Introduction:
The purpose of this study was to determine if pediatric inpatients with tracheostomies (PTIs) were at increased risk of medical emergency team (MET) activation compared to other ward patients. The requirement for a tracheostomy confers a significant risk for morbidity and mortality (1). METs have been implemented to improve the detection and management of patients at risk for clinical deterioration. Based on their risk factors, we hypothesized that PTIs would be at higher risk of clinical deterioration than other patients and so would have higher MET activation rates.

Methods:
This retrospective cohort study was conducted at a tertiary pediatric hospital, Children’s Hospital of Eastern Ontario (CHEO), in Ottawa, Canada. PTIs were identified using lists from subspecialty services, decision support and the operating room. MET activation data was obtained from a prospectively maintained database.

Results:
From 2008 to 2014 there were 42,041 admissions, including 264 involving PTIs. MET activations occurred in 1260 distinct admissions, including 33 PTI admissions. In the PTI group, the MET activation rate was significantly higher when compared to other ward patients (14 vs 2.9 per 100 admissions, p<0.001) and they had a 5.7 times increased odds of MET activation (OR 5.7, CI: 95% CI 3.6 to 9.1). Almost all PTI patients required intervention during the MET activation (94.6%) and 21.6% were admitted to PICU.

Conclusion:
PTIs are at significantly higher risk for MET activation. After MET activation, almost 80% of PTIs remained on the wards, which suggests that the MET helped manage deterioration in these patients. Targeted strategies need to be developed to reduce the risk of PTIs on the wards, and based on our results the MET may play a central role in improving care for these patients.

References:
Watters K et al. Two-year mortality, complications, and healthcare use in children with medicaid following tracheostomy. Laryngoscope 2016; 126:2611–2617