



## ASPIRE Collaborative-Wide Meeting Summary

July 26, 2019

### Attendance

- 60 total participants

### Announcements - Tory Lacca

- Slides, recordings, pictures and CME directions can be accessed on our [website](#)
- Upcoming Meetings
  - o ACQR Retreat, September 20, 2019, North Campus Research Complex (NCRC)
  - o MPOG Retreat, October 18, 2019, Renaissance Orlando, Sea World
  - o MSQC / ASPIRE Collaborative Meeting, Friday, March 27, 2020, Schoolcraft College
  - o ASPIRE Collaborative Meeting, Friday, July 17, 2020, Henry Executive Center, MSU
  - o MPOG Retreat, Friday, October 2, 2020, Washington DC
- CME credits are available for those that attended the meeting.
  - o 4.5 AMA PRA Category 1 Credits™ with 3 credits that contribute to Patient Safety CME Component of the ASA MOCA 2.0® Program
- Recruitment underway and ASPIRE anticipate six new sites for Cohort 5

### Michigan Opioid Prescribing Engagement Network (OPEN) – Dr. Chad Brummett

- The Opioid Epidemic is a continued issue, 130 deaths per day are attributed to opioid overdose, this is down from 134 deaths per day, but there is still more work to be done
- Although some deaths are due to heroin and other street opioids, very often the Initial exposure to opioids is via a provider's prescription after a procedure or injury
- Key ways to decrease the amount of opioid pills in circulation:
  - o Decrease excess prescription of opioids to post-surgical patients
  - o Only prescribe one type of short-acting opioid
  - o Do not prescribe long-acting opioids for postoperative pain
  - o Avoid preoperative administration of opioids
  - o Manage patient's postoperative expectations regarding pain management
  - o Check a Prescription Drug Monitoring Program (PDMP) database before prescribing opioids to identify concurrent active prescriptions
  - o Offer regional anesthesia as part of the pain management plan
  - o Encourage acetaminophen and NSAID use
  - o Educate patients about safe storage and disposal of excess opioids
  - o Promote Take Back Events or drop boxes (<https://michigan-open.org/takebackmap>)
  - o Circulate Michigan OPEN educational materials and brochures in clinics
  - o Visit <http://michigan-open.org> for more information
- Guidelines for postoperative prescription of opioids by procedure can be found at: <https://michigan-open.org/prescribing-recommendations/>



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- This works! Multiple studies have shown that these strategies have decreased the number of opioid pills prescribed after surgery, but has not worsened the refill rate, patient's pain scores, or patient satisfaction scores

### Using Machine Learning to Understand Acute Kidney Injury in the Perioperative Setting – Dr. Karandeep Singh

- Risk models may be used within *Learning Health Systems* (e.g. ASPIRE) to:
  - o **Patient Level**: select the best diagnosis or treatment, or counsel patients on a prognosis
  - o **System level**: efficiently allocate resources, early detection systems, or identify opportunities for improvement following *risk adjustment*
- Methods to quantify risk:
  - o **Decision trees** – easiest to understand, but often less accurate
  - o **Logistic regression** – more accurate, interpretation with some calculation
  - o **Machine learning** – most accurate, most difficult to implement, least transparent
- Risk modelling as used by Michigan Urological Surgery Improvement Collaborative (MUSIC):
  - o **Prostate cancer treatment app** – used to counsel men, on what management strategy similar patients chose (surveillance, prostatectomy, radiation, etc.)
  - o **Default order sets** – improve urologist use of appropriate follow-up monitoring
- Using machine learning to identify areas for improvement. Clinical scenario: patient develops postoperative AKI. To what provider/case attributes can the outcome be attributed?
  - o *Risk adjustment* can be used to compare observed:expected ratios to identify “underperformers” (compare what outcome was observed, versus whether the outcome was *expected* to happen) → this is performed at the *provider level*
  - o Machine learning methods can be used to attribute outcomes at the *case level*
    - Shapley values
    - Locally interpretable model explanations (LIME)
  - o Using such techniques, if a particular outcome was attributable to variables under control of the anesthesiologist, surgeon, or other provider – these variables will carry high “weights” for the case.
- So we can determine if a case likely incurred an outcome due to factors under the control of an anesthesiologist or other provider. Now what?
  - o Need to be able to explain how such an algorithm works, so that provider/QI champion can trust the data presented
  - o Need to identify a threshold for which case should be more intensively reviewed
  - o Need to be able to explain such calculations to a provider (or QI champion) in an intuitive and meaningful way



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### Implementing Blinded Record Index (BRI) Across ASPIRE – Dr. Sachin Kheterpal

