Pediatric perioperative outcomes research brainstorm session:

During this session we

I. Identified the current outcomes multi-institutional research/QI efforts our group is involved
II. Identified new potential outcomes research projects
III. Selected two projects to be initiated during this academic year.

I. Current projects:
Our department is already involved in the following national efforts
PRAN (pediatric regional anesthesia network),
Wake up safe,
STS (society for thoracic surgery),
Craniosynostosis,
PeDIR (pediatric difficult airway registry),
Smarttots-PANDA (pediatric anesthesia neurodevelopment assessment)

II. Potential outcomes research projects
Several potential projects were identified. Some of these projects share similar outcomes, populations and/or methodologies, therefore we grouped them by these shared characteristics. Below is a list of all projects identified by the group:

1.-Variability in anesthetic care:
To determine the variability in anesthetic care for Spine surgery and pectus repair surgery Background: Currently high variability in intraoperative analgesic approaches: duramorph, ketamine, others? Pain, LOS, intraoperative variability

2.-Adverse outcomes among day surgery patients
to determine the prevalence of anesthetic adverse outcomes in our Day surgery population to generate a data-driven algorithm for who gets the care at Bellevue Outcomes: Nausea, pain, airway, etc Who gets admitted and why? Admission rate from Bellevue? Prolonged PACU stays

3.-Impact of immediate extubation in ICU and overall LOS
to determine the impact of immediate extubation and sedation protocol in ICU and hospital LOS for Transplant, cardiac surgery patients.

4.-Regional:
Several projects related to the use of regional anesthetic techniques were identified Ortho – Catheters affecting LOS, drug use, etc GS – epidurals affecting LOS, drug use, etc. (laparotomy vs. other) Neonate vs. older kids
TEP vs. soaker for primary pectus repair

5.-General OR:
   Use of Sevoflurane and emergence delirium in PACU
   LOS, PACU stay, interventions in PACU
   Volatile choice and flow rates for pharmacy costs

6.-PASS clinic – impact of PASS clinic on multiple outcomes
   LOS/ admission rate/ cancellation rate/ ICU admission rate

7.-Neurotoxicity and the developing brain
   Brachial plexus repair – under 6 months and neurotoxicity, metabolic/ developmental
   considerations for prolonged anesthetics

8.-Pediatric obesity and anesthetic outcomes
   Population-based: does it matter where kids get care and who provides the care?
   Among our surgical population (T&A, appy, ortho, etc) what is the rate of complications.

9.-Predictors of delays in seeking care (don’t remember this one?)
   Does it matter what time of day on complication rate, LOS, outcomes, etc.

III. Selected projects for the current academic year

Variability in anesthetic care:
   Background: Currently high variability in intraoperative analgesic approaches for spine
   and pectus repair surgeries
   Aims:
   1. To determine the variability in anesthetic care for Spine and pectus repair surgery and
      generate baseline outcomes measures to
   2. Standardized and implement a data driven (evidenced based guided) anesthetic
      technique
   3. to evaluate outcomes post implementation of intervention
   Type of study: two phases
      Phase 1. Prospective observational cohort (follow up time 1 year) [ for baseline
              measures]
      Phase 2. Prospective interventional phase – standardization and evaluation
   Data source: Electronic anesthetic record.
   Outcomes: LOS, n/v, time to eating, pain scores in first 48 hrs.
   Study Population: stratified by etiology? Vs all comers?
   Type of spinal problem: idiopathic vs. other
   Type of pectus: cosmetic vs. other

Pediatric obesity and anesthetic outcomes
   Background: There are no current estimates of the prevalence of obesity among the
   pediatric surgical population. We know the prevalence is ~21% among the T&A
   population. In selected populations (T&A) Obese patients have higher rates of airway
complications, in adults obese patients also have higher rates of post surgical infections and longer LOS.

Aims:

1. To determine the prevalence of obesity in the pediatric surgical population (WA state? Institutional?)
2. To determine the complication rate among our surgical population (T&A, appy, ortho, etc)
3. To estimate the burden of pediatric obesity (+excess cost estimates)

Data source: anesthetic record and EMR (institutional) CHARS (Washington state)
Outcomes: unplanned/planned hospital admission rate, ICU admission, LOS, infection, airway, outcomes after discharge: (readmission, other outcomes)

Future directions: Interventions to further modify outcomes?