Attendees: P=Present; A=Absent; X=Expected Absence

P	Annemarie Akkermans (Utrecht)	P	Sachin Kheterpal (Michigan)
P	Mike Aziz (Oregon)	P	Kai Kuck (Utah)
P	Mitch Berman (Columbia)	P	Tory Lacca (Michigan)
P	Joshua Berris (Beaumont)	P	Masakatsu Nanamori (Henry Ford)
P	Dan Biggs (Oklahoma)	P	Nathan Pace (Utah)
P	Ruth Cassidy (Michigan)	P	Bill Paganelli (Vermont)
P	Karen Domino (U of Washington)	P	Robert Sanders (Wisconson)
P	Ken Cummings (Cleveland Clinic)	P	Rob Schonberger (Yale)
P	Alexander Friend (Vermont)	P	Allie Thompson (Michigan)
P	Shelley Housey (Michigan)	P	van Klei, Wilton (Utrecht)

Ground Rules for PCRC

1. Each protocol must have specific testable hypothesis with data available in MPOG data structure
2. People requesting specific data elements must also supply that data type to MPOG. If you don't submit that data type currently, then you can't get that type of data type out. However, if you have a co-investigator from another site that does supply that data, then you can ask for that type of data. The reason is so someone on the research team understands the limitations of each data element being requested and used
3. To ensure that there is not a lack of clarity about what the status of the proposal is, each proposal will get the following overall decision at the end of each presentation and discussion
   a. Accept with no changes
   b. Accept with minor changes send revision electronically
   c. Accept with major changes and represent at PCRC
   d. Reject
4. Meeting will be recorded to be shared later with members of MPOG via the MPOG website. There were no objections to this via the members that were on the call.

Enhanced Observational Study Updates

Discussion/Questions
- 2- week data collection will now start in the beginning of September

PCRC 0041 - "The relationship between intraoperative end-tidal carbon dioxide levels and postoperative pulmonary complications after non-cardiothoracic surgery. A report from the Multicenter Perioperative Outcomes Group"

Principle Investigator: Annemarie Akkermans, MD
Institution: Utrecht

Discussion/Questions
- Q: What is the hypothesis?
    - A: Hypothesis: Higher end-tidal carbon levels decrease the risk of postoperative pulmonary complications.
    - A: Changes in ventilation strategy (PEEP, TV, etc.) effect is very small. More going on to account for the outcome, so interested in looking at ETCO2.
- Q: Patients with low ETCO2 are usually those with comorbidities – could you use arterial CO2 instead of ETCO2? Concerned about smokers.
    - A: We tried to prevent large gap between arterial CO2 and ETCO2.
    - A: We will also collect arterial CO2 for cases that have it.
- Q: Do you exclude emergent cases?
    - A: Yes
- Comment: Neuro cases may be different and should be examined in subgroup analysis
- Comment: We may see a U-shaped curve with ventilation strategy and outcomes, where low and high values may be associated with more outcomes. So, perhaps revise hypothesis to define CO2 patterns associated with best outcomes
- Q: Discrepancy between LMA on pages 7 and 8.
    - A: LMA will be excluded from analysis (but is part of the MPOG definition of GA).
- Q: Use of area under the curve are somewhat arbitrary - another way would be to model the median CO2 for the case without having to choose a pre-specified cutoff.
    - A: We did this in the initial proposal, but large variation makes this difficult. We will also be collecting the median per case.
    - Comment: Suggest modeling in the alternative way – lose information with arbitrary cutoffs. Perhaps consider weighted regression methods to account for unimportant confounders.
- Q: Please explain more regarding these weighted regression methods. When you have lots of covariates – how do you make sense out of them?
    - A: One approach is stepwise movement towards parsimonious models. Newer methods are penalized regression where you weight and allow some bias in the estimation of parameters but reduce the variance. These methods allow some of the unimportant things to be constrained toward 0 and removed from the model. Cross-validation can help to determine valid number of covariates in the model. Penalty added to likelihood function. Adds other parameters to the model (ridge and lasso) in an iterative process.
    - Q: Can you get random effects from these?
        - A: Yes.
    - Comment: We will consider this as a sensitivity analysis.
- Q: What was surprising from the first paper?

- o A: We set out to investigate practice patterns over time – expected to see higher ETCO2. Large variation across institutions and providers, but also within provider and provider teams.
- Q: Would like to see more narrow inclusion criteria for procedure types or patients. Why not restrict to a higher-risk complication study population?
  - o A: We will exclude high-risk patient population from primary cohort – they will be included in a separate subgroup analysis.
  - o Q: If you do not see a change in high-risk population then why study the normal-risk? Maybe exclude inter-cranial patients and foot surgeries?
    - ▪ Comment: Variance kills precision – trying to detect a somewhat small signal with a lot of noise.
- Q: Why are so many MPOG institutions excluded from this study?
  - o A: Data requirements include tidal volume, ETCO2, PEEP and outcome data.
- Q: Perhaps primary analysis should focus on highest-risk study population? Tradeoff - more restrictive on patient population, the sample size decreases; more liberal on covariates, lose precision but may help include more institutions. What if we loosened criteria of "vent mode"?
  - o A: Selected all providers with ventilation mode – paralytic agent could be proxy with time component included.
- Q: What percentage of cases have positive pulmonary event?
  - o A: Literature indicates ~5%
  - o Comment: Concerned that you will not have enough events using ICD codes.
  - o Comment: Definition of pulmonary complications is broad – 7% in administrative datasets, so may expect similar rates from billing data.

FINAL DECISION: Electronic Revision

Institution	Vote
Academic Medical Center (AMC) Amsterdam	**N/A**
Beaumont	**Accept**
Bronson	**N/A**
Cleveland Clinic	**Electronic Revision**
Columbia	**Electronic Revision**
Holland	**N/A**
Memorial Sloan Kettering	**N/A**
NY Langone	**N/A**
Oregon Health Science University	**Electronic Revision**
St. Joseph/Trinity	**N/A**
Sparrow	**N/A**
Stanford	**N/A**
University Medical Center of Utrecht	**Abstain**
University of Colorado	**N/A**

University of Michigan	**Abstain**
University of Oklahoma	**Electronic Revision**
University of Pennsylvania	**N/A**
University of Tennessee	**N/A**
University of Utah	**Electronic Revision**
University of Vermont	**Electronic Revision**
University of Virginia	**N/A**
University of Washington	**Electronic Revision**
Vanderbilt	**N/A**
Wake Forest	**N/A**
Washington University, St. Louis	**N/A**
Weill-Cornell Medical Center – New York Presbyterian	**N/A**
Yale	**Electronic Revision**