# MPOG Virtual Retreat Notes

## Welcome & MPOG Updates

Sachin Kheterpal, MD, MBA

Housekeeping:

- Automatically muted
- Please keep video on to stay connected if able to
- Please let us know if there are technical problems via chat or cell phones
- Please enter full name in Zoom to how you would like to be referred

Overview of Agenda:

- Breakout sessions are 12:15-12:45
- Please feel free to grab lunch and eat during those sessions, but we understand if you need a 45 min zoom break
- If you would like to join a breakout room, please sign up via the link in the chat
- Morning session includes a bunch of great talks, followed by the breakout sessions then the afternoon sessions will run from 12:45-about 2:30

Overview and updates:

- Thank you to our MPOG team, MPOG champions at all MPOG institutions
- Special recognition to Dr. Lee Fleisher now CMO, CMS and Dr. James Grant now CMO, BCBSM and their impact as anesthesiologists in state and national-level leadership roles.
- COVID has created extraordinary challenges and our anesthesia and nursing teams have been at the forefront of the efforts to support clinical, IT, nursing, etc. endeavors. MPOG is still working remotely but the shared mission doesn't mean it has to be a shared location so we're able to transition to Webex, Zoom, etc. well to keep things going
- Welcome to our new sites, Dartmouth-Hitchcock, UCSF, Henry Ford Allegiance, Macomb and Wyandotte
- MPOG includes >20 states, over 50 hospitals/health systems
- Huge thanks for the over 30 sites who converted to MPOG's new import manager this year
- Our coast-to-coast coverage and diversity of ideas offered by this geographically and institutionally diverse group is fantastic
- Progress:
    - MPOG is stable, we have sustained support BCBSM (thank you!), NIH, industry, and MPOG institutions
    - We truly value our members and their priorities whether it's QI, MOCA, hospital leadership or research

    - The MPOG executive board has had some turn over with new leaders which offers fresh perspectives
- Research:
    - Publications committee (PCRC) with moderators from institutions across the country has given research proposal constructive feedback and improved the quality of MPOG projects
    - Broad team effort for proposal development, review, data extraction, and analysis
    - Great diversity and breadth of subspecialty and focus for research proposals
- QI:
    - Vibrant specialty subcommittees have added a lot of value to our overall mission
    - Measure review is constant as the evidence evolves. We can pivot rapidly to be consistent with cutting-edge research and new guidelines
    - Advancing the culture of ASPIRE, goal is to identify cases for follow up, not to designate “failed” cases, but highlight “flagged” cases for review
- IT and Administrative:
    - Tools are getting more sophisticated by simplifying and coordinating the processes
    - Increasing predictability of upgrades and product releases
    - More consistent and site-centered onboarding processes
    - Tools are aimed to serve both QI and research agendas
- Database integrations to enable QI and research
    - Surgical registries integrations:
        - National – NSQIP and STS
        - State: MSQC, MTQIP
    - Payor:
        - National CMS - Thank you to Dr. Schonberger!
        - State: Michigan Value Collaborative (MVC) - Thank you to BCBSM!
        - Blinded record index:
            - In production across all of MPOG
            - Enables centralized linking across datasets without sharing PHI
            - Currently with mortality, expanding further
- What’s next?
    - Do more with the data we have
        - QI advancements and increasing research and QI integration
    - Taking the “learning health system” concept and enhancing that mission through the integration of QI and Research
    - Working on cleaning up phenotypes and collations to only display those high-quality phenotypes
    - Encouraging use of quality metrics as exposures and outcomes since these are great, very curated data
    - Use DataDirect to define 90% of inclusion/exclusions
    - Focus on research and QI topics
    - Use MPOG data as a foundation of prospective work
        - Pragmatic clinical trials
        - Prospective observational studies
    - Take advantage of merged datasets that extend across EHRs using surgical registries and feed outcomes back to providers
    - Really want to focus on the hypothesis aspect of QI and research to target ideas that are needed to improve clinical care

    - We've worked on developing toolkits and publications as the QI and research work should really feed one another
    - We need to determine how often and how the QI and Research teams are connecting, much harder now that things are more remote
- Summary:
    - It's been a strange and challenging year, but we want to recognize the amazing progress the MPOG group has been able to make despite the challenges that have been presented

