The 2016 International Conference on Opioids (ICOO2016) was held in Boston, June 5-7, 2016, at the Joseph B. Martin Conference Center at Harvard Medical School. Attendees from around the world participated in this two plus day conference that featured renowned speakers from many countries presenting the latest research, ethics, legal and clinical application of opioids.

Eduardo D. Bruera, MD in his excellent keynote presentation, Long-term Opioid Use in Supportive Care Clinics: Assessment and Monitoring Among Patients with Advanced Cancer and Cancer Survivors, detailed the science and clinical application of opioids for pain in cancer survivors.

Sincere thanks and congratulations to all our ICOO 2016 presenters, conference committee, educational partners and co-chairs for creating a truly world class event!

Join us for ICOO 2017, June 11-13, 2017!

Dr. Carol Warfield discussing crucial issues faced by healthcare providers who prescribe opioids in her presentation Legal Issues from a Physician’s Viewpoint.

Co-Chairs, Dr. Paul Sloan and Dr. Elinore McCance-Katz directed the fifth annual International Conference On Opioids with passion, alacrity and gravitas.

Thought leaders Daniel Carr, MD and Jane Ballantyne, MD discussing Selected Case Studies and the Application of Recent Guidelines in their lively panel.

Humayun Chaudhry, DO, MACP, MACOI in his insightful keynote, The Role and Perspective of State Medical Boards in the Oversight of Chronic Opioid Therapy for Pain Management, detailed the role of medical boards as they support doctors in the proper clinical use of opioids.
Dr. Daniel B. Carr presenting the new National Pain Strategy: Implications for the Pain Community. The latest version presented can be located at:

Attorney Ronald Chapman, II, JD, Dr. Daniel Schwarz, and Honorable Jodi Debbrecht Switalski, JD (not shown), presented their eye-opening session: Evidence-Based Best Practice for Opioid Prescribing and Monitoring: Medicolegal Pain Management Expert Symposium.

Attorneys Jonathan M. Young, JD, PhD and Michael C. Barnes, JD presented If Not You, Who? A Call for Informed Professionals To Engage in Opioid-Related Policy Making.

Dr. John Standridge enlightened the audience with his presentation Association of Single-Nucleotide Polymorphisms, Buprenorphine vs Methadone Maintenance Therapy, and Second/Third Trimester Dose Reduction Strategies with Clinical Outcomes of Neonatal Abstinence Syndrome.

Dr. Penny Briscoe traveled from Australia to present: How to Wean Patients of Opioids: What Resources Can be Used to Educate and Support Patients to Cease Taking Opioids.

Leah Sera, PharmD, BCPS and Nina M. Bemben, PharmD, BCPS on OIC in New Drugs in Opioid-Induced Constipation: How Much is That Bowel Movement Gonna Cost You?

Dr. Robert Jamison captivated the audience presenting an important and timely session on the latest in Behavioral Interventions for Pain Management.
The six New England Governors in a packed session discussing their efforts to end the epidemic of opioid abuse and deaths in their states. (L-R) Gov. Peter E. Shumlin (VT), Gov. Gina M. Raimondo (RI), Gov. Dannel P. Malloy (CT), Gov. Paul R. LePage (ME), Gov. Maggie Hassan (NH) and Gov. Charlie Baker (MA). The full video of the intense session is available at: http://youtu.be/WTD1kcEBnDl or http://www.opioidconference.org

(L-R) Beatrice Setnik, PhD, James Tolliver, PhD, Richard Dart, MD, PhD and Edward Cone, PhD explored the future of ADFs in The Evolution of Abuse Deterrent Drug Formulations: Testing Effectiveness from the Benchtop to the Real World.

Dr. Kieran Moore sharing the Canadian perspective in his presentation Reducing the Community Prescribed Opioid Load as a Harm Reduction Strategy.

(Left to Right) Dr. John Renner, Dr. Akiva Daum, Dr. Joseph Insler and Dr. Anna LaRose presented Effective Treatment vs Enabling: Where to Draw the Line with Opioid Agonist Therapy?

