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2.1 Impact of COVID Session 2

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Irina Kryzhanovskaya, MD; **Jessica Tyler Ristau, MD** - University of California, San Francisco

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Stacy Shoshan, MD, PhD - Haifa Opioid Treatment Program, Tel Aviv University

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Emily Loscalzo, PsyD, MAC, NCSE; Sharon L. Larson, PhD; Brian McAnany, MPH - Philadelphia FIGHT Community Health Centers, University of Pennsylvania

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Randi Sokol, MD, MPH, MMedEd - Cambridge Health Alliance- Malden Family Medicine Center

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Lia M. Bennett, MPH; **Cara Poland, MD, MEd** - Michigan State University

2.3 MOUD Session 2

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Avik Chatterjee, MD, MPH; Alexandra Savinkina, MSPH, Alexandria Macmadu, ScM, Joella W. Adams, PhD, Alexander Y Walley, MD, MSc, Benjamin Linas, MD - Boston University School of Medicine

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Nicky J. Mehtani, MD, MPH; Zoë Kopp, MD; Matthew Abrams, BA; Jacob Izenberg, MD - University of California, San Francisco

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Meredith N. Silverstein, PhD[1], **Heather Ihrig, RN, MSN. MBA**[2], **Andrea Westinicky, MA**[1]; Lesley Brooks, MD; Cyndi Dodds, MS, LMFT; Brian Ferrans, MS; MJ Jorgensen, MPH, CHES, CDP - (1) University of Denver, (2) North Colorado Health Alliance

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Olivia Brooks, MD; Kanna Hayashi, PhD; Zishan Cui, MSc; M-J Milloy, PhD; Thomas Kerr, PhD; Nadia Fairbairn, MD, MHSc - British Columbia Centre on Substance Use

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Lysa Samuel, PA[1], **Sarah Dobbins, MPH, MS, PMHNP**[1]; Sandy Nicholson, RN; Michelle Geier, PharmD - (1) San Francisco Department of Public Health

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Katie F. Jones, MSN, PhD Student; Janet Ho MD, MPH; Zachary Sager MD, Julie Childers MD, Jessica Merlin MD, PhD - Boston College

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Helen Jack, MD; Elenore Bhatraju, MD, MPH; Kendra Blalock, MS; Brett Collins, BA; Eric Denisiuk, BA; Kevin Hallgren, PhD; Jared Wilson Klein, MD, MPH; Joseph Merrill, MD, MPH; Dan Stephens; Judith I. Tsui, MD, MPH - University of Washington

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Chin Hwa (Gina) Dahlem, PhD, FNP-C, FAANP; Aaron Dora-Laskey, MD, MS; Joan Kellenberg, MS, MPH, Monica Gonzalez Walker, MSA, RN, NE-BC; Chad Brummett,

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Josh Luftig, PA-C[1], **Hannah Rose Snyder, MD**[2]; Nicole Gastala, MD; Andrew Herring, MD; Olivia Song Park, MD, MPH; Arianna Sampson, PA-C; Jessica Smith, MA - (1) Harm Reduction Services, CA Bridge, (2) University of California, San Francisco

2.5 Pregnancy, Adolescents

Interpreting Unexpected Positive Fentanyl Test in Abstinent Pregnant Patient

Katrina Ciraldo, MD; Dominika Seidman, MD, MPH; Scott Steiger, MD; Brad Shapiro, MD; Kara Lynch, PhD; Dana Lazarovitz Thompson, RN, PHN, IBCLC, Rebecca Schwartz, ACSW - University of California, San Francisco

Multidisciplinary Prenatal and Substance Use Treatment: A Patient-Centered Programmatic Evaluation

Uma Khemraj, BS; Nivetha Saravanan, BA, MDc; Claire Kane, BA; Rachel Ingraham, BS; Kelley Saia, MD - Boston University, Boston Medical Center

Providing Non-Medical Resources to Pregnant Women with Co-Occurring Opioid Use Disorder and Intimate Partner Violence: Care and Service Provider Perspectives on Integrating Care

Esther Kim, BS[1], **Vanessa L. Murray, BS**[1]; Chelsea Pallatino, PhD, MPH; Judy C. Chang, MD, MPH - (1) University of Pittsburgh

Stigma Surrounding Pregnant Women with Substance Use Disorders: A Qualitative Study of Underlying Cultural Beliefs

Amanda Van Scoyoc, PhD; Amanda F Lowell, PhD - Yale University School of Medicine

Treatment Initiation and Engagement for Adolescents and Young Adults with Substance Use Disorder

Larissa M. Wenren, MD; Jonathan Rodean, MPP; Bonnie T. Zima, MD, MPH; Sarah M. Bagley, MD, MS; Alykhan Nurani, MS; Scott E. Hadland, MD, MPH, MS - Boston Medical Center, Boston Children's Hospital, Boston University School of Medicine, Harvard Medical School

Buprenorphine Utilization Among Adolescents and Young Adults During the COVID-19 Pandemic: An Interrupted Time Series Analysis

Rachel Alinsky, MD, MPH; Laura Prichett, PhD, MHS; Hsien-Yen Chang, PhD; Brendan Saloner, PhD - Johns Hopkins Bloomberg School of Public Health

Co-Occurring Intimate Partner Violence and Substance Use: Care Providers' Perceptions of Systems-Level Barriers to Integrated Services

Vanessa L. Murray, BS[1], **Esther Kim, BS**[1]; Judy C. Chang, MD, MPH; Chelsea Pallatino, PhD, MPH - (1) University of Pittsburgh

2.6 Alcohol, Stimulants, Benzodiazepines, Opioid

Barriers to Continuing Extended-Release Naltrexone Post-Discharge for Alcohol Use Disorder

Manuel Seraydarian, PharmD[1], **Marlene Martin, MD**[2], **Triveni Defries, MD, MPH**[3]; Triveni DeFries, MD; Joseph Clement, CNS; Marlene Martin, MD - (1) University of California, San Francisco / Zuckerberg San Francisco General Hospital and Trauma Center, (2) San Francisco General Hospital and University of California, San Francisco, (3) University of California, San Francisco

Rates of Alcohol-Related Care Among Veterans with Unhealthy Alcohol Use by Long-Term Opioid Therapy Receipt

Melinda Wang, MD, MHS; Paul Joudrey, MD, MPH; Eric DeRycke, MPH; Joseph Goutlet, PhD, MS; Sally Haskell, MD; Emily Williams, PhD, MPH; E. Jennifer Edelman, MD, MHS - Yale University School of Medicine

Alcohol-Induced Peripheral Neuropathy Leading to Wheelchair Need in a Patient With Alcohol Use Disorder

Gabriela Elizabeth Reed, MD; Jesse Ristau, MD - University of California, San Francisco

Heart Plus: Contingency Management to Increase Clinical Attendance and Reduce Stimulant Use Among High-Risk Patients with Heart Failure in an Urban Safety-Net Hospital

Elizabeth Abbs, MD[1], **Soraya Azari, MD**[1]; Leslie Suen, MD; Marlene Martin, MD; Sarah Leyde, MD; Jonathan Davis, MD - (1) University of California, San Francisco

Retention of Patients with Co-Morbid Opioid and Methamphetamine Use Disorder after Instituting Low-Threshold Care in a Rural Alaskan Outpatient Buprenorphine Treatment Program

Sarah C. Spencer, DO, FASAM; Annette Hubbard BHA - Ninilchik Community Clinic

A Tale of Two Tapers: Lessons Learned From Two Outpatient Benzodiazepine Tapers in a Resident Primary Care Clinic

Meredith A. Adamo, MD - University of California, San Francisco

Key Levers in Addressing the Opioid Crisis: The Role of Health Plans in Massachusetts

Robert M. Bohler, MPH, MA; Margot Trotter Davis, PhD; Constance M. Horgan, ScD; Dominic Hodgkin, PhD - Brandeis University

Trajectories of Prescription Opioid and Heroin Use From Adolescence to Age 50

Sean Esteban McCabe, PhD; John Schulenberg, PhD; Vita McCabe, MD; Phil Veliz PhD - University of Michigan

2.7 Hospitals

An Innovative Hospital-Based Opioid Stewardship Program (OSP) in Vancouver, Canada: Descriptive Results One Year Post-Implementation.

Seonaid Nolan, MD; Tamara Mihac, PharmD; Steve Shalansky, PharmD; Mike Legal, Pharm D, Lianping Ti, PhD - BC Centre on Substance Use, University of British Columbia

Perspectives on Caring for Hospitalized Patients With Opioid Use Disorder

Catherine Callister, MD; Steven Lockhart, MPH; Kaitlyn Hoover, BA; Jodi Summers, PhD, MCHES; Susan Calcaterra, MD, MPH - University of Colorado Anschutz Medical Campus

A Generalist Approach to Improve Care for Hospitalized Patients With Opioid Use Disorder

Mim Ari, MD; John Murray, MD; Sarah Dickson, APN; Satoru Ito, PharmD; Angela Kerins, PharmD; Jessica Street, MS; Samuel Mulroe, MS; George Weyer, MD - University of Chicago

Lower Postsurgical Readmission For Patients With Opioid Use Disorder With Better Nurse Education and Staffing

Rachel E. French, PhD, RN; Matthew D. McHugh, PhD, JD, MPH, RN, CRNP, FAAN; Linda H. Aiken, PhD, RN, FAAN, FRCN; Peggy Compton, PhD, RN, FAAN; Salimah

H. Meghani, PhD, MBE, RN, FAAN; J. Margo Brooks Carthon, PhD, RN, FAAN - University of Pennsylvania

Opioid Use Disorder Treatment Uptake in the Hospital: A Qualitative Study of Patients Who Received Hospital-Based Addictions Care and Hospital-Based Providers

Susan L. Calcaterra, MD, MPH; Steven Lockart, MPH; Catherine Callister, MD, Kaitlyn Hoover, BA - University of Colorado Anschutz Medical Campus

"Missing" Chronic Pain, Cascading Acute Pain and Discharge Against Medical Advice Among Hospitalized Patients with Opioid-Related Conditions

Shoshana Aronowitz, PhD, MSHP, FNP-BC; Evan Anderson, JD, PhD; Heather Klusaritz, MSW, PhD, Peggy Compton, RN, PhD, FAAN - University of Pennsylvania

Hospitalist Perspectives on Buprenorphine Treatment for Inpatients With Opioid Use Disorder

Vignesh Murali, BS; Megan, Reed, PhD, MPH; Nazanin Sarpoulaki, BS; Kristin Rising MD, MSHP - Thomas Jefferson University

Identifying Factors That Contribute to Burnout and Resiliency Among Hospital-Based Addiction Medicine Providers

Erin Bredenberg, MD, MPH; Susan Calcaterra, MD, MPH; Caroline Tietbohl, PhD; Ashley Dafoe, MA; Lindsay Thurman, MD; - University of Colorado

2.8 Harm Reduction

The Overdose Surge Bus: A Mobile, Low Barrier Opioid Use Disorder Treatment and Harm Reduction Model in Philadelphia

Margaret Lowenstein, MD, MSHP; Ellena Popova, MD; Kristina Pamela Garcia, MD; Judy Chertock, MD - University of Pennsylvania, Prevention Point Philadelphia

Heroin Pipe Distribution to Reduce High-Risk Drug Consumption Behaviors Among People Who Use Heroin: A Pilot Pretest-Posttest Quasi-Experimental Study

Thomas Fitzpatrick, MD[1], **Vanessa M. McMahan**[2,3]; Shilo H. Jama, Noah Frank; Sara Glick; Lauren Violette; Lisa Al-Hakim; Madeline Kramer; Shantel Davis - (1) University of Washington, (2) San Francisco Department of Public Health, (3) The People's Harm Reduction Alliance

Treatment Outcomes in a Low-Threshold Syringe Services Program-Based Buprenorphine Treatment Program

Andrea Jakubowski, MD, MS; Benjamin Hayes, MD, MSW, MPH; Brent Gibson, PhD; Christine Fitzsimmons, ASN; L. Synn Stern, RN, MPH; Franklin Ramirez, BA, Mercedes Guzman, MPH; Susan Spratt, BA; Pia Marcus, BA; Brianna Norton, DO, MPH; Aaron Fox, MD, MS - Montefiore Medical Center, Albert Einstein College of Medicine

Meeting Hospitalized Patients Who Use Substances Where They are: Implementing Harm Reduction Kits

Rachel Perera, BS[1], **Marlene Martin, MD**[2]; Louise Stephan, BS; Ro Giuliano MS; Robert Hoffman; Mitch Aman BA; Paula Lum MD, MPH; Marlene Martin MD - (1)San Francisco General Hospital, Addiction Care Team, (2)University of California, San Francisco

Drug User Health Hubs in New York State (NYS): Results of a Qualitative Study Describing Services Offered in a Novel Co-Located Harm Reduction and Treatment Model

Mercy Ude, MPH; Czarina N Behrends, PhD MPH; Kitty Gelberg, PhD MPH; Rebecca Goldberg; Shea Kelly, MPH; Rakkoo Chung; Shu-Yin Leung, MA; Bruce R Schackman, PhD; Shashi N Kapadia MD - Weill Cornell Medicine

HIV Exposure Prophylaxis Delivery in a Low-Barrier Substance Use Disorder Bridge Clinic During a Local HIV Outbreak at the Onset of the COVID-19 Pandemic

Hannan Moses Braun, MD; Chelsea Walter, MD; Natalija Farrell, PharmD; Jessica L. Taylor, MD - Boston Medical Center, The Warren Alpert Medical School of Brown University, Rhode Island Hospital

The Impact of the COVID-19 Pandemic on People Who Inject Drugs Accessing Harm Reduction Services in a Rural Context

Kinna Thakarar, DO, MPH; Michael Kohut, PhD; Rebecca Hutchinson, MD, MPH; Deb Burris, RN CRC; Hannah Loeb BS; Rebecca Bell MD; Kathleen Fairfield MD, DrPH, MPH - Maine Medical Center, Tufts University School of Medicine

Injecting Alone: Practices and Preferences Among People Who Inject Drugs in New York City

Lindsey R. Riback, MPH; Bilal T Abbas, MPA, MSW; Andres E Perez-Correa, MD; Megan M Ghiroli; Teresa López-Castro, PhD; Aaron D. Fox, MD MS - Albert Einstein College of Medicine, Montefiore Medical Center

Best Research Abstract and Runner-Up Presentation

Racial Inequities in Clinicians' Illicit Drug Test Ordering Proclivities for Pregnant People

Abisola Olaniyan, MBBS, MPH, PhD; Mary E. Hawk, DrPH, LSW; Dara D. Mendez, PhD, MPH; Steven M. Albert, PhD, MS; Judy C. Chang, MD, MPH - University of Pittsburgh Graduate School of Public Health

High Interest in Injectable Hydromorphone Treatment Among Syringe Services Participants With Refractory Opioid Use Disorder in NYC

Bilal T. Abbas, MPA, MSW; Lindsey Riback, MPH; Andres Perez-Correa, MD; Megan Ghiroli; Teresa López-Castro, PhD; Aaron Fox, MD, MS - Albert Einstein College of Medicine, Montefiore Medical Center

John Nelson Chappel Curricula, Quality Improvement and Program Abstract and Curricula, Quality Improvement and Program Abstract Runner-Up

A Podcast for Fetal Alcohol Spectrum Disorders (FASD) Education: Using Alternative Educational Delivery for Provider Training

Jacqueline S. German, MPH; Amy K. Harlowe, MPhil; Candice Bangham, MPH; Jacey Greece, DSc, MPH; Daniel P. Alford, MD, MPH, - Boston University School of Medicine

Substance Abuse Research Education and Training Program (SARET)

Mia Malone, BA[1], **Kathleen Hanley, MD**[2]; Jennifer McNeely, MD; Danielle Ompad, PhD; Jennifer Manuel, PhD; Michelle Knapp, DNP; Lukasz Witek, PhD; Marc Gourevitch, MD MPH - (1) NYU Grossman School of Medicine, (2) NYU School of Medicine

Poster Session 1

A Delayed Injection Site Reaction to Intramuscular Naltrexone in a Pregnant Woman with Alcohol Use Disorder

Amy J. Kennedy, MD, MS[1], **Kevin Artiga, BS**[2]; Tirah Samura, MD - (1) VA Puget Sound Healthcare System, (2) Charles Drew University

In Their Own Words: Peer Recovery Coaches

Tammy Slater, DNP, MS, ACNP[1], **Deborah S. Finnell, DNS, RN, CARN-AP, FAAN**[2]; Tamar Rodney, PhD, RN, PMHNP-BC, CNE - (1) Johns Hopkins University, (2) Johns Hopkins University School of Nursing

Buprenorphine Treatment for Poppyseed Tea Use in the Setting of Chronic Pain: A Case Report

Kellene Eagen, MD; Glenn Kauppila, DO - University of Wisconsin

Addiction and Motherhood: Substance Use and Its Impact on the Maternal Role

Margret Chang, MD[1]; **Brittany L Carney, DNP, FNP-BC**[2] - (1) University of Massachusetts -Medical School, (2) University of Massachusetts - Medical School

Inpatient Buprenorphine Induction Via Micro-Dosing Protocol: A Case Series

Marc Larsen-Hallock, DO, MS; Anna Maria South, MD; Adam Kolnik, MD; Laura Fanucchi, MD - University of Kentucky

Looking Beyond the Chief Complaint: The Provision of Comprehensive Care for Adolescents and Young Adults Who Use Substances

Maria Christina Herrera, MD; Sarah Bagley, MD; Krishna White, MD; Nadia Dowshen, MD; Scott Hadland, MD - CHOP

Ingestion Induced Hypoglycemia: Who's The Culprit?

Caroline Nguyen, MD; Irina Kryzhanovskaya, MD - University of California, San Francisco

Describing Ohio Certified Peer Recovery Supporters' Employment Status and Recovery Service Delivery

Trevor Moffitt, MA, LPC; Pam, Salsberry, PhD - Ohio State University

Methadone for the Treatment of Opioid Use Disorder in a Pregnant Patient: Reducing Harms and Effective Treatment Strategies

Ruchi M. Fitzgerald, MD FAAFP[1], **Michelle M. Kavouras, Peer Recovery Coach**[2], **Francesco Tani, DO**[3]; Nicholas Chien, MD - (1) PCC Community Wellness/Rush University, (2) Live4Lali, (3) Rush University

Evaluation of Provider Knowledge and Attitudes Toward Implementing Safer Psychostimulant Smoking Kits at a Large Academic Medical Center Before and After Education

Zoe Karavolis, PharmD; Kimberly Mills, PharmD Candidate 2021, Alyssa M. Peckham, PharmD, BCPP, Dinah P. Applewhite, MD - University of Pittsburgh Medical Center Western Psychiatric Hospital

Evaluation of DATA Transfer of Perinatal Hepatitis C VIRUS Exposure Risk DATA in a Multisite Health System

Mary Geist, Medical Student; Amy Schumacher, MD; Leisha Nolen, MD, PhD - University of Washington

Taking Action to Address Opioid Misuse: New Curricula to Better Prepare PAs for Treatment of Substance Use Disorder

Amy Elizabeth Parins, PA-C; Michelle Ostmoe, BS - University of Wisconsin

Fitting the Standardized Patient Encounter to a Virtual Platform: Lessons Learned From an Online Clinical Skills Training Activity for MSW and FNP Students.

Sylvie Rosenbloom, DNP, APRN, FNP-BC, CDCES; Victoria A. Osborne-Leute, PhD, MSW; Kathleen M. Sullivan, BSW - Sacred Heart University

An Open Line of Communication: Feasibility and Acceptability of Pre-Paid Phones During the COVID-19 Pandemic Among Patients With Substance Use Disorder

Alyssa Peterkin, MD[1,2,3], **Raagini Jawa, MD, MPH**[1,3]; Jacqueline You, MD; Glorimar Ruiz-Mercado, MD; Tae Woo Park, MD; Jessica Kehoe RN, BSN, CARN; Jessica L. Taylor, MD; Zoe M. Weinstein MD, MS - (1) Boston Medical Center, (2) Boston University School of Medicine, (3) Grayken Center for Addiction

A State and Local Partnership to Support Patients With Opioid Use Disorder After an Abrupt Buprenorphine Clinic Closure

Nicole O'Donnell, BA, CRS[1], **Margaret Lowenstein, MD, MSHP**[1], **Jeanmarie Perrone, MD**[1]; Jared Shinabery, MPH; Meghna Patel, MA; Jeffrey Hom, MD, MPH; Alix Gustafson, MPH; - (1) University of Pennsylvania

Assessing Current State of Medical Faculty and Staff Knowledge, Attitudes and Bias Towards Substance Use Disorders in Hospitalized Patients at an Academic Institution.

Jessica Tyler Ristau, MD - University of California, San Francisco

So You Want to Implement Contingency Management: A Technical Assistance Package to Establish Readiness Among the Multi-Tiered Personnel of an Opioid Treatment Program

Bryan Hartzler, PhD; R. David Jefferson, MSW SUDP; Kelsey Payne-Smith, BA CDAC II QMHA; John McIlveen, PhD, LMHC - University of Washington, Northwest Addiction Technology Transfer Center

Development of a Statewide, Multi-Disciplinary Addictive Substances and Pain Management Curriculum for Health Professional Students (ALAHOPE)

Heather D. Martin, MSBA; Sue S. Feldman, RN, MEd, PhD; F. Darlene Traffanstedt, MD - University of Alabama at Birmingham

The Wild World of Virtual Practice Sessions in a Graduate-Level Motivational Interviewing Course

W. Henry Gregory, PhD[1], **Victoria L. Selby, PhD, CRNP-PMH, PMHNP-BC, CARN-AP**[1]; W. Henry Gregory, PhD - (1) University of Maryland School of Nursing

"Let's Talk Addiction Med!": Developing an Interprofessional Addiction-Focused Student Discussion Group

Haley Allcroft; Hye Won Chung, BS, MSN; Hannah Batchelor, BS; Kenneth Morford, MD, FASAM - Yale School of Public Health, Yale University School of Medicine

Building Evidence: Innovative Alcohol Detox Simulation for Interprofessional Healthcare Education

Ashley E. Philpo, AE-MSN PMHNP Student[1], **Donna G. Rolin, PhD, APRN, PMHCNS-BC, PMHNP-BC**[1], **Philippa J Mason, MSSW Student**[1], **Mary Mulvaney, LMSW, ACSW**[1]; Amanda J. Simonton, PhD, APRN, PMHNP-BC; Jane Gray, PhD; Veronica G. Walker, PhD, RN, NE-BC, CNE; - (1) University of Texas at Austin

Continuous Quality Improvement of the Maryland Addiction Consultation Service: Impact on Program Implementation

Sarah Sweeney, MSW, MPH; Kelly Coble, LCSW-C; Eric Weintraub, MD - University of Maryland, School of Medicine

Expanding Nursing Education on Addictions: Responding to the Learning Needs of Nurses

Victoria L. Selby, PhD, CRNP-PMH, PMHNP-BC, CARN-AP; Alison Trinkoff, ScD, MPH, RN, FAAN; Charon Burda, DNP, PMH-CRNP, PMHNP-BC, CARN-AP; Katherine Fornili, DNP, MPH, RN, CARN, FIAAN; W. Henry Gregory, PhD; Tae Joon Park, BSN, RN, PMH-BC, CARN - University of Maryland School of Nursing

California Opioid Multi-Agency Response Initiative (Cal-OMRI) Fosters Cross Agency Collaboration with Public Health and EMS Services to Address the Opioid Crisis

Herbert Hern, MD; Andrew Herring, MD; Ori Tzvieli, MD; Senai Kidane, MD, Mariah Kalmin, MD - CA Bridge Program, American Medical Response

Developing, Implementing and Evaluating Specialized Training for Addiction Assessment Nurses in an Acute Care / Emergency Setting

Simran Riarh, RPN; Emma Garrod, MSN, RN; Nicole Cowan RN, BSN - Fraser Health Authority

Addressing the Opioid Epidemic Through Interdisciplinary Coordination: A Community-Based Hub-and-Spoke Ecosystem

Katie McCormick, LMSW; **Lori Holleran Steiker, PhD** - University of Texas at Austin

It's Not Their Fault: Medical Students' Perceptions of Mutual Aid Groups' Core Values

Kelly Rhea MacArthur, PhD; Alëna A Balasanova, MD; Alison DeLissa, PhD - University of Nebraska Omaha

Concurrent Use of Alcohol and Marijuana and its Association with Mental Health in a National Sample of College Students

Jessica Samuolis, PhD; Jocelyn Novella, Ph.D. - Sacred Heart University

Poster Session 2

Availability of Buprenorphine/Naloxone Films and Naloxone Nasal Spray in Community Pharmacies in California

Talia Puzantian, PharmD, BCPP[1], **Lucas G. Hill, PharmD, BCPS, BCACP**[2]; Narine Karapetyan, PharmDc 2022; Maryam J. Saffari, PharmDc 2022; Bahaar A. Shaw, PharmDc 2023; Sarbjot Singh, PharmDc 2023; Farhan Bokhari, PharmDc 2023; Kelly R. Reveles, PharmD, PhD, BCPS; Sorina B. Torrez, PharmDc 2022; Lindsey J. Loera, PharmD - (1) Keck Graduate Institute, (2) University of Texas at Austin

The Impact of Stress on Nurses: How Do They Cope?