## Accelerating the Quality Journey

### Michelle Schreiber, MD

- Goal: bend the cost curve down and improve quality
- Quality + safety + experience/Cost; Shifting to pay for performance model
- Support transformation to digital ecosystem: measures, data, information
- EHRs allow this data to be interoperable
- Many challenges surrounding our current national quality ecosystem
    - Too many measures vs. not enough measures: not always meaningful
    - Burden of reporting
    - Programs not aligned (strategic framework does not align between CMS, IHI, VA system, NQF, Leapfrog, Truven, etc.)
    - Should risk adjustment include socioeconomic status? Multiple viewpoints on this
    - Appropriate attribution at provider level
    - Is public transparency good or bad?
    - Payment tied to quality- enough or not enough? Cheaper to take penalty rather than to improve care/report to CMS
    - New challenges of technology
- CMS Vision: Utilize impactful quality measures to improve healthcare outcomes
- CMS Strategy:
    - Reduce measure burden (# of measures, improve alignment across payers)
    - Improve value based programs
    - Increase voice of patients through PROs and transparency
    - Transition to digital: incorporate advanced analytics and machine learning to derive measure performance/outcomes (eventually will move to only digital measures)
- CMS working to do extensive stakeholder alignment and engagement: payers, providers, pharma, government agencies, technology developers, measure developers, data aggregators, patients
- Meaningful Measures Framework 1.0 introduced in 2017
    - Reduce burden
    - Eliminate disparities
    - Track to measurable outcomes and impact
- Meaningful Measures Framework 2.0: Focus on outcomes, not process
- eCQM Strategy Project underway to advance digital strategy
- Transparency
    - Star ratings and transparency for patients
    - Price Transparency
    - Quality Data Strategy
- Aligning core measure sets across stakeholders

- Future strategies in value based programs
  - Streamline and simplify programs
  - Ensure quality is embedded in all value based models
  - Continue focus on public transparency and link to payment
  - Role of registries- issue is that CMS can't require payment be a part of participation with a measure
  - Linkage of payment to performance
  - Transformation of payment models to value based performance vs. pay for volume
  - Explore linking programs to CME/MOC
- Provider Engagement: Quality Payment Program
  - MIPS vs. APMs
    - Transforming MIPS to MIPS value pathways (MVPs): Create new participation framework beginning in 2021 performance year.
      - Smaller measure group
      - Connect measures to quality, cost, promoting interoperability, and improvement activities
      - Incorporate a set of claims-based measures that focus on population health and public health priorities
      - Streamline MIPS reporting by limiting required specialty or condition-specific measures
    - QCDRs have a role in developing innovative measures for these specialties to make clinical measures relevant
  - How do we determine value? Quality and COST, not just cost alone
- Potential roles of MPOG
  - Use quality measures to help develop MIPS value pathway for anesthesiology in conjunction with ASA
  - Advance the use of quality information from the electronic medical record; promote electronic infrastructure
  - Get involved in national standards for collection and transmission of anesthesia specific digital information.
  - Engage providers in quality improvement activities – especially those that may affect their performance in value based programs
  - Help establish standards for quality measurement in anesthesiology – avoid self reported data
  - Create evidence
  - Help establish standards of care

## The Frequency of Difficult Intubation in Obstetric Patients: A Report from the Multicenter Perioperative Outcomes Group Research Consortium

### Sharon Reale, MD

- Background: Wide variability in estimates for difficult or failed intubation in OB population - most from outside the US or among smaller centers
- Study Aims:
  - Estimate frequency of difficult intubation in obstetrics
  - Describe management of difficult intubation

    - Determine risk factors for difficult intubation
    - Determine whether frequency is higher in OB patients
- Study Population: All women 15-44 undergoing general anesthesia for C-sections from 2004-2018
- Outcome:Identified difficult or failed intubation via electronic search of database and then manually reviewed each case
- Compared rate in non-obstetric surgical patients matched 3:1 on age and gender
- Results:
    - 14,830 general anesthetics for C-sections
        - N=267 difficult intubation (1.8%)
        - N=12 failed intubation (0.08%)
    - Risk of difficult intubation 1:55
    - Risk of failed intubation of 1:1,235
    - Identifiable risk factors for difficult intubation - BMI, airway characteristics (mallampati score, limited mouth opening, cervical spine limitations) and induction of labor, pre-eclampsia/eclampsia
- Lessons Learned:
    - Variability in documentation across sites
    - Granularity of data
    - ICD codes not uniformly present
- Questions:
    - Is time of day available in MPOG? Yes, that is covered as part of our data use agreement with each site and able to be examined. Time of day was captured in the dataset, but often, the intubation occurs in the middle of the delivery and you may not be able to know the actual time of intubation.
    - No comparable contemporaneous study in the US - our results were in the middle or within the range of other published studies.
    - Use of videoscope was documented and captured within our data - used in ~ 27% of difficult intubations and ~ 67% of failed intubations. These results will be shared in the manuscript.

