The Development and Implementation of an Inpatient Pre-Anesthesia Diet to Decrease Fasting Times and NPO Violations

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Introduction

• Many studies have safely shown the benefit of pre-anesthesia oral intake, although most inpatient anesthesiologists continue to use policies requiring inpatients to be NPO at midnight.
• The ASA recommends the following NPO periods:
  - Clear liquids: 2 hours
  - Breast milk: 4 hours
  - Formula/light meal: 6 hours
  - Full meal: 8 hours
• While ‘NPO at midnight’ orders maximize scheduling flexibility, it also usually results in children fasting for many hours.
• Prolonged and medically unnecessary fasting times result in decreased patient and family satisfaction.
• Emerging data also indicates potentially delayed recovery in patients with prolonged pre-anesthetic fasting periods. [1]

Analysis of Current State

• One hundred consecutive inpatient charts were reviewed for:
  - Appropriateness of diet order on day of anesthesia
  - Total NPO hours prior to surgery
  - Number of cases delayed due to inpatient NPO violation
• Convenience sample of 25 patient families were surveyed to assess their understanding of and satisfaction with the NPO policies.
• The chart reviews and surveys indicated:
  - 34% of children have diet orders that would allow PO intake during recommended NPO period.
  - Mean time of NPO was 10.2 hours, with a median of 10 hours, and standard deviation of 4.4 hours (Fig 1).
  - Most parents and children do not understand the NPO policies and 40% of parents are overall unsatisfied with the fasting duration.
  - Approximately one inpatient case per 200 cases (approx 1 per week) is delayed by more than two hours for NPO violations due to inappropriate diet orders.

Countermeasures

• A multidisciplinary quality improvement team of pediatricians, surgeons, anesthesiologists, nutritionists, and family advocates were involved in development of a ‘Pre-Anesthesia’ diet.
• After approval by the Nutrition Committee, Pharmacy and Therapeutics, Medical Executive Committee, and Board, the order was incorporated into the electronic medical record.
• The diet consists of: clear gelatin, water, apple juice, and oral rehydration beverages.
• The tray will be offered to inpatients waiting for surgery up to two hours before their procedure time.
• The ‘Pre-Anesthesia diet’ will be ordered for all inpatients instead of ‘NPO at midnight.’

Pre-Intervention Fasting Duration of Inpatients

Figure 1

<table>
<thead>
<tr>
<th>Frequency (n of cases)</th>
<th>Approx # hours NPO</th>
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</tr>
<tr>
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<td>27.5</td>
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</tbody>
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Goals

• Our hypothesis is that the implementation of the Pre-Anesthesia diet will significantly reduce inappropriate diet orders and decrease total pre-anesthesia fasting without increasing procedural delays.
• We aim to increase patient and family satisfaction with the NPO policy by shortening the NPO period, as well as ultimately improving patient safety and recovery.
• Specific goals include:
  - A 25% reduction in average fasting duration
  - A 25% decrease in overall parental dissatisfaction
  - A 25% reduction in inappropriate diet orders
  - A 50% reduction in NPO violations from incorrect orders

Next Steps

• Education:
  - Once the diet order is functional in the EMR, education efforts regarding appropriate use of the pre-anesthesia diet will be aimed at the physicians responsible for diet order entry.
• Data Collection:
  - Post-intervention data will be completed to match pre-intervention data.
• Data Analysis:
  - We will use Poisson statistics to assess whether our post-intervention data shows a significant improvement in NPO times, patient and family satisfaction and appropriateness of diet orders.
  - Balancing measures will assess for potential increases in NPO violations after the order implementation.

Reference