Tamar Rodney, PhD, RN, PMHNP-BC, CNE - Johns Hopkins University School of Nursing

Impact of COVID-19 on Pregnant and Postpartum People Receiving MOUD

Megan Mulheron, BS; Thao Truong, BS; Kristl Smith, BS; Julia W. Felton, PhD; Cara Poland, MD, MEd - Michigan State University, College of Human Medicine

Assessing Faculty and Student Readiness to Use Virtual Reality to Practice Clinical Interviewing and Assessment Skills.

Victoria A. Osborne-Leute, PhD, MSW; Courtney A. Cardona, BSW - Sacred Heart University

Effects of Using Different Death Rate Metrics on the Analysis of Drug-Overdose Death Rates and Socioeconomical Factors

William R. Duan, BS; Dennis J. Hand, PhD - Thomas Jefferson University

Street-Drug Lethality Index: A Novel Methodology for Predicting Unintentional Drug Overdose Fatalities in Population Research

Orman Trent Hall, DO; Orman E. Hall, MA; John L. Eadie, MPA; Julie Teater, MD; Joe Gay, PhD; Meelee Kim, PhD; Dennis Cauchon; Rita K. Noonan, PhD - Ohio State University Wexner Medical Center

Analyzing Trends in Substance Use Among SBIRT Patients Engaged in Alabama Health Centers From 2017~2021

Bingqing Lu, PhD[1], **Michael A. Lawson, PhD**[1]; Shanna McIntosh, MS; Jennifer Smith, LMSW - (1) University of Alabama

Undertreatment of Psychiatric Morbidity Among Pregnant Women with Opioid Use Disorder

Rachel L. Milke, Student; Meryl Warshafsky, BA; Solomiya Teterichko, DO; Tiffany Wang, MD; Ashish Premkumar, MD; Elizabeth Krans, MD; Christina Megli, MD, PhD - Magee-Womens Research Institute

Exploring Technical Assistance Themes for the Behavioral Health Workforce During COVID-19

Holly N. Hagle, PhD; Sara Becker, PhD; Michael Chaple, PhD; Beth Rutkowski, MPH; Tom Freese, PhD; Ashley Helle, PhD; Maxine Henry, MSW, MBA; Igor Koutsenok, MD, MS, Laurie Krom, MS; Rosemarie Martin, PhD; Todd Molfenter, PhD; Kristen Powell, MSW, PhD; Nancy Roget, MS, MFT, LADC; Laura Saunders, MSW; Isa Velez-Echevarria, PsyD; Ruth Yanez, MSW - University of - University of Missouri-Kansas City School of Nursing and Health Studies

Medication-Assisted Treatment (MAT) for Opioid Use Disorder During COVID-19: To Tele-MAT

Rebecca Georgiadis, Medical Student; Daniel Rosen, PhD - University of Pittsburgh

The Impact of Social Media on Body Image and Substance Misuse in College Students During COVID-19 Quarantine

Victoria A. Osborne-Leute, PhD, MSW; Taylor Rose Rogan, BS - Sacred Heart University

Patient Characteristics Associated with Use of Video Directly-Observed Therapy for Office-Based Buprenorphine Treatment

Andrea C. Radick, MS; Zachery A. Schramm, BA; Brian G. Leroux, PhD; Kendra L. Blalock, MS; Theresa W. Kim, MD; Judith I. Tsui, MD, MPH - University of Washington

Availability of Buprenorphine/Naloxone Films and Naloxone Nasal Spray in Community Pharmacies in Florida

Sorina B. Torrez, BSA, PharmD Candidate 2022[1], **Lucas G. Hill, PharmD, BCPS, BCACP**[2], **Lindsey J. Loera, PharmD**[2]; Joshua C. Perez; Kelley M. White; Kelly R. Reveles, PharmD, PhD, BCPS; Kirk E. Evoy, PharmD, BCACP, BC-ADM, CTTS; Claire Zagorski, MSc, LP; Megan Yeung; Austin Buck; Madelynn M. Burgess, PharmD; Amanda Charles, PharmD; Michaela Clague; Gillian Gonzales; Nathalie Nguyen; Amber Tran; Anuki Wijeratne; Grace Ukazim; Jessica Bird - (1) University of Texas College of Pharmacy, (2) The University of Texas at Austin - (1)University of Texas College of Pharmacy, (2)University of Texas at Austin

Patterns in Change of Opioid Overdose Death Rate with the Day of the Week and Their Implications

William R. Duan, BS; Dennis J. Hand, PhD - Thomas Jefferson University

The Association of Prescriber Attitudes and Self-Reported Buprenorphine Prescribing Behaviors

Bridget Coffey, MSW, MA; Ryan Carpenter, PhD; Claire A. Wood, PhD; Rachel P. Winograd, PhD - University of Missouri - St Louis

Naltrexone Injections on Therapeutic Anticoagulation: A Safe Option?

Katrina Ciraldo, MD[1], **Manuel Seraydarian, PharmD**[2], **Marlene Martin, MD**[1], **Triveni Defries, MD, MPH**[1]; Martha Castellanos Perez, LVN; Xenia Guandique, LVN; James Gaspar, PharmD; Triveni Defries, MD, MPH - (1) University of California, San Francisco, (2) University of California, San Francisco / Zuckerberg San Francisco General Hospital and Trauma Center

Free at Last! 30 Pioneering Patients in Israel Initiate Extended-Release Buprenorphine Despite COVID

Stacy Shoshan, MD, PhD; Shani Litwin, MD candidate; Yehoshua Mirkin, MD candidate - Haifa Opioid Treatment Program, Tel Aviv University

Adelson Clinic for Drug Abuse Treatment and Research

Frequency of Alcohol or Benzodiazepine Use Disorder As a Contraindication to Buprenorphine Treatment

Megan M. Ghiroli, BA; Andres E. Perez-Correa, MD; Bilal T. Abbas, MSW; Lindsey Riback, MPH; Teresa Lopez-Castro, PhD; Aaron Fox, MD, MS - Montefiore Medical Center

Development and Content Validation of a Measure of Healthcare Professions Students' Attitudes and Competencies Relevant to Care of Patients with Substance Use Disorders

Patrick C. M. Brown, BS; Dana A. Button, BS; Danika Bethune, BS; Emily Kelly, MPH; Ximena A. Levander, MD, MCR; Rebecca A. Harrison, MD - Oregon Health and Science University

Differences in the Types of Withdrawal Symptoms Reported after Opioid Overdose Reversals Among Lay People and Emergency Responders

Candice L. Woolfolk, PhD, MPH; Sandra Mayen; Lauren Green; Rachel Winograd, PhD; Claire Wood, PhD; Sarah Phillips - University of Missouri - Saint Louis, Missouri Institute of Mental Health

Attitudes of Emergency Responders' Toward People Who Use Drugs and Naloxone Access Following Naloxone Training

Sarah K. Phillips, MA; Candice Woolfolk, PhD, MPH; Claire Wood, PhD; Rachel Winograd, PhD - University of Missouri-Saint Louis, Missouri Institute of Mental Health

Availability of Naloxone/Buprenorphine Films in Community Pharmacies in South Dakota

Josh C. Perez, PharmD. Candidate 2022[1], **Lucas G. Hill, PharmD, BCPS, BCACP**[2]; Kelley White, PharmD. Candidate 2022; Lindsey Lorea, PharmD; Kirk Evoy, PharmD, BCACP, BC-ADM, CTTS; Kelly Reveles, PharmD, Ph.D., BCPS - (1) University of Texas College of Pharmacy, (2) University of Texas at Austin

Monthly Subcutaneous Injectable Buprenorphine for Patients Hospitalized for Complications of Opioid Use Disorder: Who is Getting It, and Why?

Elizabeth R. Hansen, MS; Anna Maria South, MD; Laura Fanucchi, MD, MPH - University of Kentucky

Associations of Psychological Distress and Alcohol Use Patterns Among Older Adults of Sexual Minority Status and Heterosexual Peers

Carolyn K. Tran, PhD, DNP, APRN; Rebecca L. Casarez, PhD, RN, PMHCNS-BC; Angela Nash, PhD, CPNP-PC, PMHS; Johnny M. Wilkerson Jr., PhD, MPH, MCHES - University of Texas Health Science Center at Houston

Transitions in Care Between Hospital and Community for Individuals with a Substance Use Disorder: A Systematic Review

Hannah M. James, BKI; Jeffrey Morgan, MA; Lianping Ti, PhD; Seonaid Nolan, MD FRCPC dip. ABAM - British Columbia Centre on Substance Use

Is the Initial Opioid Fill for Acute Musculoskeletal Pain Deterred By Higher out-of-Pocket Costs?

Rebecca Arden Harris, MD, MSc - University of Pennsylvania

Cascade of Care After Nonfatal Opioid Overdose: Identifying Predictors of Retention and Missed Opportunities

Leah J. Leisch, MD[1], **Benjamin A. Howell, MD, MPH, MHS**[2]; Anne Black, PhD; Amanda Middle, PhD; William Becker, MD - (1) Birmingham VA Medical Center, (2) Yale University School of Medicine

Examining Neighborhood Walkability in Relation to Depressive Symptoms and Substance Use

Shireen Husami, BS; Jeremiah Bertz, PhD; Karran Phillips, MD; David Epstein,PhD; Kenzie Preston, PhD; Chloe Jordan, PhD; Sara Hertzel, BA; Landhing Moran, PhD - National Institute of Drug Abuse

Public Stigma and Opioid Addiction: The Role of Gender, Race and Opioid Type

Kimberly Goodyear, PhD; Jasjit Ahluwalia, MD, PhD, David Chavanne, PhD - Brown University

A Profile Analysis of Transtheoretical Model of Change Constructs for Reducing Cannabis Use Among Trauma Patients

John Moore, MSW; Kirk von Sternberg, PhD; Mary Velasquez, PhD - University of Texas at Austin

Rural Obstetric Health Care Professionals' Attitudes Toward Patients with Opioid Use Disorder: Associations with Screening, Brief Intervention, and Referral to Treatment

Jacob D. Baylis, MPH; Elizabeth Charron, PhD, MPH; Mitchell Garets, MSW; Shayla Archer, MS; M. Aryana Bryan, MSW, CSW; A. Taylor Kelley, MD, MPH, MSc;

Marcela Smid, MD, MS, MA; Gerald Cochran, MSW, PhD - University of Utah School of Medicine

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1.1 Emergency Department

Sustained Implementation of a Multi-Component Strategy to Increase Emergency Department-Initiated Interventions for Opioid Use Disorder

Margaret Lowenstein, MD, MSHP; Jeanmarie Perrone, MD; Ruiying Aria Xiong, MS; Christopher K. Snider, MPH; Nicole O'Donnell, BA, CRS; M. Kit Delgado, MD, MS - University of Pennsylvania

Background: There is strong evidence for emergency department (ED)-initiated buprenorphine for opioid use disorder (OUD), but less is known the best ways to translate this evidence into practice.

Objective: Our aim was to describe the implementation, maintenance, and adoption of a multi-component strategy for increasing OUD treatment in three urban, academic EDs in Philadelphia.

Methods:

Our strategy was designed collaboratively with interdisciplinary stakeholders to achieve three objectives: 1) increase provider motivation to initiate OUD treatment, 2) increase their ability to do so through tools and resources, and 3) identify appropriate patients to promote treatment engagement. Components included a financial incentive for providers to obtain a DATA waiver, integration of peer recovery specialists (PRSs) into clinical teams, development of treatment guidelines and order sets, and the use of automated alerts to identify patients with OUD and link them to PRSs.

We conducted a retrospective analysis of electronic health record (EHR) data for adult patients with OUD-related visits before (3/2017-11/2018) and after (12/2018-7/2020) implementation. We describe patient characteristics, treatment, and process measures over time. To assess impact on buprenorphine prescribing, we conducted an interrupted time series analysis (ITSA) and report provider-level variation in buprenorphine prescribing after implementation.

Results:

There were 2665 OUD-related visits during the study period; 28% for overdose, 8% for withdrawal, and 64% for other conditions. Overall, 13% of patients received MOUDs administered in the ED and/or prescribed at discharge. Following intervention implementation, there were sustained increases in treatment and process measures, with a net increase in total

buprenorphine use of 20% in the post-period (95% CI 16%-23%). ITSA demonstrated an immediate increase in buprenorphine treatment of 12% (95% CI 6-18%), with sustained buprenorphine use in greater than 20% of visits through the end of the study period. 90% of providers had an X-waiver, and 70% of providers wrote at least one buprenorphine prescription. However, provider-level buprenorphine prescribing rates ranged from 0-60% of OUD-related encounters.

Conclusions:

A combination of strategies to increase ED-initiated OUD treatment were associated with sustained increases in treatment and process measures. However, adoption varied widely among providers, suggesting additional interventions may be needed to drive broader uptake.

Implementation of Opioid Use Disorder Treatment Legislation in Massachusetts Emergency Departments: A Qualitative Study

William E. Soares III, MD, MS; Michael Dean, BS; Lauren Westafer, DO, MPH, MS; Elizabeth M Schoenfeld, MD, MS; Christene DeJong, MA, MA; Kerry Spitzer, PhD, MA; Peter Lindenauer, MD, MSc; Peter Friedmann, MD, MPH - University of Massachusetts Medical School - Baystate

Background: Buprenorphine is an evidenced based medication for opioid use disorder (MOUD) that reduces future mortality. In 2018, Massachusetts enacted legislation requiring all emergency departments (ED's) have capacity to treat patients with buprenorphine after an opioid overdose and directly refer to outpatient resources. Although the legislation applied to all ED's, implementation of the law was left to the individual institution.

Objective: Our objective was to understand facilitators and barriers to 2018 MOUD legislation implementation in a diverse sample of ED's across Massachusetts.

Methods: We conducted semi-structured interviews with ED physician leadership from a purposeful sample of Massachusetts based hospitals. Hospitals were stratified based on type (Academic/Teaching, Community, and Community/High Public Payer) as well as by opioid related deaths per 10,000 in the hospital's catchment area (high versus low). Participants were randomly selected from each of the six strata from July 2019 until October 2020. Interview guides were developed using the consolidated framework for implementation research. All interviews were recorded, de-identified and transcribed. Facilitators and barriers were identified and analyzed in an iterative fashion.

Results: We interviewed physician leadership from 20 of 56 adult ED's in Massachusetts, including 10 in communities with a high opioid burden, 6 from Academic/Teaching ED's, 5 from Community ED's, and 9 from Community/High Public Payer ED's. Those ED's with established MOUD programs prior to 2018, or those with grant funding listed multiple facilitators with few barriers to implementation, including: provider acceptance of the efficacy of MOUD, community resources and ease of prescribing during clinical practice. Conversely, those ED's without pre-established MOUD programs or funding, or with low community opioid

burden often struggled with implementation, citing barriers at the provider level (questioning efficacy of treatment, duty as an ED provider) and the system level (lack of community referral, risk of diversion).

Conclusions: Many ED's without pre-existing MOUD programs or funding struggled to implement 2018 MOUD legislation, citing provider and system level barriers. Enhanced clinical support for ED's with lower opioid burden and limited resources may improve implementation of the 2018 MOUD legislation.

From Research to Legislation: A Qualitative Case Study of Massachusetts' 2018 Care Act Expanding Emergency Department Initiation of Medication for Opioid Use Disorder

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Background: Initiating treatment with medication for opioid use disorder (MOUD) for individuals presenting with opioid-related overdose to the Emergency Department (ED) has been demonstrated to increase access and improve treatment retention, decrease opioid use, and is cost-effective. ED MOUD induction programs now exist throughout the US, though Massachusetts was the first state to pass legislation in 2018 mandating that all acute-care hospitals that provide emergency services must be able to provide opioid agonist MOUD for individuals presenting with opioid-related overdose.

Objective: After the governor's office introduced a bill aimed at increasing access to treatment, diverse stakeholders collaborated to craft the legislation to focus on requiring all hospitals to develop capacity to provide MOUD. We sought to characterize the formulation and policymaking process for this groundbreaking legislation, with particular attention to the role of research, personal stories, economic and public health considerations, and whether the specific needs of youth were addressed.

Methods: We conducted semi-structured qualitative interviews between August and November 2019 with 10 key stakeholders from Massachusetts involved in the policymaking process from multiple sectors including state legislative and executive government branches, hospitals and physicians, advocacy groups, and related associations. We analyzed transcripts using a hybrid inductive-deductive approach based on themes identified using an iterative process.

Results: Key themes regarding factors in the policymaking process identified included: the pressing need for action amidst an opioid overdose crisis, multiple stakeholders collaborating and cooperating, the strong role of research in demonstrating this was an evidence-based life-saving practice, overcoming concerns about feasibility and financing, the lack of consideration of youth needs, and processes taken to move towards feasible implementation. Stakeholders noted "We're in epidemic mode and we need to do something" and that "In terms of getting access to [MOUD], research is critical, I mean it's the whole ballgame."

Conclusions: These study results suggest that rather than personal stories, research supporting the effectiveness of ED MOUD induction was the driving factor in passing the Massachusetts legislation, and that the success of this legislation is attributable to diverse stakeholders collaborating towards a common goal of increasing access to evidence-based treatment in an attempt to respond to the opioid epidemic.

Implementation of Opioid Prescribing Legislation in Massachusetts Emergency Departments: A Qualitative Study

William E. Soares III, MD, MS; Michael Dean, BS; Lauren M Westafer, DO, MPH, MS; Elizabeth M Schoenfeld, MD, MS; Christene DeJong, MA, MA; Kerry A Spitzer, PhD, MPA; Peter K Lindenauer, MD, MSc; Peter Friedmann, MD, MPH - University of Massachusetts Medical School - Baystate

Background: In 2016, Massachusetts enacted legislation in response to the opioid epidemic by restricting opioid prescribing, including a 7-day limit on first prescriptions and querying an online prescription drug monitoring program (PDMP) before prescribing. While the legislation applied to all emergency departments (EDs), interpretation and implementation were left to the individual institution. Although statewide opioid prescriptions decreased after this legislation, the barriers and facilitators to implementation at individual ED's remain unknown.

Objective: Our study objective was to understand the implementation of the 2016 opioid prescribing legislation in a diverse sample of EDs across Massachusetts.

Methods: We conducted semi-structured interviews with ED physician leadership from a purposeful sample of Massachusetts-based hospitals. Hospitals were stratified based on type (Academic/Teaching, Community, and Community/High Public Payer) as well as by opioid-related deaths per 10,000 in the hospital's catchment area (high versus low). ED representatives were randomly selected from the six strata from July 2019 until October 2020. Interview guides were developed using the implementation science framework, Consolidated Framework for Implementation Research. All interviews were recorded, de-identified, and transcribed. Facilitators and barriers were identified and analyzed in an iterative fashion.

Results: We interviewed physician leadership from 20 of 56 adult EDs in Massachusetts, including 10 in communities with a high opioid burden, 6 from Academic/Teaching ED's, 5 from Community ED's, and 9 from Community/High Public Payer ED's. Facilitators included clinician acceptance of the dangers of prescription opioids and the ability to place responsibility for decisions to prescribe opioids on state law. Barriers included lack of funding for implementation, a poorly designed online PDMP interface that required clinical time to navigate and interpret, and a lack of understanding of the consequences of the law.

Conclusions: While the implementation of the 2016 Massachusetts opioid legislation was enhanced by ED provider understanding and acceptance of limitations placed on prescribing, the complicated and burdensome initial versions of the PDMP limited use. Greater emphasis on streamlining processes required during clinical care may improve future ED opioid legislation.

Addressing the Opioid Crisis Through Community Engagement: Houston Emergency Opioid Engagement System (HEROES)

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Background:

Deaths from opioid-related overdoses across the United States reached over 46,000 in 2017. 1.23% of all visits to emergency departments in the US in 2017 were attributed to opiate use, with yearly financial impacts totaling over $5 billion. Medication for opioid use disorder (MOUD) has shown to reduce mortality however there are many barriers to initiation and continuation of treatment. Over 80% of individuals with opioid use disorder (OUD) are not currently in treatment. This absence of treatment could result in increased opioid-related mortality.

Objective:

The objective of Houston Emergency Opioid Engagement System (HEROES) is to use emergency physicians as a bridge from acute presentation to long term treatment for individuals with opioid use disorder. The goal of enrolling individuals in HEROES is to successfully link them to more permanent ongoing treatment after the initial program.

Methods:

The target population of this intervention were adults who met the DSM-V criteria for OUD. These participants were referred to the program from April 2018 to December 2020 from two hospital emergency departments, recovery centers, drug courts, and local law enforcement. Patients enrolled in HEROES were provided rapid access to board-certified physicians for initiation of buprenorphine, counseling, and peer support sessions. Primary outcomes were percentage of patients who completed the 30-day program and successful linkage to ongoing treatment.

Results:

There were 775 participants who initiated treatment on buprenorphine from April 2018 to December 2020, with an average age of 36 (±9.6 years) and 52% of participants were males. At 30 days, 702/775 (90.58%) completed the program, and a majority >50% were successfully connected to a subsequent community addiction medicine physician. There was a significant improvement in health-related quality of life.

Conclusions:

Implementation of a multipronged treatment program is feasible and was associated with positive patient-reported outcomes. Lack of insurance is a predictor for treatment failure. Long wait times are common for admission to outpatient programs for MOUD, so a model like this program that

bridges the gap between acute presentation and outpatient treatment with support from peer coaches and licensed chemical dependency counselors could be promising for increasing long term treatment engagement.

Targeted Homelessness Prevention Intervention for Patients With Alcohol or Drug Use: A Pilot Feasibility Study

Kelly Doran, MD, MHS[1], **Daniela Fazio, BA**[1]; Sara Zuiderveen, MPP; Dana Guyet, MSW; Andrea Reid, LCSW - (1) NYU Langone Health

Background: We previously developed a homelessness (HL) risk screening tool (HRST) that identifies emergency department (ED) patients at high risk of next year HL. We now describe a pilot study of the first ED HL risk screening and prevention intervention. Collaborating with local government and community organizations, we delivered the intervention that further targets patients with substance use (SU) who are at heightened risk.

Objective: To test the feasibility of implementing a HL prevention intervention.

Methods: We randomly approached patients at an urban public hospital ED, May 2019 to Mar 2020. Eligible patients were adults, medically stable, not incarcerated, spoke English, had unhealthy alcohol or any drug use, and were not homeless but screened positive for risk using the HRST. The study intervention consisted of: 1) brief counseling and referral to SU treatment using a pre-existing ED program; 2) enhanced referral (email warm handoff, printed directions, MetroCard) to Homebase (HB), an evidence-based HL prevention program; 3) up to 3 troubleshooting phone calls by study staff to ensure participants accessed HB. Participants completed verbally administered surveys at baseline and 6 months.

Results: Of 2,183 patients screened, 51 were eligible; most ineligible patients screened negative on the HRST. 40 of 51 (78%) eligible participated; 1 later withdrew. Participants were diverse in age, gender, race, and ethnicity. At baseline, 29 (74%) had never heard of HB. Of the 32 (82%) participants reached at 6 months, most said it was very or extremely helpful talking to someone about their housing situation (23, 72%) and receiving resources about SU (21, 66%). 31 (97%) were satisfied with the study experience. 13 (41%) said their housing situation had improved in the past 6 months and 16 (50%) said it had not changed. 20 (62.5%) had made at least 1 contact with a HB office, 50% of whom said HB services were helpful. Participants also shared ideas on improving the intervention.

Conclusions: Despite a surge of interest in screening for patients' social needs, a dearth of research has examined ED social needs interventions. Given the known bidirectional relationship between HL and SU, addressing HL risk in tandem with SU interventions warrants future study.

Efficacy of a Novel Brief Motivational Intervention for Alcohol-Intoxicated Young Adults in the Emergency Department: A Randomized Controlled Trial

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Background: Heavy drinking among young adults is a major public health concern. Brief motivational interviewing (bMI) in the Emergency Department (ED) interventions have shown promising but inconsistent results.

Objective: To test the efficacy of a novel bMI model with in-person discussion in the ED plus up to 3 booster telephone calls using a randomized controlled trial.

Methods: Young adults (18-35 years old) admitted to the ED with alcohol intoxication (N=344) were randomized to receive either the novel bMI model or a minimal intervention (single structured brief advice in the ED). Follow-up questionnaires were conducted at 1-, 3-, 6-, and 12-months. Primary outcomes were the number of heavy drinking days (HDD, i.e. 6 standard drinks or more) over the previous month and the total score of the Short Inventory of Problems (SIP) questionnaire over the previous 3 months. Secondary outcomes included alcohol use overall (weekly drinking amount), additional alcohol consequences, change in Alcohol Use Disorder Identification Test (AUDIT) score, readmission to the ED, and alcohol treatment initiation.

Results: Using generalized estimating equations (GEE), we observed an overall increase of HDD over the follow-up time (B=0.04, 95% CI 0.02 to 0.05, $p<0.001$) and a significant time X intervention interaction (B=-0.03, 95% CI -0.05 to -0.003, p=0.03), indicating that the bMI group showed statistically less increase in HDD compared to the brief advice group. Differences were non-significant for SIP score and secondary outcomes except for alcohol treatment initiation which was significantly more likely in the bMI group over the 12-month follow-up (OR=3.70, 95% CI 1.07 to 12.78, p=0.04).

Conclusions: This study showed that a bMI model implemented in an ED context might help young adults admitted with alcohol intoxication to maintain a lower level of HDD over one year. Our intervention also increased the likelihood of initiating specialized alcohol treatment. Results were inconclusive regarding alcohol problems and consequences, alcohol use overall, alcohol use disorder scores, and readmission to the ED. Future studies will examine potential intervention effect mechanisms and/or modifiers.

