



Opioid Misuse Work at University of Michigan

*Programs, Projects, and Researchers
focused on reducing and preventing opioid misuse
and overdose*

Compiled by:



Introduction

The University of Michigan is a leader in addressing the local and national opioid epidemic.

The purpose of this document is to provide an overview of the University of Michigan's education, outreach, policy, and research programs, as well as researchers, that are focused on reducing opioid misuse and overdose to facilitate collaboration with local, state, and national partners.

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I. Cross-campus Centers/Institutes

University of Michigan Injury Center

Key Leaders: Amy Bohnert, Maureen Walton, Rebecca Cunningham

The University of Michigan Injury Center is a CDC-funded, U-M-supported research program focused on injury prevention. One of its main focus areas is prescription drug overdose (PDO) prevention. The Injury Center addresses PDO with the following initiatives:

- Educational events and programs
 - Lunchtime seminars
 - [2015 Opioid Overdose Summit](#)
 - Massive Open Online Course on safe prescribing (in development)
- Policy support
 - Providing information to legislators about PDO to support effective policy development. (Worked to provide guidance to new MAPS legislation; developing pilot to expand access to medication-assisted treatment)
 - Representation on Governor Snyder's Opioid Commission
 - Representation on Governor Snyder's Opioid Task Force
 - Faculty provided guidance to CDC on Prescribing Guidelines for Chronic Pain
- Epidemiology
 - Creation of real-time database on overdose in MI. Working closely with High-Intensity Drug Trafficking Area (HIDTA) group to identify and define overdose deaths in state "hot spots."
- Research: Funded six opioid-related projects

Institute for Healthcare Policy and Innovation (IHPI)

Key leader: John Ayanian

IHPI is the nation's leading university-based institute of health services researchers (with 490+ faculty members) evaluating how healthcare works and how it can be improved, and advising policy makers to inform change. IHPI has developed several strategic initiatives to address specific policy challenges across a number of areas. One component of IHPI's strategic initiative in the area of Opioid Overuse and Abuse is Michigan-OPEN (Michigan Opioid Prescribing Engagement Network):

Michigan-OPEN

Key leaders: Chad Brummett, Michael Englesbe, Jennifer Waljee

Michigan-OPEN seeks to develop a preventative approach to the opioid epidemic in the state of Michigan. The initiative aims to transform surgical pain management and curb opioid misuse by targeting opioid-naïve patients prior to opioid dependence. Through prevention, intervention, and education, Michigan-OPEN aims to disrupt the epidemic of prescription opioid addiction now affecting every age group – from the nation's youth to the elderly. Over the next five years, the initiative will increase awareness among surgical patients and providers regarding the risks of prescription opioids, obtain detailed clinical data, and identify and disseminate best practices in post-operative opioid prescribing.

UMSARC (U-M Substance Abuse Research Center)

Home institution: U-M School of Public Health

To promote and extend the knowledge regarding individual, institutional and social mechanisms of substance use/abuse. By applying the University of Michigan's unique strengths in research and training; we aim to cross disciplinary boundaries, consider innovative questions, develop new research strategies, advance public discourses and develop a greater understanding of substance abuse.

II. Department-based Centers

University of Michigan Addiction Center (Psychiatry)

Key leader: Frederic Blow

The University of Michigan Addiction Center has a three-tiered mission: 1) to conduct clinically-relevant research on the onset, diagnosis, treatment, and clinical course of substance use disorders; 2) to generate and disseminate new knowledge to educate and train the next generation of clinicians and research scientists; and 3) to deliver specialized treatment services for individuals with substance use disorders.

- Educational programs
 - Addiction Center Training Program
 - Addiction Psychiatry Fellowship
- Research: Ongoing projects on addiction, including opioid-related addiction

Chronic Pain & Fatigue Research Center (Anesthesiology)

Key leader: Daniel J. Clauw

The Chronic Pain and Fatigue Research Center (CPFRC) is a multidisciplinary center committed to improving the understanding and management of disorders distinguished by symptoms of chronic pain and fatigue. The CPFRC holds regular education seminars designed to provide patients and their families with the latest information about pain syndromes, as well as guidance on symptom management strategies.

III. Outreach & Policy Projects

OUTREACH

Washtenaw Health Initiative Opioid Project

Status: ongoing

Leadership: Community Mental Health Partnership of Southeast Michigan, Washtenaw Recovery Advocacy Project, Home of New Vision, St. Joseph Mercy Health System, University of Michigan Health System, Michigan Opioid Prescribing Engagement Network (Michigan-OPEN), Washtenaw County Public Health, Ann Arbor Treatment Services, Ozone House, Avalon House, Unified

Summary: The Opioid Project serves as a central repository of local opioid-related information and of individuals doing opioid related work locally. Our organization aims at promoting all opioid-related events in the community, and serve to connect the individuals on the ground doing the work. Thus, the Opioid Project has two main functions: Coordination and Communication.

Sustaining and Strengthening Community University Partnership to Develop a Web-based Naloxone Training Curriculum for Law Enforcement Officers

Status: ongoing

Funding: MICHR Community University Partnership Seed Grant

PI: Chin Hwa (Gina) Y. Dahlem

Summary: Since August 2015, officers from the Washtenaw County Sheriff's Office (WCSO) have been trained to use intranasal naloxone and have already successfully rescued 38 lives from opioid overdoses. Intranasal naloxone offers an innovative route to administer naloxone through a needleless system that protects officers from needle stick injuries. Thus, our overarching goal is to further build our existing partnership and develop organizational capacity among the University of Michigan, WCSO, and Home of New Vision (substance use treatment center) to develop an innovative web-based naloxone training curriculum for officers in effort to reduce opioid overdose mortality in Washtenaw County and beyond.

Statewide Opioid Recovery Drives, Disposal Strategy Development; and Safe Return

Status: ongoing

Funding: Michigan-OPEN

Faculty engagement: Chad Brummett, Michael Englesbe, and Jennifer Waljee

Summary: This program's objectives are: removing excess opioids from Michigan communities by organizing statewide opioid recovery drives, creating opioid disposal strategies, and identifying methods to improve opioid return.