## The impact of the COVID-19 pandemic on surgical case volumes at MPOG hospitals

### Orestes Mavrothalassitis, MD

- Background: significant national morbidity and mortality, routine hospital operations disrupted, and unclear timing, scope, variance and consequences of changes to perioperative patient care across the country.
- Study Design: 33 MPOG centers, 01/2019-05/2020 for adults from sites continuously contributing data. Excluded patients without outcome status
- Methods:
    - Primary Outcome: Weekly surgical volume (total and by center)
    - Secondary Outcome: Case mix (proportion of each procedure and absolute numbers)
    - Exposures: Date of surgery, national COVID data, pandemic period (pre, intra and post)
    - Covariates: demographic, ASA, comorbidities

    - Analysis: Join point regression, causal analysis with TMLE, MICE package for missing data
- Preliminary Results:
    - Dramatic drop week of March 16 - have yet to do join point analysis
    - Absolute nadir the week of April 6
    - Rise back to national average by end of May, despite surging COVID cases
    - Will break this analysis down by center - but preliminary data shows similar pattern across high and low surgery volume centers
    - Heterogeneity in volume reduction (ranging from 33% to 72%)
- Next Steps:
    - Complete full analysis (including case-mix analysis)
    - Questionnaire for each center to understand site-specific factors influencing changes in case volume and mix
    - Evaluate impact of major public health events/mandates/etc on observed national perioperative trends
    - Possible addition of patient-level covid status in MPOG data and follow-up outcomes study
- Lessons Learned:
    - Data Direct - tool continues to evolve (communicate early and often)
    - Not all variables are created equal - keep in mind the quality of real-world EHR data and don't reinvent the wheel
    - Recent rapid expansion of MPOG member hospitals - might have smaller number of centers if looking to include older data in your study population
- Questions:
    - Characteristics of center with most versus least decrease - limited in ability to describe centers as we try to retain anonymity in centers. MPOG may be able to add attributes in an anonymous way - state-COVID severity score

## Utilization Patterns of Perioperative Neuromuscular Blockade Reversal in the United States: A Retrospective Observational Study from the Multicenter Perioperative Outcomes Group

Tim Dubovoy, MD

- Background: Sugammadex was a novel NMB reversal agent with previous data largely based on international study results. Outcome studies focused primarily on measures of efficiency (limited evidence for reducing postoperative complications). Adoption of a new drug may be hindered by cost concerns and restrictions on use
- Study Aim:
    - Identify practice changes in management of NMB following sugammadex approval
- Study Design: 24 MPOG institutions (had to have sugammadex on formulary at the time of the study); included all surgical procedures between Jan 2014- Aug 2018 for adults receiving NMB agent
    - 3 distinct study periods: before sugammadex, transitional period (0-6 months after sugammadex used at each site), after sugammadex (6+ months after first use at each site)
    - Multiple exclusion criteria
- Methods:

    - Primary Outcome: administration of reversal agent (neostigmine versus sugammadex) or spontaneous reversal
    - Covariates on patient-level, case-level, NMB and monitoring, intraoperative timed events and type of institution and provider
    - Analysis: descriptive and trend (normalized for each hospital to the first documented case with sugammadex)
    - Multivariable mixed-effects logistic regression models controlling for covariates
- Results:
    - Took about 5 months after FDA approval for centers to start using sugammadex
    - After 6 month transition period - sugammadex was drug of choice in ~40% of cases
    - Spontaneous reversal decreased over time
    - Inter-institution variability in adoption of sugammadex for non-university versus university affiliated institutions
    - Increased use of NMB used during post-sugammadex period for both sugammadex and neostigmine cases
    - Decrease in undocumented TOF in post-sugammadex period
    - Similar dosing pattern of neostigmine in pre and post-sugammadex period
    - Majority of cases received between 2-4 mg/kg of sugammadex
    - 36% of sugammadex cases received a dose of exactly 200 mg
    - Older age, male sex, ASA 3 or 4, emergent surgery, obesity and severe comorbidities and major procedures were associated with sugammadex use
- Lessons Learned:
    - Overall, across all centers, sugammadex was used preferentially in patients with known risk factors for residual NMB or postoperative pulmonary complications - higher degree of NMB prior to reversal, limited physiologic reserves and medical comorbidities, and surgical procedures that present high risk for postoperative respiratory complications
- Limitations:
    - Scope was limited to FDA-approved indications and doses
    - Did not examine the effects of policy or practice restrictions that may have existed at the individual institutions

