Improving Compliance and Documentation of Prophylactic Antibiotics Prior to Percutaneous Gastrostomy (PEG) Placement

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Introduction & Background

• Pre-procedure antibiotics before PEG placement is a national patient safety goal to reduce the risk of infection. It is also a reportable measure (ASC-5) to the Centers for Medicare and Medicaid Services affecting reimbursements in 2014 [1].

• According to data from 1992, surgical site infections increased length of stay by an average of 7 days with patients five times more likely to be readmitted and twice as likely to die [2]. However, for every 5.8 patients treated with a prophylactic antibiotic, one periportal infection can be prevented with a relative risk reduction of 19% [3]. The optimal timing for prophylactic antibiotics is between 30 to 59 minutes before incision [4].

• Few EMRs and endowriters are not all designed to monitor this goal. Little is known about which QI interventions can aid in improving provider compliance and sustainability with these recommendations.

Aim

• The aim of this project was to increase both the [1] documentation of pre-PEG antibiotics and [2] administration of the antibiotic to within 60 minutes of the start of the PEG.

• We aimed for a 10% increase every 3 months to a goal of 100% compliance.

Methods

Our endoscopy unit uses a commercial endowriter (Endoworks, Olympus), an EMR (EPIC), and paper nursing forms and PEG kit.

• The first intervention was a 15 min lecture during GI QI Grand Rounds, followed by an email to all GI providers. Three months later a second chart review was performed to assess the impact of this intervention. Based on this data and a discussion with nurses and providers, a second intervention (PEG sticker) was developed. Feasibility was tested for 2 weeks prior to full implementation. Three months later, a final chart review of all PEG cases was performed.

Interventions

This QI project aims to assess the impact of two low cost interventions:

1. A 15 min lecture during GI QI Grand Rounds, followed by an email to all GI providers.

2. PEG stickers, which were affixed to the PEG consent forms and PEG kit.

We aimed for a 10% increase every 3 months to a goal of 100% compliance.

• Documenting pre-PEG antibiotics is a national patient safety goal. Precisely the endoscopy technician who placed the PEG sticker must place the label on the patient’s chart. The data was extracted from the electronic medical administrative record (eMAR).

• Administration of antibiotic within 60 min of PEG placement is also a reportable measure [4]. The data was extracted from the electronic medical administrative record (eMAR).

• Utilization of PEG stickers is a process measure to ensure that the order set was utilized.

Feasibility was tested for 2 weeks prior to full implementation. Three months later, a final chart review of all PEG cases was performed.

• Few EMRs and endowriters are all designed to monitor this goal. Little is known about which QI interventions can aid in improving provider compliance and sustainability with these recommendations.

• Pre-PEG antibiotics for inpatient endoscopy cases will only be administered in the endoscopy suite, and not on wards and endoscopy suite was the most common reason for > 60 minutes between the incident and antibiotic administration.

• Delivery cases had decreased documentation but increased administration of antibiotics compared to endoscopy cases.

• Transportation delays between the inpatient wards and endoscopy suite was the most common reason for > 60 minutes between administrations of antibiotics at the time of antibiotic administration.

• Pre-PEG antibiotics for inpatient endoscopy cases will only be administered in the endoscopy suite, and not on the floor, to avoid transportation delays.

• Future POSA cycles will target sustainability of results.

References


Measurements of Improvement

Outcome Measures:

• Documentation of Pre-PEG Antibiotics

• Administration of antibiotic

• Administration of antibiotic within 60 min of PEG

Process Measures:

• Utilization of PEG Sticker

Results

Outcome Measures:

This QI study showed that a lecture and provider targeted email combined with a low cost POC sticker significantly increased administration and documentation of pre-PEG antibiotics.

• Bedside cases had decreased documentation but increased administration of antibiotics compared to endoscopy cases.

• Transportation delays between the inpatient wards and endoscopy suite was the most common reason for > 60 minutes between administrations of antibiotics at the time of antibiotic administration.

Process Measure:

PEG sticker had 66% compliance overall

• 76% endoscopy, 36% bedside

Concerns:

• Accuracy of PEG stickers

• 2 cases had PEG stickers documenting antibiotics were given without additional documentation by anesthesia or eMAR.

• 4 cases had PEG stickers documenting different antibiotics compared to alternate documentation by anesthesia or eMAR.

Lessons Learned

• IT challenges of an EMR, eMAR, and endowriter make designing a single solution for compliance and monitoring challenging.

• Further study into the throughput of bedside cases is needed as implementation of all interventions (including the PEG sticker) will have to be easy to use across several microsystems as these cases are done throughout the hospital and not in our endoscopy unit.

• Pre-PEG antibiotics for inpatient endoscopy cases will only be administered in the endoscopy suite, and not on the floor, to avoid transportation delays.

• Future POSA cycles will target sustainability of results.