Impact of an Interdisciplinary Primary Care Clinic for Veterans with Addiction on Emergency Department Visits and Hospitalizations

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Background: Patients with clinical and social vulnerabilities, such as substance use disorders (SUDs) and homelessness, often encounter barriers in traditional primary care environments and sometimes rely on the emergency department (ED) for care. The Vulnerable Veteran Innovative Patient-Aligned Care Team (VIP) Initiative, established in 2018, is an interdisciplinary, team-

based primary care delivery model designed to address the needs of Veterans with histories of SUDs, homelessness, and other medical and social vulnerabilities.

Objective: To determine changes in ED visits and hospitalizations in the 12 months following VIP, compared to the 12 months before enrollment.

Methods: We examined a Veteran cohort enrolled in VIP from March 2018-September 2019. Quarterly numbers of ED visits and hospitalizations were abstracted from administrative data in the year prior to and following VIP enrollment. Applying an interrupted time-series design, we used generalized estimating equations with negative binomial distributions to estimate changes in numbers of visits/hospitalizations and slopes over time. We explored potential differences in program effects by interacting time with VIP cohorts, hierarchically grouped as histories of high ED use (3+ visits in 12 months), homelessness, and SUDs.

Results: The cohort included 978 Veterans, 270 (28%) with high ED use, 119 (12%) with homeless experiences, and 166 (17%) with SUDs. In the overall sample, average ED visits and hospitalizations were lower in the 12 months after VIP, compared to the 12 months prior (mean ED visits=.48 vs .56, IRR=0.34; mean hospitalizations=.17 vs .21, IRR=0.23). Patterns of utilization varied over time across the VIP subgroups (interaction p's<0.001; Figure 1). Specifically, rates of ED visits and hospitalizations increased in the quarters before VIP for the specified cohorts (p's<0.05). After VIP enrollment, rates of ED visits and hospitalizations significantly declined (p's<0.001) for patients with histories of high ED use but were stable (p's>0.05) for the other groups.

Conclusions: An interdisciplinary primary care model dedicated to addressing the needs of patients with histories of SUDs, homelessness, and medical complexity reduced acute care services, particularly for patients with prior reliance on the ED, demonstrating potential for cost savings.

Figure. Emergency department visits and hospitalizations before and after enrollment in the VIP Initiative

1.2 Race, Ethnicity, Racial Disparities

Integrating Addiction and Posttraumatic Stress Disorder Care for Latinx Individuals Who Inject Drugs: Role of Syringe Service Programs

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Background: Co-occurring posttraumatic stress disorder and opioid use disorder (PTSD+OUD) is highly prevalent among Latinx who inject drugs and increases the risk of overdose and death. COVID-19 has disproportionately affected this population, exacerbating historical barriers to receiving effective care. Research indicates that co-locating PTSD and OUD treatment enhances reach and outcomes, and suggests that harm reduction centers like syringe service programs (SSPs) are promising integration sites. However, no data exists on how to tailor PTSD+OUD

treatment for Latinx who inject drugs and confront unique experiences of marginalization and stigma.

Objective: We qualitatively explored how Latinx who are living with PTSD+OUD have experienced care for each disorder, the perceived impact of COVID-19, and preferences, barriers, and facilitators for SSP-based PTSD+OUD services.

Methods: We (a multidisciplinary, bilingual Spanish/English team) recruited from three, New York City SSPs. After screening for eligibility (self-identified as Latinx; past opioid use; probable PTSD diagnosis), we administered the PTSD Checklist for *DSM-5* (PCL-5) and interviewed participants in their preferred language using a piloted, semi-structured guide. We coded in the language spoken and applied a thematic analysis framework.

Results: Interviews were completed with 13 participants (69% male; mean age = 46 [SD 9]), primarily of Puerto Rican (62%) or Dominican (24%) descent, who met PTSD criteria (mean PCL-5 score = 39 [SD 16]) and reported almost daily injection heroin use (mean days, past month = 25 [SD 9]). Participants reported extensive OUD treatment histories (mean OUD lifetime treatments = 13 [SD 11]). Fifty four percent reported no prior PTSD treatment. Participants shared that COVID-19 further disrupted their already precarious health and social care networks. Thematic analysis revealed three shared realities: sparse clinical attention to PTSD symptoms; culturally-based stigma (*verguënza*) hindering care, even at SSPs; and SSPs as "anti-stigmatizing" places of belonging and recognition. Participants expressed loyalty to their relationship with SSPs despite COVID-19 disruptions and strong interest in receiving PTSD care aligned with harm reduction principles and based in SSPs.

Conclusions: Findings underscore the potential role of SSPs to address unmet mental health needs of Latinx who use drugs and its potential for integrating PTSD+OUD care.

Debunking the Myth of Low Behavioral Risk Among Asian Americans: The Case of Alcohol Use 2002-2018

Audrey Hang Hai, PhD, MSW; Christina Lee, PhD; Rachel John, MSW; Michael G. Vaughn, PhD; Ai Bo, PhD; Patrick Ho Lam Lai, MSW; Christopher P. Salas-Wright, PhD - Tulane University

Background: The link between discrimination and alcohol use is well documented among people of color including Asian Americans (AAs) and there has been a recent surge in race-based violence against AAs during the COVID-19 pandemic. Additionally, AAs comprise the fastest-growing ethnic group in the United States. Given these events and demographic changes, it is important to understand the prevalence of alcohol use and related harms among AAs.

Objective: This study aims to systematically examine the prevalence and correlates of alcohol use/misuse among AA adolescents and adults, using up-to-date nationally representative data.

Methods: Using data from the 2002-2018 National Survey on Drug Use and Health, we examined the prevalence and psycho-social-behavioral correlates in drinking, binge drinking,

and alcohol use disorder (AUD) among AA adolescents and adults. We also estimated the prevalence of binge drinking and AUD by country of origin and nativity.

Results: The highest rates of binge drinking and AUD were observed among US-born Korean Americans (binge drinking: 26.9%, AUD: 13.1%) and US-born Filipino Americans (binge drinking: 25.9%, AUD: 6.2%). Among AA adolescents, older adolescents (15-17) had the highest prevalence of past-month drinking (10.5%), binge drinking (4.3%), and AUD (2.6%). Risk factors for AA adolescents included major depressive episodes (MDE), frequent conflicts with a parent, negative peer influence, lower grades, cigarette, marijuana, and cocaine use. Protective factors for AA adolescents were parental affirmation, religiosity, and drug prevention messages outside of school. Among AA adults, the highest rates of drinking (47.6%), binge drinking (23.0%), AUD (9.3%) were observed among young adults ages 18-25. Risk factors for AA adults included MDE, serious psychological distress, drug selling, theft, having been arrested/booked, and cigarette, marijuana, and cocaine use. Religiosity was a protective factor against drinking among AA adults.

Conclusions: Contrary to the common perception that AA is a low-risk group for alcohol problems, we found that AA young adults, US-born Korean, Filipino, and Indian Americans have a high risk for alcohol use and misuse. We also identified risk and protective factors against alcohol use/misuse among AAs. Preventions and interventions that incorporate the important risk/protective factors for AAs using a culturally sensitive approach are needed.

Predictors of Follow-Up And Treatment Initiation In A Sample Of Alcohol Positive Women Veterans: Differences After Screening

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Background: Binge drinking is associated with high rates of morbidity and mortality for women. The Department of Veterans Affairs (VA) has made efforts to establish gender-sensitive evidence-based screening and follow-up practices to address this critical problem. Yet, little is known about the quality of implementation of follow-up or treatment initiation across age and ethnicity for women veterans (WV) who binge drink.

Objective: We sought to analyze if disparities and differences in patient characteristics exist in the outcomes of follow-up and treatment initiation following screening positive for binge drinking in WV with unhealthy alcohol use. `

Methods: We conducted an observational database only study of WV age 21-65 years (N=280) who screened positive for unhealthy alcohol use (AUDIT-C $\geq$3) in one VA medical center from 2010 to 2016. We ran logistic regression to determine if there were disparities in follow-up (brief intervention and/or referral to treatment), and differences in treatment initiation (completed referral) using a modified gender-sensitive binge drinking measure. We employed a Heckman biprobit to conduct sensitivity analysis for the two-part model.

Results: Of the mostly white sample (66%), 11% were Latinx. Young adults (age 21-24 years) made up 10% of the sample. The rate of binge drinking was 62.5%. WV who binge drank were more likely to receive follow-up (OR 4.5, $p<.001$). Latinx WV who engaged in binge drinking were 70% less likely to receive follow-up compared to white WV (OR 0.3, $p <.05$). WV with referral receipt ($n=115$) were more likely to initiate treatment (OR 4.4, $p<.05$). Young adults with referral receipt, were less likely to initiate treatment compared to age groups 25-29 and 39-65 years (OR 14.5, $p <.01$; OR 11.0, $p<.05$). Results of the Heckman model were highly comparable.

Conclusions: In a sample of WV with unhealthy alcohol use in one VA medical center, disparities exist for a Latinx population in the implementation of evidence-based binge drinking practices. Young adult WV who binge drink were less likely to connect to services. Innovative strategies may be needed to reduce inequities in implementation of screening and follow-up practices for binge drinking in Latinx and young adult WV to foster health and well-being.

Content Analysis of Perspectives on Pharmacotherapy Among Urban American Indians and Alaska Natives Experiencing Alcohol Use Disorders

Cameron M. Cupp, Medical Student - Elson S. Floyd College of Medicine

- **Background**: Greater than 70% of the American Indian and Alaska Native (AI/AN) population currently lives in urban areas, and urban AI/ANs are disproportionately affected by alcohol-related morbidity and mortality. Studies in other Native communities highlight concerns about the cultural acceptability of directive, abstinence-based approaches, such as cognitive behavioral therapy and 12-step programs. However, no research to date has documented urban AI/AN perspectives on pharmacotherapy in alcohol use disorder (AUD) treatment.
- **Learning Objectives**: Understanding these populations thoughts on pharmacotherapy may help providers create more culturally appropriate, patient-centered and effective approach.
- **Case Presentation**: Patient participants ($n = 31$) were urban AI/ANs who met criteria for an AUD and participated in semi-structured interviews regarding their experiences in AUD treatment to date as well as suggestions for redesigning AUD treatment in their own vision. Additional staff, providers and management were interviewed in 5 focus groups ($n = 22$) and key informant interviews ($n = 6$). Conventional content analysis was used to create a thematic description. Although there were no specific interview prompts addressing alcohol withdrawal syndrome or pharmacological treatment for AUD, nearly one-fourth of the sample spontaneously mentioned these issues. Patient participants primarily noted symptoms of alcohol withdrawal syndrome (e.g., anxiety) were disruptive to their sleep and ability to focus on daily activities and could benefit from treatment. Some patient participants correctly noted benzodiazepines used for this purpose (e.g., chlordiazepoxide), whereas others cited buprenorphine or methadone, which are indicated for treatment of OUD and not AUD. Staff and provider participants additionally noted the potential for naltrexone to support clients in use reduction and harm reduction.

- **Discussion**: These findings highlight patient and provider interest in pharmacotherapy as an additional support for recovery but also the need for more patient education around its indicated uses. Further research with dedicated prompts assessing perceptions of pharmacotherapy, larger sample sizes, and inclusion of a broader group of Native communities is needed to more comprehensively understand perceptions of pharmacotherapy for alcohol use disorder in healthcare settings serving Native populations.

A Qualitative Analysis of Barriers to Opioid Agonist Treatment for Racial/Ethnic Minorities

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Background:

Since 1999, the public health burden of opioid use disorder (OUD) has surpassed half a million deaths. The opioid overdose mortality rate is rising fastest in the non-Hispanic black population compared to other racial/ethnic groups in the United States. Clinical guidelines strongly recommend opioid agonist treatment (OAT) as a first-line treatment for OUD. However, racial/ethnic minorities are less likely to receive OAT compared to non-Hispanic white individuals.

Objective:

Evaluate perceptions and barriers to opioid agonist treatment across racial/ethnic groups at the individual, interpersonal, community, and societal levels.

Methods:

We recruited adult patients (n=36) with OUD (not on OAT) from the Boston area. One research assistant conducted semi-structured telephone interviews. We developed a codebook through author consensus based on review of themes in initial transcripts. We performed coding and analysis in NVivo 12 Pro according to principles of grounded theory and thematic analysis. We stratified our analysis by race/ethnicity.

Results:

Our preliminary thematic analysis of interviews identifies that across all racial/ethnic categories in our sample, anticipated stigma was the most frequently reported barrier to OAT and most patients preferred non-OAT methods for treatment. White participants had more favorable opinions of OAT as compared to Black participants. Black participants reported social support as the main facilitator to addiction treatment, while white participants reported self-motivation as the most important factor. Black participants preferred treatment for OUD through “cold turkey” or residential treatment, while white participants preferred naltrexone followed by “cold turkey” methods.

Conclusions:

From a structurally competent lens, we see Black patients' distrust of medication for OUD as a reaction to historical racial abuse, neglect, and stigmatization by healthcare institutions. Black patients' preference for residential treatment suggests a desire for psychosocial and peer-recovery based care, addressing social determinants of health (e.g., lack of social support). An approach rooted in structural humility should consider limitations of medication management-only OUD care in racial/ethnic minority populations. Addiction specialists may engage these populations better with culturally tailored interventions for OUD that offer psychosocial treatment in combination with medication for OUD.

Barriers and Facilitators to Treatment for Opioid Use Disorder in Hispanic/Latinx Populations

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Background: Rates of opioid-related overdose death among Hispanic/Latinx individuals have increased significantly. We used qualitative methods to explore barriers and facilitators to treatment for OUD among Hispanic/Latinx individuals.

Objective: The goal is to inform novel, strength-based treatment approaches for OUD among Hispanic/Latinx individuals.

Methods: We recruited Hispanic/Latinx adults with a history of OUD from two residential treatment programs and one low-threshold drop-in center for people who use drugs. We conducted semi-structured interviews, in English or Spanish. We used Borkan's immersion/crystallization method and NVivo12 analysis software to identify and organize themes, applying the social-ecological model for interpretation.

Results: Thus far, we have conducted interviews with 10 individuals (60% in Spanish) of a projected 25 to 30. In accordance with the socio-ecological framework, we grouped themes into individual-level, interpersonal, and community/societal factors that were either facilitators or barriers to treatment.

At the individual level, intrinsic motivation was an important facilitating factor, with one participant saying "it just gets tired and played out after a while," and another mentioning pregnancy as an intrinsic motivating factor.

At the interpersonal level, the impact of addiction on family was a facilitator to treatment ("I lost my parents a few years ago and they were my sustenance [...] I couldn't be with them [my children] because being with them was not a good example that I was giving them by using opioids"). Some participants described their physical environment as a barrier: "if I stay in this area, I will never get clean". The same was true for their social environment, describing the "stinkin' thinkin'" of their peers.

At the community/societal level, incarceration--most commonly related to minor offenses such as possession--was cited as a barrier to treatment. Participants also described incarceration-related detoxification as harmful to long-term recovery. Additionally, strict methadone programs requirements were cited as a treatment barrier.

Conclusions: These themes are not specific to Hispanic/Latinx communities, though incarceration and its impacts are known to be inequitable. Family-oriented treatment goals, supportive environments and peer networks, carceral reform, and reducing methadone-specific barriers may improve treatment success not only in Hispanic/Latinx individuals, but for all individuals at overdose risk.

1.3 Infectious Diseases, HIV

Enrollment and Baseline Characteristics of a Prospective Cohort of Hospitalized Individuals with Opioid Use Disorder and Serious Bacterial Infections

Benjamin Bearnot, MD, MPH; Sydney Crute; Mimi Yen Li; Elyse Park, PhD; Sarah Wakeman, MD; Travis Baggett, MD, MPH; Nancy Rigotti, MD - Massachusetts General Hospital

Background:

Outcomes among people with opioid use disorder (OUD) and serious bacterial infections (SBI) are dismal, yet existing data have been largely drawn from retrospective cohorts and cross-sectional studies, limiting the evaluation of key addiction and infection outcomes. Here we report on the preliminary experiences of enrolling and retaining individuals with OUD and SBI into a prospective observational cohort study.

Objective:

To assess the feasibility of enrolling and following a longitudinal cohort of people with OUD and SBI, and to describe baseline characteristics of enrolled participants.

Methods:

We enrolled individuals admitted to a large academic hospital in Boston, MA, who had OUD as assessed by the hospital's addiction consult team and SBI requiring ≥2 weeks of antibiotics as assessed by ICD-10 codes. We interviewed participants at baseline and at 3-, 6-, 12-, and 24-weeks to assess addiction and infection outcomes. Continuous use of medication for opioid use disorder (MOUD) for ≥12 out of the past 14 days and patient directed discharges were assessed via timeline follow-back procedures and electronic health record review.

Results:

We enrolled 59 individuals during the study period (12/2019-4/2021). Among those due for follow-up, we have retained 74% for 6-weeks, 65% for 12 weeks, and 52% for 24 weeks.

Participants were 36% female, 14% Latinx, and had a mean age of 38 years (SD=8). Most individuals (61%) had multiple infectious sources. Individually, bacteremia (64%), osteomyelitis (29%), abscess (25%), and endocarditis (24%) were the most common diagnoses. Baseline demographic and clinical characteristics revealed a high prevalence of housing instability (92%), incarceration (34%), recurrent infections (80%), polysubstance use (88%), and recent injection drug use (86%). While nearly all participants were started on MOUD (97%) before hospital discharge, only 27% (3/11) of those followed for 24 weeks were on MOUD continuously without interruption or a patient directed discharge.

Conclusions:

Enrolling and following a prospective cohort of patients with OUD and SBI was feasible. The high prevalence of adverse social determinants of heath and treatment interruptions over 24-weeks illustrates the need for innovative, multifaceted treatment approaches. Further research engaging these high-risk individuals is needed.

Improving Treatment of Injection Drug Use-Related Infective Endocarditis with a Multidisciplinary Hospital Team That Includes Addiction Medicine

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Background: Injection drug use-related infective endocarditis (IDU-IE) is a complex disease with increasing incidence and a high risk of morbidity and mortality. Patients often do not receive addiction treatment as part of routine hospital-based IDU-IE care leading to poor outcomes.

Objective: To evaluate the effect of a Multidisciplinary Endocarditis Evaluation Team (MEET) involving addiction medicine, anesthesia, cardiology, cardiothoracic surgery, infectious disease, case management, nursing, and social work on initiation of medications for opioid use disorder (MOUD), completion of antibiotics, and completion of outpatient cardiac follow up.

Methods: This is a retrospective cohort study of patients with IDU-IE treated at an academic medical center that compared medical and addiction medicine outcomes between patients treated with hospital-based care coordinated by a MEET versus historical controls treated without a MEET.

Results: There were 41 patients with IDU-IE prior to MEET implementation and 29 patients with IDU-IE treated after MEET implementation. The two groups were similar in age, race, and ethnicity but differed in gender distribution (10% Female historical cohort vs 41% Female MEET cohort). Overall the two groups had similar hospital length of stay, readmission rates, follow up, and mortality at 3 and 6 months. After implementing MEET, there was a statistically significant ($p = 0.003$) increase in the number of patients started on MOUD during their hospitalization (48%) compared to the historical cohort (15%) and completion of antibiotics

(80% historical cohort vs 100% MEET cohort, p = 0.01). Outpatient cardiac follow up did not differ between the groups.

Conclusions: Patients treated for IDU-IE utilizing a MEET that includes addiction medicine specialists resulted in an increased proportion of individuals being started on MOUD during their hospitalization and completing antibiotics.

Experiences of Pain and Distress and the Acceptability of Mind-Body Therapies Among Hospitalized Patients with Opioid Use Disorder and Serious Bacterial Infections

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Background:

Serious bacterial infection (SBI) hospitalizations have surged during the opioid epidemic. Retention on medication for opioid use disorder (MOUD) among individuals with OUD and SBI is low. Mind-body therapies (MBT) are associated with significant reductions in opioid-treated pain and cravings, effects that may improve treatment retention among individuals with OUD and SBI, but MBT acceptability among these individuals is unknown.

Objective:

The study aimed to guide development of an MBT for individuals with OUD and SBI by 1) eliciting their experiences of pain, cravings, or psychological distress during hospitalization and 2) assessing their acceptability of an MBT.

Methods:

We conducted qualitative interviews within a prospective cohort study of individuals hospitalized with OUD and SBI at an academic institution in Boston, MA. Participants were sampled at selected timepoints during and after an index hospitalization. Semi-structured interviews were guided by the Theoretical Framework of Acceptability (TFA) to characterize experiences of pain, cravings, and distress, and seven domains of intervention acceptability: affective attitude, burdens, opportunity costs, ethicality, intervention coherence, perceived effectiveness, and self-efficacy. Interviews also included quantitative assessments of privacy, internet, and video-conferencing availability.

Results:

Of 59 participants enrolled in the prospective cohort between 12/2019 and 04/2021 (mean age 38, 36% female, 85% white), 97% of 36 individuals approached for an MBT-acceptability interview agreed to be interviewed. 10 (mean age 37, 40% female, 90% white) were recruited for interviews in 02/2021. Participants reported high pain and distress levels and moderate OUD cravings during hospitalization and post-acute care. Participants held positive attitudes toward MBT and its effectiveness for pain and distress, had limited concerns around participation

burdens, considered MBT to be in line with their goals of developing coping mechanisms and greater self-awareness, and articulated confidence in their ability to complete an 8-session MBT program. 90% indicated interest in initiating MBT during a hospitalization. 100% had access to a video-conferencing device, 90% to a private location, and 80% to internet.

Conclusions:

Hospitalized patients with OUD and SBI reported high levels of pain, distress, and cravings during hospitalization and post-acute care. The idea of a remotely-delivered mind-body intervention had high acceptability among these individuals.

A Case of Skin-Popping and a Sore Ankle: Lessons in Injection-Related Harm

Surabhi Nirkhe, MD - University of California, San Francisco

Background: Skin and soft tissue infections are a common complication of injection drug use, leading to significant morbidity and mortality. Studies show that people who inject drugs (PWID) are familiar with self-treatment methods for wounds and abscesses and can often identify signs of infection. However, stigma and trauma often deter PWID from seeking healthcare when they develop complications. Adverse outcomes can be compounded by limited knowledge among healthcare providers regarding injection techniques and their complications.

Learning Objectives:

-Describe skin-popping and its associated risks

-Develop a respect for the lived experience of PWID

Case Presentation: A 55 year old man with a history of opioid and stimulant use disorder presented to the hospital with one week of left ankle pain. He injected heroin into his forearms via skin popping, resulting in chronic wounds. He self-managed his wounds with medihoney and hydrocolloid dressings and intermittently accessed care for superimposed cellulitis. In the emergency room, a left leg ultrasound was negative for DVT and X-rays ruled out osteomyelitis. He was admitted for bilateral arm cellulitis. Many hours later, the admitting team found that he had extreme pain with passive and active motion of his left ankle. Labs showed an ESR of 73 and CRP of 162. A diagnostic arthrocentesis revealed a WBC of 90K consisting of 97% neutrophils. He was taken to the OR for a joint wash-out and final synovial fluid cultures grew MSSA. He did not require further treatment for his arm wounds.

Discussion: ‘Skin-popping’ describes the injection of a drug either subcutaneously or intradermally. This method is chosen for various reasons, ranging from difficult venous access to a desire for slower drug uptake. The obvious risks of skin popping include cellulitis and abscess, but it is also important to recognize its pernicious complications-- necrotizing fasciitis, botulism, secondary amyloidosis, and transient bacteremia causing hematogenous spread. In this case, the focus on chronic arm wounds delayed the diagnosis of septic arthritis, which had been the patient’s chief complaint. A respect for the lived experience of PWID together with improved

education of patients and providers regarding the risks of various injection techniques can expedite treatment of complications.

Promoting Treatment of Hepatitis C Among People Who Use Drugs in Washington State.

Jocelyn R. James, MD[1], Judith I. Tsui, MD, MPH[1]; Emalie Huriaux, MPH; Jon Stockton, MHA - (1) University of Washington

Background: An epidemic of hepatitis C (HCV) infection has emerged in the US among young people who use drugs (PWUD), particularly opioids. Meanwhile, direct-acting antiviral medications have made curing HCV relatively straight-forward and led to campaigns to eliminate HCV as a public health threat. Promoting HCV treatment among PWUD is a priority of Washington State's "HCV Free Washington" initiative.

Objective: We aimed to prepare buprenorphine waiver trainers to educate waiver trainees about the importance and effectiveness of HCV treatment among PWUD.

Methods: We developed a 45-minute module on HCV treatment among PWUD then conducted train-the-trainer sessions for buprenorphine waiver trainers to prepare them to present this module in conjunction with buprenorphine trainings. We also presented the module at other addiction-related training events. We surveyed participants of the initial sessions regarding knowledge and attitudes about HCV treatment among PWUD. We provide descriptive data on initial outcomes.

Results: Four train-the-trainer sessions were conducted from January to March 2021 involving 12 participants from Family Medicine, Internal Medicine, and Psychiatry. To date, three trainers have presented the module in association with waiver trainings. In post-session surveys of an initial round of attendees, 11 of 20 (55%) respondents reported changed views on the importance of treating HCV among PWUD. All respondents agreed that treating HCV among PWUD is important to public health and 18/20 (90%) agreed that they felt confident to treat uncomplicated HCV. Thirteen of 20 (65%) reported intent to treat HCV, 5/20 (25%) reported they would "maybe" do so, and 2/20 (10%) reported they did not intend to treat HCV.