## Subcommittee Updates

**Allison Janda, UM - Cardiac**

- What We've done
    - First meeting was held on July 20, 2020
    - Discussed first potential measures for development
        - Glucose management
        - Post-bypass hypothermia avoidance
- 7 PCRC Cardiac Research Proposals accepted
- Plan to incorporate evidence-based guidelines in measures to ensure consistency and improve potential applications for QI and research purposes
- Goals
    - Build 1 cardiac-specific measure in 2020
        - Glucose management
        - Post-bypass hypothermia avoidance

    - Build 2-3 cardiac-specific measures in 2021
        - Antibiotic timing
        - Hypotension avoidance
        - AKI avoidance
    - Collaborate with the SCA and guideline committees to create consistent, evidence-based measures
    - Pursue STS-merged outcome reports  requires institutions to integrate with STS
- If interested in joining the MPOG Cardiac Subcommittee contact Dr. Janda (ajanda@med.umich.edu.
    - Next Meeting is October 9th

**Bishr Haydar, UM - Pediatric**

- Pediatric Subcommittee reconvened in December 2019 after a 2 year hiatus; led by Bishr Haydar (University of Michigan), Vikas O'Reilly-Shah (Seattle Children's), and Brad Taicher (Duke Children's)
- 64 Participants have joined from around the US and Netherlands
- What We've accomplished this year
    - TEMP-04: Percentage of cases with a median intraoperative temperature < 36C.
    - Two pediatric opioid equivalency cohorts: Spine and Tonsillectomy
    - PAIN-01: Percentage of cases where at least one non-opioid adjunct was administered between Preop Start through Anesthesia End.
- MPOG Pediatric Publications
    - Anesthesia & Analgesia (2020) - Risk Factors for Intraoperative Hypoglycemia in Children (Dr. Lori Reigger, University of Michigan)
    - Anesthesiology (2016) - Reference Values for Noninvasive Blood Pressure in Children during Anesthesia (Dr. Jurgen de Graaff, Netherlands)
    - In Submission to Journal of Pediatrics
        - Anesthesia practice for pyloromyotomy: A retrospective analysis of care patterns from a national cohort (Yale)
    - 3 Pediatric Proposals Accepted
        - An Assessment of Risk Factors for Hypoxemia in Young Children Undergoing One Lung Ventilation (Wake Forest)
        - The effect of induction time on intraoperative hypoxemia for pediatric patients undergoing anesthesia: a retrospective cohort analysis (Massachusetts General Hospital)
        - Prevalence and trends of high body mass index in a multi-institution pediatric surgical population: A Report From the Multicenter Perioperative Outcomes Group (MPOG) (Yale)
    - 4 additional pediatric proposals have been submitted to PCRC
- 2021 Goals
    - Pediatric Measure Build
        - Intraoperative Hypotension (informational)
        - Postoperative Respiratory Complications
    - Collaborate with the SPA Quality & Safety Committee to gain expert consensus on pediatric revisions needed for existing MPOG measures.
    - Pursue opportunities with NSQIP-Peds or Wake Up Safe  Data integration

- If interested in joining the pediatric subcommittee contact Meridith Bailey (meridith@med.umich.edu)
    - Next Meeting is October 6, 2020 (2-3p ET)

**Rachel Kacmar, Colorado - Obstetrics**

- First meeting was held on in September 2017 and reconvened in December 2019
- Modified existing ASPIRE measures to either exclude obstetric patients or modified inclusion criteria (OB hemorrhage protocol considerations for TRAN 02)
    - Call for Measures survey in 2020 to identify focus areas
- Released first OB-specific measure in July 2020: ABX 01 (OB) Antibiotic timing for cesarean delivery
- Currently building BP 04 (OB): Prolonged hypotension for cesarean delivery
- 2021 Goals
    - Build 2-3 obstetric-specific measures in 2021
    - Collaborate with the SOAP and guideline committees to create measures that are as consistent and evidence-based as possible
- If you would like to join please email Dr. Kacmar: Rachel.Kacmar@cuanshutz.edu

## Is Equity, Diversity and Inclusion important for perioperative outcomes?

Nathalia Jimenez, MD, MPH

- Objectives
    - Describe key concepts of Equity, Diversity and Inclusion (EDI)
    - Explain what are Social Determinates of Health (SDOH) and its contribution to perioperative outcomes
    - Discuss strategies to incorporate EDI in perioperative outcomes research and QI
- · Outline
    - Importance of equity, diversity and inclusion (perioperative care/outcomes)
        - What are social determinants of health (SDOH)/ examples disparities in perioperative care
        - Demographic and socioeconomic factors in the US population
    - One size does not fit all, how QI/QS efforts can increase disparities
    - Promoting equitable outcomes
        - The role of Quality improvement work & research
        - Beyond adjusting, how to interpret disparities between population groups
        - We found disparities, now what? moving from documenting to implementing solutions.
- Should we care about diversity?
    - Paradigm
        - All patients are **equal**
        - I treat all my patients the same (**equally**) I don't see race/ethnicity/gender…
        - Anesthesia is data driven-we use the same information for all patients (age, gender, weight, comorbidities, same fasting guielines…)