James McDonald, MD, MPH presenting The Disciplinary Process for Physicians Who are Reported for Poor Opioid Prescribing Practices.
(Left to Right) Dr. Seddon Savage and Dr. Gil Fanciullo in a timely session *Opioids and Clinical Cannabis: Considerations in Co-occurring Use.*

Dr. Howard A. Heit inspiring the audience with his presentation *Opioids for Chronic Pain: “Damned if You Do, Damned if You Don’t!”*

Dr. Elinore McCance-Katz, ICOO2016 co-chair tackles the tough issue of *Medication Assisted Treatment for Opioid Use Disorders that Occur in the Treatment of Chronic Pain.*

(Left to Right) Paul Coplan, ScD, MBA, Gregory Wedin, PharmD, DABAT and Laura Wallace, MPH presenting *ER/LA Opioid Analgesics REMS: Implementation and Impact on Opioid Abuse, Overdose and Death.*

(Left to Right) Dr. Joseph Stauffer, Dr. TJ Gan and Dr. Lynn Webster presenting *Kappa Opioid Receptor Agonists (KORAs), a Novel Pharmacology for the Treatment of Acute and Chronic Pain.*

(Left to Right) Dr. Kathryn Walker and Dr. Mary Lynn McPherson engaging the audience with their presentation *Contemporary Issues in Opioid Therapy.*

Dr. Guy Hans discussing *Reduction in Postoperative Opioid Requirement Through the Combined Application of Preoperative Risk Assessment and Multimodal Analgesia.*

Dr. Jane Ballantyne shares insights into the creation of the recent CDC guidelines in *Practical Aspects to Following Opioid Guidelines.*
Between a Rock and a Hard Place? Managing Pain in Patients on Opioid Maintenance Therapy
Nina Bemben, PharmD, BCPS; Leah Sera, PharmD, BCPS
The rising rate of opioid misuse and addiction has led to increasing numbers of patients seeking treatment for opioid substance use disorder. This presentation will address the clinical challenge of managing pain in patients receiving opioid maintenance therapy (buprenorphine or methadone) for concurrent substance use disorder.

Levorphanol: Can This Old Dog Learn New Tricks?
Nina Bemben, PharmD, BCPS; Leah Sera, PharmD, BCPS
Leverphanol is a µ-opioid agonist, with additional activity as a NMDA receptor antagonist. While uncommonly used in the United States, the pharmacology of levorphanol and its pharmacokinetic characteristics make it potentially useful for pain management. This presentation reviews the pharmacology and pharmacokinetics of levorphanol and addresses its place in therapy.

Epidemic: Responding to America’s Prescription Drug Abuse Crisis
Angela Conover
This presentation focuses on heroin accessibility in all communities as a result of addictions that stem from prescription pain killers. To address this issue, the Partnership for a Drug-Free New Jersey, the Drug Enforcement Administration-NJ Division, and HIDTA NY/NJ have embarked upon a series of gatherings with New Jersey’s medical community to address the important role these professionals can have in reversing the alarming trends in opiate abuse.

Oral Fluid Drug Testing: A New Look at Applications, Advantages, and Methods
Damian Borg, PhD; Richard Stripp, PhD; Elizabeth Kolb
Although urine is the most common biological matrix used in clinical toxicology, a major disadvantage is that it solely indicates past exposure to a drug. Thus, the development of simpler methods to assess biologically active drug levels in a person is desirable. Oral fluid is a matrix well suited for the clinical toxicology/medication monitoring industry because collections are based upon simple, non-invasive, collection procedures using an oral swab.

A 10-year Retrospective Study of Opioid Overdoses among Patients in a Large Integrated Healthcare System
Joseph Bosccarino, PhD, MPH; H. Lester Kirchner, PhD; James Pinckavich, MSPH; Vijay Nadipelli, BPharm, MS; Naoko Ronquest, PhD; Michael Fitzpatrick, MD, FACEP; John Han, MD, MS; FIPP, DAPM
The prevalence of opioid abuse has increased drastically over the past decade. This current study describes the characteristics of patients who have overdosed on opioids and assesses the health outcomes and cost among those admitted to a large health system using electronic health records.

