EHR query of opioid prescribing data; (2) tools for engaging stakeholders across the system; and (3) example EMR tools that can inform prescriber decision-making.

## 4D Transitioning from Pain Initiation into Addiction Treatment: "They Just Want to Feel Normal"

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### PURPOSE

The purpose of this grounded theory study was to examine the process involved when adults first use opioids to treat pain through their enrollment in an outpatient medication-assisted treatment (MAT) program to recover from opioid use disorder. Opioid use disorder among U.S. adults has increased in recent years with a concurrent rise in MAT program enrollment. Limited understanding exists regarding how and on what basis people with persistent pain enter MAT. This IRB-approved study reveals participants' unique perspectives concerning their initial use of opioids, living with pain, and their deciding to enroll in MAT. This session will describe how practice changes can be informed from the resulting theory.

### METHODS

Experienced qualitative researchers used open-ended questions to elicit narratives from 10 participants chronicling their journey from initial opioid use through opioid use disorder recovery treatment. Inclusion criteria called for adults enrolled in a single outpatient MAT program reporting they initially used opioids for treating pain. Interviews were digitally recorded in a private room at the MAT facility and later transcribed. Corbin and Strauss' approach to data analysis and grounded theory development were followed.

### RESULTS

A newly-developed theory, Living with Persistent Pain: From Opioid Initiation to Substance Use Treatment was supported by three predominant categories emerging from data: "addiction pathway," "becoming normal," and "relationship spectrum." The theory's overarching core category, "living with pain" was described as a complex and tumultuous process originating in a precipitating painful experience, advancing to the initial use of opioids, and culminating with ongoing recovery in MAT.

### IMPLICATIONS

The decision to enter MAT for opioid use disorder was key to helping participants with pain recover a sense of normalcy, which ultimately was both helped and hindered by significant relationships. Healthcare providers who understand both pain management and the addiction process are essential for guiding recovery-oriented treatment approaches.

## 4E Bioethics and Pain Management: A New and Practical Application

Esther I. Bernhofer PhD, RN-BC, CPE. *Cleveland Clinic*

The field of Bioethics provides clinicians with a framework that combines ethics and empirical evidence to help them make the right decision when faced with complex clinical dilemmas. However, bioethics has not been widely applied to pain management situations even though treatment decisions frequently include moral/ethical considerations, especially in the current context of the opioid abuse epidemic. The aims of this presentation are to review the principles of ethics related to pain care, move practically from ethics to values-based decision-making, and apply the bioethical framework of ethical and empirical evidence to complex pain management issues. Methods used to support this discussion include a review of historical, bioethical, and empirical literature as well as real-world case studies. The results of the literature review reveals that there has always been a moral imperative to treat pain and suffering, yet those who reported suffering without visible evidence ("pain without lesion") were often suspect of ulterior motives, stigmatized, and poorly treated. The field of Bioethics developed as a philosophical and practical approach to providing moral/ ethical guidelines for patient care to decrease bias, stigma, and unfair application of medical treatment. Currently, advances in pain science with new treatment options abound, yet there is evidence that stigma continues and pain is still not well managed; a model of values-based pain management decision-making has emerged to partially explain this phenomenon. Combining the empirical evidence of pain management science with moral/ethics theory can help solve clinical issues in practical ways by informing better pain assessment, understanding patient autonomy, deciding whose risk vs. whose benefit takes priority in treatment decisions, and supporting ethics-driven pain management policies. In conclusion, it is the practical application of bioethics to pain management quandaries that will provide the answer to the ultimate pain care question: what is the right thing to do?

## 5A NSAIDs: Friend or Foe as Opioid Alternatives?

June E. Oliver RN-BC, MSN, CCNS, APN/CNS. *Swedish Covenant Hospital*

With the rise in public and professional concern over opioid overdose deaths, a growing emphasis is being placed on using non-opioid analgesics. Nonsteroidal anti-inflammatory drugs, while not new, are garnering new interest as opioid alternatives. Along with demonstrated analgesic efficacy for nociceptive pain, these medications carry significant risks of morbidity and mortality from multiple mechanisms, ranging from hypertension, GI ulcerations, bleeding, kidney injury and cardiovascular acute events. In using this class of medication, the pain practitioner needs to have a strong understanding of the pharmacology of the variety of NSAIDs, impact of dosing and length of treatment, indications and contraindications and monitoring for toxicities. Weighing the risk and benefits in choosing an NSAID, including newer combination medications with gastrointestinal protective agents, will be explored- and contrasted with an overview of opioid risk and benefits.