Conclusions: A statewide initiative to train buprenorphine waiver trainers to also conduct HCV treatment modules was well-received. Participants of HCV sessions offered in conjunction with addiction trainings agreed that treating HCV among PWUD is important and reported confidence treating HCV; more than half reported their views were changed by the session. This innovation could be upscaled to reach more buprenorphine waiver trainers, previously waivered prescribers, and others providing substance use care.

Examining the Patient-Provider Relationship in the Bravo Study on HIV and Opioid Use Disorder Treatment In Vietnam: A Qualitative Study

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Background:

The provider-patient relationship has been implicated as a positive force in healing, treatment satisfaction, and health outcomes, including outcomes and adherence for antiretroviral therapies and methadone maintenance treatment (MMT) for patients with HIV and opioid use disorder (OUD), respectively. Understanding provider-patient relationships as it relates to HIV and OUD care in Vietnam could prove valuable to determining viability of and barriers to an integrated care model.

Objective:

To examine the provider-patient relationship in the setting of integrated OUD and HIV treatment in North Vietnam.

Methods:

As part of the BRAVO study comparing HIV clinic-based buprenorphine with referral to MMT, we conducted face-to-face qualitative interviews with 44 patients living with HIV and OUD enrolled at 4 HIV clinics in Hanoi, Vietnam, and 43 providers (nurses, physicians, counselors, pharmacists, clinic managers) in 8 HIV clinics across northern Vietnam. Interviews were performed between 2013 and 2018; they were professionally transcribed, coded in Vietnamese, and analyzed using a semantic, inductive approach to qualitative thematic analysis.

Results:

Several themes were identified: 1) Stigma towards patients, mostly related to their OUD, led providers to fear violence from patients and patients to experience frustration from provider comments 2) Patient-provider relationships were initially superficial but deepened over time, facilitated by treatment integration and perspective-taking 3) Patients valued provider competence, and perceived this as improving as integrated treatment offered providers a better understanding of patients' health problems and providers became more skilled at navigating interpersonal interactions with patients with OUD.

Conclusions:

The perception of competence and reduced stigma from providers were important to patients feeling cared for during treatment. For providers, improved attitudes and competence came with more experience working with patients with OUD and HIV.

Impact of Alcohol Use Disorder Severity on HIV Viral Suppression and CD4 Count in Three International Cohorts of People Living With HIV

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Background:

Alcohol use has been linked to HIV outcomes through biological effects or effects on antiretroviral medication adherence, but few have explored the effects of alcohol use disorder (AUD) on outcomes.

Objective:

This study assessed the cross-sectional associations between AUD severity and HIV viral suppression and CD4 count in the cohorts of the Uganda Russia Boston Alcohol Network for Alcohol Research Collaboration on HIV/AIDS (URBAN ARCH).

Methods:

People living with HIV (PLWH) from Uganda (n=301), Russia (n=400) and Boston (n=251) were included. Logistic and linear regressions were used to assess the associations between AUD severity (number of DSM 5 criteria) and HIV viral suppression and CD4 count, adjusting for sex, age, marital status, education level, employment, current use of opioids, cannabis, stimulant and tobacco.

Results:

Proportion of females was 51% (Uganda), 34% (Russia) and 33% (Boston); mean age (SD) was 40.7(9.6), 38.6(6.3) and 52.1(10.5) respectively. All but 27.3% in Russia and 5.2% in Boston were on ART. Mean number of AUD criteria was 1.6(2.4) in Uganda, 5.6(3.3) in Russia and 2.4(3.1) in Boston. Viral suppression was achieved in 92% of the sample in Uganda, 57% in Russia and 87% in Boston; median (IQR) CD4 count was 673(506;866), 351(201;542) and 591(387;881) respectively. In adjusted models, there was no cross-sectional association between AUD severity and HIV viral suppression: OR (95%CI) per 1 additional AUD criteria in Uganda 1.08(0.87;1.33); Russia 0.98(0.92;1.04); Boston 0.95(0.84;1.08) or CD4 count: beta (95%CI) per 1 additional criteria: 5.78(-7.47;19.03), -3.23(-10.91;4.44) and -8.18(-24.72;8.35) respectively.

Conclusions: In three cohorts of PLWH, we did not find an association between AUD severity and HIV viral suppression or CD4 count. PLWH and AUD can achieve virologic control and AUD does not appear to be associated with HIV viral suppression and CD4 count.

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1.4 Impact of COVID Session 1

An Unfreezing Moment: Reflections on the Impacts of the COVID-19 Pandemic on Overdose Prevention, Harm Reduction & Homelessness Advocacy in Philadelphia

Shoshana Aronowitz, PhD, MSHP, FNP-BC[1], **Margaret Lowenstein, MD, MSHP**[1]; Eden Engel-Rebitzer, BA; Zachary Meisel, MD, MSHP; Evan Anderson, JD, PhD; Eugenia South, MD, MSHP - (1) University of Pennsylvania

Background:The COVID-19 pandemic and ensuing service delivery interruptions had serious impacts on people who use drugs (PWUD) and people experiencing homelessness, including instability in the drug supply, decreased access to substance use disorder (SUD) treatment and harm reduction supplies, increased substance use and relapse due to stress and isolation, inability to properly isolate and quarantine without stable housing, and risk of COVID-19 spread in congregate living spaces. At the same time, many have noted a potential opportunity for rapid change in health and drug policy—an "unfreezing moment" or punctuated equilibrium—in response to the pandemic.

Objective: The aim of this study was to explore how the COVID-19 pandemic impacted the work of harm reduction advocates, community organizers, and SUD treatment clinicians in Philadelphia, and how they predict that the pandemic-related changes to their work can inform future directions of overdose prevention, harm reduction efforts, and homelessness advocacy.

Methods: In this qualitative descriptive study, we conducted one-on-one, semi-structured, in-depth interviews with 30 harm reduction advocates, community organizers, and SUD treatment clinicians during July & August 2020 and used thematic analysis to analyze the data.

Results: The analysis of these data yielded three themes: 1/ "None of it should be new to anybody": COVID-era issues impacting PWUD and people experiencing homelessness are extensions of existing problems; 2/ "An opportunity to actually benefit in some way from this crisis": Possibility for innovation and improved care for PWUD and people experiencing homelessness; and 3/ "Nothing we've tried has worked, so we have to be uncomfortable and creative": The uncertain path forward.

Conclusions: Despite the many barriers that participants faced to promoting the health and well-being of PWUD and people experiencing homelessness during the pandemic, they also believed that the pandemic presented an "unfreezing moment," or an important opportunity for positive policy change that has the potential to promote drug user health into the future, including a continuation of loosened federal restrictions on substance use disorder treatment, legalization of safe consumption spaces, safe supply of substances, and progressive, creative housing solutions.

Comparison of Office-Based Buprenorphine Treatment Outcomes Before and During the COVID-19 Pandemic in Bronx, New York

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Background: New York City, particularly the Bronx, was an early epicenter of COVID-19 in the US and experienced drastic changes to health care delivery in Spring 2020, including overflowed hospital capacity, clinic closures, and staff redeployment. The Bronx has also been a historic epicenter for opioid use disorder (OUD) and overdose mortality, which continued to worsen in 2020. Few studies have examined buprenorphine treatment outcomes in the context of colliding public health crises.

Objective: To compare office-based buprenorphine treatment (OBOT) outcomes before and during the COVID-19 pandemic in Bronx, New York

Methods: We conducted a retrospective study of all patients with OUD referred to an OBOT program within a large urban health system between March to August 2019 ("before COVID-19") vs. March to August 2020 ("during COVID-19"). The OBOT program, which encompasses seven community clinics throughout the Bronx, rapidly transformed to telemedicine visits for all patients and halted urine drug testing during COVID-19. Referral, visit, and buprenorphine prescription data were extracted from the program database and electronic health record. Outcomes were proportion of referred patients who scheduled intake visits, initiated treatment (≥1 buprenorphine prescription on/after intake visit), and remained in treatment at three-months (≥1 prescription at 90 days after initiating treatment).

Results: 72 patients were referred before COVID-19 compared to 35 referred during COVID-19. Most patients referred to OBOT were middle-aged (mean age 45 vs 47), male (68 vs 66%), and racial minorities (71 vs 74% Black/Latinx) in both periods. Patients referred before COVID-19 were more likely to be publicly insured or uninsured (86 vs 67%, p=0.03) and from outpatient settings (81 vs 63%, p=0.05) than those during COVID-19. The proportion of referred patients who scheduled intake visits (86 vs 77%, p=0.24), initiated treatment (78 vs 71%, p=0.47), and remained in treatment at three-months (33 vs 46%, p=0.21) were not significantly different before vs. during COVID-19.

Conclusions: Rapid transformation of OBOT with telemedicine visits-for-all and halted urine drug testing did not lead to worse outcomes during the COVID-19 pandemic in the Bronx. As opioid overdose mortality worsens, policies and practices that lower the threshold to OUD treatment must be extended beyond the duration of COVID-19.

Early Treatment Retention Among New Intakes at an Urban Opiate Treatment Program During the COVID-19 Pandemic

Scott Steiger, MD[1], **Oanh Kieu Nguyen, MD, MAS**[1]; Matthew Perrotta, BS; Brad J Shapiro, MD - (1) University of California, San Francisco

Background: During the COVID-19 pandemic, opiate treatment programs (OTPs) sought to reduce risk of viral transmission while maintaining access to life-saving medication. In March

2020, our OTP moved most medication dispensing outdoors, suspended random urine drug testing, delivered medication to patients in quarantine, and increased take-home doses of medication. With the exception of the limited intake physical exam mandated by SAMHSA, almost all counseling and medical provider visits were conducted via telehealth.

Objective: We sought to assess the impact of the pandemic and pandemic-related service changes on intakes to treatment and their 60-day retention in treatment at our OTP to guide ongoing quality improvement.

Methods: We used OTP electronic health record data to assess the number of new intakes from March-August 2020 compared to a historical control (March-August 2019). We assessed 60-day retention in treatment and stratified retention by fentanyl presence in urine drug screening (UDS) at intake.

Results: The number of intakes in 2020 was similar compared to our historical control (n=162 vs. 157), with a 60-day retention rate of 59.3% in 2020 vs 65.6% in 2019 (p=0.25, ARR 6.3%) and an unadjusted HR 0.82 (95% CI 0.46-1.18) of 60-day retention in 2020 vs. 2019. The proportion of UDS with fentanyl present increased from 30.1% in 2019 to 54.7% in 2020 (p<0.001). After adjusting for fentanyl presence, the adjusted HR of 60-day retention was 0.93 (95% CI 0.5 -1.31) in 2020 vs. 2019.

Conclusions: Our findings suggest that our robust, multifaceted COVID response allowed us to maintain access to OTP services during the early COVID-19 pandemic. Intake UDS results reflect the increased availability of fentanyl in our community over the same period. We observed a small decrease in 60-day retention among new intakes which was strongly associated with fentanyl presence in intake UDS. The successful clinical structural changes described here may serve as a model for future emergency responses, while the next phase of quality improvement efforts will target retention in treatment among patients who use fentanyl.

Understanding Substance Use, Perceived Overdose Risk, and Coping Strategies in Low-Income People With Opioid Use Disorder Through COVID-19 Pandemic - A Qualitative Study

Andres E. Perez-Correa, MD; Bilal Abbas, MPA, MSW; Lindsey Riback, MPH; Megan Ghiroli; Teresa López-Castro, PhD; Aaron Fox; MD, MS - Albert Einstein College of Medicine

Background:

After large scale disasters, whether man-made or natural, traumatic events can lead to depression, anxiety, and substance use. Overdose deaths have increased during the COVID-19 pandemic, but reasons for these overdoses are unknown.

Objective:

We examined how COVID-19 and resulting public health restrictions affected substance use among low-income people with OUD. Specifically, we investigated stressors, coping mechanisms, and perceived risk of opioid overdose throughout the pandemic.

Methods:

We conducted semi-structured interviews with 13 participants at an urban syringe services program (SSP). Due to COVID-19 restrictions, interviews were conducted by phone or in person. We developed an interview guide exploring SSP participants' daily routines, substance use, responses to safety guidelines, ways of coping with stress, and perceptions regarding overdose risk. All interviews were audio-recorded and professionally transcribed. A grounded-theory approach was used to analyze the interviews.

Results:

Most participants were middle-aged, male, Hispanic and received either methadone or buprenorphine treatment for OUD. Common themes were: 1.Loneliness and social isolation; 2. Increases in non-opioid substance use to cope with stress; and 3. Difficulty accessing supportive services, such as the SSP or health care providers. However, there were two contrasting patterns of opioid use and perceived overdose risk. Some participants increased opioid use during the pandemic due to loneliness: *"Basically, it means that when you're not busy doing things and you just have time to kill...The level of depression, the isolation itself increases the use."*. Others reported "staying home" more and reducing illicit opioid use: *"...I've been doing better due to that COVID...I was scared to go outside...I've been pretty much been staying away from heroin."*.

Conclusions:

Participants described resiliency in coping with stressors, but they also relied on services and positive social networks based in programs that were closed due to COVID-19 restrictions, which impacted mental health and possibly overdose risk. Other factors that may have affected overdose risk, such as changes in drug supply (e.g., fentanyl contamination) could not be captured by our qualitative methods. Public health guidelines during COVID-19 have emphasized social distancing to reduce viral transmission; however, future emergency plans should have more nuanced contingencies for populations vulnerable to harms from social isolation.

"I'll Do What I Got to Do to, Just to Keep Safe" – Patient Perceptions of COVID-19 Pandemic Policy Changes and Recovery Support at Opioid Treatment Programs in Rural Oregon

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Background: In response to the COVID-19 public health emergency, federal agencies announced in March 2020 changes to regulations around take-home methadone dispensing at opioid treatment programs (OTPs) in order to improve access to addiction treatment and reduce disease transmission.

Objective: We explored OTP patient perceptions on how these announcements were received and implemented in rural communities and how these policy adjustments and the COVID-19 pandemic impacted their addiction treatment and recovery.

Methods: Semi-structured individual qualitative interviews were completed in 2 phases, the first between August and October 2020 with 22 patients and second between November 2020 and January 2021 with 24 patients (total n=46) receiving methadone for opioid use disorder (OUD). We recruited patients with varying take-home methadone frequencies and duration of treatment engagement from 3 OTPs in rural Oregon communities. All interviews were conducted via phone, audio-recorded, and transcribed verbatim. Transcriptions were then coded, with codes generated both deductively and inductively. We analyzed data using directed content analysis in an iterative process to identify themes.

Results: Analysis revealed four main themes: 1) Balancing safety from COVID-19 infection with priority of managing OUD, 2) Navigating rule changes as the pandemic progressed, 3) Adjusting to counseling and support groups via telemedicine or virtual platforms and 4) Recognizing future opportunities for OTP policies post-pandemic. Participants reported following recommendations to avoid SARS-Co-V2 infection and prevent transmission to family or other OTP patients. Some noted how OTPs were reversing blanket exceptions to methadone take-home dosing made earlier in the pandemic, despite feeling they were "following the rules" and things were currently "more risky." Telemedicine and virtual groups were "basically the same" as in-person encounters for some. However, others expressed strong preference for counseling conducted "face-to-face" while some preferred phone, independent of COVID-19 safety concerns. Participants desired a "return to normal," however also wanted continuation of flexible policies implemented during the pandemic.

Conclusions: The COVID-19 pandemic highlights the resilience of patients in rural communities with OUD in adjusting to changing OTP policies and procedures necessary in maintaining safe services and engagement in addiction treatment. Participants voiced desire for input in future OTP policies.

"When Other Places Were Closing Their Doors Because of COVID-19, We Were Opening Ours": Recovery Housing in Missouri During the Lockdown

Claire A. Wood, PhD; Alex Duello, MPH, Paul Thater, BS, Brittany Blanchard, MPH, Candice Woolfolk, PhD, Rachel Winograd, PhD - University of Missouri - St Louis

Background: Recovery housing supports individuals' recovery by providing stable living environments and fostering social connection. Although many treatment providers closed or operated with limited hours during the initial months of COVID-19, it is unclear the extent to which there were similar disruptions in recovery housing services.

Objective: Examine differences in recovery housing utilization during the first four months of COVID-19 (March–June 2020) relative to same four months in the year prior (March–June 2019).

Methods: We utilized state billing and service data to analyze treatment episodes for uninsured individuals with opioid use disorder and examined differences in recovery housing use by type of treatment program, State Opioid Response (SOR) or Non-SOR, across comparable 2019 and 2020 timeframes. We examined the proportion of individuals receiving housing, the total number of housing nights across all treatment episodes, and the average number of housing nights per treatment episode.

Results: Results demonstrated an increase in the proportion of treatment episodes involving recovery housing during COVID-19 relative to the year prior, although this increase was primarily driven by SOR treatment episodes, not Non-SOR treatment episodes. Average number of housing nights per treatment episode as well as total number of housing nights across all treatments episodes (7,143 vs 4,111) increased during COVID-19 relative to the year prior. Although overall access to recovery housing increased to a greater extent among SOR treatment episodes, both SOR and Non-SOR treatment episodes evidenced large increases in the average number of recovery housing nights per treatment episode during COVID-19.

	Percent of Treatment Episodes Involving Housing		Avg. Housing Nights per Treatment Episode	
	March-June 2019	March-June 2020	March-June 2019	March-June 2020
Non-SOR	3.0%	3.2%	19.9	35.2
SOR	4.8%	11.0%	42.2	51.6
Overall	3.7%	6.0%	32.4	46.1

Conclusions: Results support anecdotes from housing providers at the beginning of COVID-19 indicating they increased access to recovery housing while other service providers closed. Follow-up analyses are needed to determine the extent to which increased access to – and longer stays within – recovery housing served to buffer other COVID-19 challenges (e.g., loss of employment, social isolation) and the impact of recovery housing on continued engagement in treatment.

"There's a Stereotype But There's a Lot of Good:" Clients' Perspectives on Changes to Opioid Treatment Program Services During COVID-19

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Background: Regulations governing methadone treatment at opioid treatment programs (OTPs) require frequent attendance for observed dosing. To mitigate COVID-19 spread at OTPs, regulations around provision of unsupervised "take home" doses were substantially loosened in

March 2020. These OTP policy changes provide an opportunity to examine the effects of more flexible methadone administration strategies.

Objective: To describe the impact of increased “take home” methadone doses, remote counseling, and other OTP changes on patients’ experience of care.

Methods: Between June and August 2020, we recruited participants receiving methadone treatment in a single Bronx, NY OTP from an ongoing tobacco treatment trial. We conducted in-depth, semi-structured interviews addressing: perceptions of COVID-19-related OTP changes, benefits and challenges associated with these changes, and their effects on substance use and recovery. Interviews were coded by a multidisciplinary study team within a deductive framework and interpreted using thematic analysis.

Results: Our sample (n=18; mean age 55 years (SD 8); women 55%; Latinx 55%; Black 33%, white 11%) had a mean of 8 years (SD 6) of methadone treatment and mean dose of 100 mg (SD 57) daily. Overall, participants responded to fewer in-person requirements with appreciation and relief. Participants shared unique trajectories of transition from traditional OTP services to remote-based care prompted by COVID-19. We identified three interrelated tensions within this collective process of adaptation: 1) Many voiced missing the social supports of peers and staff at the OTP yet feeling liberated from time and travel burdens. 2) Reduced face-to-face interactions meant community-rooted OTP strengths like accountability and pride in recovery had to be re-built by each participant, leading to newfound coping strategies and resilience as well as drug-use-related risks. 3) Stigma and shame associated with OTP were also transformed; many felt emancipated while others remained frustrated by "take home" protocols that were perceived as arbitrary and punitive.

Conclusions: OTP recipients experienced COVID-19 exemptions to strict attendance requirements as disrupting structural and stigma-based barriers to OTP care. Findings suggest potential modifications to OTP that may bolster patient agency and facilitate greater engagement and treatment satisfaction.

1.5 Telemedicine, Technology, Education

Perceived Usability of a Mobile App to Deliver Telehealth-Based Medication Treatment for Opioid Use Disorder

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Background: People with opioid use disorder (OUD) have long faced barriers to entering and staying in treatment (*e.g.* stigma, poor interactions with health care, privacy concerns, time conflicts, poor treatment availability, housing instability, and absence of social support), many of which have been amplified by the COVID-19 pandemic. Telehealth has the potential to eliminate many barriers to care.

Objective: To evaluate the usability of existing and planned features of our mobile application (app) used to deliver treatment for OUD via telehealth and to incorporate patient feedback into app design improvements.

Methods: Participants with history of treatment for OUD were recruited via paid Twitter advertisements, flyers in clinics, and word-of-mouth for a virtual, in-depth focus group or focused interview. Participants provided feedback on a series of app screen shots and responded to a follow-up survey about the perceived usability of the app and various features.

Results: Participants (N=30) were from the Northeast (n=15), Oregon (n=9) and Ohio (n=6), and primarily white (77%) with a mean age of 41.8 (range 22-69) and had an average of 4 prior OUD treatments episodes. Participants identified prior barriers to treatment such as difficulty finding a provider/treatment program in their location and transportation. Overall, participants perceived the app to be "completely" or "very" easy to use (90%) and appealing (87%) and thought they would be "very" comfortable (84%) using the app. Participants rated the main features of the app (ability to chat securely with care team, telehealth visits) very helpful and appreciated the flexibility of being able to have a visit from almost anywhere. Most participants (83-93%) deemed components such as daily affirmations and medication treatment-related reminders (*e.g.* pick up medication at pharmacy, take medication*)* as useful features, and 83 reported they would recommend others to receive care for OUD via the app.

Conclusions: Patients with OUD continue to experience barriers to treatment. Our app was perceived to be simple to use and shows promise for acceptability. Provision of care for OUD via mobile technology is convenient and has the potential to reduce or eliminate many barriers associated with treatment.

Attitudes of Individuals in Substance Use Treatment Towards the Use of Mobile Phone Technology and GPS Tracking in Research on Substance Use Disorders

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Background: Smartphone apps have the potential to yield greater insight into and curtail triggers that precipitate return to use. Smartphone ownership and use are widespread among persons in substance use treatment and persons enrolled in treatment programs express interest in the use of recovery-promoting apps. To our knowledge, no research to date has explored participant perceptions of mobile phone tracking and surveillance.

Objective: This project aimed to identify how individuals in substance use treatment perceive the use of mobile phone technology (e.g., GPS tracking) in research to understand how to effectively recruit this population into an ongoing study (Project RENEW).

Methods: We conducted 30 semi-structured interviews in September and October 2019 among individuals in substance use treatment. Half these interviews were held in a small urban area in

southcentral Connecticut, and half in a rural area in northeastern Georgia. Interviewers described a study where participants consented to download a smartphone app that shares their GPS location with researchers and would also send a daily survey. Participants shared their perceptions of this study and described their willingness to participate in such a study. Participants also provided feedback on an existing app prototype. Thematic analysis was used to identify themes related to the research aims described above.

Results: We identified four themes. Participants: 1) described a range of comfort and experience with the use of smartphone technology; 2) rarely vocalized concern with GPS tracking features of our study, though nearly all posited that others might have this concern; 3) often confused research with intervention, focusing on the potential therapeutic effects of study participation; and 4) overwhelmingly expressed interest in participating in the study in order to promote recovery among themselves and others.

Conclusions: Despite the apprehension of treatment staff and the research team, few participants expressed concerns about GPS tracking. Providing education around how GPS tracking in research works and emphasizing the potential benefits of such research projects are key strategies for effective recruitment and engagement of people with substance use disorders. Mobile phone apps using GPS tracking present an opportunity to study the factors leading to use and return to use in real time.

The Dynamicare Solution for College Students: Evaluating Acceptability and Impact on Nicotine, Alcohol and Cannabis Use

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Background: Alcohol and other drug use continue to pose significant problems on college campuses despite a wide range of evidence based intervention efforts. In addition, interventions such as contingency management can be challenging for programs to deliver as they can be labor intensive.

Objective: Participants will become more familiar with the use of smartphone technology applications for intervening with substance use including their acceptability and effectiveness among college students.

Methods: As part of a college health center's SBIRT efforts, students identified iwth risky substance misuse were offered the opportunity to enroll for smartphone-based contingency management (CM) offering a) facetime recovery coaching, b) remote biometric substance monitoring, c) wellness-based activity scheduling, d) CBT modules and e) "smart bank" incentives. Data were collected on activity completion, program satisfaction, performance on biometric testing and self-reported reductions in substance use and related consequences.

Results: Over the period of 18 months, 25 college students were enrolled in the Dynamicare pilot (mean age = 20.5; 36% female, 16% nonbinary, 48% male). Students completed 92% of scheduled wellness activities and attended 89% of their recovery coaching calls. Students earned

and average of $40 per month that was held in a smart bank for them to make electronic purchases. Overall, students reported strong satisfaction with the Dynamicare app, indicating that they found the recovery coaching and monetary incentives the most helpful in addressing their substance use. On average, students completed 64% of scheduled tests within the time period scheduled and were successful on 51% of the scheduled tests (77% of completed tests). T-tests demonstrated significant reductions in cannabis use as measured by the Cannabis Intervention Screener (X_1=7.2 & X_2=5.0, range=0 to 10, t=3.1, p<.01) and nicotine use as measured by frequency of use (X_1=3.1 & X_2=2.3, range=0 to 4, t=3.4, p<.01). While reductions were seen in alcohol use as measured by changes in scores on the Alcohol Use Disorders Identification Test, the decrease did not achieve significance. Additional findings on reductions based on identified substance goals will be shared.