Law Enforcement Officers' Perceptions of Intranasal Naloxone Training for Opioid Overdoses

Status: ongoing

Funding: MICHR Pilot Seed Grant

PI: Chin Hwa (Gina) Y. Dahlem

Summary: Dissemination of the naloxone education intervention has been limited by the availability of trainers, the content has not been rigorously evaluated, and largely limited to didactic PowerPoint presentations. There is a need to develop an efficient and effective naloxone education intervention to certify and re-certify officers to deliver the life-saving naloxone medication to prevent opioid overdose-related deaths in Washtenaw County and beyond. Therefore, the goal of this study is to determine the feasibility and acceptability of a didactic naloxone educational intervention for LEOs as the initial step in developing and testing a new intervention – an educational web-based intervention aimed at LEO's -- to prevent opioid overdose deaths.

PREVENTION
ADULTS, LAW ENFORCEMENT

Chronic Pain Workshop

Status: ongoing

Funding: Michigan Medicine clinical initiative

Faculty engagement: Dan Clauw

Summary: Held every two weeks at Dominos Farms for chronic pain patients and family members. Educates about all potential problems with using opioids to treat chronic pain.

POLICY

Comprehensive Public Health Approach to America's Opioid Epidemic

Status: underway

Funding: CDC via Safe States

PI (coordinating center): Johns Hopkins Co-I's (collaborating centers): U-M Injury Center, University of Iowa Injury Prevention Center, West Virginia University Injury Control Research Center

Faculty engagement: Patrick Carter, Rebecca Cunningham

Summary: The focus is translation of evidence into policies and programs that can reduce the opioid overdose and addiction problem through state and local action. The group will disseminate an updated version of *The Prescription Opioid Epidemic: An Evidence-based Approach* and four state-specific reports (data and policy/program status) and share state-specific documents with key policymakers and other stakeholders in the four states.

The Impact of Legislation and Policies on Prescription Opioid Overdose Rates

Status: underway

Funding: U-M Injury Center pilot study

PI: Amy Bohnert

Summary: Unintentional overdose deaths increased 173% among adults between 1999 and 2010 in the U.S. A primary effort to address the problem has been through state legislation and policy related to opioid prescribing or legal protections for individuals responding to an overdose. Studies have examined the impact of prescription drug monitoring programs on population overdose rates, with mixed findings. To date, there has been no comprehensive evaluation of the impact of relevant laws. The objective of this study will be to examine the impact of enactment of seven specific types of state laws on overdose rates.

Scientific Advisor on Governor Snyder's [Opioid Task Force](#)

Status: complete

Faculty engagement: Amy Bohnert

Summary: The Michigan Prescription Drug and Opioid Abuse Task Force is a result of the call for a comprehensive plan to address prescription drug and opioid abuse in Gov. Snyder's 2015 State of the State address. The bipartisan task force examined the recent trends, evaluated strategic options, and developed a statewide action plan.

Representation on Governor Snyder's [Opioid Commission](#)

Status: underway

Faculty engagement: Rebecca Cunningham

Summary: The Commission is reviewing the Report of Findings and Recommendations for Action from the Michigan Prescription Drug and Opioid Abuse Task Force and developing and proposing policies and an action plan to implement the recommendation from the report.

Participation in development of [CDC Guideline for Prescribing Opioids for Chronic Pain](#)

Status: complete

Faculty engagement: Amy Bohnert

Summary: CDC developed and published the guidelines to provide recommendations for the prescribing of opioid pain medication for patients 18 and older in primary care settings.

Recommendations focus on the use of opioids in treating chronic pain (pain lasting longer than three months or past the time of normal tissue healing) outside of active cancer treatment, palliative care, and end-of-life care.

Providing Content Expertise to State Legislators

Status: ongoing

Faculty engagement: Rebecca Cunningham, Jen Martin, Patrick Carter, Amy Bohnert, Rich Medlin (activity coordinated via University of Michigan Injury Center)

Summary: Ongoing communication with key legislators developing legislation regarding opioids.

Provide consultation and subject expertise; provided expertise to develop language for new legislation that will affect the state's prescription drug monitoring program (PDMP) revision, as well as funding for treatment programs.

IV. Educational Events & Programs

U-M Injury Center Lunchtime Seminars

Status: ongoing

Funding: U-M Injury Center

Faculty engagement: Allison Lin, Carol Boyd, Amy Bohnert, others

Summary: Monthly educational events focused on various injury prevention topics; presentations by faculty who have recently completed research.

2015 U-M Injury Center Opioid Overdose Summit

Status: complete

Funding: U-M Injury Center, IHPI, U-M Medical School, MICHR, U-M Psychiatry, UMSARC

Faculty leads: Amy Bohnert, Rebecca Cunningham

Summary: This day-long event featuring national speakers provided an opportunity for attendees to explore and learn about an emerging public health issues. Some 400 attendees participated, including nearly 200 via webcast. Resources from this event are available at

<http://www.injurycenter.umich.edu/conferences/university-michigan-injury-center-opioid-overdose-summit>.

Safer Opioid Prescribing Massive Open Online Course

Status: proposed in 2017-19 U-M Injury Center grant proposal

Funding potential: U-M Academic Innovation, U-M Injury Center

Faculty leads: Amy Bohnert, Rebecca Cunningham, Sarah Stoddard

Summary: Development of a MOOC to help train future prescribers about prescription drug misuse and guidelines around safer prescribing. Intended audience: U-M Medical School students, as well as allied health students across the country.

The Opioid Epidemic: U-M Medical School M3 course

Status: underway

Funding: N/A

Faculty leads: Michael Englesbe

Summary: New, required session for third-year medical students, providing information about policies and practices related to opioids. Groups of students devise solutions to the crisis from the perspective of: clinical expert, policy expert, state director of HHS, hospital CEO, law enforcement, and dean of a medical school.

Michigan OPEN Research in Progress (RIP) Sessions

Status: Ongoing

Funding: N/A

Faculty Engagement: Chad Brummett, Michael Englesbe, and Jennifer Waljee

Summary: Monthly sessions with objectives to: 1) Review and give feedback on current research in progress relevant to opioid use and misuse; 2) facilitate research network focusing on opioid topics; and 3) engage trainees of all levels in impactful work in the area of opioid use and misuse.

V. Clinical Committees

Clinical Decision Support Committee

Status: ongoing

Funding: Michigan Medicine initiative

Faculty engagement: Rich Medlin

Summary: Implementing clinical decision support tools for MiChart that improve patient safety when they are prescribed controlled substances; reducing opiate prescribing at Michigan Medicine.

Controlled Substance Diversion Prevention Program

Status: ongoing

Funding: University of Michigan, Pharmacy

Staff engagement: Carol Purcell

Summary: Formed in response to the local and national issue of substance abuse disorder and prescription drug overdose, the Diversion Prevention Program oversees controlled substance handling and use from procurement to waste at Michigan Medicine. Through the use of data analytics and education, the program aims to prevent, detect, and respond to controlled substance diversion to ensure the safety of our patients, staff and community.