        - Anesthesiologists and Diversity (equity and inclusion): All patients are NOT the same, We treat patients differently, We strive for **equitable** care Vs **equal** care
            - Age → developmental range (physical, emotional & cognitive )
            - Gender → PONV, Sugamadex
            - Race →
                - Differential prevalence-comorbid conditions population groups (i.e. sickle cell disease, cystic fibrosis)
                - Genetic associations population groups- CYP2D6 and ultra-rapid codeine metabolizers
            - Anesthesia uses the same information for all patients → BUT
                - We tailor care according to: age, gender, weight, comorbidities
- Implicit Bias & Medical Care
    - Explicit (self-reported) beliefs known to the individual
    - Implicit (non-conscious) beliefs not readily apparent to the individual and can differ from a person's explicit beliefs
        - Implicit prejudice, discrimination, and bias can be observed in the absence of intention to discriminate. ( examples medical literature )
        - Implicit attitudes more frequent non-verbal behavior
    - Sabin et al. Physicians' Implicit and Explicit Attitudes About Race by MD Race, Ethnicity, and Gender JHCPU. 2009; 20(3): 896–913
    - Sabin et al. The Influence of Implicit Bias on Treatment Recommendations for 4 Common Pediatric Conditions. American Journal of Public Health | 2012, Vol 102, No. 5
- Anesthesia & Implicit Bias?
    - Non-verbal interaction with patients
    - Don't have immediate feedback from patients (prophylactic tx PONV, pain)
        - We make assumptions without talking to the patient about it after they are under anesthesia
    - Quick decisions based limited number of variables
- Disparities in Anesthetic Care
    - Example 1:
        - Antiemetic Prophylaxis as a Marker of Healthcare Disparities in the National Anesthesia Clinical Outcomes Registry (Andreae et al)
        - Main finding: association between socioeconomic markers and anti-emetic prophylaxis (ondansetron and dexamethasone).
            - Medicaid patients less likely to receive anti-emetic OR 0.85 [0.81, 0.89]
        - Methods:
            - Use of large dataset (NACOR) 173,133 cases.
            - Outcome anti-emetic prophylaxis à surrogate marker for anesthesia quality (availability, applicability, cost)
            - Predictor socioeconomic indicators: Insurance and income (Beyond race)
        - Anesth Analg. 2018 February ; 126(2): 588–599.
- What are Social Determinates of Health?

- "Social determinates of health are life-enhancing resources, such as food supply, housing, economic and social relationships, transportation, education, and health care, whose distribution across populations effectively determines length and quality of life"
  - Economic Stability
    - Employment
    - Food insecurity*
    - Housing instability*
    - Poverty*
  - Education
    - Early childhood education and development
    - Enrollment in higher education
    - High school graduation
    - Language and literacy*
  - Social and community context
    - Civic participation
    - Discrimination
    - Incarceration
    - Social Cohesion- Family support*
  - Health and Health Care
    - Access to Health Care*
    - Access to Primary Care*
    - Health Literacy*
  - Neighborhood and Built Environment
    - Access to foods that support healthy eating
    - Patterns
    - Crime and violence
    - Environmental conditions
    - Quality of housing*
  - Poverty
    - 38.1 Million people lived in Poverty
    - USA poverty rate 11.8% (2018)
    - Distribution Unequal
      - Higher among females
        - Women 12.9%
        - Men 10.6%
      - Higher among children
        - Children 16.2%
        - Seniors 9.7%
    - Poverty line- for an individual was $12,784/yr
      - Higher among NA/AA/Hispanic
        - Native American 25.4%
        - Black 20.8%