Conclusions: Among college students, Dynamicare shows promise as a potential intervention to reduce substance use. Further research is needed to examine outcomes more fully.

Increasing Knowledge and Decreasing Negative Attitudes Towards Treating Patients With Opioid Use Disorder Amongst a Medical Student Cohort

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Background: Current literature suggests that stigma[1,2] and insufficient education[3] are barriers to effectively caring for individuals with opioid use disorder (OUD). With recent policy changes eliminating the 8-hour X-waiver training requirement, it is imperative that educators develop and evaluate medical student curricula that improve knowledge on treating OUD while also decreasing negative attitudes and stigma towards this patient population.

Objective: We aimed to develop and evaluate the effectiveness of a 4-hour workshop for third-year medical students on increasing knowledge about OUD and appropriate MOUD use and decreasing OUD stigma.

Methods: Third-year medical students at a large Midwestern university completed a mandatory hybrid workshop involving 2.5 hours of asynchronous online lecture videos on topics including the history of the opioid epidemic and treatment legislation, stigma toward chronic pain and OUD, and appropriate use of MOUD; and a 1.5-hour small-group virtual case discussion covering medication choices, stigma against agonist treatment, and avoiding stigmatizing language. Likert scales on pre- and post-surveys were used to assess student satisfaction, knowledge, interest in prescribing buprenorphine, comfort diagnosing and treating OUD, and stigma via items adapted from the Drug Problems Perceptions Questionnaire, such as “I often feel uncomfortable when working with patients with OUD.”4 Descriptive analyses were conducted, with t-tests used to evaluate significance.

Results: 145 students attended the workshop, with 120 (83%) completing the pre-survey and 115 (79%) completing the post-survey. 108/115 (94%) were very satisfied or satisfied with the workshop. Among the 98 (68%) who completed both surveys, student interest in prescribing buprenorphine increased from a score of 1.79/5 to 2.08/5 (*P* = .004), comfort diagnosing

increased from a score of 2.96/5 to 3.69/5 (P <.001) and treating OUD increased from 2.63/5 to 3.41/5 (P <.001). The percentage of total knowledge questions answered correctly increased from 13% to 46% (P <.001). Endorsement of stigmatizing attitudes decreased significantly on all 5 stigma-related questions.

Conclusions: Our results highlight the effectiveness of a 4-hour hybrid workshop in increasing knowledge and interest in prescribing buprenorphine while decreasing stigma towards OUD. This curriculum addresses an important need in undergraduate medical education to train learners to diagnose and treat OUD while decreasing bias.

An Exploratory Study of Medical Students' Knowledge, Preparedness, Attitudes and Perceptions of Treating Patients with Addiction

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Background:

Most physicians regularly encounter patients with addiction, yet research suggests that healthcare providers feel inadequately trained to care for this population. Addiction education in medical school is imperative for training physicians to provide high-quality care.

Objective:

Our objective was to characterize medical student knowledge and attitudes towards patients with addiction to facilitate curriculum improvements and the current state of medical school addiction curriculum.

Methods:

A 39-question anonymous, voluntary, online survey was administered via school-specific communication channels to 3rd/4th year students at 29 medical schools through Qualtrics. The survey explored students' experiences, knowledge of, and attitudes towards patients with addiction. Student-reported data on medical school curriculum was collected from collaborating schools.

Results:

The survey had 848 responses, response rate=9.5% (848/8890), completion rate=82% (696/848); 74% (599/809) of students desired more education on substance use disorders (SUD); only 55% (421/759) reported feeling that they know enough about the causes of addiction. A minority demonstrated comprehensive knowledge about opioid use disorder (OUD): 27% (213/773) recognized that clinicians outside of an opioid treatment program require an X-waiver to

prescribe buprenorphine; only 40% (315/773) identified buprenorphine as a preferred treatment to manage OUD. While 75% (619/809) reported being on a clinical team that initiated medication for treatment of SUD, just 50% (439/808) reported seeing/participating in harm reduction, and only 33% (251/762) reported feeling comfortable administering/teaching patients to administer naloxone. Only 41% (316/761) reported feeling comfortable counseling patients with SUD and 65% (499/762) reported finding working with this population rewarding. The student-reported curriculum review indicates that most schools do not emphasize teachings on addiction medicine: the median number of hours of addiction-related teaching was 7 hours, mean=10.6, 95% CI [6.7,14.2]; only 57% (17/30) of medical schools offered addiction electives; few schools, 17% (5/30), require students to have clinical exposure to addiction medicine on clerkships.

Conclusions:

This exploratory study demonstrates that students may lack core knowledge regarding OUD and harm reduction strategies; our review of medical school curriculum suggests that addiction medicine may not be emphasized sufficiently. To improve student readiness to treat patients with SUD, we propose curriculum development that stresses the importance of understanding and treating addiction.

Clinical Experience in Addiction Treatment Facilities As a Strategy to Positively Influence Nursing Student' Attitudes Towards AUD and Related Issues

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Background: Alcohol use disorders remain among the pathologies most rejected by nursing students, reflecting in their negative attitudes and representations towards people suffering from this disorder. One reason that could explain this phenomenon is the lack of education, which has not been offering sufficient information and training on addictions in nursing curricula. There are pieces of evidence that gradual and continued training of the student seems to have better results in change students' attitudes and conceptions towards AUD, than one-time and only theoretical training. Among the training strategies that could minimize this phenomenon, clinical practice with these patients during undergraduate nursing education contributes to greater acceptance and more positive attitudes towards these patients. Such evidence reinforces the need to investigate training strategies that might contribute to a more positive attitude towards AUD among nursing students**.**

Objective: To identify the effect of a clinical experience in addictions treatment facilities in the nursing students ttitudes towards AUD and related issues.

Methods: quasi-experimental pretest-posttest design study, with follow-up within 30 and 90 days. The final sample consisted of 108 nursing students who participated in a curricular training clinical of 15 hours per week during six weeks in an AUD treatment facility. A validated attitude measurement scale was used to data collect. To compare the indicators between the times, the Wilcoxon paired test was used.

Results: significant difference in the scale of attitudes scores indicating participants' more positive attitudes, towards persons suffering from AUD as well as care for these patients were observed in all follow-ups: T_0 and T_1 (p-value < 0.001), T_1 and T_2 (p-value = 0.004) T_0 and T_2 (p-value < 0.001); the highest mean of this indicator was observed in the T_2 time.

Conclusions: The results suggest that Clinical experiences delivering care for patients suffering from AUD in specialized treatment facility during the pre-qualifying nursing education has the potential to contribute to futures nurses' skill preparation to assess de AUD problems, and also overcoming the phenomena of negative attitudes, arising as a potential strategy for nursing education in this field.

Increasing Support for Peer Recovery Specialists in Acute Care Settings

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Background:

Peer-driven interventions have been shown to improve care for individuals with substance use disorders (SUDs), and peers have increasingly been incorporated into interventions in medical settings. Despite the valuable role Peer Recovery Support Specialists (PRSS) play, there is limited evidence about how to best prepare and provide ongoing training and support for this professional group. Penn's OUTREACH (Organizing the Use and Training of Recovery Experts to Add to Community Health) program was developed to understand and meet the needs of PRSS staff.

Objective:

To provide training, support, and professional development opportunities for PRSS we:

1. Developed and hosted a webinar series
2. Created a "peer support for peer supporters" network

Methods:

Our webinar series disseminates information about implementation and sustainability of PRSS programs by leveraging the expertise of individuals working in recovery support, harm reduction, emergency medicine, and addiction treatment. Topics have included Supporting Patients with OUD through Peer Outreach and Telehealth, Changing Culture in the Health System with Peers, and Supporting Patients on Medications for Opioid Use Disorder. The "peer support for peer supporters" network that meets biweekly and features facilitated discussions by peers on topics relevant to the group for self-care and professional development. To evaluate the impact of programs and remain responsive to ongoing needs of participants, each session was followed by an evaluation.

Results:

Attendees of our webinars hosted in February and April 2021 (n=89) included PRSS, clinicians, and leaders in hospitals, social service groups, and other organizations in the Philadelphia region. In post-webinar evaluation, mean satisfaction score was 4.7/5 and usefulness for practice was 4.6/5. Of the 10 peer support sessions hosted between January and May 2021, attendance consistently averaged 8 participants per bi-weekly session. Participants work in community PRSS programs, hospitals, primary care, and community SUD programs. Future work includes focus groups of participating peers to elicit feedback and further understand the needs of participants.

Conclusions:

Developing educational and support interventions for PRSS is feasible and of interest to PRSS and their organizations. Our findings suggest there is need for and interest in increasing supports to PRSS to facilitate increased training, professional development, and well-being.

Telehealth for Opioid Use Disorder Treatment in Low-Barrier Clinic Settings: An Exploration of Clinician Perspectives

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Background: Despite effective, evidence-based treatments for opioid use disorder (OUD), there are significant racial, ethnic, socioeconomic, and geographic disparities in treatment access. Telehealth models may be a powerful facilitator of equitable access to OUD treatment with buprenorphine, allowing patients with geographic and transportation barriers or competing responsibilities like work and childcare to engage in care. A COVID-era policy change allows for buprenorphine induction and maintenance via telehealth. However, little published research has focused on perspectives of OUD treatment clinicians about the impact of new telehealth models on care of the most marginalized patients with OUD.

Objective: The aim of this study was to explore OUD treatment clinician perspectives on provision of OUD care via telehealth at low-barrier programs.

Methods: We used qualitative descriptive methodology to interview clinicians working at low-barrier, outpatient OUD treatment programs in Philadelphia during July and August 2020. The design of the interview guide was based on the Social-Ecological Model. We used thematic analysis to analyze data with NVIVO software.

Results: We interviewed 22 multi-disciplinary OUD treatment clinicians (nurse practitioner, physician assistant, physician, nurse, case manager, peer worker). Our analysis yielded three themes: 1/ Easier access: the use of telehealth facilitates care for many patients who have difficulty attending in-person appointments for a variety of reasons; 2/ Technology barriers: engagement with telehealth can be seriously limited by marginalized patients' access to and comfort with technology, particularly those experiencing homelessness; and 3/ Clinician control vs. patient preferences: a tension exists between what clinicians believe is appropriate regarding

telehealth vs. what patients desire for their OUD treatment. Patient preferences about their treatment delivery may be at odds with clinician preferences or beliefs about what model (telehealth vs. in-person care) is appropriate based on patient characteristics such as perceived stability.

Conclusions: Telehealth presents an opportunity to expand access to OUD care, but questions remain about how to best support marginalized patients who struggle with technology and balance flexibility with treatment oversight. Telehealth models may help expand OUD treatment access, although their ability to ensure equitable access to marginalized patients is unknown.

1.6 Smoking, Vaping, Cannabis

Vaping, Perceptions of Vaping, and Plans to Quit Among E-Cigarette Users in the United States and the United Kingdom

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Background: The United States (US) and the United Kingdom (UK) have different policy approaches to e-cigarettes; the US treats them as a suspect alternative to combustible cigarettes while the UK considers them first-line cessation aids.

Objective: To describe e-cigarette users' characteristics and compare intentions to quit, and attributes associated with those intentions across countries.

Methods: We used the online crowdsourcing platform Prolific Academic to survey current e-cigarette users in both countries. Measures were drawn from existing international surveys and included sociodemographics, intentions to quit, and attitudes toward e-cigarettes. Tests included the Wilcoxon Signed-Rank test, Fisher's Exact test, logistic regression, and ordinal regression.

Results: A total of 1044 participants (524 UK; 520 US) participated in the study. The mean age was 34.18 years; most were male (50.57%), white (84.57%), had a bachelor's degree or above (55.45%), and were employed (75.95%). UK respondents were more likely than US respondents to be ever cigarette smokers (89.3% vs 71.3%, p <.0001); daily vapers (68.9% vs 53.3%, p <.0001) and to use e-cigarettes to quit smoking cigarettes (74.8% vs 65.2%, p =.0007). Most UK (61.6%) and US (61.3%) respondents intended at some point in time to stop using e-cigarettes for good (p=.9493). Future plans to quit were significantly different between countries (OR 0.47, p=.0004), with US respondents planning to quit sooner. UK respondents perceived social attitudes to be more favorable toward e-cigarettes, with 56% reporting their government definitely or probably approved of using e-cigarettes, compared to 29% of US respondents (p =.0004).

Conclusions: Most vapers intend to quit, but US respondents plan to quit sooner than UK respondents. This may be due to more favorable policies and perceptions regarding e-cigarettes in the UK versus the US. Future research should examine whether e-cigarette cessation is an important public health goal, and if so, determine effective ways to stop.

Dual Use of Cigarettes and E-Cigarettes Triples the Odds of Binge Drinking – Findings From 2019 Kansas BRFSS

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Background: Alcohol consumption ranks third among preventable causes of death in the U.S., behind tobacco use and poor diet/physical inactivity. Excessive alcohol use accounts for one in 10 deaths among adults aged 20–64 years in the U.S. In 2010, it was responsible for $249 billion in economic costs. Over three quarters of these costs are due to binge drinking. Cigarette smoking is associated with alcohol use. However, little is known about the relationships between other forms of tobacco use and binge drinking.

Objective: Explore the relationships between tobacco use (cigarettes, smokeless tobacco, e-cigarettes, dual cigarettes and e-cigarettes) and binge drinking among Kansas adults.

Methods: The 2019 Kansas BRFSS survey data were collected through cell and landline phones from non-institutionalized Kansas residents aged 18 years and older. Survey questions included health-related behaviors, chronic health conditions, and other major health topics.

Results: Over 17% (17.4%) reported binge drinking. The sample was 50.6% female, 21.6% aged 65+ years, and over half (53.4%) earned an annual household income of $50,000 or more. Regarding tobacco use, 16.2% smoked cigarettes, 6.9% used e-cigarette, 2.9% used cigarettes and e-cigarettes, and 5.1% used smokeless tobacco. After controlling for demographic factors, cigarette smokers had 1.6 times the odds of binge drinking compared to non-smokers (95% CI: 1.2 – 2.1), e-cigarette users had 1.4 times the odds of binge drinking than non-e-cigarette users (95% CI: 1.0 – 1.9), and smokeless tobacco users had 1.8 times the odds of binge drinking than non-smokeless tobacco users (95% CI: 1.1 – 3.1). Dual cigarette and e-cigarette users had 2.9 times the odds of being binge drinkers than non-dual users (95% CI: 1.8 – 4.7).

Conclusions: This study extends our knowledge of the relationship between cigarette smoking and binge drinking to include other forms of tobacco use including smokeless tobacco, e-cigarettes and dual use of cigarettes and e-cigarettes. Coordinated efforts by public health professionals to address all forms of tobacco use as part of a comprehensive alcohol use intervention is warranted. Similarly, interventions addressing e-cigarette use and dual use among youths should include alcohol use.

Independent Midwives' Practices in Caring for Breastfeeding Women Who Smoke

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Background: Exclusive breastfeeding is recommended by the World Health Organization for all infants in their first six months, including if their mother smokes: the benefits of breastfeeding for infants still outweigh the risks associated with their mother's tobacco use. There is evidence

of an association between women's decision whether to breastfeed or not and their smoking status. In France, independent midwives are the primary healthcare professionals who care for pregnant and post-partum women. They must be able to offer appropriate care regarding smoking cessation and support for women who wish to breastfeed.

Objective: The study objectives were to assess the proportion of independent midwives who provide appropriate care for women who breastfeed and wish to stop smoking (primary), and for women who smoke, cannot stop smoking, and wish to breastfeed (secondary).

Methods: We conducted a cross-sectional study among independent midwives from the Auvergne-Rhône-Alpes region, France. We sent by e-mail an anonymous questionnaire which included self-describing questions about the midwives' practices and clinical vignettes to explore their practices in different situations. We ran descriptive univariate and bivariate analyses of collected data.

Results: Among the 157 independent midwives who answered the questionnaire, in the clinical vignettes, 96% would offer support for smoking cessation 77% would offer nicotine replacement therapy. For women who wish to breastfeed but cannot stop smoking, 85% of the respondents would offer support for breastfeeding independently of the smoking status, and 91% would offer hygiene advice to limit the effects of smoking on infants. We did not find any recurrent pattern of association between self-described practices or demographics and practices explored by vignettes.

Conclusions: Among the independent midwives who answered our study, most seem to offer appropriate care for women who breastfeed and wish to stop smoking, and appropriate and non-judgemental care for women who smoke, cannot stop smoking, and wish to breastfeed. Although midwives' practices could still be improved, public health advice could be of help for women who wish to breastfeed and who smoke, whether they wish to stop smoking or not.

Co-Use of Marijuana and Tobacco in Adults With and Without a Mental Health Disorder in Colorado, 2015 to 2018

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Background: Populations with mental health disorders are more likely to smoke cigarettes and more likely to die from tobacco use from than the primary psychiatric disorder. Tobacco use is also strongly associated with the co-use of marijuana and persons co-using may have more difficulty quitting tobacco smoking. In addition to tobacco, marijuana use is also more prevalent among persons with mental health disorders.

Objective: We examined the prevalence of the co-use of tobacco smoking and past 30-day marijuana use in populations with and without a self-reported mental health disorder in Colorado in 2015 and 2018.

Methods: The Attitudes and Behaviors Survey on Health is an anonymous, periodic, population-level, telephone survey of Colorado adults (aged 18+). Survey items included self-reported smoking behaviors, mental health disorders, and past 30-day marijuana use. Current tobacco smoking was defined as having smoked at least 100 lifetime cigarettes and smoking on at least some days of the past 30 days. Analyses were weighed to represent the Colorado adult population using PROC SURVEYFREQ commands in SAS.

Results: The overall prevalence of co-use in Colorado was 5.6% (95% confidence interval [CI] 4.8, 6.3) in 2015. There was non-significant increase to 6.4% (95% CI 5.7, 7.0) in 2018. In 2015, prevalence of co-use was significantly ($p<0.001$) higher among adults with a self-reported mental health disorder (11.1%; 95% CI 8.5, 13.6) compared to those without (4.3%; 95% CI 3.6, 5.0). In 2018, there was a non-significant increase of co-use in both groups; co-use prevalence among adults with a mental health disorder was 12.8% (95% CI 10.7, 14.8) and 4.8% (95% CI 4.1, 5.5) among those without.

Conclusions: Prevalence of the co-use of marijuana and tobacco among Colorado adults may be trending upwards. The burden of co-use is especially concentrated among those self-reporting a mental health disorder; ~1 in 8 Coloradoans with a mental health disorder co-use. These data suggest that smoking prevention/cessation is a public heath opportunity in Colorado. Tobacco cessation and prevention interventions should be targeted and tailored towards adults co-using marijuana and/or self-reporting a mental health disorder.

What Incoming Medical Students Think About Medical Marijuana: A Survey of Attitudes and Knowledge

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Background: As more states legalize medical marijuana (MMJ), physicians are expected to talk about MMJ with patients; however, there is no formal training on this topic. Medical students have significant knowledge gaps and report low confidence in their ability to adequately discuss potential benefits and risks of MMJ. Understanding these knowledge gaps is important to guide formal MMJ curricula development.

Objective: This study aims to identify medical student knowledge gaps and perceived training needs regarding MMJ, as well as the impact of knowing someone who uses MMJ on these outcomes.

Methods: Incoming medical students (N=250; 83.9%) completed a survey about their MMJ knowledge, attitudes, and experiences. Students responded on a 5-point Likert scale to 16 statements, divided into 6 subcategories, about MMJ. Students were also asked to indicate from a list of 21 potential side effects which were known adverse effects of MMJ. Independent t-tests were used to compare outcomes between students who endorsed knowing someone who had received MMJ vs. those who did not.

Results: The majority of students were unsure about MMJ uses, felt unprepared discussing it with patients, and believed there should be formal MMJ training. Students who knew someone that received MMJ (34.5%) were more likely to believe it was an effective treatment (3.72±0.73 vs. 3.45±0.65; t=2.847; p=0.005), and to have more permissive beliefs regarding legality (4.26±0.78 vs. 3.40±0.94; t=7.183, p<0.001) and recommending MMJ (3.98±0.63 vs. 3.57±0.62; t=4.863, p<0.001). There were no group differences in beliefs about physician training in MMJ or the potential risks and adverse effects of MMJ (*p*s>0.05).

Conclusions: Although 36 US states and Washington D.C. have legalized MMJ, there are no formal medical curricula on this topic. This study shows that students recognize the need for training. Personal experiences may impact medical student beliefs and knowledge about MMJ, which underscores the importance of developing a standardized curriculum to ensure all students graduate with an evidence-based foundational understanding of MMJ.

Synthetic Cannabinoids and Cannabinoid-Related Deaths: Relationship with Age, Gender, Race and Manner of Death

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Background: Little research has focused on whether there is an association between age, gender, race and the manner of death of people who died with cannabinoids and synthetic cannabinoids as their cause of death. We defined synthetic cannabinoid-related death (SCRD) and cannabinoid-related death (CRD) as any death involving these substances as present at time of death that played a causal role in the death of an individual as determined by the medical examiners through urine and toxicology results.

Objective:

The goal of this study is to determine if there is a significant relationship between age, gender, race and manner of death in people who died from cannabinoids and synthetic cannabinoids. Understanding the variations in sociodemographic characteristics among decedents is essential in creating educational materials for harm reduction dissemination strategies.

Methods: A secondary analysis was conducted using de-identified data from the Florida Drug and Law Enforcement (FDLE) reports from 2014-2018. Chi-square tests of independence was used to examine the relationships between variables of age, gender, race, manner of death and the CRD and SCRD.

Results:

A total of 10, 277 cases were included in the analysis. Among them, 37 people died from cannabinoid as a cause of death, and 186 deaths from synthetic cannabinoids. Using a chi-square tests of independence, result showed that there was a significant relationship between age and cannabinoid-related deaths: $X^2(1,6) = 32.299$, $p < .001$ (where most deaths happened between 45-54 years old). There was also a statistically significant relationship between race and

cannabinoid-related deaths: $X^2(1,5) = 17.382$, $p = .004$ (where non-Hispanic whites were more affected at 73%). The relationship between the manner of death and synthetic cannabinoid-related deaths showed statistical significance: $X^2(1,4) = 114.7333$, $p < .001$ (97.8% died from accidents).

Conclusions:

The increase in cannabinoid and synthetic cannabinoid-related deaths is a persistent burden to society which has long-term health consequences as more people use marijuana for medical and recreational purposes. Phase 2 of this study is underway to create effective Synthetic Cannabinoid and Cannabinoid for Harm Reduction Education Dissemination (SCCHRED) material.

Unanticipated Positive Breathalyzer Result Explained by Recent Fentanyl Vaping

Dolor Akpore, DO; William Greene, MD; Theodore Bowles, MD - University of Florida

Background:

The introduction of E-cigarettes and other tobacco-based “vaping” products has led to an expansion of the available options for substance administration. Like smoking and injection, inhalation of vaporized substances avoids first pass elimination, readily crossing the blood/brain barrier, and resulting in near immediate onset of effects. Unlike other methods, vaping does not require access to identifiable drug paraphernalia (e.g., syringe, pipe, bong), making it an efficient and appealing option to some substance users. The widespread availability of fentanyl, coupled with its ease of extraction from transdermal products and suitability for incorporation into a solution used in electronic vaporizing devices, make this highly-potent drug particularly susceptible to misuse via vaping.

Learning Objectives:

- To highlight the recent increase in vaping of non-tobacco substances
- To list three risks associated with vaping fentanyl
- To describe how fentanyl vaping could explain an unanticipated positive breathalyzer result

Case Presentation:

A 34yo female, with a history of trigeminal neuralgia and opioid use disorder, voluntarily entered substance treatment at the partial hospitalization program level of care. While on therapeutic weekend pass home, her remote alcohol monitoring device (a breathalyzer/smartphone interface) recorded multiple weak-positive blood alcohol concentrations, ranging from 0.006- 0.009. Upon return from pass, the patient exhibited behavioral anomalies, adamantly denied alcohol consumption, and a urine drug test was collected. Confirmatory urine testing revealed evidence of recent fentanyl consumption (positive for norfentanyl at 164 pg/mL) and no evidence of alcohol consumption (negative for ethanol,

ethyl glucuronide and ethyl sulfate). Use of vaporized fentanyl on the weekend pass accounts for the drug test findings in this case.

Discussion:

In the deadliest year on record, over 81,000 Americans died from drug overdoses in 2020. In a world of ever-increasing complexity of substance use patterns, drug-delivery systems, and drug testing modalities, the astute clinician must remain abreast of latest developments. Electronic vaporizing devices are now used to deliver many non-nicotine drugs, including fentanyl. Vaporizer solutions (a.k.a. E-liquids) often contain ethanol which, for patients using vaporizer devices, may yield positive results on commonly utilized alcohol tests.

1.7 Opioid Analgesic Prescribing

Discontinuation and Tapering of Prescribed Opioids and Risk of Overdose Among People on Long-Term Opioid Therapy for Pain: The Moderating Role of Opioid Use Disorder

Mary Clare Kennedy, PhD; Alexis Crabtree, MD, PhD; Seonaid Nolan, MD; Wing Yin Mok, BA; Zishan Cui, MSc; Amanda Slaunwhite, PhD; Lianping Ti, PhD - British Columbia Centre on Substance Use

Background: The overdose crisis in North America has prompted systems-level efforts to restrict opioid prescribing for chronic pain. However, little is known about how discontinuing and tapering of prescribed opioids for chronic pain shapes overdose risk, including possible differential effects among people with and without concurrent opioid use disorder (OUD).