VI. Research Projects

Brief Prescription Opioid Overdose Intervention in an Urban Emergency Department

Status: complete

Funding: U-M Injury Center PI: Amy Bohnert

Summary: This randomized controlled trial was set in a single emergency department (ED) in which, 204 adult, English-speaking patients seeking care who reported prescription opioid misuse during the prior 3 months were recruited. Patients were randomized to either the intervention, a 30-minute motivational interviewing-based session delivered by a therapist plus educational enhanced usual care (EUC), or EUC alone. Participants completed self-reported surveys at baseline and 6 months post-baseline (87% retention rate) to measure the primary outcomes of overdose risk behaviors and the secondary outcome of non-medical opioid use. Participants in the intervention condition reported significantly lower levels of overdose risk behaviors and lower levels of non-medical opioid use at follow-up compared to the EUC condition. This study represents the first clinical trial of a behavioral intervention to reduce overdose risk. Results indicate that this single motivational enhancement session reduced prescription opioid overdose risk behaviors, including opioid misuse.

PREVENTION

Tailoring Opioid Prescribing after Major Trauma

Status: underway

Funding: U-M Injury Center

PI: Jennifer Waljee

Summary: The overarching purpose of this study is to generate robust pilot data toward a future R01-level proposal that will implement a multifaceted intervention to reduce excess prescription opioids in the community. In the state of Michigan, mortality related to prescription opioids is accelerating even more rapidly than the national average, and was 20% higher than the national average in recent years.¹¹ At the University of Michigan, the Acute Care Surgery services cares for over 1,300 (1,100 trauma, 200 burn) patients each year who suffer major trauma, burn injuries, or require emergent procedures for non-elective surgical conditions (e.g., necrotizing fasciitis, intestinal perforation). In this mixed-methods study, we will examine the match between opioid prescribing and consumption after discharge, conduct a needs-assessment among providers caring for patients with major injury, and develop an intervention targeted to providers designed to align reach opioid prescribing and consumption.

PREVENTION

ADULTS

Opioid Tapering Prior to Total Knee and Total Hip Arthroplasty

Status: underway

Funding: U-M Injury Center and Department of Anesthesiology

PI: Paul Hilliard Collaborators: Chad Brummett, Jenna Goesling, Lewei Lin, Mary Janevic, Joseph Long, Natalie Gulau

Summary: A large number of patients present for elective surgery with a history of active opioid use for pain management. Recent work calls into question the benefit of opioid use for the treatment of chronic pain. When patients have surgery, they often require a short course of opioid based medication for acute pain management and it becomes dangerous and difficult to control acute pain in opioid tolerant patients. Our clinical practice is to recommend reduction in opioids whenever possible in anticipation of surgery. The goal of this work is to try to understand barriers that prevent patients from achieving a reduction and to better understand if our current interventions are effective.

PREVENTION

ADULTS

Prescription Opioids and Driving Risk: A Comparison by Dose and Medical Use and Misuse

Status: underway

Funding: CDC/U-M Injury Center pilot study

PI: Ray Bingham Co-I: Amy Bohnert

Summary: The purpose of the pilot study is to compare the patterns of prescription opioid use, individual characteristics, driving behavior, and driving outcomes of three groups: high-dose (>50mg morphine equivalent per day [MME]) medical users, high-dose prescription opioid misusers, and low-dose (<50MME) opioid users. Non-medical opioid users will not be included due to the: small scope of the study and extra resources required to recruit this group; and because a primary intention of the proposed study is to identify opportunities to intervene in conjunction with opioid prescribing. Participants will be recruited at pain clinics and asked to complete an online survey and to provide permission to obtain their Michigan driver history and electronic medical records.

EPIDEMIOLOGY

ADULTS

Trajectories of Nonmedical Prescription Drug Misuse

Status: underway

Funding: NIH/NIDA

PI: Sean McCabe Co-I's: Philip Todd Veliz, Carol Boyd, B. West

Summary: The objective of this project is to improve the understanding of medical and nonmedical use of opioid analgesics as well as other controlled medications among 18-year-olds and their transition to adulthood.

EPIDEMIOLOGY

ADOLESCENTS

Longitudinal Changes in Recovery from Drug Use Disorders: A National Study

Status: underway

Funding: NIH/NIDA

PI: Sean McCabe Co-I: Carol Boyd

Summary: The goal of this secondary analytic study is to use two waves of existing nationally representative longitudinal data to examine the course of drug use disorders, including opioid use disorder, along with longitudinal changes in recovery from drug use disorders among U.S. adults, including rates and correlates of relapse and full remission.

EPIDEMIOLOGY

ADULTS

Psychosocial Pain Management during Addictions Treatment to Improve Outcomes

Status: underway

Funding: NIH/NIDA

PI: Mark Ilgen Co-I: Amy Bohnert

Summary: A RCT of a psychosocial intervention to address co-occurring pain and addiction.

TREATMENT

Co-prescribing Naloxone for High-risk Adults, Family, and Friends in a Primary Care Clinic

Status: ongoing

Funding: MedVec Nursing Innovation Award (student award)

PI: Chin Hwa (Gina) Y. Dahlem

Summary: The CDC recommends co-prescribing naloxone for all patients who are at high-risk for overdose. To facilitate the implementation of the CDC recommendation, we will develop and implement a protocol for primary care clinicians to co-prescribe naloxone for those who are at high risk for opioid overdoses and to their family and friends.

PRESCRIBING, PREVENTION EDUCATION, QUALITY IMPROVEMENT
ADULTS

Reducing Non-medical Opioid Use: An Automatically Adaptive mHealth Intervention

Status: underway

Funding: NIH/NIDA

PI: Amy Bohnert Co-I's: Rebecca Cunningham, Fred Blow, Mark Ilgen, John Piette, Karen Farris, Satinder Singh Baveja

Summary: This is a randomized controlled trial of an artificial intelligence-enhanced intervention to reduce risky opioid use among emergency department (ED) patients with recent non-medical opioid use and receiving an opioid at the ED. The intervention will be delivered by interactive voice response and be compared to an enhanced usual care condition.

PREVENTION, TREATMENT

ADULTS

Developing a Prescription Opioid Overdose Prevention Intervention

Status: underway

Funding: NIH/NIDA

PI: Amy Bohnert Co-I's: Maureen Walton, Fred Blow, Mark Ilgen

Summary: A pilot randomized controlled trial of a three-session motivational intervention to reduce overdose and HIV risk behaviors among patients at a residential addictions treatment center.

