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### Impact of an institutional designed protocol in the management of dislodged gastrostomy tubes

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**Title:** Impact of an institutional designed protocol in the management of dislodged gastrostomy tubes

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**IRB Number:**

**Roles of submitting/Presenting Author:** Study Design, data acquisition, analysis, interpretation and drafting of manuscript.

**Problem Statement/Question:** There is lack of evidence for when to obtain radiographic tube contrast study or surgical consult for pediatric patients who presents to emergency department (ED) with gastrostomy tube (g-tube) dislodgement.

### **Background/Project Intent**

The ED g-tube dislodgement protocol was implemented in March 2018 (Figure 1). A retrospective chart review was performed between March 2017-August 2017 (pre-protocol) and March 2018-August 2018 (protocol-era) for patients between the ages of 0-18 years presenting to our ED for g-tube dislodgement. Patients for g-tube exchange or dislodgement of other feeding tubes were excluded. Statistical analysis was performed in STATA and reported in medians and proportions.

### **Methods**

The ED g-tube dislodgement protocol was implemented in March 2018 (Figure 1). A retrospective chart review was performed between March 2017-August 2017 (pre-protocol) and March 2018-August 2018 (protocol-era) for patients between the ages of 0-18 years presenting to our ED for g-tube dislodgement. Patients for g-tube exchange or dislodgement of other feeding tubes were excluded. Statistical analysis was performed in STATA and reported in medians and proportions.

### **Results:**

Of 230 patients included, 94 (41%) presented pre-protocol, while 135 (59%) presented in protocol era. The median age was 24 months (IQR 16,60), 60% were male, and the median weight was 7kg (IQR 9.2,17.3). A surgical consultation was obtained for 18 patients (19%) pre-protocol and in 46 (34%) in protocol-era, ( $p=0.01$ ). The surgical team replaced g-tube in 15 patients (16%) pre-protocol, and in 33 (25%) in protocol-era ( $p=0.08$ ). Sixty patients (64%) had a tube contrast study after replacement pre-protocol, while 90 (67%) had one in protocol-era ( $p\text{-value}=0.28$ ). Pre-protocol, there was no difference in the number of tube contrast studies performed after g-tube replacement by the surgical team however, in protocol-era, a significantly more contrast studies were performed after g-tube replacement.

For patients < 8 weeks from initial g-tube placement, a surgical consult was obtained in 8 (80%) pre-protocol and 12 (71%) in protocol-era ( $p=0.48$ ). Of these, a tube contrast study was obtained in 8 patients (80%) pre-protocol and 13 (76%) in protocol-era, ( $p=0.61$ ). The surgical team replaced the g-tube in 6 patients (60%), pre-protocol and in 8 (47%) in protocol-era ( $p=0.40$ ). The median length of ED stay was 122 minutes (IQR 44, 186) for the study population and there was no significant difference pre-and during protocol era. Only one patient in protocol era with g-tube 6 weeks from initial placement went to the operating room after malposition during bedside replacement.

**Conclusions:**

In conclusion, adoption of a protocol for management of gastrostomy tube dislodgement increased frequency of surgical consultation without significant change in patient outcome or ED time. However, time is needed for the protocol to mature and large sample size is needed to assess long-term impact.