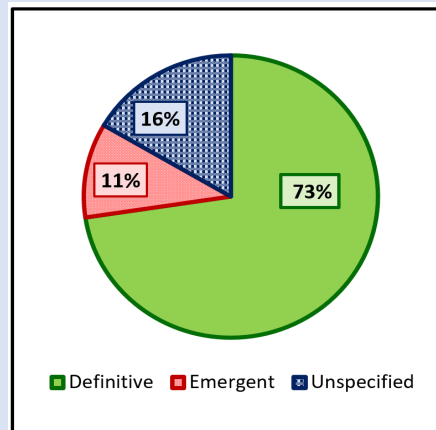


Figure 2. Timely significance of cardiac catheterization

Results

After thorough data collection we obtained the following:

- 73% of cases (1170) had a definitive NPO start and end time noted in the EHR.
- 11% of cases (174) were emergent, of which NPO was ordered since "last known meal."
- 16% of cases (267) had an unspecified time of NPO.
- Hospital protocol is to start NPO after midnight, which was consistent with the records seen in these definitive cases.
- Average definitive NPO time was 11.69 ± 3.32 hours.
- Comparison of NPO data between 5 data collectors revealed no significant difference between collectors.

*Of note: cases listed as "emergent" as stated above, were removed from our data pool for analysis due to not necessarily being dependent on NPO orders within the hospital system. Therefore, not aligning with the interest of this study.

Conclusion/Next Steps

- Standardizing NPO orders prior to procedures, at or before midnight, creates an unnecessary burden for patients. Mishra et. al, analyzed fasting versus non fasting groups prior to cardiac catheterization and found there was no greater benefit to fasting prior to procedure and no major risk in non-fasting patients.
- According to our data, the average non-emergent patient spent 11.69 hours in NPO, which could greatly impact the patient and their comfort level.
- We believe our study has provided insight into not only prolonged NPO times but perhaps the need for more individualized documentation of NPO orders. However, more studies are required to further analyze this issue.
- Helpful next steps could include individualized NPO orders based on surgery start time, form completion training, or simple triage by morning or afternoon surgery time

References

- Friedrich, S., Meybohm, P., and Kranke, P. Nulla per os (NPO) guidelines: time to revisit? Current Opinion in Anaesthesiology. 2022; 33(6): 740-745. doi: 10.1097/ACO.0000000000000920.
- Green, SM, et al. An international multidisciplinary consensus statement on fasting before procedural sedation in adults and children. Anaesthesia. 2020; 75(3): 374-385. doi: 10.1111/anae.14892.
- Fasting Guidelines of International Anesthesia Societies. UpToDate. 2023.
- Mishra A, Singh M, Kane M, Acker W, Kaluski E, Sattur S, Sethi A, Arora S, Sporn D. Strict versus non fasting prior to cardiac catheterization: a prospective evaluation of safety and clinical outcomes. Eur Heart J. 2019; 40 (ehz745.0983)