Introduction: Perioperative hypothermia is recognized as a serious perioperative event. Consequences include increased incidence of surgical site infection, coagulopathy, increased post-operative length of stay, increased oxygen consumption and myocardial infarction. To date, there are limited data in the pediatric population regarding the incidence of, risk factors for, and means to prevent perioperative hypothermia. The current data was obtained from a quality improvement project which investigated factors related to perioperative hypothermia and then instituted a bundle to prevent its occurrence.

Methods: A multidisciplinary quality improvement team including representatives from anesthesiology, pediatric surgery, perioperative nursing, and quality improvement services was formed. The teams aim was to create a temperature management bundle, implement it, and decrease the incidence of perioperative hypothermia by 50%. A detailed process map outlining the perioperative flow of children in our operating room was analyzed, and opportunities for improvement identified by the team. Based on this analysis, potential solutions were trialed on a limited basis, and results were scrutinized for effectiveness. Elements deemed to be most effective were collated into a temperature management bundle. The final bundle was discussed in all perioperative department meetings and then implemented in all perioperative locations. The incidence of hypothermia was electronically monitored and this data was presented to perioperative staff utilizing a statistical process control chart.

Results: For purposes of this project, hypothermia was defined as a temperature of less than 36°C on arrival to the PACU in patients having had a procedure lasting 60 minutes or longer. Utilizing this definition, baseline data indicated that there was a 10% incidence of hypothermia. Implementation of the bundle resulted in a sustained 50% reduction in hypothermia.

Discussion: Perioperative hypothermia is associated with increased morbidity and cost. Further, the Centers for Medicare and Medicaid Services Surgical Care Improvement Project links perioperative temperature management to reimbursement. We utilized classic quality improvement methodology to build a temperature maintenance bundle, thus standardizing our approach to temperature management in all of our operating rooms. The result was a sustained 50% reduction in hypothermia in our pediatric population (fig.1).

References
Incidence of Hypothermia upon arrival to PACU
(cases > 60 minutes)