TREATMENT

ADULTS

Primary Care Intervention to Reduce Prescription Opioid Overdoses

Status: underway

Funding: VA Health Services Research & Development

PI: Amy Bohnert Co-I's: Maureen Walton, Fred Blow, Mark Ilgen, Michael Clay, Maria Silveria, Matthew Bair

Summary: A randomized controlled trial of a motivational intervention to improve safe handling and storage and reduce overdose risk behaviors among veterans prescribed chronic opioid therapy in VA primary care clinics. The intervention is compared to an equal-attention condition of receiving the VA long-term opioids informed consent and education on pain.

PREVENTION

ADULTS (VETERAN)

System for Opioid Overdose Surveillance

Status: underway

Funding: HIDTA (Office of National Drug Control Policy)

Faculty involved: Mahshid Abir, Rebecca Cunningham, Amy Bohnert, Richard Medlin

Summary: Creation of real-time database on overdose in MI. Working closely with High-Intensity Drug Trafficking Area (HIDTA) group to identify and define overdose deaths in state "hot spots."

EPIDEMIOLOGY

CHILDREN, ADOLESCENTS, YOUNG ADULTS, ADULTS

Study of State EMS Protocol for Intranasal Naloxone Administration Using a Lower Dose of Naloxone

Status: underway

Funding: (none)

PI: Deborah Wagner

Collaborator: EMS Medical Director for Washtenaw/Livingston Counties; HVA and Livingston County Ambulance QA staff

Summary: Goal is to determine if using a lower dose that is more cost effective shows equal outcomes to other medical control areas utilizing a larger dose.

Advancing the Treatment of Chronic Pain through Individualized Opioid Cessation

Status: underway

Funding: NIH/NIDA

PI: Jenna Goesling Co-I's: Dan Clauw, Dave Williams, Chad Brummett

Summary: This is a K23 award that aims to 1) characterize the unique factors that influence opioid use and identify potential targets for an opioid cessation intervention, 2) develop the content of an opioid cessation intervention for chronic pain patients; and 3) pilot test the opioid cessation program with chronic pain patients.

PREVENTION

ADULTS

University of Michigan Centers of Research Translation (CORT) grant

Status: underway (until 2021)

Funding:

Co-PI's: Dan Clauw, Chad Brummett Collaborators: Dave Williams, Richard Harris, Afton Hassett, Steve Harte, Jennifer Waljee, Kevin Chung, Alex Tsodikov, Wendy Marder

Summary: This large center grant hypothesizes that the same neural signature seen in fibromyalgia on brain imaging and quantitative sensory testing is also present in subsets of individuals with osteoarthritis, rheumatoid arthritis and carpal tunnel syndrome, and predicts unresponsiveness to opioids as well as peripherally directed therapies such as surgery to relieve pain, or biologics given to treat the inflammation associated with RA.

MECHANISMS OF OPIOIDS AND PAIN

ADULTS

Centralized Pain Phenotype as a Predictor of Opioid Non-responsiveness

Status: underway (until 3/20)

Funding: NIH/NIDA

Co-PI's: Dan Clauw, Chad Brummett

Summary: Performs both opioid PET and fMRI and individuals undergoing knee arthroplasty and hypothesizes that the centralized pain phenotype is characterized by opioid non-responsiveness because the endogenous opioid system is participating in the pathogenesis of centralized pain states.

MECHANISMS OF OPIOIDS AND PAIN

ADULTS

Scenario-tailored opioid messaging program (STOMP): An interactive intervention to prevent analgesic-related adverse drug events in children and adolescents

Status: underway

PI: Terri Voepel-Lewis

Summary: This multidisciplinary research is evaluating new strategies to help parents learn about opioid risks, make safe and effective analgesic decisions, and to develop and demonstrate safe drug management behaviors. The goal of this research is to provide new approaches that will promote the safe and effective use of opioid analgesics for children and adolescents who need them.

PREVENTION

ADOLESCENTS, CHILDREN

Opioid and Over-the Counter Analgesic Use and Knowledge among Adolescents and Young Adults: A Community Based Survey

Status: underway

PI: Terri Voepel-Lewis

Summary: This multidisciplinary project will evaluate everyday opioid and analgesic use and knowledge in a population of adolescents and young adults – a group at high risk for analgesic misuse. Of primary interest is what this group understands about the risks of analgesics, and how they obtain prescription drug risk information. As children transition to self-health management, it is imperative to understand how much they understand about prescription analgesic risk. This information will inform future interventions aimed at reducing analgesic knowledge deficits among this high risk group.

PREVENTION

ADOLESCENTS, ADULTS

VII. U-M Researchers

Abir, Mahshid	Assistant Professor	Emergency Medicine	mahshida@umich.edu
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Haffajee, Rebecca	Assistant Professor	HMP, School of Public Health	haffajee@umich.edu
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Walton, Maureen	Professor	Psychiatry	waltonma@umich.edu



Mahshid Abir, MD, MSc

Assistant Professor, Emergency
Medicine

Research Interests:

Dr. Abir is an emergency physician and health services researcher with a joint appointment at the University of Michigan and the RAND Corporation. Dr. Abir's research focus is in evaluating the continuum of acute care delivery in the United States with a focus on addressing policy-related questions pertaining to use, quality, efficiency, outcomes, and costs of acute care delivery. She currently leads the System for Opioid Overdose Surveillance project, which is creating a real-time database on overdose in MI, working closely with High-Intensity Drug Trafficking Area (HIDTA) group.



Amy Bohnert, PhD

Associate Professor, Psychiatry
Mental Health Innovations, Services,
and Outcomes

Research Interests:

Amy Bohnert has led a number of projects related to overdose and prescription drug safety. A focus of this research has been specifically aimed at improving care occurring in primary care and addictions treatment settings related to opioid use problems. She has also served in a scientific advisory role to the Centers for Disease Control and Prevention, including as a member of the expert panel for the opioid prescribing guidelines, to the Food and Drug Administration, and to the Michigan Prescription Drug and Opioid Abuse Task Force.



Carol Boyd, PhD, RN, FAAN

Professor, Nursing

Research Interests:

My research interests focus on high risk populations (e.g., adolescents, emerging adults and LGBT populations) and the different behaviors associated with the medical misuse and nonmedical use of opioid analgesics.