## 5B When Addiction Hurts: Managing Acute Pain in Patients Receiving Medication Assisted Therapy (MAT)

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Andrea M. Wetshtein PharmD, BCPS, CPE. *OhioHealth Grant Medical Center*

### BACKGROUND

In 2016 over one-million Americans were receiving medication assisted therapy (MAT) for opioid use disorder (OUD). This trend is expected to only increase as the number of patients permitted to be seen by a buprenorphine-naloxone provider increased to 275 patients in August of 2016. With the advent of the depot-naltrexone injection, even more patients can receiving MAT. With the increasing availability of MAT, acute care providers are facing difficulties managing patients with acute pain on these complex treatment modalities.

### PURPOSE

This presentation will include an overview of MAT: the components of MAT, the pharmacology of the medications (methadone, buprenorphine-naloxone, and naltrexone), clinical pearls of each medication, legal considerations for inpatient providers, and strategies for managing acute pain crisis in patients with OUD. Opioid dosing strategies as well as non-opioid management of acute pain crisis, including the use of ketamine, will be discussed. The learner will be able further their practice skills through participation in several interactive case studies focusing on each MAT medication.

## 5C Sedation and Factors Nurses Consider When Making Decisions to Medicate for Pain in the PACU

Danielle Dunwoody RN, MS, PhD. *Halton Healthcare*

### PURPOSE

The purpose of this study was to examine how nurses working in the Post-Anesthetic Care Unit (PACU) identify and describe excessive sedation and what criteria they use to make decisions about medicating patients for pain.

### METHODS

Utilizing Heideggarian Hermeneutics methodology, approximately 20 individuals were interviewed using open-ended questions that focused on capturing the expert nurses' lived experiences while working in the PACU. Interviews were audiotaped, transcribed, and analyzed using an interpretive team and a modified seven-stage process for interpretation by

Diekelman, Allen, and Tanner (1989). Supporting approvals from the University IRB was obtained as well as approval from the sponsoring organization. The results of this study will be shared with ASPMN membership with the goal of receiving feedback, additional data, and consensus on findings.

## RESULTS

20 expert (the average of 31 years nursing experience and 10 years working in PACU) PACU nurses from a Canadian suburban hospital were interviewed. Data collection occurred between September 2017 and January of 2018. Analysis is in process.

## CONCLUSIONS

The results of this study will inform the development or refinement of sedation scales with the goal of improving sensitivity and specificity to capture all aspects of opioid induced sedation.

## 5D Investigation of Decision-making in Prescription Drug Monitoring Program Use: A Factorial Survey Experiment

Barbara St. Marie PhD, AGPCNP. *University of Iowa College of Nursing*

The National Institute on Drug Abuse has stated that the increase in availability of prescription opioids for the treatment of pain has contributed to the rise in opioid misuse and diversion. In response to this increase, states have implemented Prescription Drug Monitoring Programs (PDMPs) so that healthcare providers can access the controlled substance prescription history of their patients. There is some evidence that PDMPs have been successful in decreases in deaths from overdose. The goals of PDMPs are to reduce opioid abuse, decrease opioid diversion, and help identify when substance treatment is warranted. The purpose of this presentation is to provide preliminary data on a study is to determine what factors most influence a health care provider's decision to consult the Prescription Drug Monitoring Program database (PDMP). Currently, in most states, it is the provider's discretion on when to consult the PDMP for prescribing or dispensing controlled substances. There is a gap in knowledge about the circumstances that lead to PDMP use, including the role implicit biases plays in determining access of the PDMP prior to prescribing or dispensing opioids for pain. The clinical significance of this study is that implicit biases and other subconscious decision-making process could be contributing to health disparities in how controlled substances are prescribed and used. Basic research on patient and provider characteristics associated with PDMP, and provider decision-making is needed to identify if there are implicit biases and what they are. With this knowledge, training and policy changes could be implemented to address non-clinical variation in PDMP use.