        - Hispanic 17.6%
        - White 10.1%
        - Asian 10.1%
    - Poverty: Percent of US children <17 years living in poverty
        - Year 2019, a family of two adults and two children fell in the “poverty” category if their annual income fell below $25,926/yr
        - Anesthesia
            - Food insecurity
            - Obesity/failure to thrive
            - Poor tx adherence
            - Calls (phone minutes)
                - Demographic changes in the US
                - Race and ethnicity US population is increasingly more diverse
                - The biggest change is among children
                - Will predict what is going to happen in the next 20 years
- Disparities in anesthesia care
    - Example 2:
        - Race, Postoperative Complications, and Death in Apparently Healthy Children (Olubukola et al)
        - Main finding: AA children compared to White children had higher 30 DPOP mortality OR 3.43 (95% CI: 1.73–6.79), post-operative complications : 1.18 (95% CI: 1.13–1.23) and serious adverse events (OR 1.07; 95% CI: 1.01–1.14).
        - Methods:
        - NSQIP-Pediatrics (2012–2017) 172,549 patients.
        - Serious adverse events in healthy children (excluded ASA3+)
        - Adjusting age, sex, age, RVU (complexity of procedure), year of procedure, case urgency and operating time.
    - 2017 Demographic characteristics of uninsured in the United States
        - Insurance coverage by demographic characteristics
        - Higher among younger people
        - Higher among males
        - Higher among latinos
        - Higher in the south
        - Varies by demographic characteristic on the child
            - Poor children more likely to be uninsurances
            - Higher in Hispanics
            - Higher in non-citizens
            - Some states, many in the south, did not participate in Medicaid expansion. This is also where you see clustering of Hispanic populations with no Medicaid expansion to the children
    - Example 3:

- A Cross-Sectional Analysis of Community Water Fluoridation (CWF) and Prevalence of Pediatric Dental Surgery Among Medicaid Enrollees (Lee et al)
- Main finding: Access to CWF is associated with lower caries-related visits and Dental surgery
- Methods:
    - Use of large dataset (Medicaid claims data) 436 counties within 5 states per year (872 county-year observations)
    - Outcome Dental surgery under general anesthesia (Cost, resources , **exposure GA pediatrics)**
    - Predictor public health intervention water fluoridation at the county level (regional variation)
    - JAMA Network Open. 2020;3(8):e205882.
    - Refugees and immigrants
        - Where America's refugees come from
            - Congo
            - Burma
            - Ukraine
        - Top states for US refugee resettlement in fiscal 2019
            - Texas
            - Washington state
            - New York

■ Immigrants
- Coming from
    - Mexico
    - China
    - India
    - Philippines
    - El Salvador

■ SDOH
- Limited English proficiency
- Health literacy
    - Level often depends on the country that they come from
    - Even with highly educated people, there are cultural norms that are different from those in the US
        ■ Advocacy for care
            - US- shared decision making
            - Other countries may defer to the medical team for decision making
- Anesthesia
    - Prior traumatic events
    - Coping
    - Anxiety

■ Immigrants and refugees- limited English proficiency (LEP), health literacy

- Nearly 5 million English language learners in US public schools in fall 2015
- Represent 9.5% of US public school enrollees, up 8.1% in 2000
- ~ 3/4 of students with LEP in U.S. public schools (77%) spoke Spanish as their primary language at home in 2015
- PEW research center/ National Center for Education Statistics
- When we use an interpreter – consider the child in pediatrics, the child may not speak English

    - Example 4:
        - Postoperative Pain Management in Children, Parental English Proficiency, and Access to Interpretation (Jimenez et al)
        - Main finding: Children of LEP parents had fewer pain assessments, were less likely to receive opioid analgesics compared with children of EP parents. **More frequent use of professional interpreters** mitigate differences.
        - Methods:
            - Small clinical dataset 474 patients ( 1 year data)
            - Matching by age group, surgical procedure, and admission date.
            - Assessment of intervention
            - Clinical and administrative dataset ( billing data interpreter services)

- EDI Research and Quality Improvement
    - Quality improvement (QI) approaches are appealing for addressing disparities
    - QI strategies <u>target modifiable aspects of care delivery</u>
        - Hard to make disparities disappear or give insurance to everyone
        - Can target things we can change
    - <u>Address multiple aspects of care</u> in a systematic fashion
        - Compound effect of SDH in one individual that make them vulnerable
    - <u>Tailor</u> care over time based on <u>data monitoring</u>.
    - Policy supported  IOM → equity is a core domain of healthcare quality
    - AHRQ formalized this link (quality equity) annual quality & disparity reports
    - https://www.ahrq.gov/research/findings/nhqrdr/nhqdr18/index.html
    - Supported by legislation: ACA requires collection of race/ethnicity data & reporting of quality performance measures stratified by race/ethnicity
    - Potential effects of QI interventions on health disparities
        - Scenario 1: QI Intervention disproportionately benefits underserved group -> disparities reduced
            - Ex: having interpreters in every OR
            - Scenario 2: QI intervention benefits all groups at same rate -> Disparities remain constant
                - Reality is – because everyone has the same improvement, disparities remain constant