Objective: We examined whether OUD and opioid agonist treatment (OAT) status moderated the effects of prescribed opioid discontinuation and tapering on risk of overdose among people on long-term opioid therapy for pain.

Methods: A 20% random sample of residents in the provincial health insurance client roster in British Columbia (BC), Canada was derived from the BC Provincial Overdose Cohort. The study sample included persons aged 14 to 74 years who had ≥1 episode of long-term use of opioids (≥90 days with ≥90% of those days on therapy) for pain between October 2014 and December 2018. We used marginal structural Cox regression to estimate the effect of prescription opioid treatment status (discontinuation vs. tapering vs. continued therapy [reference]) on risk of overdose (fatal or non-fatal) stratified by: people without diagnosed OUD, people with diagnosed OUD receiving OAT, and people with diagnosed OUD but not receiving OAT.

Results: Of 14,037 persons, 530 (3.8%) experienced ≥1 overdose event over a median of 3.7 years of follow-up. Discontinuing opioids was associated with increased overdose risk among people without OUD (adjusted hazard ratio [AHR] = 1.43; 95% confidence interval [CI] = 1.12 – 1.82), people with OUD but not on OAT (AHR = 2.48; 95% CI = 1.69 – 3.64) and people with OUD on OAT (AHR = 3.22; 95% CI = 1.66 – 6.27). Tapering of opioids was associated with decreased overdose risk among people with OUD receiving OAT (AHR = 0.34; 95% CI = 0.12 – 0.93) and not receiving OAT (AHR = 0.54, 95% CI = 0.29 - 0.99).

Conclusions: Discontinuing prescribed opioids increased overdose risk, particularly among people with OUD. Tapering reduced overdose risk among people with OUD. Our findings highlight the need to avoid abrupt discontinuation of opioids for pain and to engage patients with OUD in voluntary tapering of opioids for pain when appropriate.

Adherence to Safer Opioid Prescribing Guidelines Among Providers Caring for Older Adults in an Urban Safety-Net Geriatrics Practice

Vassiliki Pravodelov, MD, FACP; Paige Scarbrough, BA; Samantha G. Chua, MD; Daniel P. Alford, MD, MPH; Karen E. Lasser, MD, MPH - Boston University School of Medicine

Background: Older adults may require opioids for symptom palliation. Even though rates of opioid misuse and opioid use disorder (OUD) in older adults are lower than in younger adults, older patients are at risk for opioid-related adverse events due to physiologic changes, comorbidities, and polypharmacy. National and state agencies have promulgated safer opioid prescribing guidelines to reduce adverse events, misuse, and diversion.

Objective: We assessed adherence to guideline-based safer opioid prescribing among providers caring for older adults at a safety-net geriatrics practice.

Methods: We conducted a retrospective chart review using the electronic health record (EHR) of a random sample (n=200) of eligible patients 65 years and older who received primary care at an urban geriatrics clinic (n=100) or house call practice (n=100) and had at least one outpatient opioid prescription from 3/19/2016 - 3/18/2020. We collected information regarding demographics, comorbidities, daily morphine milligram equivalents (MME), risky co-prescribed medications, and documentation of guideline-based care including patient provider agreements (PPAs), Prescription Drug Monitoring Program (PDMP) checks, pill counts, and urine drug tests.

Results: The mean age was 83.5 (±8.2) years with most patients identifying as Black (66%), speaking English (68%), and residing in low-income communities (69%). Forty-two percent of patients had significant multi-morbidity (Charlson Comorbidity Index score of 9 or higher); 29% had active cancer and 45% were on hospice at some time during the review period. Seventeen percent of patients had a history of substance use disorder; 5% had a history of OUD. We observed prescriptions of >50 MME/day in 30% of patients. Providers co-prescribed benzodiazepines to 31% of patients and GABA analogues to 37%. Naloxone was prescribed to only 14% of patients. In regards to recommended opioid prescribing practices, providers documented a signed PPA in 23% of patients, PDMP checks with every opioid prescription by a primary provider in just 7% of patients, pill counts in 9%, and urine drug tests in 22% of patients during the study period.

Conclusions: Older adults at high risk for opioid-related adverse events received opioid prescriptions with infrequent documentation of risk-reducing guideline-based care. This study highlights actionable areas to reduce opioid-related risk in this vulnerable population.

Improving Access to Care For Patients Taking Opioids For Chronic Pain: Recommendations From An Interdisciplinary Expert Panel

Adrianne R. Kehne, BA; Pooja Lagisetty, MD, MSc; Jennifer Thomas, BA - University of Michigan

Background: Recent policies and guidelines instituted to reduce inappropriate opioid prescribing may have unintended consequences for the 5-8 million patients taking long-term opioid therapy for chronic pain in the U.S. As providers discontinue prescribing and turn away patients dependent on opioids, this population faces limited access to primary and pain-related care.

Objective: Generate policy, intervention, and research recommendations to improve access to care for individuals taking opioids for chronic pain.

Methods: Between September 2020 and January 2021, we convened a 24-person interdisciplinary expert panel comprised of policymakers, regulators, patient advocates, providers, researchers, and insurers from across Michigan. Following a modified Delphi format, panelists reviewed background materials, met for two virtual discussions, and completed two surveys to produce recommendations; consider their impact, feasibility, and importance; and then rank them by implementation priority. Recommendation rankings were averaged to create a final priority-ranked list. Rankings for thematically related recommendations were pooled into mean "theme averages."

Results: The panel produced 11 final recommendations, yielding three major themes: reimbursement reform, provider education, and practices to reduce racial disparities. The 3 reimbursement-related recommendations received the highest rankings (theme average = 4.2/11), including the two top-ranked recommendations: increasing reimbursement for time needed to treat complex chronic pain (#1/11) and establishing coordinated care models that bundle payment for multimodal pain treatment (#2/11). Four recommendations on provider education ranked slightly lower (theme average = 6.2/11) and included training on biopsychosocial factors of pain care and clarifying the continuum between physical dependency and opioid use disorder. Four recommendations addressed racial disparities (theme average = 7.2/11), ranging from standardizing pain management protocols to reduce bias to increasing recruitment and retention of providers from underrepresented racial minorities.

Conclusions: Panelists emphasized that multiple strategies may be needed to meaningfully expand access. Reimbursement-related recommendations were perceived as having higher impact and importance but lower feasibility than other recommendations. Above all, panelists indicated that reimbursement should incentivize traditionally lower-paying care (e.g. non-pharmacologic and non-procedural interventions). Importantly, while this panel was Michigan-based, limited care access is generalizable, and there is national potential to implement these recommendations.

Use of Safer Opioid Prescribing Micro-Podcasts to Engage the Reluctant Learner

Daniel P. Alford, MD, MPH - Boston Medical Center, Boston University School of Medicine

Background: In the U.S there is concurrent under-treatment of pain and overprescribing of opioids with associated opioid-related harms. Prescriber education is an important strategy for

addressing these dual crises. Boston University School of Medicine Office of CME (BUSM CME) has over eight years of experience delivering safer opioid prescribing education via its online Safer/Competent Opioid Prescribing Education (SCOPE) program.

Objective: To develop an innovative outreach strategy to increase interest in comprehensive safer opioid prescribing education among prescribers who were previously unresponsive to traditional outreach approaches.

Methods: BUSM CME partnered with Haymarket Medical Education (HME) to develop 12 micro-podcasts each under four minutes to provide flexible and convenient learning opportunities to clinicians in the HME database including those who were unresponsive to previous traditional outreach approaches. The micro-podcasts address specific common safer opioid prescribing challenges (e.g., unexpected urine drug test results) with expert advice to engage learners with practical clinical pearls. All micro-podcast users are encouraged to access and complete the comprehensive, two hour free online SCOPE program. Email and social media campaigns brought clinicians to the micro-podcast page, where they could listen and/or click to be brought to the comprehensive educational activity.

Results: Over nine months (April - December 2018), there were 6,896 visits to the micro-podcast page, with 3,997 users listening to micro-podcasts. Of the 3,997 users, 30% (1,218/3,997) started the SCOPE activity and consisted of 42% physicians, 22% nurse practitioners, 22% physician assistants and 10% nurses. Of those that started SCOPE, 72% (873/1,218) completed the entire 2 hour program of which 66% (576/873) had received previous messages about the SCOPE program but only completed the activity after completing a micro-podcast.

Conclusions: Micro-podcasts offers an innovative outreach strategy to address common clinical challenges and encourage some previously resistant clinicians to complete a comprehensive two hour safer opioid prescribing education program.

Opioid Prescribing Among Dentists: Understanding Patient and Provider Characteristics Associated with Opioid Prescribing

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Background:

Despite the known effectiveness of treating dental pain using a combination of ibuprofen plus acetaminophen, opioids are still commonly prescribed.

Objective:

In preparation for a randomized trial using clinical decision support to implement non-opioid pain management and de-implement the prescribing of opioids following extractions among dentists in a large Midwest healthcare system, we conducted a baseline analysis of opioid

prescribing practices among dentists to better understand prescribing based on patient and provider characteristics.

Methods:

This study was conducted utilizing data from the electronic health record of HealthPartners. The analytic sample consisted of all 169,173 encounters from 90,487 patients undergoing a dental procedure in the baseline period (9/1/2018 to 8/30/2019), prior to implementing a clinical trial to de-implement opioids for post-extraction pain management. Opioid prescribing within 7 days of the index encounter was described within procedure type, provider type, and patient strata defined by age, sex, race, ethnicity, Medicaid coverage, and need for an interpreter. GEE models addressed adjusted associations.

Results:

Overall, 1.9% of encounters included an opioid prescription, with the highest opioid prescribing in extraction (26%), and oral surgery non-extraction encounters (25%). Fully 40% of encounters with an oral surgeon included opioid prescribing, compared to <1% for all other provider types. For encounters with an extraction procedure, all patient age groups were more likely than those age 66+ to receive an opioid prescription, particularly those age 18-25 (OR=6.9). Patients having a complex rather than simple extraction were more likely to receive an opioid prescription (OR=6.3) and those seen by an oral surgeon rather than dentist (OR=9.1) were more likely to receive an opioid prescription. Among patients with a diagnostic procedure, opioid prescribing was more likely among male than female patients (OR=1.2), Black patients relative to White (OR=1.7), and patients with Medicaid coverage (OR=1.9).

Conclusions:

Opioid prescribing rates vary considerably depending on procedure type. Patterns of associations between patient factors and opioid prescribing also vary considerably across procedure type. To understand which patient groups are more at risk of being prescribed opioids it is essential to take into account the particular procedures they are receiving.

Validation and Clinical Utility of a National Prescription Drug Monitoring Program Risk Metric

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Background: Community pharmacies rely on Prescription Monitoring Programs (PMP) to identify opioid-related risk. A validated PMP-based opioid-risk algorithm does not exist.

Objective: The PharmScreen study (CTN-0093) was designed to independently validate a PMP risk metric (PMP-RM) developed/deployed by the largest US PMP vendor (42/50 states) as a universal screen.

Methods: Community pharmacies rely on Prescription Monitoring Programs (PMP) to identify opioid-related risk. A validated PMP-based opioid-risk algorithm does not exist. The PharmScreen study (CTN-0093) was designed to independently validate a PMP risk metric (PMP-RM) developed/deployed by the largest US PMP vendor (42/50 states) as a universal screen.

Results: Participants (N=1,464) were ~49 years old (SD=14.9), primarily White (92.5%), and female (61.9%). The PMP-RM showed fair concurrent validity (Area Under the Curve≥0.70; K=0.35; P=0.37, $p<0.001$). The ASSIST and PMP-RM categorized 36.9% of participants as low-risk (i.e., not needing screening/intervention) and 32.2% as moderate/high-risk (i.e., needing screening/intervention). Further, 17.1% were categorized as moderate/high PMP-RM risk but low ASSIST risk—these participants reporting disability (OR=3.12), poor general health (OR=0.66), and/or greater pain severity/interference (OR=1.12/1.09; $p<0.05$)—with 85.5% reporting current moderate/high pain (i.e., needing unmanaged-pain screening/intervention). Finally, 13.7% were categorized as moderate/high ASSIST risk but low PMP-RM risk—these participants reported greater overdose history (OR=1.24) and/or illicit substance use (OR=1.81-12.66; $p<0.05$).

Conclusions: While possibly not a strong identifier of non-opioid substance use, the PMP-RM could serve as a universal prescription opioid-risk screener given its: low burden relative to other "quick-screens" (i.e., no direct patient assessment); high accuracy (86.2%) identifying low-risk patients and those needing opioid use/unmanaged pain screening/intervention; and broad US availability.

A Novel Framework for Approaching Pain Management in a Patient With Concurrent Opioid Use Disorder and Serious Illness

Janet J. Ho, MD, MPH; Julie Childers, MD; Katie Fitzgerald Jones, MSN, APN, APRN; Jessica Merlin, MD, PhD, MBA - University of California, San Francisco

Background:

Safely navigating the management of pain for patients with concurrent serious illness and OUD has become even more complex in the context of the opioid overdose epidemic, OUD treatment gaps, improved prognosis with advanced cancer treatment, increased risk of chronic cancer-related pain, and a lack of evidence on pain in people with SUD or cancer. Addiction specialists may be consulted on opioid management decisions.

Learning Objectives:

To Analyze a complex case of pain, OUD, and serious illness using the 7P framework to weigh risks/ benefits of opioids

Case Presentation:

55 year old woman with locally advanced bladder cancer with cervical now status post cystectomy and hysterectomy, OUD, and chronic back pain. Most recently stopped going to OTP due to stigma, and continues on long acting morphine for pain control prescribed by palliative care. Surgical oncology team asking for plan with opioids post-op, as surgery is expected to be curative and pain relieving.

Discussion:

The 7P framework is a novel method to guide decision-making around balancing risks/ benefits of opioid pain management for patients with concurrent OUD and serious illness.

7P Framework	Case patient
Pain details	Chronic back; Acute post-op; Cancer-related pain expected to resolve with surgery
Prognosis	Years. Curative surgery.
Performance status: physical and cognitive function/ goals	Independent w/ADL, drives
Properties of substance use: diagnosis; activity/ stability; severity)	OUD, severe, early remission (8 mo.). Prefers buprenorphine, open to MMT, focused on no MOUD.
Psychosocial factors: mental health diagnoses, supports, housing, etc.	Trauma, anxiety. boyfriend has active, untreated SUD/OUD
Partnership with others: addiction, psych/ mental health, palliative care, social work, chaplaincy, patient navigators/ peer recovery coaches, primary care, etc.	new addiction trained PCP post-op
Parity: would the treatment recommendation be different if the patient did not use substances?	Palliative care may be more likely to continue prescribing MSER for chronic cancer pain
Treatment option risks/ benefits	- MSER: +: effective for pain. -: not first-line MOUD, overdose risk, unclear future prescriber. -OTP: +: prior effect, treats pain, recovery support structure. -: feels stigmatized and thus stopped going. -Buprenorphine: +: prior effect, treats pain. -: reduced overdose risk, boyfriend may benefit

Exploratory Analysis of Factors That Explain the Association of Traumatic Spinal Injury and Opioid Misuse in a Prospective Cohort of Level I Trauma Patients

Alyssa Tilhou, MD, PhD; Ola Shana, BA; Tudor Borza, MD, MS; Amelia Baltes, MPH; Brienna Deyo, MPH; Randall Brown, MD, PhD - University of Wisconsin

Background: Patients with traumatic spine injury often require opioid medications at hospital discharge to manage pain. However, this population may be at increased risk of opioid misuse.

Objective: To explore patient and treatment factors that explain the association between spine injury and opioid misuse.

Methods: Data come from a 24-week prospective cohort study of patients 18-75 years old admitted to Trauma and Orthopedic Surgical Services at a Level I trauma center. Inclusion criteria: English speaking, receiving opioids during hospitalization, and self-management of medications at discharge. Spine injury was assessed using the Abbreviated Injury Scale. Opioid misuse was defined at 24 weeks by self-reported use of opioids: in a larger dose, more often or for longer than prescribed; via a route different than prescribed; from someone other than a prescriber; and/or use of heroin or opium. Exploratory factors included four groups: sociodemographic characteristics, pre-existing psychiatric conditions, pain, and treatment factors. Bivariate analyses estimate the relationship between exploratory factors and having a spine injury. Multivariable logistic regression estimated the association between spine injury and opioid misuse when adjusting, in sequence, for the four exploratory factor groups.

Results: 292 participants completed baseline measures and 239 completed opioid misuse items. Of those with baseline measures, 65 (22.3%) had a spine injury and 14 (4.8%) developed misuse. Spine injury predicted the development of opioid misuse [OR 3.50, 95% CI (1.15, 10.68)]. In bivariate analyses, treatment factors (injury severity score, intubation, and hospital length of stay) were significantly associated with having a spine injury. In the multivariable models, adjusting for treatment factors resulted in the elimination of the association between spine injury and opioid misuse. In sensitivity analyses, the association between spine injury and opioid misuse lost significance when adjusting for injury severity score or length of stay but not intubation.

Conclusions: Spine injury exhibits a complex medical association with opioid misuse that predominantly operates through treatment factors. Further research should explore and replicate these findings. Trauma patients with spine injuries may represent a distinct subpopulation requiring early intervention to prevent the development of opioid misuse.

1.8 MOUD Session 1

Pollutants, Pandemics, and Precipitated Withdrawal: The Case for Simplifying Buprenorphine Microinduction in the Outpatient Setting

Shawn Matthew Cohen, MD; Dana A. Cavallo, PhD; Jeanette Tetrault, MD; Stephen Holt, MD, MS - Yale University Program in Addiction Medicine, Yale University School of Medicine

Background:

With a contaminated drug supply, traditional methods of buprenorphine initiation often result in precipitated withdrawal. Low dose initiation with gradual dose titration while continuing full opioid agonists, also called microinduction, has been increasingly utilized, though its use in the outpatient setting, requiring dose splitting and daily dose changes, remains limited by its complexity.

Learning Objectives:

1) Microinduction of buprenorphine allows transition from full opioid agonists reducing risk of precipitated withdrawal

2) A visual guide and partnership with a community pharmacy for dosepacks make microinduction simpler in the outpatient setting

Case Presentation:

TW is a 56 year old woman with cocaine use disorder in sustained remission and opioid use disorder on buprenorphine-naloxone 12-3 mg SL daily. After years of sustained remission, in the setting of COVID-19 quarantine and feelings of isolation, she had a recurrence of intermittent opioid use and stopped buprenorphine-naloxone. She attempted to restart 12-3 mg SL buprenorphine-naloxone 24 hours after her last heroin use which precipitated severe withdrawal prompting continued opioid use. She followed up in clinic with a plan to restart buprenorphine at which time her urine drug screen was positive for methadone (confirmed by mass spectrometry), fentanyl, and opiates. She denied intentional use of methadone or fentanyl suggesting contaminated heroin. She had several more episodes of precipitated withdrawal when attempting to restart buprenorphine-naloxone despite waiting >48 hours since last use and using adjunctive medications.

Ultimately, she successfully restarted buprenorphine-naloxone without precipitated withdrawal using the microinduction approach detailed in Figure 1. She remains on buprenorphine-naloxone 1 month later.

Discussion:

This case illustrates the utility of outpatient buprenorphine microinduction in the setting of contaminated heroin and prior unsuccessful traditional induction attempts. Creation of a visual guide facilitated this complex process. Partnership with a community pharmacy creating a prepackaged dosepack has since made it simpler.

Figure 1

Outcomes Associated With Expanded Take-Home Eligibility for Outpatient Treatment with Medications for Opioid Use Disorder: A Mixed-Methods Analysis

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Background:

Access to medications for opioid use disorder (MOUD) in the U.S. is highly restricted. In March 2020, to reduce transmission of COVID-19, SAMHSA issued emergency regulations allowing up to two weeks of take-home doses for most patients.

Objective:

We evaluated the benefits and unintended consequences of the new regulations expanding take-home eligibility to inform MOUD policy post-pandemic.

Methods:

We conducted a mixed-methods evaluation of an opioid treatment program in San Francisco caring for a diverse, low-income urban population. We assessed clinic-level intake, retention, and take-home prescribing; individual-level acute care utilization and mortality; and patient and provider perceptions of benefits, harms and challenges of the new regulations.

Results:

Clinic volume, intake and retention were largely unchanged after implementation of the new regulations, though the average monthly proportion of individuals receiving take-homes significantly increased from 31% to 47% ($p<0.001$). Among 506 established patients (≥90 days of care), the 10-month mortality was 2.7% among those who never received take-homes versus 3.2% among those newly started ($p=0.79$) and 0.8% among those with increases in take-homes ($p=0.24$). Individuals who never received take-homes had higher rates of emergency department visits (47.0%) and hospitalizations (19.7%) versus those with new starts (ED visits 29.2%, $p<0.001$; hospitalizations 14.3%, $p=0.19$) or increases in take-homes (ED visits 17.5%, $p<0.001$; hospitalizations 10.0%, $p=0.02$). Both patients and providers reported increased treatment flexibility, leading to increased engagement and stabilization.

Conclusions:

Given the benefit and lack of appreciable harms, policymakers should consider extending expanded MOUD take-home eligibility after COVID-19, with careful monitoring for unintended outcomes.

Real-World Use and Clinical Outcomes after 24 Weeks of Treatment with a Prescription Digital Therapeutic for Opioid Use Disorder

Yuri Maricich, MD; Robert Gerwien, PhD; Alice Kuo, BA; Keely Boyer, MBA; Daniel C. Malone, PhD; Fulton F. Velez, MD, MS, MBA - Pear Therapeutics, Inc

Background: Substance use disorder continues to worsen despite expanded use of telemedicine and medications for opioid use disorder (OUD), suggesting the need for additional treatment options. Prescription digital therapeutics (PDTs) are FDA-authorized software-based treatments delivering evidence-based behavioral therapies on mobile devices and which have demonstrated improvement in clinical outcomes in randomized control trials.

Objective: To evaluate real-world use and associated clinical outcomes of a PDT in patients with OUD who are prescribed either a single 12-week course of treatment, or 24-weeks of treatment via a 12-week "refill" prescription.

Methods: An observational evaluation of patients treated for 12- and 24-weeks with a PDT for OUD. Engagement and retention data in weeks 9-12, or 21-24 were collected via the PDT and analyzed with descriptive statistics. Substance use was evaluated as a composite of patient self-reports and urine drug screens (UDS). Missing UDS data were assumed to be positive. A responder analysis of patients who achieved 80% or greater abstinence on the composite measure was conducted. A regression analysis of hospital encounters for 12- vs. 24-week prescriptions controlling for covariates was also conducted.

Results: In a cohort of 3,853 individuals with OUD who completed a 12-week PDT prescription, a second cohort of 643 was prescribed a second 12-week "refill" prescription, for a total treatment time of 24 weeks. Mean age of the 24-week cohort was 39 years, 56.7% female.

At 24 weeks of total treatment abstinence in the last 4 weeks of treatment was 86% in an analysis in which patients with no data are assumed to be positive. Over 91% of patients were retained in treatment. Individuals treated with the PDT for 12 weeks had a 44% decrease in unique hospital encounters compared to the 9 months prior to PDT initiation, while those treated for 24 weeks had a 59% reduction from the pre-initiation period.

Conclusions: These data present real-world evidence that treatment for 24 weeks with a PDT for OUD is associated with high levels of engagement, improved outcomes, and fewer hospital encounters compared to a single prescription for a PDT.

Rural-Urban Trends in the Availability of Methadone Maintenance Therapy During the Beginning of the National Opioid Crisis

Amanda Sharp, PhD; Timothy Creedon, PhD; Daniel Sullivan, PsyD - Cambridge Health Alliance

Background: The opioid epidemic has been underway for more than two decades with virtually no signs of abatement despite the existence of multiple forms of effective treatment, including methadone maintenance therapy (MMT).

Objective: We investigated the first decade of the opioid crisis to examine the extent to which MMT was available in communities with the highest need for OUD treatment and whether availability increased over time in response to the growing severity of the crisis.

Methods: We conducted secondary analysis of N-SSATS, CDC WONDER, and NSDUH data merged at the state-year level. Using N-SSATS, we analyzed repeated measures data on nearly all substance abuse treatment facilities operating in the U.S. during the study period, 2004-2011. Primary outcomes were if facilities offered MMT and buprenorphine in each study year. Key explanatory variables were whether each facility was located in a rural or urban county, year, and a rural*year interaction. We controlled for state-level opioid mortality (CDC WONDER) and misuse (NSDUH) rates and for a range of facility-level characteristics. We estimated generalized linear mixed models to estimate differential trends accounting for clustering of multiple observations within unique facilities, counties, and states.

Results: Among N=96,047 observations, 21.6% were rural and 53.7% were from facilities present for the entire study period. MMT was available in 9.8% of facilities in 2004 and 11.3% in 2011. In model-based analyses, rural facilities were significantly less likely to offer methadone than urban facilities (-5.2 pts., $p<0.001$) and were slower to add MMT over time (-0.2 pts/year, $p=0.005$. Buprenorphine was more available in areas with higher opioid mortality rates (0.8 pts, $p<0.001$), but methadone was less available (-1.0 pts., $p<0.001$).

Conclusions: At the beginning of the opioid crisis, MMT was least available in the places where it was most needed—rural communities with higher opioid mortality rates. Between 2004 and 2011, availability of MMT did not meaningfully increase while buprenorphine availability nearly tripled. These findings may inform responses to current and future public health crises—including COVID-19—and raise questions about how such crises may unfold differently if long-established, effective treatments are made widely available from the outset.