- Goal is to link data sources to capture better outcome data on our patients
- While it is easy to link data locally at each hospital using identifiers, it's harder to link across multiple hospitals or data sources without using identifiers
- Blinded Record Index (BRI)
  - o Using national standards and technology to turn identifiers (SSN, birthdate, etc.) into non-identifiable hashed codes that are difficult to decipher (no identifiers will be shared with MPOG Coordinating Center)
  - o Double hashed code is sent to MPOG Coordinating Center; similar hashing algorithms are applied to linking data sources (death data, etc.) and hashed codes are then matched across the datasets without any identifiers being used
  - o Example use cases: linking to death data, linking data across hospitals to determine if a patient from one hospital is treated at another hospital
  - o No additional paperwork is needed - the software to enable this is already deployed at each institution, however, it has not yet been turned on
- Next Steps:
  - o MPOG Coordinating Center will contact each MPOG site to begin uploading BRI data
  - o Technical staff at each institution will need to run code (provided by MPOG Coordinating Center technical staff) to turn the software on
  - o ACQRs will check a box on the transfer tool to enable BRI process on monthly and historic uploads

### Michigan Society of Anesthesiologists as a Vehicle for Quality Improvement – Dr. Roy Soto

- The MSA can serve as a vehicle for spreading relevant QI information to anesthesiologists throughout the state of Michigan who may or may not provide care at an institution participating with MPOG. Opportunities include:
  - o A wide reach to providers in Michigan with 1000 active members
  - o Can harness the downstream power of resident education as each resident in the state of Michigan is required to do a QI project.
- Partner with medical schools and other organizations (MANA, AORN etc.) ASPIRE provides information for its members through a “Featured Measure” article in the MSA’s monthly Newsletter. This is one way ASPIRE has begun to collaborate with the MSA to spread information/data and education throughout the state.
- Challenges to receiving QI data and standards of care:
  - o Non-Participants of ASPIRE
  - o Innovation overload
  - o Cost/Resources



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### ASPIRE Updates – Kathryn Buehler

- New measures released to the dashboard on Monday, July 29<sup>th</sup>:
  - CARD 03: Troponin I elevation >0.6ng/mL in high cardiac risk cases
    - High Risk is defined as intraperitoneal, intrathoracic, or suprainguinal vascular procedures (CPT codes required) OR comorbidities as adapted from the Revised Cardiac Risk Index (Congestive Heart Failure, Diabetes-Complicated and Uncomplicated, CAD, or CKD)
    - Performance will be displayed as an inverse measure (low is better)
    - CARD 02 and AKI 01 will also be converted to display as inverse measures as of Monday, August 5<sup>th</sup>- please notify your providers of this change
  - SUS 01: Mean fresh gas flow (FGF) ≤ 3L/min, during administration of halogenated hydrocarbons and/or nitrous oxide
    - Relies on Insp % halogenated agent for accurate score
    - Nitrous oxide flows will be used if available
- Avoiding Surgical Site Infections Toolkit is now available on the website:  
<https://mpog.org/quality/ptstoolkit-2/>
- Anesthesia CPT Prediction will now be used in measures for cases where anesthesia or surgical CPT codes were not submitted
  - ASPIRE uses a machine learning algorithm that takes the procedure text and predicts the top 3 anesthesia CPT codes
  - Still need sites to continue to submit CPT codes when they are available
  - GOAL: Be less dependent on billing codes to send accurate measure feedback
- Preop & PACU Data is now available from several sites
  - Physiologic data, medication and fluid administration, PONV documentation, nursing documentation, PACU Times are examples of data for future measure development
  - Submit your measure ideas to the Quality Committee or post to the ASPIRE forum
  - ASPIRE already plans to build measures for:
    - PONV 03: PONV incidence in PACU
    - Expand the GLU 01/02 measures to examine preop/PACU glycemic control
    - Respiratory complications in PACU

### Closed Session: ASPIRE Performance Review (Michigan Sites Only) – Nirav Shah

- In a confidential session, performance was unblended for Michigan sites to discuss opportunities for improvement and share their successes with other health systems.
- The following measures were discussed:
  - NMB 02: NMB Reversal Administered



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- Sugammadex is heavily restricted at some sites
- Group would be interested in a report or metric examining sugammadex usage as well as reintubation rates in PACU
- Some discussion re: sugammadex dosing
- Dr. Kheterpal to disperse Merck poster presentation on Sugammadex usage
- PUL 02: Median TV <8cc/kg IBW
  - Several sites have had success in changing the default ventilator settings to 400cc, RR: 14-15, and PEEP 4
  - Overall, the entire collaborative has shown improvement in this measure over the last 12 months
  - Sites have adopted the IBW charts and provided laminated copies for reference in the OR
  - Some concern over hypoventilation and acid-base balance. Recommended increase in respiratory rate to counteract these effects.
- GLU 01: Hyperglycemia (BG>200 intraop: recheck or treatment within 90 minutes)
  - Some sites are checking a blood glucose in preop on all diabetics and treating if BG>150mg/dL
  - Recommendation to exclude MRI cases as it is not possible to treat while in the MRI machine
- TRAN 01/02: Changes to TRAN 02 in April were perceived as appropriate and increased scores significantly across all sites
- TOC 01: Intraoperative Transfer of Care
  - One site has worked with their Epic team to create a standardized, auto-populated handoff form for the intraop and PACU handoffs that can be used by anesthesia providers to cover necessary information and also meet the measure of performing a handoff. Team is willing to share their build with other Epic sites if interested.