Progression of Non-Medical Use of Hydrocodone Combination Products: Results from an Internet Survey of Recreational Drug Users
Theresa Cassidy, MPH; Natasha Oyedele, MPH; Jared Beaumont, MPH; Sven Guenther, PhD; Travis Mickie, PhD
Non-medical use of prescription opioids continues to increase (SAMHSA, 2010). However, little is known about the potential impact commonly prescribed opioids, such as hydrocodone combination products (HCPs), have on abuse progression and their influence on the overall problem of prescription opioid abuse.

Survey of Patients’ Perspective on Opiate Treatment Agreement in the Outpatient Clinic
Cheryl Erwin, JD, PhD; Pravesh Sharma, MD; Regina Baronia; Arqam Abdali; Stephen Manning
There is no question that competing public health concerns, ie, the under-treatment of pain and the abuse of prescription drugs, present a major policy dilemma in the United States of America. The “War on Pain” stands at odds with the “War on Drugs” in America, leaving conscientious physicians in the middle of the battlefield. This study demonstrates that the doctor/patient relationship is at risk through the use of opioids and heroin. These data are concerning and complicated. This presentation will clarify what these data actually represent, providing a scientific basis to better inform clinicians and policymakers in addressing opioid misuse and abuse.

Current Status of Implementation for Abuse-Deterrent Opioids in the US market—The Need for Working with Policymakers and Payers to Improve Legislative and Regulatory Incentives for ADFs
Daniel Cohen, MALCS
Abuse Deterrent Formulations (ADF’s) are breakthrough technologies that can play a major role in deterring abuse. Medical professionals need to understand the public policy implications impacting the technologies which exist today, what current opioids contain ADF’s, and the importance of mandatory adoption of ADF’s in all C-II opioids.

Oral Overdose and Treatment Preference
Jessica Fiori, BA; Genie Bailey, MD; Michal Conti, BA; Megan Risi, BS; Michael Stein, MD
This study seeks to investigate how the experience of lifetime overdose and overdose in the last year influences the treatment preferences of opioid dependent individuals in an inpatient detoxification setting.
Ultra-Rapid Outpatient Opioid Detoxification Using a Novel Enhanced Multimodal Ketamine Infusion
Gerald Grass, MD
To our knowledge this is the first documented use of an enhanced sequential ketamine infusion to rescue a patient from acute ultra-high dose opioid withdrawal symptoms secondary to intrathecal pump misadventure.

Decreased Opioid Use and Pain Scores After Five Months Using a Compounded Topical Analgesic: Fourth Interim Results from the Optimizing Patient Experience and Response to Topical Analgesics (OPERA) Observational Study
Jeffrey Gudin, MD; Michael Brennan, MD; Edmund Harris, MD; Peter Hurwitz; Derek Dietze
158 adult patients experiencing neurologic or musculoskeletal pain received a compounded topical analgesic for a mean of 164 days. Use of opioids and pain levels assessed by BPI (Short Form) each decreased significantly. Patient satisfaction levels were high, and no side effects were reported. Results of previous analyses were confirmed.

Decreased Pain and Opioid Use Following Use of a Compounded Topical Analgesic: Third Interim Results from the Optimizing Patient Experience and Response to Topical Analgesics (OPERA) Observational Study
Jeffrey Gudin, MD; Michael Brennan, MD; Edmund Harris, MD; Peter Hurwitz; Derek Dietze
631 adult patients experiencing neurologic or musculoskeletal pain received a compounded topical analgesic for a mean of 76 days. Pain levels assessed by BPI (Short Form) and use of opioids each decreased significantly. BPI score decreases were greater for patients using diclofenac-containing as compared to ketoprofen-containing compounded topicals.