Systemic Barriers to Effective Use of Long Acting Injectable Buprenorphine in a Vulnerable Population – A Case Series

Cheryl J. Ho, MD[1,2], **Lawrence Y. Chang, PharmD**[1], **Marce Abare, MD, MPH**[1]; Todd Fong, MD - (1) Valley Homeless Healthcare Program, County of Santa Clara, (2) Stanford University School of Medicine

Background: Long-acting injectable (LAI) Buprenorphine is an effective medication in the treatment of opioid use disorder. Currently, in the United States, LAI Buprenorphine is only available through a Risk Evaluation and Mitigation Strategy (REMS) Program. For clinics or healthcare systems that do not or have not yet pursued REMS certification or "Buy and Bill" as a specialty pharmacy in order to stock the LAI Buprenorphine, clinics must order LAI Buprenorphine from a third-party specialty pharmacy, as opposed to a traditional retail pharmacy. Coordinating the timing of the writing of the prescription, medication delivery, and patient injection appointment, are all necessary steps for a patient to receive their LAI Buprenorphine dose.

Learning Objectives:

- Describe the process by which LAI Buprenorphine is regulated in the United States through the REMS program
- Identify the different pharmacy options by which to order LAI Buprenorphine

- Name potential unintended clinical harms from LAI Buprenorphine's restricted distribution system
- Discuss how well-intended safeguards to ensure medication safety can actually cause structural barriers to treatment and worsen healthcare disparities in vulnerable patient populations with histories of housing instability and incarceration.

Case Presentation:

3 case discussions of individuals who had unintended negative clinical outcomes because of the medication distribution barriers to receive LAI Buprenorphine in a timely fashion. Case 1 details a case of a patient stable on LAI Buprenorphine who had difficulties obtaining a subsequent dose, eventually leading to psychiatric hospitalization and incarceration. Case 2 describes a patient with multiple medical co-morbidities who was not able to receive LAI Buprenorphine when needed. Case 3 describes an individual who received LAI Buprenorphine in the jail setting and had difficulty receiving his follow-up dose.

Discussion:

LAI Buprenorphine is an important treatment option for opioid use disorder. The goal of the REMS program is to mitigate serious harm or death from intravenous self-administration by ensuring healthcare settings and pharmacies are certified. However, the unintended consequences of this restricted medication distribution channel result in more barriers that lead to less medication availability. Sadly, the disproportionate burden of these consequences fall onto vulnerable patients who already face a number of barriers to receiving adequate opioid use disorder treatment.

Timely Access to Methadone for Opioid Use Disorder Among Urban and Rural Opioid Treatment Programs

Darve A. Robinson, MD, MS; Paul J. Joudrey - Yale New Haven Hospital

Background: Methadone can prevent opioid overdose deaths, but it is only available in the US at federally certified opioid treatment programs (OTP). Timely access to methadone improves rates of medication initiation but it is unknown how timely access compares across urban and rural OTPs.

Objective: To compare timely access to methadone initiation among urban and rural OTPs during COVID-19.

Methods: We completed a cross-sectional audit study of all OTPs listed as providing methadone for OUD within Substance Abuse Mental Health Services Administration behavioral health treatment services locator within 14 US states and territories (Connecticut, District of Columbia, Kentucky, Maine, Massachusetts, Maryland, Michigan, Missouri, New Hampshire, Ohio, Rhode Island, Tennessee, Vermont, and West Virginia) between May 11 and June 17, 2020. Our primary outcome collected during standardized mock patient calls was wait in days to first appointment. Each OTP was contacted twice: once as a patient with Medicaid and once as a

patient with no health insurance (self-pay). Our primary exposure was urban or rural classification of OTP zip code according to the US Federal Office of Rural Health Policy. We compared days to first appointment using a Mann Whitney U test.

Results: Among 342 clinics within 14 US jurisdictions, we successfully contacted 268 (78%) clinics during US Medicaid calls, 271 (79%) clinics during US self-pay calls. Across the US jurisdictions, 228 (85%) of OTPs were in urban zip codes. During Medicaid calls, the median days to first appointment was 2 (IQR 1, 4) among urban and 2.5 (IQR 1, 6; p = 0.14) among rural OTPs. During self-pay calls, the median days to first appointment was 3 (IQR 1, 5) among urban and 4 (IQR 3, 6; p = 0.008) among rural OTPs.

Conclusions: Our results suggest rural OTPs offer less timely access to methadone for individuals with opioid use disorder and no health insurance relative to urban OTPs. The longer wait for care among rural OTPs may compound the existing high travel burden associated access to methadone in rural communities. Novel systems of methadone delivery are needed in rural communities to ensure equitable access.

"The Idea Is to Help People Achieve Greater Success and Greater Liberty from Us": A Qualitative Study of COVID-19 Take-Home Liberalization for Opioid Use Disorder Treatment

Leslie Suen, MD, MAS; Stacy Castellanos, MA; Neena Joshi, MS; Shannon Satterwhite, MD, PhD; Kelly R. Knight, PhD - University of California, San Francisco, San Francisco Veterans Affairs Medical Center

Background:

When the COVID-19 pandemic struck in early 2020, the United States (US) was already facing an epidemic of opioid overdose deaths, and overdose deaths continue to surge during COVID-19. To reduce COVID-19 spread and disruptions in access to life-saving medications for opioid use disorder (MOUD) including buprenorphine and methadone, agencies at the federal and state level granted unprecedented exemptions and liberalized restrictions on MOUD, including access to unsupervised take-home doses. We conducted a qualitative study to evaluate the impact of these policy changes on MOUD treatment experiences at an Opioid Treatment Program in California.

Objective:

We conducted a qualitative study to evaluate the impact of these policy changes on MOUD treatment experiences at an Opioid Treatment Program in California.

Methods:

We interviewed 10 providers and 20 patients receiving MOUD. We transcribed, coded, and analyzed all interviews using modified grounded theory methodologies.

Results:

Providers discussed clinical decision-making processes and experiences expanding take-homes. Overall, implementation of take-home liberalization policies was cautious. Providers reported making individualized decisions, using patient factors to decide if benefits outweighed risks of overdose and diversion. Factors affecting decision-making included patient drug use, overdose risk, housing status, and vulnerability to COVID-19. Providers interpreted guidelines in ways that expanded take-homes for new patient groups and noted few adverse events. Patients who received take-homes reported increased autonomy and treatment flexibility, which in turn increased likelihood of treatment stabilization and engagement. Patients who remained ineligible for take-homes, usually due to ongoing non-prescribed opioid or benzodiazepine use, desired greater transparency and shared decision-making.

Conclusions:

Liberalized restrictions in response to COVID-19 led to the potential for unprecedented expansion and access to MOUD take-homes. In our study, providers and patients perceived benefits in expanding access to take-homes and experienced few adverse outcomes, suggesting liberalized take home policies should remain post-COVID-19. Future studies should explore whether these findings are generalizable to other OTPs and assess larger samples to quantify patient-level outcomes resulting from expanded take-home policies.

Outpatient Ultra-Low Dose Buprenorphine Inductions: A Case Series

Judy S. Chertok, MD[1], **Margaret Lowenstein, MD, MSHP**[1]; Stephen Iannacone, MD, MA; Kevin Lee, PharmD, AAHIVP - (1) University of Pennsylvania

Background: With the shift in the opioid drug supply to fentanyl, which has been shown to have variable and protracted clearance, we have observed a growing subpopulation of patients with protracted withdrawal symptoms and precipitated withdrawal using standard buprenorphine induction methods. There are some published protocols for inpatient cross-tapering of buprenorphine with full opioid agonists, also known as micro-induction. However, reports of similar outpatient regimens are limited. We adapted the protocol from an outpatient case report to use all standard 2-0.5 mg buprenorphine-naloxone films for an easy-to-follow outpatient regimen. Here we describe three patients in different clinical scenarios from our practices in Philadelphia who successfully transitioned from opioids to buprenorphine at home using this protocol.

Learning Objectives:

1. Highlight the need for alternative buprenorphine induction strategies.

2. Review a protocol for cross-tapering of buprenorphine to facilitate ultra low-dose induction.

Case Presentation:

1. 42 y/o woman with OUD and IV fentanyl use seen in a low barrier mobile setting who was unable to tolerate standard induction, despite close follow-up and comfort

medications. Successfully transitioned to buprenorphine at home using this approach over 7 days.

2. 31 y/o woman with OUD and stimulant use disorder, struggled to get on buprenorphine in an office setting for 3 years. Ultimately tolerated transition to buprenorphine using this method along with comfort medications. Continued to use buprenorphine 8mg/day along with opioids on days 7-14 and received buprenorphine extended-release on day 14.
3. 52 yo man with recurrent prosthetic valve endocarditis admitted to the hospital after returning to opioid, benzodiazepine and stimulant use. After experiencing precipitated withdrawal, the patient left against medical advice. His outpatient team instructed him on a home cross-taper regimen, which he accelerated to complete over the course of 5 days. He had no adverse effects and was transitioned back to a maintenance buprenorphine dose on day 5.

Discussion: Standard buprenorphine inductions are challenging for some patients. With this protocol, we have been able to successfully guide a number of patients in various settings through the process. This harm reduction approach is patient-centered and provides options, flexibility and control for our patients.

2.1 Impact of COVID Session 2

I'm Here for You and Let Me Just Ask Someone Real Fast: Timely Addiction Medicine Consultation Via E-Consults in Primary Care

Irina Kryzhanovskaya, MD; **Jessica Tyler Ristau, MD** - University of California, San Francisco

Background: At the intersection of the COVID-19 pandemic and substance use disorder (SUD) epidemic, overdose deaths—particularly related to opioids and stimulants—are rising. To address this SUD crisis, primary care providers are uniquely positioned at the frontlines to screen, diagnose, and treat addiction. While SUDs are commonly encountered in primary care, referring patients to specialty care when complex addiction medicine questions arise is not always available and can be challenging. Electronic consultation (eConsult: PCP-initiated electronic health record referrals for a specialty question that is outside PCP expertise but may not require an in-person evaluation) is one model that has been shown to improve timely access to subspecialty care in many medical subspecialties.[(1)]

Objective: We describe initial data from implementation of addiction medicine eConsults in a large academic health system.

Methods: We performed a descriptive analysis of the first 6 weeks of implementation of eConsults for addiction medicine after go-live in our large academic health system, serving over 100,000 patients in primary care. For each question and response, we looked at demographics, consult question, presence of SUD diagnosis, whether a clinic appointment was necessary, and PCP implementation of recommendations.

Results: Eight eConsults were submitted in the first six weeks of implementation. Patients were predominantly male (n=5, 63%) in their 40’s (average age: 47) with a SUD diagnosis (n=6, 75%). Treatment for alcohol use disorder (AUD) was the most common consult question (n=5, 75%), followed by the management of buprenorphine for pain (n=1, 13%) and urine toxicology screen interpretation (n=1, 13%). PCPs placing eConsults were mostly faculty (n=5, 63%). Three eConsults were ordered by trainees (37%). Specialist recommended in person visit for one (13%) eConsult. Five PCPs had already implemented eConsult recommendations at time of initial review.

Conclusions: For most patients in the first weeks of eConsult launch, addiction specialists provided strategies for management in primary care without an in-person evaluation. PCPs implemented most recommendations. To address the SUD crisis, eConsults show promise as timely, efficient, and necessary means of supporting PCPs to deliver quality care to patients with SUD.

References:

1) Lowenstein 2017. PMCID: PMC5562932.

Providing Low-Barrier Addiction Treatment Via a Telemedicine Call Line During the COVID-19 Pandemic in Los Angeles, County: An Assessment One Year Later

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Background: Los Angeles County was an epicenter for the COVID19 pandemic in 2020. Los Angeles County Department of Health Services (LAC DHS) provides medical treatment for the safety net population of the county, including a large population of people experiencing homelessness.To improve patients’ access to substance use disorder (SUD) services during the COVID19 pandemic, the LAC DHS Ambulatory Care Network (ACN) created a telemedicine call line in March 2020 for patients to access low-barrier medications for addiction treatment.

Objective: The purpose of this study was to describe the first 12 months of the telemedicine call line by evaluating the type of calls received, the number and type of patients treated, and the number and type of addiction medications prescribed.

Methods: The telemedicine addiction medications call line was established in March 2020 with grant funding via a local addiction treatment grant. It is staffed by x-waivered providers from the LAC DHS system, all with significant experience in providing mediation treatment for SUDs. The call line is available 24 hours a day for all DHS affiliated hospitals, clinics, correctional services, and outreach providers to call when they have a patient interested in receiving addiction medication treatment. After each telemedicine visit is completed, providers logged patient information into a secure registry. Registry information was collected from March 31, 2020 to March 30, 2021 including patient demographics and the reason for visit. Information on

addiction medications prescribed by the call line providers was also collected. Descriptive statistics were obtained and resulted below.

Results: During our study period, there were 616 calls received and logged in the telemedicine call line registry by 10 providers. These calls represented a total of 547 patients [mean age 40 years, 75% male (N=410, 18% Latino (N=98), 50% experiencing homelessness (N=275)]. Most patients had either Medicaid insurance (N=345, 63%) or no insurance (N=163, 30%). The most prescribed addiction medication was buprenorphine-naloxone (271 prescriptions, 82%), followed nicotine replacement therapy (38, 12%), buprenorphine alone (12, 4%) and naltrexone (9, 3%).

Conclusions: A telemedicine call line can be an effective way to deliver low-barrier addiction medications to high-risk patients during the COVID-19 pandemic.

Buprenorphine Telemedicine Utilization in Missouri's Safety Net Substance Use Treatment System During COVID-19 Lockdown

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Background: During the initial months of the COVID-19 pandemic and lockdown, many substance use treatment agencies closed or operated with limited hours. To promote COVID-19 social distancing and other safety precautions, federal agencies loosened or removed restrictions for telehealth service delivery related to buprenorphine for opioid use disorder (OUD). The extent to which these policy changes compensated for reduced in-person services by facilitating broader virtual access to the medication is unknown.

Objective: To assess the impact of COVID-19 and increased flexibility of buprenorphine-related telemedicine regulations on buprenorphine utilization in Missouri's publicly-funded substance use treatment system during the initial three months of the pandemic.

Methods: This study utilized state billing and service data to examine episodes of care (EOCs) among uninsured individuals with OUD receiving treatment in Missouri's publicly-funded treatment system. The volume and proportion of buprenorphine-related services were compared across March-May 2019 vs. March-May 2020, within the State Opioid Response (SOR) grant vs. outside of SOR treatment (Non-SOR).

Results: Within Non-SOR treatment, a comparable volume and proportion of EOCs involved buprenorphine during March-May 2020 as March-May 2019. Among SOR EOCs however, approximately half as many EOCs involved buprenorphine prescriptions in 2020 compared to 2019, with the proportion of total treatment EOCs involving buprenorphine decreasing by 10%. Correspondingly, the proportion of EOCs that involved no medication increased 12% within SOR during this time period.

Table 1. Buprenorphine Utilization

	Pre-COVID-19 (March-May 2019)		COVID-19 (March-May 2020)	
	Non-SOR	SOR	Non-SOR	SOR
Number and percent of total EOCs with a buprenorphine prescription	270 (31%)	563 (63%)	277 (30%)	252 (53%)
Percentage of total EOCs with no medication	56%	23%	59%	35%

Conclusions: Loosened restrictions on buprenorphine prescribing were not sufficient to maintain buprenorphine utilization during the first three months of COVID-19. Within the predictable decrease in the *total volume* of services provided during the COVID-19 lockdown, the *proportion* EOCs involving buprenorphine decreased further, while the proportion of those receiving no treatment medication increased. Differences between the SOR and Non-SOR programs may be due to the nature of the populations served, SOR providers having less telehealth infrastructure, or other reasons.

"I Don't Really See It As I Lost Anything Through the Virtual Appointments": A Qualitative Study of Addiction Treatment and Telehealth During COVID-19

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Background: The drug-related overdose crisis is worsening in the setting of COVID-19 with provisional drug overdose death data demonstrating a 24% increase in mortality, totaling almost 90,000 deaths. During these combined crises, maintaining access to medication for opioid use disorder (MOUD) is essential, life-saving care. Recent drug policy changes to increase access to MOUD during COVID-19 has shifted some outpatient MOUD treatment into virtual settings to reduce the demand for in-person care.

Objective: To qualitatively explore what is gained and lost in virtual patient encounters for patients with OUD at a low-threshold, on-demand addiction treatment clinic that offers buprenorphine and harm reduction services (Harm Reduction and BRidges to Care (HRBR) Clinic) in Portland, Oregon.

Methods: We conducted semi-structured interviews with participants who utilized virtual visits through HRBR Clinic. Interviews were dual-coded and analyzed using a directed content analysis.

Results: We conducted interviews between March and May 2021 (n=19). Five participants had both in-person and virtual visits at HRBR, 12 participants had videoconference and telephone visits only, and 2 participants had videoconference visits only. The sample was predominantly white (n=16) and stably housed (n=14) with comparable gender (male, n=10) and employment status (employed, n=9). Two overarching themes emerged: 1) the patient care experience and 2) clinic-related logistics. Elements relating to the patient care experience included interactions with providers, access to physical exams, mutual respect, patient preference, and patient-related

logistics (i.e., transportation, scheduling). Clinic-related logistics included the impact of on-demand services, convenience, and physical location. When participants were asked "if you had to choose between in-person or virtual visits, which would you ultimately choose?" 63% would choose virtual visits (n=12), 16% choose in-person visits (n=3), and 21% (n=4) would choose a mix between in-person and virtual visits.

Conclusions: Virtual visits were perceived as a valuable and critical option for accessing MOUD by the participants in our study. Though many participants felt virtual care was their preferred option, many preferred face-to-face visits due to relational aspects with providers. Participants desired flexibility and the ability to have a choice of virtual or in-person depending on their needs.

Extraordinary Success! Patient Thrives after Coordinating Care to Treat Active Leukemia, Psychiatric Illness and Opioid Use Disorder Despite COVID-19

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Adelson Clinic for Drug Abuse Treatment and Research, Adelson Clinic for Drug Abuse Treatment and Research

Background:

Opioid use disorder (OUD) due to prescription medications is an increasing problem worldwide. Acute myeloid leukemia is an aggressive cancer that results in fatal disease if left unmanaged. A woman who suffered from OUD, PTSD, borderline personality disorder, chemotherapy induced neuropathic pain, and acute myeloid leukemia was successfully helped to begin a life in recovery by bringing together via zoom and in-person meetings ten individuals from five interdisciplinary teams at three different institutions during the COVID-19 pandemic.

Learning Objectives:

1. Confidently practice evidence based medication treatment for OUD in cancer patients.
2. Identify circumstances when methadone or buprenorphine/naloxone is the most appropriate medication.
3. Use our model as a framework for developing a successful interdisciplinary approach to managing OUD, chronic pain, psychiatric illness and active cancer.

Case Presentation:

A 25-year-old woman with PTSD and borderline personality disorder developed acute myeloid leukemia at age 21. Chemotherapy resulted in cancer remission within 5 months, but also caused peripheral neuropathy. Different pain medications were ineffective, and so she was prescribed escalating amounts of oral fentanyl to 25 doses of 200mcg daily (5000 mcg/day). Her pain was not relieved, but she did develop OUD and opioid induced hyperalgesia. She had been a college student, however during the next 2 1/2 years of remission, she did not engage in any studies, hobbies or work due to her OUD. Starting in March 2020, just as COVID-19 was escalating,

combined in-person and zoom meetings were held to coordinate her inpatient cancer treatment, transition her onto buprenorphine, and continue her care in a medication-assisted treatment center. Since May 2020, more than one year, the patient has remained stable on buprenorphine/naloxone and her pain has become manageable with over the counter medications.

Discussion:

Increasing numbers of patients survive their cancer, but ultimately die from the OUD they developed during their cancer treatment. OUD can be successfully treated in cancer patients. Circumstances when methadone or buprenorphine/naloxone is the most appropriate medication include patient preference, optimizing pain management and safety. In March 2020, combination in-person and zoom meetings took place to coordinate her care. Our model offers a framework for developing a successful interdisciplinary treatment approach at other institutions.

Increased Provision of Unobserved Methadone During the COVID-19 Pandemic Did Not Increase Risk of Diversion

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Background:

Federal regulations specify the number of required weekly visits to opioid treatment programs (OTPs) for observed administration of methadone. Though regulations were explicitly designed to prevent diversion, evidence of this is sparse. In response to the COVID-19 pandemic, regulatory agencies allowed for increased provision of take-home doses of methadone to facilitate social distancing.

Objective:

To compare the rate of potential misuse or diversion of methadone prior to and following March 2020 changes in the provision of take-home methadone doses.

Methods:

We conducted a retrospective cohort study at three Bronx, NY OTPs pre- (12/16/19 to 3/16/20) and post- (3/17/20 to 6/16/20) regulatory changes. As a proxy for lower stability in opioid use disorder treatment, we selected a random sample of 20% of patients receiving observed methadone either 5 or 6 days weekly. We quantified the number of take-home doses over the study period. We assessed instances of potential misuse and diversion based on documentation in OTP clinical records (hereafter "diversion"). This was operationalized as a composite of: not returning take-home bottles at the subsequent OTP visit, returning someone else's bottles, returning defaced bottles, requesting methadone before scheduled, witnessed or attempted sales,

or other documented suspicious activity. We conducted interrupted time series analyses to compare the incidents of diversion per 100 take-home doses, month by month over the study period.

Results:

This sample (n=249, 31% women, 20% Black, and 69% Latinx, with a median methadone dose of 80 mg/day and treatment duration of 4.7 years) was dispensed a total of 5,724 (pre) and 13,848 (post) take-home doses. A total of 183 participants (73%) had no documented diversion. The number of incidents of diversion per 100 take-home doses was 0.56 (pre) compared to 0.54 (post). The monthly rate of diversion/100 take-home doses was flat during the pre-period, dropped March – May and returned to baseline levels May-June. Retention in OTP care at the end of the study period was 96%.

Conclusions:

Despite provision of over double the number of take-home doses of methadone, rates of diversion of methadone remained <1%. These findings are promising and provide evidence to sustain flexible methadone administration moving forward.

Beyond COVID-19: Will the Opioid Treatment Program Access Portal Remain Open?

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Background: The COVID-19 pandemic brought a unique opportunity to rapidly overhaul opioid treatment programs (OTPs) and policies in the United States. Prior to the disaster emergency, OTP policies guiding delivery of care have been viewed by providers and patients alike as notoriously stringent.

Objective: The present study assessed provider attitudes towards COVID-19 related changes to Pennsylvania regulations governing medication initiation, counseling, take-home privileges, and confidentiality in OTPs.

Methods: A survey was disseminated by email to 182 state-licensed OTP program directors using a list provided by the Pennsylvania chapter of the American Association for the Treatment of Opioid Dependence. The program director or designee for each organization completed the survey.

Results: There were 77 respondents to the survey, 65 of whom were administrators, with the remainder being clinical staff. Most respondents (N=37) worked in settings where buprenorphine was the opioid agonist provided, while 17 dispensed methadone only and 23 offered both medications. Forty-two percent of programs reported delivering counseling services via telehealth, although 62% of programs delivered 0-25% of their counseling services by two-way audio-video transmission. Despite the low rate of adoption of this approach for telehealth, most providers (N=68) indicated that they wish to continue telehealth services after the disaster

emergency has ended. While buprenorphine initiation via telehealth was also underutilized (52% of respondents reported initiating 0-25% of patients via telehealth), most respondents (N=32) would like to offer this service beyond the disaster emergency. Although policy changes allowed patients to receive increased take-home privileges, 53 respondents reported that they took advantage of this change in less than 26% of patients. Interestingly, about half of patients who were new to receiving take-home doses returned the correct number of empty bottles (45.8%). About half of respondents estimated that 76%-100% of methadone patients tested positive for methadone during monthly screening. Despite these potential diversion indicators, more than half of respondents (N=39) wished to continue to offer up to 28 days of take-homes for their patients.

Conclusions:

These findings indicate openness on the part of providers, mainly administrators, to embrace policy changes that could improve patients' ability to access treatment, although providers may be slow to adopt such policies.

2.2 Education

An Interprofessional Substance Use Disorder Training Program Spanning 6 Health Sciences Schools: Year 1 Outcomes

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Background: Interprofessional teams are important for providing high-quality care to individuals with substance use disorders (SUDs). Health profession students who participate in interprofessional learning programs may be better prepared to deliver team-based SUD care.

Objective: We developed and implemented a year-long, longitudinal, virtual SUD curriculum for students in 6 health sciences schools (Dentistry, Medicine, Nursing, Pharmacy, Public Health and Social Work) to improve learners' confidence, knowledge and attitudes about providing interprofessional SUD care.

Methods: Our elective 12-hour curriculum was developed by an interprofessional team of faculty including nursing, physician and social work experts. Each quarter students completed 2 hours of individual and/or small group activities before gathering as a large group for 2-hours of didactics and discussion groups on SUD screening (fall), assessment (winter) and treatment (spring). Themes of interprofessional collaboration, patient-centeredness, de-stigmatization and harm reduction were included throughout the program. Students were surveyed before and after completing the curriculum to: 1) determine their confidence with screening, assessment and treatment of SUDs, 2) assess changes in their attitudes about SUDs and 3) evaluate their readiness to provide care as part of an interprofessional team.