        - Scenario 3: QI Intervention disproportionately benefits majority group -> disparities widen
        - K Casey Lion and Jean L Raphael Pediatrics 2015;135:354-361
- QI Interventions may not improve disparities
    - In some cases, disparities may worsen
    - Greater uptake or effectiveness of the intervention in the population with better outcomes at baseline.
    - Standardized clinical pathways (do not account for differences in populations)
        - Example:
        - Benchmarking (avoidance of higher risk patients)
            - At the start of the affordable care act, some hospitals selected less sick patients to show better outcomes
        - Performance incentives (avoidance of patients barriers for adherence treatment)
            - Example: if we keep taking care of pts with poor adherence to treatment, we won't look as good as other institutions
        - Public reporting
        - Provider reminder systems, and decision aids. (difficult heterogeneity)
            - We rely heavily on the idea that all patients are the same
- Addressing disparities: Example 5
    - Reduction of Peripartum Racial and Ethnic Disparities-A Conceptual Framework and Maternal Safety Consensus Bundle. (Council on Patient Safety in Women's Health Care-Toledo P)
    - https://safehealthcareforeverywoman.org/patient-safety-bundles/reduction-of-peripartum-racialethnic-disparities/
    - Multidisciplinary group
    - Commitment to address racial & ethnic disparities
    - Bundle created within framework of SDOH
        - Systematic approach support systems in addressing disparities
            - Readiness
            - Recognition
            - Response
            - Reporting –systems learning
- Disparities research special consideration
    - Research methods should adapt to population characteristics and sociocultural environments i.e. IRB (confidentiality, data management)

- Cultural/linguistic considerations challenge the use of mainstream interpretations of standard evaluation techniques. (i.e. Scales)
    - Scales are often developed in populations that typically participate in research, may not be applicable to other groups
- Do no harm to the populations involved. i.e. Research subject protection issues and poss. of biases can lead to misinterpretation of results
    - IRB askes for address and telephone number and some sort of identification for gift cards
    - A lot of families decide not to participate because they don't want to give that information
    - Have to be careful in the say that we interpret their results, especially around non compliance or non adherence to treatment

■ Disparities research difficulties
- Clinical trials, longitudinal cohort studies
    - Recruitment (lack of trust in the system)
    - Cost (i.e. Interpretation and translation of materials)
    - Adherence (follow up- migrant workers, high mobility populations)
- Existing data
    - No data (before ACA, no data on race/ethnicity except for Medicaid/Medicare)
    - Inadequate data race/ethnicity (assigned vs self- reported);
    - Data based in obsolete constructs gender (binary)

■ Recommendations from the National Institute on Minority Health and Health Disparities (NIMHD)
- Formative
    - Needs assessments (informed by key stakeholders)à
        - Research relevant to the community and context
        - Draw upon the assets of the population
        - Patients who live in multigenerational homes have strong family support
    - Process: instruments, policies, timing, training, data collection, reliability of the practices, and adherence to the design
- Design and methodology
    - Etiologic research should assess exposures and outcomes at multiple levels
    - Interventional: multilevel interventions
- Summative (outcomes, impacts, and cost)
- Am J Public Health 2019 ;109(S1):S34-S40

- Summary
    - Social Determinants of Health (SDOH) contribute to perioperative outcomes
    - Equity is a core domain of healthcare quality
    - Data to address disparities we need to measure & monitor them
    - QI interventions may reduce disparities if appropriately implemented
    - Disparities research is needed and can be done if it is rooted in the needs and strengths of vulnerable populations
- Questions:
    - Nathalia Jimenez njimen@uw.edu

## Integrating your MPOG Data with surgical registry and payor data

Mike Mathis, MD

Assistant Professor of Anesthesiology
Associate Research Director, MPOG

- Strength in collaboration - not just collaborating across centers but also collaborating across database registries (STS, NSQIP, CMS)
- Strengths/unique features of MPOG data
    - Intraop granularity
    - Minute-to-minute physiologic, ventilator, medication/fluid; timestamps, providers, and interventions
    - Also access to administrative data  pro fee diagnosis codes, administrative discharge ICD-9/10 codes
- Strength/unique features of registry data
    - Preop and Postop
    - Quality from painstaking manual review/patient follow-up
    - Detailed structured history/physical, surgical procedure details
    - Very importantly, outcomes data  mortality, hospital LOS, organ system complications
- Opportunities via database integration
    - Successfully integrating this data, can achieve opportunities for research/QI unable to be achieved by either database alone
    - Can work to integrate surgical registry & MPOG data into one location
    - Accessible to both groups with appropriate monitoring of data access & peer review
    - Through combining high-quality processes of care data through MPOG, and high-quality outcomes data through surgical registries
    - Can generate innovative studies
    - Positive externalities – engages surgeons, reinforces relationships that start in the OR, takes them into realms of collaborative research & QI
- Current status of NSQIP and STS Integrations
    - NSQIP - 12 sites completed
    - STS- Cardiac - 3 sites completed, 5 in process
    - STS- Thoracic - 8 sites completed
    - STS-INTERMACS - tentative, in process @ coordinating center