Chad Brummett, MD

Assistant Professor, Anesthesiology

Research Interests:

Dr. Brummett is an anesthesiologist and pain physician. His work focuses on the mechanisms of opioid non-responsiveness in centralized pain states. In addition, as one of the Co-PI's of the Michigan Opioid Prescribing Engagement Network (Michigan-OPEN), he studies the appropriate perioperative opioid management and safe disposal as a preventative approach to the opioid epidemic.



Patrick Carter, MD

Assistant Professor, Emergency Medicine

Research Interests:

Dr. Carter is co-lead for the U-M Injury Center Policy Workgroup and PI of a four-state, multi-CDC-center initiative to translate evidence into policies and programs that can reduce the opioid overdose and addiction problem through state and local action.



Dan Clauw, MD

Professor, Anesthesiology

Research Interests:

Dr. Clauw leads a large pain research group that studies a number of different chronic pain conditions.

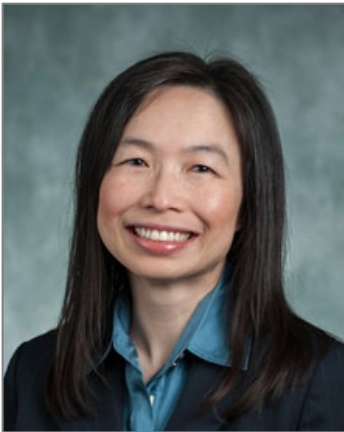


Rebecca Cunningham, MD

Professor, Emergency Medicine
Associate Chair, Research, Emergency Medicine
Director, University of Michigan Injury Center

Research Interests:

Dr. Cunningham directs the U-M Injury Center, which has a core focus on reduction of opioid-related deaths. She also is a lead faculty on the development of an opioid overdose database for MI hotspots in collaboration with the Michigan High-intensity Drug Trafficking Area (HIDTA) program.



Chin Hwa (Gina) Dahlem, PhD, RN

Clinical Assistant Professor, Nursing

Research Interests:

I am currently developing a web-based naloxone education intervention for first responders with the long-term goal of implementing and disseminating evidence-based intervention to decrease opioid overdose deaths. I am particularly interested in educating and increasing access to naloxone for all sectors of society.



Michael Englesbe, MD

Associate Professor, Surgery

Research Profile:

Dr. Englesbe's research and policy interests focus on improving the quality and efficiency of surgical care, including perioperative optimization of patients for major surgery. One specific area is post-operative opioid utilization. He also co-directs the Michigan Opioid Prescribing and Engagement Network (M-OPEN).



Jenna Goesling, PhD

Assistant Professor, Anesthesiology

Research Interests:

My primary research involves the use of both qualitative and quantitative methods to better understand how to address opioid cessation in patients with chronic pain taking opioids. The long term goal is to develop patient centered opioid cessation interventions for chronic pain patients. Additionally I am involved in several projects related to pre and post-operative opioid use, with the goal of reducing opioid use prior to surgical interventions and preventing new opioid use following surgeries.



Rebecca Haffajee, MPH, JD, PhD

Assistant Professor, School of Public Health

Research Interests:

Rebecca Haffajee is a lawyer and health services research whose work combines detailed law analysis with empirical investigations of the relationships between policies and behavioral health. Dr. Haffajee studies the effectiveness of legal and policy levers intended to reduce opioid misuse and overdose – such as the implementation of prescription drug monitoring programs, criminalization of opioid abuse and prescribing behaviors, and requirements around medication assisted treatment therapy provision – as well as their unintended outcomes.



Paul Hilliard, MD

Assistant Professor, Anesthesiology

Research Interests:

Developing effective opioid tapering programs prior to surgery to produce better health outcomes and decrease opioid use.



Mark Ilgen, PhD
Associate Professor, Psychiatry

Research Interests:

I am interested in improving the care for individuals with co-occurring pain and addiction. This applies to those with opioid use disorders as well as those with other substance use disorders.



Lewei (Allison) Lin, MD
Research Fellow, Psychiatry

Research Interests:

I am an addiction psychiatrist and health services researcher interested in examining variability in opioid prescribing across physicians and healthcare systems to develop tailored interventions to promote safer prescribing. I am also interested in improving treatment for patients with addiction (and other psychiatric disorders) in medical settings.



Donovan Maust, MD

Assistant Professor, Psychiatry

Research Interests:

I am a geriatric psychiatrist interested in safe prescribing to older adults, specifically focusing on benzodiazepines and CNS-active polypharmacy (e.g., benzodiazepines and opioids or other CNS-depressants).



Sean E. McCabe, PhD

Research Professor, Institute for Research on
Women and Gender

Research Interests:

Assessing medical and non-medical use of prescription medications from adolescence to adulthood and the development of substance use disorders and other long-term adverse consequences.



Richard Medlin, Jr., MD, MSIS

Assistant Professor, Emergency Medicine
Associate Chief Medical Information Officer

Research Interests:

I am one of the Associate Chief Medical Information Officers at Michigan Medicine and an Emergency Medicine faculty member. My primary expertise is in data retrieval and electronic health records. I am particularly interested in using health information exchange to limit repeated opiate prescribing and use it to provide feedback to providers when a patient is prescribed opiates repeatedly. I am also working on implementing clinical decision support tools for MiChart that improve patient safety when they are prescribed controlled substances.



Stephen Strobbe, PhD, RN, PMHCNS-BC, CARN-AP, FIAAN

Clinical Associate Professor, Nursing

Research Interests:

Addiction, mental health and substance use disorders, and prevention/treatment/recovery.



Philip Todd Veliz, PhD

Research Assistant Professor, Institute for
Research on Women & Gender

Research Profile:

My research focuses on athletes' use and misuse of prescription opioids. In particular, I assess whether athletes in certain types of sports are at greater risk of misusing opioids due to injury, stress, or for recreation.



Terri Voepel-Lewis, PhD, RN

Associate Research Scientist
Anesthesiology, Pediatrics

Research Profile:

Terri Voepel-Lewis' main research and clinical interests are related to the safe and effective use of opioids for pain management in the hospital and home settings. She has conducted several recent pediatric studies related to opioid prescribing patterns and adverse events, and her work is currently focused on educating parents and adolescents about opioid risks. She is a member of the *Society of Pediatric Pain Medicine Guidelines Committee* which is currently developing guidelines for safe pediatric perioperative opioid use.