Relative Bioavailability, Intranasal Abuse Potential, and Safety of Benzhydrocodone/Acetaminophen, a Novel Immediate-Release Hydrocodone Prodrug Combination, Compared with Hydrocodone Bitartrate/Acetaminophen in Recreational Drug Abusers
Sven Guenther, PhD; Travis Mickle, PhD; Kathryn Roupe, PhD; Jing Zhou; Beatrice Sehik, PhD; Vincent Lam, PhD; Talar Hopyan, PhD; Catherine Mills, MSc
Recent survey data indicate that 23 percent of opioid abusers endorse intranasal administration of hydrocodone IR combination products. The prodrug benzhydrocode was developed to deter non-oral forms of abuse of such products. This study assessed the abuse potential and pharmacokinetics of benzhydrocode/acetaminophen relative to hydrocode/acetaminophen in recreational opioid abusers.

Long-Term Safety and Analgesic Efficacy of Buprenorphine Buccal Film in Patients With Moderate-to-Severe Chronic Pain Requiring Around-the-Clock Opioids
Martin Hale, MD; Veronica Urdaneta, MD, MPH; M. Todd Kirby, PhD; Qinfang Xiang, PhD; Richard Rauck, MD
The novel buprenorphine buccal film developed using BioErodible MucoAdhesive technology allows for absorption of drug across the buccal mucosa of patients with moderate-to-severe pain. Long-term safety and efficacy findings of this new buprenorphine formulation are presented for patients with moderate-to-severe chronic pain requiring around-the-clock opioids.

Monitoring for Respiratory Compromise: Results of a Survey of Nurses
Sandra Hanneman, PhD, RN, FAAN; Michael Wong
An online survey of 73 nurses, who are members of the American Hospital Association (AHA), explored nurses’ attitudes and beliefs about respiratory compromise, including opioid-induced respiratory depression, and continuous monitoring practices and technologies used to monitor patients.

Clinical Challenges in the Abuse Potential Assessment of CNS-Active Drugs: Investigator Perspectives With a Special Commentary From a Study Volunteer Talar Hopyan, PhD, C.Psych; Pierre Geoffroy, MDCM, MSc, FCFP
This session will provide a unique perspective of these trials and their challenges, namely from the Investigator, study scientist, and most importantly, the study subject.

The Influence of Cardiac Output on the Pharmacokinetics of Sufentanil in Pigs
Christian Jeleazcov, MD, MSc; Harald Ihmsen, PhD; Joachim Schmidt, MD
Pharmacokinetics of sufentanil were studied in pigs with increased or decreased cardiac output. Clearances and volumes of distribution significantly increased with cardiac output.

Study to Comprehensively Calculate Risk of Aberrant Behavior to Opioids by Incorporating Genetic and Phenotype Risk Factors
Sapana Kabaria, MD; Svetlana Kantorovich, PhD; Ashley Brenton, PhD; John Blanchard, PhD; Brian Meshkin
Balancing appropriate pain management with opioid abuse risk mitigation is a challenging undertaking navigated by physicians daily. This study incorporates clinical, phenotypic, and genetic variables to develop and validate a novel risk stratification algorithm used to accurately determine a patient’s likelihood of opioid misuse or abuse.

Oxymorphone induced thrombotic microangiopathy
Kamia Thakur, MD; Joseph Vadakara, MD; Alok Silodia, MD
Opana ER (oxymorphone) is a cheap illicit drug available throughout the USA. Intravenous use of the crushed gel formulation has been associated with drug-induced thrombotic microangiopathy. In this abstract we describe two patients who lived together and used Opana ER intravenously. Both presented with microangiopathic hemolytic anemia that mimicked thrombotic thrombocytopenic purpura.

Intrathecal Morphine Infusion Therapy in Management of Chronic Pain: Present and Future Implementation in Korea
Yongiae Yoo, MD; Jee Youn Moon, MD, PhD; Yong Chul Kim, MD, PhD
We conducted a retrospective chart review of patients who had received an ITMP implant since the introduction of the device in Korea. Analyses focused on the clinical condition of patients after implantation and on a variety of clinical outcomes related to the intrathecal morphine infusion treatment processes.

Neuropathic Pain in High Level Spinal Cord Injury Effectively Controlled by Spinal Cord Stimulator
Prasanth B. Katta, DO; Vittal R. Nagar, MD; Vinod Muniswamy, MD; Luis A. Vascellino, MD; Sara Salles, DO
57 year old male C4-American-Spinal-Injury-Association-classification-C with resultant neuropathic pain in his right lower extremity after failing non-interventional modalities for pain relief found relief with novel use of spinal cord stimulator.