- Where to Start?
    - Step-by-step integration playbook on MPOG website
    - Conversations to have: clinical champions (surgeons, heads of practice for registry), IRB personnel, IT teams at MPOG and registries
    - Be prepared for questions/FAQ document
- Can MPOG-ASPIRE participation lead to reduced healthcare costs?
    - New initiative within MPOG is to also seek de-identified claims data from the Centers for Medicare and Medicaid Services (CMS), Blue Cross Blue Shield of Michigan (BCBSM), Blue Care Network (BCN)
    - We've been fortunate to gain access to CMS data as supported by an NIH grant led by Dr. Schonberger at Yale
    - We've also started at Michigan, through access to data within a quality collaborative – the Michigan Value Collaborative – amalgamates these claims data from CMS and the Blues, with aim to improve the health of Michigan through sustainable, high-value healthcare
    - Very promising preliminary results in a study led by Dr. Allison Janda - for all payers across all procedure types (major abdominal, and orthopedic), we found significantly greater reduction in post-discharge and total episode payments for procedures performed in ASPIRE hospitals compared to non-ASPIRE control hospitals

## MPOG Product Planning Feedback

Nirav Shah, MD

2019 QI Plan Reflection- What have we done in 2020?

- Created first systems-level measure: MORT 01, 30-day hospital mortality
- Evolved ASPIRE culture but changing verbiage of QI reporting to passed and flagged, rather than failed
- Updated MIPS and former QCDR measures based on Quality Committee feedback as we are no longer a QCDR
- Created a formal measure review process - Quality Champions assigned to do this review of all measures at least every 3 years
- Released GLU 03/04 as part of the glycemic management bundle
- Have not yet included transfusion management data from PACU in a measure
- Have not yet risk-adjusted our BP 03 hypotension measure- pending
- Working on specifying SUS 02 - measuring our GLobal Warming Footprint
- Developed Acute Kidney Injury Toolkit
- Pediatric/OB Anesthesia Measures: TEMP 04 (peds), ABX-01 (OB), OME for tonsillectomy and adenoidectomy for pediatric patients
- Sugammadex utilization data shared at the July ASPIRE meeting (data also shared during this meeting- see slide deck for more information)

Describe MPOG Product Planning Process

- Ability to easily access data that you submit
- Turn the data tha you submit into usable information

- Self-service: try to limit the need for someone from the coordinating center to make your site project work successful
- Build tools that enable both research and QI missions
- Where not possible, balance QI and research development
- Stay agile so we can pivot quickly to need development as needed
- Organize Product planning in a variety of categories
    - App suite development
    - Data types to add or refine
    - Infrastructure improvements
    - QI Measures
    - COmputed phenotypes
    - Major applications for reporting (DataDirect and Dashboard)
    - Minor Applications (phenotype browser, concept browser, measure browser)
    - New sites

Application Development 2020

- Updated Data Direct and released Data Direct 2.1 to make more intuitive filters and will guide you through selecting outputs more easily
- Updated Case Viewer 2.0: Overhauled case viewer within the MPOG Application Suite
    - Enhanced search features
    - Removed clutter from banner
    - Added some curated views for measure review
    - Organized in a more intuitive way as compared to 'original' Case Viewer
- QI Reporting: Dashboard 2.0 released this year, available for beta testing now
    - Specialty dashboards added for pediatric, cardiac, and obstetric anesthesia
    - One click navigation to case lists, provider lists, and measure summaries
    - Add measure labels
    - Improve visualizations
    - New filters
    - Updated Benchmarking/Intra-institutional comparison

Plans for 2021 and Beyond

- Quality Plans
    - Continue glucose management bundle with GLU 05/06
    - Continue to build peds, cardiac, obstetric QI measures as advised by the subcommittees
    - PUL 04/respiratory bundle: modify PUL 01/02/03 to add a bundle element that takes driving pressure into consideration; begin monitoring pulmonary complications (outcomes) with PUL 04
    - Continue sustainability work with SUS 02: GWF inhalational agents
    - Begin to build more controversial, informational, best practice measures for ASPIRE 2.0
    - Re-introduce QI stories
    - Update Provider Feedback Emails
    - Continue incremental updates to the dashboard and Data Direct

    - Application Suite changes: Location Mapping overhaul to make it more initiative to use
    - MQUARK: Generalize clinical trial software
    - Infrastructure: continue to add more computed phenotypes which are the foundation of our QI and research programs
- GOAL: Integrate MPOG applications so they continue to work well together