Deborah Wagner, PharmD

Clinical Professor, Pharmacy &
Anesthesiology

Research Interests:

My interests regarding opiates revolve around both the inpatient and outpatient settings. My focus in the inpatient setting has been to optimize multimodal analgesia including new modalities for pain management such as low dose lidocaine and ketamine infusions. It also includes the appropriate prescribing of opioids so as to minimize waste, and standardization of doses in pediatrics that will minimize variability in dosing, decrease waste, and improve patient safety. On the ambulatory side my focus has been on the opioid overdose epidemic and strategies to optimize the administration and availability of intranasal naloxone.



Jennifer Waljee, MD

Assistant Professor, Plastic Surgery

Research Interests:

My primary interest is in the provider-factors that contribute to variation in perioperative opioid prescribing. In addition, I am interested in the applications and limitations of patient-reported outcomes, notably pain, as a quality metric for acute and chronic surgical conditions.



Maureen Walton, MPH, PhD

Professor, Psychiatry

Research Interests:

I am interested in substance use prevention and early intervention among adolescents and emerging adults including prescription opioids. Two recent projects (Project Chill; Project U Connect) showed secondary effects on reducing prescription opioids. In our ongoing alcohol intervention study, we will examine the secondary outcomes on other drugs, including prescription opioids.

VIII. Recent U-M Faculty Publications on Opioid and Prescription Drug Misuse

1. Ashrafioun L, **Bohnert AS**, Jannausch M, **Ilgen MA**. Evaluation of the current opioid misuse measure among substance use disorder treatment patients. *J Subst Abuse Treat*. 2015 Aug;55:15-20. doi: 10.1016/j.jsat.2015.02.007. PMID:25800105 | PMCID:PMC4456230.
2. Ashrafioun L, Edwards PC, **Bohnert AS**, **Ilgen MA**. Nonmedical use of pain medications in dental patients. *Am J Drug Alcohol Abuse*. 2014 Jul;40(4):312-6. doi: 10.3109/00952990.2014.930152. PMID:24963730.
3. Austic E, **McCabe SE**, Stoddard SA, Ngo QE, **Boyd C**. Age and Cohort Patterns of Medical and Nonmedical Use of Controlled Medication Among Adolescents. *J Addict Med*. 2015 Sep-Oct;9(5):376-82. doi: 10.1097/ADM.0000000000000142. PMID:26291544 | PMCID:PMC4592367.
4. Bair MJ, **Bohnert AS**. Overdoses in Patients on Opioids: Risks Associated with Mental Health Conditions and Their Treatment. *J Gen Intern Med*. 2015 Aug;30(8):1051-3. doi: 10.1007/s11606-015-3332-4. No abstract available. PMID:25896091 | PMCID:PMC4510212.
5. Becker WC, Ganoczy D, Fiellin DA, **Bohnert AS**. Buprenorphine/Naloxone dose and pain intensity among individuals initiating treatment for opioid use disorder. *J Subst Abuse Treat*. 2015 Jan;48(1):128-31. doi: 10.1016/j.jsat.2014.09.007. PMID:25312475.
6. Blum JM, Biel SS, **Hilliard PE**, Jutkiewicz EM. Preoperative ultra-rapid opiate detoxification for the treatment of post-operative surgical pain. *Med Hypotheses*. 2015 Jun;84(6):529-31. doi: 10.1016/j.mehy.2015.02.008. PMID: 25816931.
7. Boehnke KF, Litinas E, **Clauw DJ**. Medical Cannabis Use Is Associated With Decreased Opiate Medication Use in a Retrospective Cross-Sectional Survey of Patients With Chronic Pain. *J Pain*. 2016 Jun;17(6):739-44. doi: 10.1016/j.jpain.2016.03.002. PMID:27001005.
8. **Bohnert AS**, Bonar EE, **Cunningham R**, Greenwald MK, Thomas L, Chermack S, Blow FC, Walton M. A pilot randomized clinical trial of an intervention to reduce overdose risk behaviors among emergency department patients at risk for prescription opioid overdose. *Drug Alcohol Depend*. 2016 Jun 1;163:40-7. doi: 10.1016/j.drugalcdep.2016.03.018. PMID:27062245.
9. **Bohnert AS**, Eisenberg A, Whiteside L, Price A, **McCabe SE**, **Ilgen MA**. Prescription opioid use among addictions treatment patients: nonmedical use for pain relief vs. other forms of nonmedical use. *Addict Behav*. 2013 Mar;38(3):1776-81. doi: 10.1016/j.addbeh.2012.11.005. PMID:23254228 | PMCID:PMC4049343.

10. **Bohnert AS, Ilgen MA**, Ignacio RV, McCarthy JF, Valenstein M, Blow FC. Risk of death from accidental overdose associated with psychiatric and substance use disorders. *Am J Psychiatry*. 2012 Jan;169(1):64-70. doi: 10.1176/appi.ajp.2011.10101476. Erratum in: *Am J Psychiatry*. 2012 Jan;169(1):99. PMID:21955932.
11. **Bohnert AS, Ilgen MA**, Trafton JA, Kerns RD, Eisenberg A, Ganoczy D, Blow FC. Trends and regional variation in opioid overdose mortality among Veterans Health Administration patients, fiscal year 2001 to 2009. *Clin J Pain*. 2014 Jul;30(7):605-12. doi: 10.1097/AJP.000000000000011. PMID:24281278.
12. **Bohnert AS**, Logan JE, Ganoczy D, Dowell D. A Detailed Exploration Into the Association of Prescribed Opioid Dosage and Overdose Deaths Among Patients With Chronic Pain. *Med Care*. 2016 May;54(5):435-41. doi: 10.1097/MLR.0000000000000505. PMID:26807540.
13. **Bohnert AS**, McCarthy JF, Ignacio RV, **Ilgen MA**, Eisenberg A, Blow FC. Misclassification of suicide deaths: examining the psychiatric history of overdose decedents. *Inj Prev*. 2013 Oct;19(5):326-30. doi: 10.1136/injuryprev-2012-040631. PMID:23322257.
14. **Bohnert AS**, Roeder KM, **Ilgen MA**. Suicide attempts and overdoses among adults entering addictions treatment: comparing correlates in a U.S. National Study. *Drug Alcohol Depend*. 2011 Dec 1;119(1-2):106-12. doi: 10.1016/j.drugalcdep.2011.05.032. PMID:21715108.
15. **Bohnert AS**, Tracy M, Galea S. Characteristics of drug users who witness many overdoses: implications for overdose prevention. *Drug Alcohol Depend*. 2012 Jan 1;120(1-3):168-73. doi: 10.1016/j.drugalcdep.2011.07.018. PMID:21839588 | PMCID:PMC3229655.
16. Bohnert KM, **Walton MA**, Resko S, Barry KT, Chermack ST, Zucker RA, Zimmerman MA, Booth BM, Blow FC. Latent class analysis of substance use among adolescents presenting to urban primary care clinics. *Am J Drug Alcohol Abuse*. 2014 Jan;40(1):44-50. doi: 10.3109/00952990.2013.844821. PMID:24219231 | PMCID:PMC4346305.
17. Bonar EE, Ashrafioun L, **Ilgen MA**. Synthetic cannabinoid use among patients in residential substance use disorder treatment: prevalence, motives, and correlates. *Drug Alcohol Depend*. 2014 Oct 1;143:268-71. doi: 10.1016/j.drugalcdep.2014.07.009. PMID:25096272 | PMCID:PMC4161625.
18. Bonar EE, **Bohnert AS**. Perceived Severity of and Susceptibility to Overdose Among Injection Drug Users: Relationships With Overdose History. *Subst Use Misuse*. 2016 Aug 23;51(10):1379-83. doi: 10.3109/10826084.2016.1168447. PMID:27245115.
19. Bonar EE, **Cunningham RM**, Chermack ST, Blow FC, Barry KL, Booth BM, **Walton MA**. Prescription drug misuse and sexual risk behaviors among adolescents and emerging