Combination Strategies for Chronic Pain Management and Central Nervous System Side Effects
Prasanth B. Katta, DO; Vittal R. Nagar, MD; Vinod Muniswamy, MD; Paul A. Sloan, MD
Literature suggests combination strategies for chronic pain management is commonly used in clinical practice. The clinicians treating chronic pain patient population with combination strategy should have constant vigilance, should perform re-evaluation, and a high level of suspicion to avoid the adverse effect.
Prevalence of False Negative Urine Test Results by LC-MS/MS: Comparing a High Sensitivity Method to the Current Industry Standard
Phillip Lipnick; Kevin Krock, PhD
The number of false negative test results were determined for each drug and/or metabolite from anonymized patient data that were generated from a validated high-sensitivity LC-MS/MS analysis. Results falling between our cutoff level and the industry average cutoff level were considered false negatives.

Safety Profile of Injectable Hydromorphone in a Medically Supervised Treatment Program for Long-Term Severe Opioid Use Disorder in Vancouver, Canada: Outcomes from Recent SALOME RCT
Scott MacDonald, MD; Cheryl McDermid, MD; Piotr Klakowicz, MD; Eugenia Oviedo-Joekes, PhD; Kirsten Marchand, PhD student; Daphne Guh, MSc; Suzanne Brissette, MD
This presentation will discuss the safety profile of high doses of injectable hydromorphone in the context of a landmark clinical trial that demonstrated its effectiveness for the treatment of severe opioid use disorder. The audience will gain an understanding of this innovative treatment approach and best practices for its delivery.

Opioid Modulation of Gut Microbiome Exacerbates Gram-Positive Sepsis
Jingjing Meng, PhD; Sabita Roy, PhD; Rui Zhang, PhD; Bradley Segura, MD, PhD; Brent Bauman, MD; Santanu Banerjee, PhD
Knowledge about the effects of prescription opioids is lacking. Our study will provide both clinical and laboratory evidence indicating that opioid treatment induces worse outcome of sepsis by modulating gut microbiome, which might provide helpful information to control or prevent infection in patients on opioids.

Emergency Medicine Providers Underestimate Their Opioid Prescribing Practices
Sean Michael, MD; Christopher Androski, MS; Kavita Babu, MD; Martin Reznek, MD, MBA
A randomized survey of attending and resident emergency medicine physicians and advanced practice providers suggests that clinicians systematically underestimate their own opioid prescribing practices, compared to those of their peers.

Pharmacokinetics and Abuse Potential of Benzhydrocodone, a Novel Prodrug of Hydrocodone, After Intranasal Administration in Recreational Drug Users
Travis Mickle, PhD; Sven Guenther, PhD; Kathryn Roupe, PhD; Jing Zhou; Daniel Dickerson, MD, PhD; Lynn Webster, MD
Non-oral abuse of immediate-release opioids is prevalent and remains a public health concern. Benzhydrocodone is a prodrug of hydrocodone with inherent physicochemical and pharmacological properties designed to deter non-oral forms of abuse. This study examined the pharmacokinetics and abuse potential of intranasal benzhydrocodone relative to intranasal hydrocodone bitartrate.

A Meta-Analytic Review of the Adverse Drug Events of Prescription Opioids for Chronic Non-Cancer Pain
Matthew Pelcowitz B.A., MSc Candidate
This review will underscore the problems with the literature on the adverse events of prescription opioids and provide a meta-analytic estimate of the prevalence of specific adverse events involved with prescription opioids such as misuse, abuse, addiction, overdose and deaths.
Effectiveness and Safety of Hysingla® ER, a Once-daily, Single-entity, Hydrocodone With Abuse-deterrent Properties in Treating Chronic Nonmalignant and Nonneuropathic Pain in Patients with Depression and Anxiety
Louise Taber, MD; Rupa Shah, PharmD; Shau Yu Lynch, PhD; Ellie He, PhD; Steven R. Ripa, MD
Treatment with Hysingla® ER, a once-daily, single-entity, hydrocodone (HYD) formulated with abuse-deterrent properties, resulted in a clinically important reduction in pain severity and pain interference in patients with comorbid depression and anxiety. HYD efficacy was sustained throughout the 12-month maintenance period with stable HYD doses during this period.