## 5E.1. Associations between the Gut Microbiome and Migraines in 7-18-Year-Old Children: The American Gut Cohort Analysis

Jinbing Bai PhD, MSN, RN. *Emory University Nell Hodgson Woodruff School of Nursing*

## PURPOSE

10% children suffer from migraine which result in more school absences and lower academic performance. Recent literature proposed that the gut microbiome may impact migraines through increased intestinal epithelial permeability and inflammation. This quantitative study examined the associations between the gut microbiome and migraines among a cohort of children aged 7-18 years from the American Gut Project (AGP). Findings can help understand biological mechanisms of migraines so that personalized interventions can be designed towards migraine control. IRB approval is not applicable for this secondary analysis.

## METHODS

We analyzed a cohort of children from the AGP, an ongoing national initiative profiling gut microbiome across various populations using 16S rRNA V4 gene. Eligible participants were 7-18-year-old healthy children and had the gut microbiome data available. Raw 16S rRNA sequencing and metadata were obtained from the AGP Public Repository. After quality control of 16S data, alpha-diversity (observed-OTUs, Shannon, Faith's_PD) and beta-diversity metrics (weighted-, unweighted-UniFrac, Bray-Curtis

distances), taxonomic and abundance analyses were conducted using QIIME2™.

## RESULTS

381 children (341 without migraines and 40 with migraines) were analyzed. These children had mean age of 11.5 years and mean BMI of 18.0. Migraine children were more White (p=0.04), more boys (p=0.01), younger (p=0.002) and more underweight (p<0.001). Compared with those without migraines, children with migraines showed lower estimates in observed-OTUs, Shannon and Faith's_PD (p<0.01). All the weighted- and unweighted-UniFrac, and Bray-Curtis distances displayed the gut microbial dissimilarities between children with and without migraines (p=0.001). Children with migraines had higher abundances in genus of Actinobacteria (e.g., Bacteroides, Parabacteroides, Eggerthella, Odoribacter), Firmicutes (e.g., Lachnospira, Dorea, Veillonella), and Proteobacteria (e.g., Sutterella) than children without migraines.

## CONCLUSION

Associations between gut microbiome diversity and abundances and migraines in children suggested potential biological mechanisms of migraines. Future work needs to examine how the metabolites of gut microbes impact migraines in children.

## 5E.2. How to Assess for Respiratory Compromise When Your Patient Is Using Supplemental Oxygen

Carla R. Jungquist ANP-BC, PhD, FAAN. *University at Buffalo*

## PURPOSE

Opioid analgesics are commonly administered to hospitalized patients to treat pain, but these drugs pose risks for serious adverse events such as unintended advancing sedation, respiratory depression, and even death. A study was performed to explore which of three types of electronic monitoring devices (pulse oximetry, capnography, or minute ventilation) were more feasible and effective at detecting OIRD in the PACU setting.

## METHODS

A study was performed in the PACU at a community hospital in Buffalo NY. Nurse anesthesia students recruited 60 patients in the pre-operative admissions department. Forty-nine of the 60 patients wore three types of electronic monitoring devices while they were recovering from back, neck, hip or knee surgery in the PACU. All patients were on supplemental oxygen while in the PACU. Data was gathered every 2-5 minutes off the three electronic monitoring devices as well as time each dose of medication was delivered. Covariates included sex, age, medical diagnosis, type of anesthesia, STOP-Bang score.

## RESULTS

The study found that in the setting of supplemental oxygen, pulse oximetry is not a reliable and effective method to assess respiratory compromise. Twenty-four of the 49 patients exhibited sustained signs of OIRD within minutes of receiving an opioid while in the PACU. While the pulse oximetry readings didn't change, end Tidal CO2 levels increased and Minute Ventilation decreased, representing hypoventilation. A tool commonly used to screen patients for OIRD is the STOP-BANG questionnaire. In this study, the STOP-BANG questionnaire was not predictive of the patients who exhibited signs of OIRD.

## CONCLUSIONS

When using supplemental oxygen, capnography and minute ventilation devices are more sensitive and specific in detecting OIRD.

## 5E.3. Pain-Related Patient Satisfaction in Ambulatory Settings

Michele Marie Farrington BSN, RN, CPHON. *University of Iowa Health Care*

The purpose of this quality improvement initiative was to obtain baseline and ongoing monthly measurements of patient satisfaction related to pain in diverse ambulatory settings across an academic medical center. The goal was to utilize this innovative strategy to maintain or improve the pain-related care being delivered. While not a clearly defined concept, patient satisfaction has been linked to quality outcomes in the literature.