- adults. *J Stud Alcohol Drugs*. 2014 Mar;75(2):259-68. PMID:24650820 | PMID:PMC3965680.
20. Bonar EE, **Ilgem MA, Walton M, Bohnert AS**. Associations among pain, non-medical prescription opioid use, and drug overdose history. *Am J Addict*. 2014 Jan-Feb;23(1):41-7. doi: 10.1111/j.1521-0391.2013.12055.x. PMID:24313240 | PMID:PMC4049000.
21. **Boyd CJ**, Austic E, Epstein-Ngo Q, **Veliz PT, McCabe SE**. A prospective study of adolescents' nonmedical use of anxiolytic and sleep medication. *Psychol Addict Behav*. 2015 Mar;29(1):184-91. doi: 10.1037/adb0000026. PMID:25419966 | PMID:PMC4388758.
22. **Boyd CJ**, Cranford JA, **McCabe SE**. Longitudinal trajectories of non-medical use of prescription medication among middle and high school students. *J Addict Dis*. 2016 Oct-Dec;35(4):258-265. PMID:27167900 | PMID:PMC5086405.
23. **Boyd CJ, Veliz PT, McCabe SE**. Adolescents' Use of Medical Marijuana: A Secondary Analysis of Monitoring the Future Data. *J Adolesc Health*. 2015 Aug;57(2):241-4. doi: 10.1016/j.jadohealth.2015.04.008. PMID:26206447 | PMID:PMC4514911.
24. **Boyd CJ**, Young A, **McCabe SE**. Psychological and drug abuse symptoms associated with nonmedical use of opioid analgesics among adolescents. *Subst Abuse*. 2014;35(3):284-9. doi: 10.1080/08897077.2014.928660. PMID:24905351 | PMID:PMC4243924.
25. Britton PC, **Bohnert AS**, Wines JD Jr, Conner KR. A procedure that differentiates unintentional from intentional overdose in opioid abusers. *Addict Behav*. 2012 Jan;37(1):127-30. doi: 10.1016/j.addbeh.2011.08.006. PMID:21955872 | PMID:PMC4864590.
26. Cranford JA, **McCabe SE, Boyd CJ**. Adolescents' nonmedical use and excessive medical use of prescription medications and the identification of substance use subgroups. *Addict Behav*. 2013 Nov;38(11):2768-71. doi: 10.1016/j.addbeh.2013.06.015. PMID:23954563 | PMID:PMC3831005.
27. Cron DC, Englesbe MJ, Bolton CJ, Joseph MT, Carrier KL, Moser SE, **Waljee JF, Hilliard PE**, Kheterpal S, **Brummett CM**. Preoperative Opioid Use is Independently Associated With Increased Costs and Worse Outcomes After Major Abdominal Surgery. *Ann Surg*. 2016 Jul 15. [Epub ahead of print] PMID:27429021.
28. **Cunningham RM**, Chermack ST, Ehrlich PF, Carter PM, Booth BM, Blow FC, Barry KL, **Walton MA**. Alcohol Interventions Among Underage Drinkers in the ED: A Randomized Controlled Trial. *Pediatrics*. 2015 Oct;136(4):e783-93. doi: 10.1542/peds.2015-1260. PMID:26347440 | PMID:PMC4586730.

29. **Dahlem CH**, Horstman MJ, Williams BC. Development and implementation of intranasal naloxone opioid overdose response protocol at a homeless health clinic. *J Am Assoc Nurse Pract*. 2016 Jan;28(1):11-8. doi: 10.1002/2327-6924.12249. PMID: 25809544.
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31. Fudalej S, Jakubczyk A, Kopera M, Piwonski J, Bielecki W, Drygas W, Wasilewska K, **Ilggen M**, **Bohnert A**, Barry K, Ploski R, Blow FC, Wojnar M. DISC1 as a Possible Genetic Contribution to Opioid Dependence in a Polish Sample. *J Stud Alcohol Drugs*. 2016 Mar;77(2):220-6. PMID:26997180 | PMCID:PMC4803654.
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33. **Goesling J**, Henry MJ, Moser SE, Rastogi M, Hassett AL, **Clauw DJ**, **Brummett CM**. Symptoms of Depression Are Associated With Opioid Use Regardless of Pain Severity and Physical Functioning Among Treatment-Seeking Patients With Chronic Pain. *J Pain*. 2015 Sep;16(9):844-51. doi: 10.1016/j.jpain.2015.05.010. PMID:26080041.
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35. Goldenberg DL, **Clauw DJ**, Palmer RE, Clair AG. Opioid Use in Fibromyalgia: A Cautionary Tale. *Mayo Clin Proc*. 2016 May;91(5):640-8. doi: 10.1016/j.mayocp.2016.02.002. Review. PMID:26975749.
36. **Haffajee RL**. Preventing opioid abuse with prescription drug monitoring programs: a framework for evaluating the success of state public health laws. *Hastings Law Journal* 2016;67(6):1621-1694.
37. **Haffajee RL**, Jena AB, Weiner SG. Mandatory use of prescription drug monitoring programs. *JAMA* 2015;313(9):891-892.
38. **Haffajee RL**, Parmet WE, Mello MM. What is a public health "emergency"? *N Engl J Med* 2014;371(11):986-988.
39. Hassett AL, Wasserman R, **Goesling J**, Rakovitis K, Shi B, **Brummett CM**. Longitudinal assessment of pain outcomes in the clinical setting: development of the "APOLO" electronic data capture system. *Reg Anesth Pain Med*. 2012 Jul-Aug;37(4):398-402. doi: 10.1097/AAP.0b013e3182524672. PMID:22653521.