Effectiveness and Safety of Hysingla® ER, a Once-daily, Single-entity, Hydrocodone With Abuse-deterrent Properties in Treating Chronic Non-malignant and Non-neuropathic Pain in Patients with Osteoarthritis
Louise Taber, MD; Stacy Baldridge, MSN, RN, CNRN, CCRC; Ellie He, PhD; Steven R. Ripa, MD
In this clinical analysis, many patients with chronic pain associated with OA who were treated with HYD had ≥ 2-point reductions in pain, pain severity, and pain interference that were maintained over a 52-week period. HYD was well tolerated, and no new or unexpected AEs or safety concerns were observed.

Safety, Tolerability, and Efficacy of Xtampza™ ER (oxycodone DETERx® extended-release) Treatment in Subjects 65 years and Older
Christy Thompson, PhD; Michael DeGeorge, PharmD; Ernest Kopecky, PhD; Ben Vaughn, MS
This analysis showed that Xtampza™ ER was well tolerated and efficacious in an ≥65 population. Safety was similar to that of other opioid analgesics. Xtampza™ ER may be an alternative to hard tablet oxycodone formulations in the elderly, including those with difficulty swallowing.

Sprinkle Administration of Xtampza™ ER (oxycodone DETERx® extended-release): An Abuse-deterrent, Extended-release Formulation
Christy Thompson, PhD; Michael DeGeorge, PharmD; Ernest Kopecky, PhD; Alison Fleming, PhD
This study demonstrates that Xtampza ER can be administered as an intact capsule or by opening the capsule and sprinkling the contents onto applesauce, thus offering a flexible dosing option for the estimated 11 million patients that suffer from both chronic pain and dysphagia.

MeDSS: A Data-Driven Decision Support Tool for Pain Management
Jaya Tripathi; Scott Weiner, MD, MPH
In our presentation, we will show how the use of advanced analytics and visualization techniques can help with pain medication management.

Physicians Prescribing Opioids to Legitimate Pain Patients Can Take Concrete Steps to Lessen the Risk of Criminal Prosecution
Benjamin Wish
In recent years, criminal prosecutions of physicians who prescribe opioids for the treatment of pain, especially chronic non-cancer pain, have increased significantly. Although the risk of prosecution cannot be eliminated, there are important steps physicians can and should take to minimize that risk.

Evaluating the SOAPP-R’s Contribution to Assessing Risk for Prescription Opioid Abuse
Daniel Eichorn, BS; Alexandra Lesenskyj, BA; Christina R. Maxwell, PhD, MTR; Ricardo A. Cruciani, MD, PhD; Sarah K. Moore, PhD, LCSW
Our retrospective review aimed to evaluate the SOAPP-R’s contribution in assessing the risk for opioid misuse; determining the percentage of patients with high-risk SOAPP-R scores and assessing the tool’s effectiveness at predicting urine toxicology abnormalities aided in this exploration.

Exploring the Effects of Short-Term Oxycodone Maintenance on Pain and Other Responses in Physically Dependent Opioid Users
Marion Coe, Doctoral Candidate; Paul Nuzzo; Michelle Lofwall, MD; Sharon Walsh, PhD
Algesia, analgesia, and prototypic opioid response are evaluated in a 6-week inpatient study of physically dependent opioid users maintained on oxycodone. While volunteers reported subjective opioid effects (eg euphoria) during pharmacological challenge sessions, they were insensitive to the analgesic properties of oxycodone, even at twice the maintenance dose.

Opioid Use in Chronic Pain Patients with Chronic Kidney Disease: A Systematic Review
Vittal Nagar, MD; Prava Birthi; Sara Salles, DO; Paul A. Sloan, MD
A systematic review of published studies describing the use of opioid and other analgesics for the treatment of chronic pain in patients with chronic kidney disease.