**Introduction**

- Accidental tracheal extubation in the operating room or during transport of the patient is a theoretically preventable adverse event.
- This event has the potential for devastating outcomes.
- Our objective was to study this event in a pediatric population undergoing general anesthesia, determine the risk factors and identify methods to reduce the occurrence of such events.

**Methods**

- The anesthesia electronic medical record at Lucile Packard Children's Hospital collects Quality Improvement (QI) data for each case. Accidental extubation (AE) is one of the routinely monitored indicators in our QI surveillance.
- Accidental extubation (AE) is defined as extubation in the operating room, or during patient transfers that was not part of anesthetic plan.
- A retrospective analysis of this surveillance database from April 2012 to January 2016 was completed.
- Patient demographics, ASA status, specific anesthetic information, procedure location and surgery type were reviewed.

**Results**

- A total of 33 cases were identified, making the incidence of perioperative AE to be less than 0.1%.
- 82% of events occurred in the OR and the remaining at remote locations such as procedure units, cardiac catheterization lab and during patient transport. (Table 1)
- 36% of the events occurred in shared airway cases with plastic or ENT surgeons and 30% occurred in head and neck procedures.
- In the majority of these cases, the head is turned 90 or 180 degrees away from the anesthesiologist, making direct observation of surgical steps difficult.
- Surgical manipulation was the initiating event for AE in 48% cases.
- AE was relatively uneventful in 88% of patients but 12% of patients (n=4) had significant oxygen desaturation requiring resuscitative medications and/or chest compressions. Fortunately, no long-term sequelae were noted in any of these patients.

**Discussion**

- Incidence of perioperative AE is low but such an event can result in serious morbidity.
- In our study the most common risk factors identified were surgery involving the head and neck, a shared airway and very small patients.
- The most common initiating event was a change in positioning of patient by either surgical or anesthesiology team.
- We propose the following changes that could decrease the incidence of AE:
  - Identify surgeon champion for ENT and plastics services.
  - Emphasize extra vigilance during patient positioning.
  - Develop a standard method of securing the endotracheal tube for shared airway cases.
  - Separate “airway” time out vs. highlighting airway concerns during regular time out.
  - Require the surgeon to verbalize before initiating changes to position that affect endotracheal tube position.
  - Prefer 90 degree turn of the OR table over 180 degree turn.

**References**