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41. **Ilggen MA, Bohnert AS**, Ganoczy D, Bair MJ, McCarthy JF, Blow FC. Opioid dose and risk of suicide. *Pain*. 2016 May;157(5):1079-84. doi: 10.1097/j.pain.0000000000000484. PMID:26761386 | PMCID:PMC4939394.
42. **Ilggen MA**, Bohnert K, Kleinberg F, Jannausch M, **Bohnert AS, Walton M**, Blow FC. Characteristics of adults seeking medical marijuana certification. *Drug Alcohol Depend*. 2013 Oct 1;132(3):654-9. doi: 10.1016/j.drugalcdep.2013.04.019. PMID:23683791.
43. **Ilggen MA**, Kleinberg F, Ignacio RV, **Bohnert AS**, Valenstein M, McCarthy JF, Blow FC, Katz IR. Noncancer pain conditions and risk of suicide. *JAMA Psychiatry*. 2013 Jul;70(7):692-7. doi: 10.1001/jamapsychiatry.2013.908. PMID:23699975.
44. **Ilggen MA**, Schulenberg J, Kloska DD, Czyz E, Johnston L, O'Malley P. Prevalence and characteristics of substance abuse treatment utilization by U.S. adolescents: national data from 1987 to 2008. *Addict Behav*. 2011 Dec;36(12):1349-52. doi: 10.1016/j.addbeh.2011.07.036. PMID:21885197 | PMCID:PMC3269242.
45. Jakubczyk A, **Ilggen MA, Bohnert AS**, Kopera M, Krasowska A, Klimkiewicz A, Blow FC, Brower KJ, Wojnar M. Physical Pain in Alcohol-Dependent Patients Entering Treatment in Poland:Prevalence and Correlates. *J Stud Alcohol Drugs*. 2015 Jul;76(4):607-14. PMID:26098037 | PMCID:PMC4495079.
46. Johnson SP, Chung KC, Zhong L, Shauver MJ, **Engelsbe MJ, Brummett C, Waljee JF**. Risk of Prolonged Opioid Use Among Opioid-Naïve Patients Following Common Hand Surgery Procedures. *J Hand Surg Am*. 2016 Sep 7. pii: S0363-5023(16)30427-0. doi: 10.1016/j.jhsa.2016.07.113. [Epub ahead of print] PMID:27692801.
47. Kim HM, Smith EG, Ganoczy D, Walters H, Stano CM, **Ilggen MA, Bohnert AS**, Valenstein M. Predictors of suicide in patient charts among patients with depression in the Veterans Health Administration health system: importance of prescription drug and alcohol abuse. *J Clin Psychiatry*. 2012 Oct;73(10):e1269-75. doi: 10.4088/JCP.12m07658. PMID:23140657.
48. Larney S, **Bohnert AS**, Ganoczy D, **Ilggen MA**, Hickman M, Blow FC, Degenhardt L. Mortality among older adults with opioid use disorders in the Veteran's Health Administration, 2000-2011. *Drug Alcohol Depend*. 2015 Feb 1;147:32-7. doi: 10.1016/j.drugalcdep.2014.12.019. PMID:25575652 | PMCID:PMC4310721.
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50. **Lin LA, Bohnert AS**, Kerns RD, Clay MA, Ganoczy D, **Ilgen MA** (2017). Impact of the Opioid Safety Initiative on high dosage opioid prescribing in the VHA. *Pain: in press*
51. **Lin LA, Bohnert AS**, Price AM, Jannausch M, Bonar EE, **Ilgen MA**. Pain acceptance and opiate use disorders in addiction treatment patients with comorbid pain. *Drug Alcohol Depend.* 2015 Dec 1;157:136-42. doi: 10.1016/j.drugalcdep.2015.10.017. PMID:26530502.
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53. **Lin LA, Walton MA**, Bonar EE, Blow FC. Trajectories of nonmedical use of prescription opioids among adolescents in primary care. *Addiction Research & Theory.* 2016;24(6): 514-520.
54. Matusiewicz AK, **Ilgen MA**, Bonar EE, Price A, **Bohnert AS**. The Relationship Between Non-Medical Use of Prescription Opioids and Sex Work Among Adults in Residential Substance Use Treatment. *J Subst Abuse Treat.* 2016 May;64:24-8. doi: 10.1016/j.jsat.2016.01.010. PMID:26979551.
55. **Maust DT**, Kales HC, Wiechers IR, Blow FC, Olfson M (2016). No end in sight: benzodiazepine use among older adults in the United States. *Journal of the American Geriatrics Society: in press.*
56. **Maust DT**, Blow FC, Wiechers IR, Kales HC, Marcus SC (2016). National trends in antidepressant, benzodiazepine, and other psychotropic treatment of older adults in psychiatric and primary care. *Journal of Clinical Psychiatry: in press.*
57. **McCabe SE**, Cranford JA. Motivational subtypes of nonmedical use of prescription medications: results from a national study. *J Adolesc Health.* 2012 Nov;51(5):445-52. doi: 10.1016/j.jadohealth.2012.02.004. PMID:23084165 | PMCID:PMC3479410.
58. **McCabe SE**, Dickinson K, West BT, Wilens TE. Age of Onset, Duration, and Type of Medication Therapy for Attention-Deficit/Hyperactivity Disorder and Substance Use During Adolescence: A Multi-Cohort National Study. *J Am Acad Child Adolesc Psychiatry.* 2016 Jun;55(6):479-86. doi: 10.1016/j.jaac.2016.03.011. PMID:27238066 | PMCID:PMC4921895.
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longitudinal study. *Addiction*. 2014 Jan;109(1):102-10. doi: 10.1111/add.12347. PMID:24025114 | PMCID:PMC3930150.

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66. **McCabe SE**, West BT, **Boyd CJ**. Motives for medical misuse of prescription opioids among adolescents. *J Pain*. 2013 Oct;14(10):1208-16. doi: 10.1016/j.jpain.2013.05.004. PMID:23954519 | PMCID:PMC3792708.
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