NIPPING NPO VIOLATIONS IN THE BUD: A QUALITY IMPROVEMENT PROJECT TO IMPROVE ADHERENCE TO PRE-OPERATIVE FASTING GUIDELINES

University of Arkansas for Medical Sciences / Arkansas Children’s Hospital

SA Gennuso, MD, BD Masel, MD, FC Dooley, MD, JL Hamrick, MD, K Henry, RN, CD Pierce, RN and JS Apuya, MD

INTRODUCTION

- Violations of fasting guidelines result in delay or cancellation of the surgery. Cancellation of outpatient procedures not only present a burden to patients and their families but also to the hospital through loss of resources, inefficient use of OR time, staff, and equipment.
- Research performed at Tulane University Medical Center in 2009 elucidated their costs associated with cancelled cases and found that a cancelled pediatric case came at an average financial cost of $1,325.
- Cancellation cases cause a delay in treatment of children’s ailments, and cases that proceed in spite of NPO violations increase the risk of pulmonary aspiration.
- Our institution, has had an admittedly poor reporting strategy for tracking NPO violations in the past. In addition, we had not yet determined the cause of many of these NPO violations.
- One hypothesis is that the guidelines and preoperative education materials have been too complicated for many of our patient’s caregivers to easily understand and follow.
- The aim of this study is to improve the NPO violation reporting system, establish the incidence of NPO violations, provide new educational materials that are more easily understood by less educated parents and guardians, and assess whether NPO violations decreased as a result of these changes.

METHODS

- The Rapid Estimate of Adult Literacy in Medicine-Short Form (REALM-SF) was used to assess the health literacy of a sample set of caregivers.
- Caregivers of 100 patients presenting for outpatient elective surgery were surveyed from November to December 2014, and their health literacy assessment data was tabulated (Fig 1).
- Upon completion of the survey, preoperative teaching documentation was reviewed. A pamphlet entitled “Your Child’s Surgery” with a description of preoperative fasting guidelines and instructions has been provided to caregivers by UAMS surgery clinics at the pre-surgical scheduling appointment for many years.
- This pamphlet was assessed for readability and reading grade level by the UAMS Center for Health Literacy and was found to be at an 11th-13th grade reading level.
- A revised and simplified pamphlet was created at an 8th grade reading level. This pamphlet has been distributed to outpatient surgical clinics since December 2015.
- The NPO Violation Log (Fig 2) was created and given to nurses in the ambulatory surgery center. NPO violations are now tracked regularly.
- The NPO violation frequency and reasons were then reassessed after the new pamphlet distribution.
- These results were then compared with the frequency and reasons for NPO violations under the original pamphlet distribution to assess whether any improvement has been noted.

RESULTS

- A revised and simplified pamphlet was created at an 8th grade reading level. Projected distribution to the outpatient surgical clinics was initially December 2015. However, due to unresolved issues with the hospital printing company, the pamphlet has yet to be distributed to our patients’ families.
- In order to track NPO violations, an NPO violation log was devised to display the patient’s name, medical record number, record if the case was cancelled/delayed, and the reason for the NPO violation. Ambulatory surgery nurses were notified of this violation log. The NPO violation log was placed in a central location and ambulatory nurses were instructed to fill out the form in its entirety.
- NPO violations are now tracked regularly.
- 39 NPO violations were recorded by ambulatory care nurses from mid November 2015 through mid February 2016. 24 of 39 cases of NPO violations did not have a reason provided for the NPO violation. 4 of 39 cases of NPO violations were secondary to a parent forgetting that their child needed to be NPO for surgery. 6 of 39 parents were confused about when to discontinue food and drink before surgery. 3 of 39 parents thought food and drink were ok before surgery. 2 of 39 cases cancelled for NPO violations were due to a language barrier.

DISCUSSION

- This quality improvement project has established that a large portion of our patients’ caregivers were receiving educational materials and instructions that are written at too advanced of a grade level for them to easily understand and follow.
- We have attempted to remedy this in the arena of NPO violations by providing educational materials and instructions on NPO guidelines that are at an 8th grade reading level.
- 39 NPO violations were recorded by ambulatory care nurses from mid November 2015 through mid February 2016. We will continue to track this NPO violations and reassess after the new pamphlet are distributed to our patients' families.
- It is likely that many of the educational materials and instructions provided to patients on a wide range of topics in the healthcare setting are not tailored appropriately to be easily comprehended by a large portion of the recipients. This has far reaching implications for providers throughout the pediatric and adult healthcare industries.
- It is likely that patient compliance and satisfaction could improve significantly if a concerted effort were made to create all patient materials easier to comprehend especially by less educated patients and families.
- This project has also shown the profound underreporting and recording of NPO violations at our institution prior to the initiation of a very simple reporting tool in concert with nurse education on the importance of reporting these events.
- NPO violations are a large financial burden for hospitals and surgical centers, cause increased patient morbidity, and squander valuable personnel time and capital resources.
- Without adequate reporting of these violations, a facility cannot begin to assess the root cause for the violations and attempt to develop solutions to decrease the incidence.
- We therefore recommend that all surgical facilities develop some sort of easily accessed and user-friendly reporting system on NPO violations. Doing so at our institution has greatly increased the awareness of this issue and has allowed us to begin testing mechanisms to improve in this arena.

FIGURE 1
Health Literacy Assessment Data (Results of survey of 100 caregivers)

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Score</th>
<th>Grade Level Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>Third grade and below; will not be able to read most low literacy materials</td>
</tr>
<tr>
<td>4</td>
<td>1-3</td>
<td>Fourth to sixth grade; will need low literacy materials</td>
</tr>
<tr>
<td>29</td>
<td>4-6</td>
<td>Seventh to eighth grade; will struggle with most patient education materials</td>
</tr>
<tr>
<td>67</td>
<td>7</td>
<td>High school; will be able to read most patient education materials</td>
</tr>
</tbody>
</table>

FIGURE 2
NPO Violation Log: Upper portion of an excel spreadsheet placed in the Ambulatory Surgery Center

| NAME | MED. REC. NUMBER | REASON FOR NPO VIOLATION/WAS CASE CANCELLED OR JUST DELAYED? (Example: NPO instruction not clear to them or confusing, a different person receiving the NPO instructions and was passed along another person, they forgot, etc.) |

REFERENCES


Division of Pediatric Anesthesiology and Pain Medicine, Arkansas Children’s Hospital, 1 Children’s Way, Little Rock, AR 72202