Results: We enrolled 99 students from 5 health sciences schools (36% from social work, 27% from medicine, 11% from public health, 10% from nursing and 6% from dentistry). 82 students completed both the baseline and end-of-program survey (response rate 83%). After the training, more participants agreed or strongly agreed that they could confidently screen (22% baseline, 80% after training), assess (12% baseline, 74% after training) and treat (14% baseline, 72% after training) patients with SUDs. Attitudes towards patients with SUDs were largely positive at the baseline assessment and were similar after the training. There were increases in the proportion of participants who understood their own profession's (71% baseline, 96% after training) or other professions' (58% baseline, 100% after training) roles in caring for patients with SUDs.

Conclusions: Our interprofessional SUD curriculum resulted in increased confidence in fundamental SUD skills as well as improved interprofessional attitudes among participants. An important caveat is that the students who voluntarily enrolled in this training may hold pre-existing positive attitudes towards the program's goals.

CHAMPioning Change: Training Generalist Faculty in Addiction Medicine and Behavioral Health

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Background: Only 11% of Americans with substance use disorders (SUD) receive treatment. General internal medicine (GIM) clinicians can address this gap with training in SUD competencies, which have been underemphasized in medical education. The HRSA-funded Collaborative Behavioral Health and Addiction Medicine in Primary Care (CHAMP) program provides faculty, residents, and students with enhanced training in addiction medicine and behavioral health to meet these educational needs. Here we describe development and implementation of a CHAMP faculty retreat.

Objective: To enhance clinical and educational skill development in addiction medicine and behavioral health among GIM faculty through a virtual retreat.

Methods: A six-hour virtual retreat in November 2020 for Yale GIM faculty included a morning plenary, five 45-minute concurrent workshops, and a lunchtime session on local SUD resources. Guided by a pre-retreat needs assessment, retreat topics included: pain and addiction, cognitive behavioral therapy, medications for addiction treatment, prescribing buprenorphine in practice, and harm reduction. Sessions facilitated by faculty experts offered a consistent framework of *practice pearls*, *teaching tools*, and *commit-to-change challenges*. A 3-item, 5-point Likert-scale survey with additional free text options followed each workshop. Follow-up surveys focused on skills gained from the retreat were collected after five months. Sessions were recorded and participants received continuing education credit.

Results: 39 out of 58 participants responded to workshop surveys. Participants found presenters to be knowledgeable (mean 4.75), inspiring and engaging (4.63), and communicated clearly (4.63). Strengths included use of patient cases, valuable materials, practical content, engagement with peers, and the creation of a safe learning environment. Improvement opportunities included

increased workshop time, more case-based learning, and role-play demonstrations. Follow-up surveys (n=8) showed many of the skills taught at the retreat were reported as being adopted or intended to be adopted in clinical practice (presentation will provide frequencies). Respondents most valued communication skills and knowledge gained about treatment options and local resources.

Conclusions: Topics in addiction medicine and behavioral health for GIM faculty can be effectively delivered through a virtual retreat. Case-based workshops featuring *practice pearls*, *teaching tools*, and *commit-to-change challenges* permitted participants to transform content into action.

Building a Pipeline for Addiction Medicine Research: MedStAR, a Novel Addiction Medicine Research Training Program for Medical Students in Five Western States

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Background: Building the pipeline of addiction medicine clinicians and clinician-researchers is critical for addressing the vast unmet needs of patients with substance use disorders. Prior efforts have largely targeted graduate medical education (fellowship programs) and continuing education (career mentorship and faculty development), leaving intensive medical student training overlooked.

Objective: We developed an innovative, comprehensive 3-year training program in addiction medicine research for medical students enrolled at a large regional medical school with urban and rural reach in 5 states (WA, WY, AK, MT, ID).

Methods: Our research training program recruits first-year medical students who participate in an intensive 9-week training block in the summer before their 2nd year which includes weekly didactic lectures and online trainings covering research methods, ethics, clinical topics and career development. Students receive longitudinal mentorship from research and clinical faculty mentors and a research methods coach. The goal for all mentees is a national conference presentation and published manuscript before graduation. The program is guided by a steering committee, an equity committee, and student feedback. Here we describe program implementation, including virtual adaptations due to COVID-19, and results from a trainee survey.

Results: During the 2020 inaugural year, we rapidly obtained stakeholder input then recruited faculty mentors and the initial class of trainees (n=8) from 4 states (WA, AK, MT, ID). Trainees were matched with mentors and research projects based on mutual interests. This cohort was 75% female, 50% Caucasian, and 37.5% disadvantaged, based on ≥2 federally recognized background identifiers. At the end of the summer block, 75% reported strong interest in addiction medicine careers and 75% in research careers. Students agreed the summer block experience helped create professional relationships with established addiction medicine

researchers, clinicians and mentors. To date, 4 students have presented at regional conferences, 5 abstracts have been submitted to national or international research conferences, and 1 manuscript has been published in a peer-reviewed journal.

Conclusions: A dedicated, longitudinal addiction medicine research training program for medical students in states with large rural populations is feasible and has the potential to build a pipeline of clinician-investigators pursuing careers in addiction medicine.

Creation of a National Addiction Curriculum for Frontline Providers: Evaluation After Roll-Out to 25 Family Medicine Residency Programs

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Background:

Despite the American Council on Graduate Medical Education (ACGME) designating addiction as a core competency in residency training,1 a standardized addiction curriculum has not yet been created. We have developed a National Addiction Curriculum that employs evidence-based content and evidence-based teaching principles.2-4 Our curriculum includes 12 modules and uses a flipped classroom approach. Each module consists of: a) an asynchronous, highly interactive online session (60-90 minutes) followed by b) an in-person application-based session (60 minutes) run by a faculty member using a comprehensive teachers' guide. Each module is also associated with continuing medical education (CME) credits. In January 2021, we launched this curriculum with 25 Family Medicine Residency sites.

Objective: To understand the learning value of this curriculum for both residents and faculty after providing 4 courses.

Methods:

We compared residents' pre- and post-responses from 673 knowledge-based questionnaires, and we thematically analyzed faculty feedback collected through four faculty development focus groups.

Results:

Compared to their pre-module tests, residents demonstrated post-module improvement in knowledge-based assessments, average increases of: 15% for SBIRT module, 6.5% for the Addiction as Chronic Disease module, 6% for the Taking a Substance Use Disorder Hx, and 9% for the Safe Prescribing of Opioids module.

Faculty members found the content of the modules evidence-based, relevant, and the flipped-classroom approach an effective teaching strategy. In particular, they identified the following as being important components to facilitating resident learning: emphasis on teaching communication skills (such as motivational interviewing) through videos and role-playing; in-

depth case discussions (depth over breadth), and one-page summaries of each module. To improve the curriculum, faculty recommended: protected time for residents to complete the modules, holding residents accountable for asynchronous learning, faculty training around teaching via virtual formats, and tailoring course content to local addiction resources.

Conclusions:

This flipped-classroom, evidence-based interactive curriculum improved resident knowledge around addiction topics and provided a forum for them to apply this knowledge in case-based and role-playing formats. Future research is needed to explore its impact on resident and faculty behaviors (diagnosis and management) of patients with SUDs.

Development and Validation of Standardized Patient Cases to Assess Medical Student Competence Managing Patients Presenting with Pain and/or Substance Use Disorder

Lisa J. Merlo, PhD, MPE[1], **Carolyn F. Stalvey, MD**[1]; William M. Greene, MD; Martha E. Brown, MD; Czerne Reid, PhD - (1) University of Florida

Background: Education on substance use disorders (SUDs) and pain management must be integrated throughout medical school training and include opportunities for skill practice. Interactions with standardized patients (SPs) allow medical students to obtain objective feedback on differential diagnosis and patient counseling skills.

Objective: To develop and test a portable SUD educational experience/assessment tool that can be integrated into the curriculum at medical schools nationwide.

Methods: Two faculty members with board certification in psychiatry and addiction medicine collaborated with the Standardized Patient Center Medical Director and a faculty member with expertise in addiction education to develop three SP cases. Cases involved individuals presenting with: SUD with co-occurring psychiatric symptoms (SP1); chronic pain without SUD (SP2); and chronic pain with SUD (SP3). Each case was pilot-tested with 3-7 cohorts of 3rd-year medical students completing their required Psychiatry clerkship (n = 15-20 students/cohort). After each cohort completed the SP encounter, results were analyzed. Revisions to the SP cases and/or clerkship curricula were implemented, as indicated, to better match the educational objectives. Due to COVID-19, the cases were also adapted for use as either live in-person experiences or simulated telehealth appointments (via PHI-Zoom).

Results: Checklist ratings highlighted significant deficiencies in student performance, with total scores for the initial cohort averaging 49.3% for SP1, 28.9% for SP2, and 44.4% for SP3. Despite some improvements resulting from modest curricular revision, scores for subsequent cohorts averaged 91.3-95.6% on Communication, 39.7-48.1% on History-Taking skills, and 30.9-52.6% on Patient Counseling, suggesting need for further curricular enhancement. Student comments highlighted the importance/value of the SP encounter (e.g., “It was useful to experience, moving forward in our careers. I didn’t feel equipped to handle the cases because I wasn’t sure what I was getting into”).

Conclusions: Patients with pain and/or SUDs are ubiquitous across medical specialties, but most medical students do not obtain sufficient practice working with these patients. SP interactions are a useful tool for assessing individual student clinical skill. Group performance scores can highlight gaps in the curriculum that require further emphasis. The experience can easily be adapted to a virtual (i.e., simulated telehealth) format, increasing accessibility and utility, and potentially lowering associated costs.

Adapting Buprenorphine Waiver Training for Undergraduate Medical Education: Medical Student Responses and Attitudes

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Background: Strong evidence supports the efficacy of medications for opioid use disorder (MOUD), but stringent policies impair access to treatment. Furthermore, many physicians report not feeling comfortable prescribing MOUD due to inadequate knowledge. Most medical students believe MOUD training should occur during undergraduate medical education (UME). As legislation surrounding the DATA-2000 waiver for prescribing buprenorphine is shifting, it is an opportune time to consider how to best incorporate MOUD training into UME.

Objective: This study examines medical student experiences completing the 8-hour MOUD-waiver training toward identifying the optimal way to incorporate MOUD training into UME.

Methods: At the start of their third year all students received a survey that included questions regarding experiences working with people with OUDs, and beliefs and knowledge regarding harm reduction and treatment. During pre-clerkship orientation, students were required to complete an 8-hour online MOUD training. After orientation, students completed another survey, which included questions about their perceptions of MOUD training.

Results: Ninety-five of 290 students (32.8%) completed MOUD training and both surveys. Before training, 60.0% had not heard of the DATA-2000 waiver, but the majority (82.1%) endorsed their interest in being able to prescribe buprenorphine. Although the majority (77.9%) stated they found the training useful, only half (53.7%) enjoyed it. Despite mixed feelings about training content and delivery, most students (79.1%) believed future medical school classes should receive MOUD training. Only 34.1% believed MOUD training should continue as a separate online training module; the majority thought it should be integrated, longitudinally throughout the current curriculum rather than provided as an individual online module.

Conclusions: Medical students want more education regarding MOUD; however, the 8-hour online MOUD training may not be the best approach for trainees. As 8-hour training is no longer required for all physicians prescribing buprenorphine for OUD, there is an opportunity to modify the content presented during UME. Introduction of an integrated, trainee-relevant MOUD training in UME should help future physicians feel confident in their knowledge to treat patients with OUD and comfortable applying for the waiver.

Technical Support of Physicians Through the Addiction Medicine Practice Pathway Application Process May Lead to Better Acceptance Rates

Lia M. Bennett, MPH; **Cara Poland, MD, MEd** - Michigan State University

Background: The Addiction Medicine Practice Pathway was launched in 2017 and closes in 2025. The practice pathway is a process for physicians to meet eligibility requirements for board certification without completing a fellowship. The level of detail necessary for successful approval is not clear when applying. Therefore, physicians who would otherwise qualify, are denied sitting for the exam despite meeting or exceeding the requirements. This is due to lack of documentation of practice activities.

Objective: Michigan Collaborative Addiction Resources & Education System (MI CARES) identifies physicians engaged in addiction medicine practice, but not board certified to provide technical support and education for documentation of their experiential hours on the addiction medicine certification application.

Methods: Participants were enrolled using a snowball recruiting method and continued with endorsements from local and national associations. We created an addiction medicine core content curriculum based on the board exam. From there, on-demand, asynchronous modules were developed to support the educational needs, including a module dedicated to the practice pathway application process. In addition, MI CARES developed tools that included a document of detailed descriptions of practice activities and an excel tracking tool that emulates the exam application to calculate experiential hours. MI CARES staff provided coaching and mentorship to participants. This coaching helped physicians verbalize their expertise and translate it to the specific practice activities.

Results: In the first year of the program, 230 physicians from 37 states enrolled. Over half (58.7%) were male and the majority were 25-44 years old (47.6%) or 45-64 years (43.3%). Just over half were white (55.0%) with Asian or Pacific Islander (19.0%) and Black (10.8%). Medical specialties include family medicine (29.4%), internal medicine (23.2%), psychiatry (22.4%), and emergency medicine (8.8%). Of 2020 applicants, 51 received board certification; twenty-four received coaching, and tracking tool review. Five participants had been previously denied. With assistance from MI CARES, they successfully achieved board certification.

Conclusions: To successfully apply for the addiction medicine practice pathway, physicians benefit from technical support and coaching. This educational program shows promise supporting physicians across the nation to become board certified.

2.3 MOUD Session 2

Medications for Opioid Use Disorder in Massachusetts Jails: Cost-Effectiveness and Impact on Overdose Deaths

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Background: Overdose risk is greatly elevated following release from incarceration. Nonetheless, the majority of prisons and jails in the United States discontinue medications for opioid use disorder (MOUD) upon incarceration, further exacerbating post-release overdose risk.

Objective: We sought to model the impact of statewide MOUD access during incarceration on population-level overdose mortality and cost in Massachusetts.

Methods: We employed a state-transition cohort-based mathematical model simulating the natural history of opioid use disorder (OUD) to estimate the number of overdose deaths and associated costs over a five-year period (2021-2025) in Massachusetts, comparing three strategies: 1) status quo with no MOUD available during incarceration, 2) a strategy where only extended-release naltrexone was offered, with 66% of patients initiating treatment and 30% linking to treatment post-corrections and 3) a strategy informed by existing correctional programs where the entire population is screened and initiates treatment (33% buprenorphine, 66% methadone, 1% naltrexone) upon incarceration and 70% link to treatment post-corrections. We derived model inputs and costs from state and national surveillance data, the Massachusetts Department of Corrections, clinical trials, and observational studies.

Results: The model projected 10,603 overdose deaths in Massachusetts in years 2021-2025. Compared to this status quo, a statewide extended-release naltrexone strategy for incarcerated individuals with OUD averted 94 deaths over 5 years—a 0.9% decrease. A strategy including all three MOUD averted 359 deaths over 5 years—a 3.4% decrease. The Incremental Cost-Effectiveness Ratio (ICER) of offering all three MOUD compared to status quo was $69,439 per quality-adjusted life year (QALY) gained. The strategy offering all three MOUD provided more life expectancy at a lower cost per QALY than the naltrexone-only strategy ($342,271), and thus offering all three MOUD is a dominating strategy in cost-effectiveness terms. Sensitivity analyses assuming lower initiation rates for MOUD showed fewer averted deaths, but similar ICER values.

Conclusions: This modeling study confirmed that for incarcerated individuals with OUD, a strategy including buprenorphine and methadone averted more deaths and was more cost-effective than a naltrexone-only strategy. Given escalating overdose deaths, correctional facilities should urgently implement MOUD programs as part of a suite of policies to combat the opioid epidemic.

Optimizing Buprenorphine-Based Treatment for Opioid Use Disorder During Incarceration: Understanding Barriers, Opportunities, and Racial Inequities

Nicky J. Mehtani, MD, MPH; Zoë Kopp, MD; Matthew Abrams, BA; Jacob Izenberg, MD - University of California, San Francisco

Background: Data has consistently supported the safety and efficacy of buprenorphine in the treatment of opioid use disorder (OUD) during incarceration and in reducing the risks of post-release mortality and morbidity. Yet, only a minority of jails have adopted the use of buprenorphine for this purpose and, among those that have, rates of medication continuation post-release have remained low. The criminal justice system's disproportionate targeting of people of color in the United States makes the availability of such medication-based treatment during incarceration an issue of racial justice.

Objective: To understand the lived experience of accessing treatment for OUD during incarceration, to identify unique barriers faced by people of color, and to use patient narratives as a guide to conceptualize improvements to OUD treatment in jail and at re-entry.

Methods: Structured interviews were conducted with 10 men with OUD receiving buprenorphine during incarceration and/or after release from an urban jail. Interviews were audio-recorded, professionally transcribed, and analyzed through a grounded theory methodology by two independent coders using an iterative process.

Results: Jail was described as environment in which the underlying causes of addiction—including isolation, racism, trauma, and negative self-narratives—were exacerbated. Existing policies surrounding OUD treatment, which involved the use of buprenorphine tapers, periods of abstinence, and medication re-initiation prior to release, were noted to be unintentionally racist and likely to increase the risk of buprenorphine mis-use among people in jail. Participants identified needs for increased transparency in the jail's buprenorphine treatment program, earlier treatment initiation, infrastructural support at transitions, and psychosocial programming as an adjunct to buprenorphine-based treatment. Risk of diversion was acknowledged as an ongoing issue, but one that could be mitigated and that exists beyond the scope of buprenorphine treatment.

Conclusions: Policies regarding the treatment of OUD in carceral environments must be intentionally anti-racist and appreciate the chronic disease nature of addiction. Patient-supported interventions that may optimize treatment during incarceration and retention post-release include the use of buprenorphine sublingual films over tablets, standardization of eligibility criteria for buprenorphine initiation, institution of maintenance buprenorphine early during incarceration, provision of bridge dispensing of buprenorphine at the time of release, and opportunities for psychotherapy and social networking.

Jail-Based MAT Services and Access to Community-Based Treatment

Meredith N. Silverstein, PhD[1], **Heather Ihrig, RN, MSN. MBA**[2], **Andrea Westinicky, MA**[1]; Lesley Brooks, MD; Cyndi Dodds, MS, LMFT; Brian Ferrans, MS; MJ Jorgensen, MPH, CHES, CDP - (1) University of Denver, (2) North Colorado Health Alliance

Background: Retention in substance use treatment post-incarceration is critical to reducing the risk of overdose.[1] Reported benefits of jail-based MAT include increased post-release intentions to continue MAT.[2] This presentation describes the MAT and intensive care

coordination services provided by a jail-based MAT program in Larimer County, Colorado. It also describes client-level program outcomes.

Objective: The purpose of this presentation is to describe the implementation and client outcomes of a jail-based MAT program.

Methods: Descriptive and inferential statistics to measure entry into and progression through jail-based care and into community-based treatment post release were calculated on a set of routinely occurring jail intake, treatment enrollment, and services data for a cohort of clients (*N*=405) enrolled in the jail-based MAT program between October 1, 2019, and August 31, 2020.

Results: There was a mean of 12.08 days (SD = 21.3) between jail intake and MAT enrollment. Buprenorphine was the most commonly prescribed MAT with 197 clients induced and 124 continued on this MAT. 73.9% of clients were contacted by the jail-based care coordinator an average of 8 days before their release date. On average, clients attended community based MAT provider appointment less than a week after being released. 46.9% of clients documented at least one return to custody. These clients were more likely to be induced on MAT at their first program enrollment (62.4%) compared to clients who had no return to custody date (50.2%). These clients were more likely to be continued on MAT ($X^2(1) = 5.99$, $p < .05$). One hundred sixteen (51%) clients attended at least one MAT treatment provider appointment post release although COVID-19 may have limited access to community-based care. From October 2019 through February 2020, 72% of clients attended at least one appointment.

Conclusions: Person-centered intensive care coordination initiated early in treatment as part of jail-based MAT programs may support access to and engagement in community-based MAT post-release. MAT continuation during incarceration for inmates with OUD may reduce the risk of return to custody. Limitations to these findings include the lack of a control group and longitudinal follow up to determine treatment dosage.

Sociostructural and Substance Use Factors Associated With Re-Incarceration Among People Who Use Drugs in Vancouver, Canada

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Background: Re-incarceration is associated with a high burden of health and social costs. Though individuals with substance use disorders are disproportionately represented in the criminal justice system, specific factors associated with re-incarceration risk among people who use drugs (PWUD) are not well-established.

Objective: To explore socio-structural and substance use factors associated with re-incarceration among a cohort of PWUD.

Methods: We used longitudinal data from two ongoing prospective cohort studies of PWUD in Vancouver, Canada from June 2006-November 2018. We included adults (≥18 years old) reporting at least one incarceration event in the last six months and who completed at least one

additional semi-annual follow-up study visit during the study period. We performed multivariable extended Cox regression to explore factors associated with re-incarceration.

Results: Among 468 participants, 346 (75.4%) were men, 255 (54.7%) identified as non-white, and 227 (48.5%) experienced at least one re-incarceration event. In the multivariable analysis, homelessness (adjusted hazard ratio [AHR] = 1.28; 95% confidence interval [95% CI]: 1.03-1.59), heavy alcohol use (AHR = 1.62; 95% CI: 1.22-2.16), and non-custodial sentencing (AHR = 1.62; 95% CI: 1.22-2.16) in the six months prior were positively associated with re-incarceration, while engagement in addiction treatment services (AHR = 0.76; 95% CI: 0.61-0.95) and sex work (AHR = 0.44; 95% CI: 0.26-0.76) in the six months prior were negatively associated with risk of re-incarceration.

Conclusions: Nearly half of PWUD in our sample experienced a re-incarceration event. Homelessness was strongly associated with re-incarceration in our study. Among substance use factors, heavy alcohol use was associated with re-incarceration, while measures of substance use involving unregulated drugs were not associated with re-incarceration after adjustment for multiple confounders. Access to stable housing and substance use services, including treatment for alcohol use disorder, following incarceration events may reduce risk of re-incarceration among PWUD. Decriminalization of substance use may also be an important intervention in reducing the substantial proportion of re-incarceration among PWUD.

Low Barrier Access to Buprenorphine in the San Francisco Shelter in Place Hotels

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Background: During the COVID-19 pandemic, San Francisco has also seen a dramatic increase in opioid overdose deaths. In April 2020, in response to the COVID-related emergency declarations, the City and County of San Francisco opened the first Shelter-in-Place (SiP) hotel. Over the following months, the city expanded the temporary emergency SIP program to include 25 SIP hotel for over 2,500 COVID-vulnerable people experiencing homelessness (PEH).

Objective: The need to address OUDs among marginalized populations is a critical priority. Over the past year, an interdisciplinary Street Medicine & Shelter Health team expanded low barrier access to buprenorphine in the SiPs, including on-site/at-home buprenorphine inductions and monitoring.

Methods: We present observational data to characterize the expansion of low barrier buprenorphine access in the SiPs and discuss this model for addiction treatment among PEH.

Results: Of the 25 SiPs, all were supported by frontline healthcare staff from the Department of Public Health and contracting agencies. An interdisciplinary, integrated healthcare team team served 2,059 PEH in the SiPs from 4/01/2020 to 02/28/2021. Of these, 316 (15.3%) were noted to have an OUD on intake. In a closer look at 2 sites comprising 243 beds, 78 (32.1%) of guests were found to have OUD and 43 (55.1%) were started on buprenorphine. At some sites, buprenorphine prescriptions were delivered next day by highly trained pharmacy staff. Weekly

delivery was continued for these clients as long as pharmacy access remained a barrier to engagement. Challenges were many and included locating patients for delivery and counseling, medication delivery and monitoring, continuation of medication, and COVID risk mitigation. There were also challenges for patients in decreasing opioid use and other illicit substance use as well as linkage to ongoing behavioral health and primary care. Despite challenges, many clients successfully continued buprenorphine MAT.

Conclusions: In this novel environment, we developed collaborations with on-site nursing and support staff, clinical pharmacists, and providers to improve low barrier access to MAT. An interdisciplinary team of nurses, providers, and pharmacists successfully expanded access to low barrier buprenorphine to residents of SiP hotels.

Barriers to Buprenorphine Use and Confidence in Treating People with Addiction Among a National Sample of Palliative Care Clinicians

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Background:

Buprenorphine is a versatile and unique opioid for treating pain and opioid use disorder (OUD). Little is known about barriers faced by palliative care (PC) clinicians to increased adoption of buprenorphine prescribing for patients with serious illness and addiction. Palliative Care (PC) clinicians have reported frequently encountering patients with OUD but endorse limited confidence in managing opioid use disorder and opioid misuse. It is unknown whether the DEA X waiver or buprenorphine use improves PC clinicians confidence in managing addiction in palliative care populations.

Objective:

1. Describe the prevalence and practice trends of PC providers licensed to prescribe buprenorphine for OUD
2. Identify and analyze attitudes, experiences, and challenges with a) obtaining buprenorphine licensure and b) prescribing buprenorphine.

Methods: We surveyed 100 PC clinicians with self-reported interest in buprenorphine regarding their waiver status, buprenorphine prescribing practices, comfort with managing serious illness and addiction, and barriers to waiver or prescribing buprenorphine. We used descriptive statistics and frequencies to describe study population and chi-squared tests of independence to examined the association between comfort managing patients with serious illness and addiction and buprenorphine waiver/prescribing practices. Qualitative responses were coded by independent investigators using a content-analysis based approach to identify recurrent themes.

Results: Among 100 respondents, 26% were licensed to prescribe buprenorphine and were actively prescribing, 31% were licensed but not prescribing buprenorphine, and 43% were not licensed to prescribing buprenorphine. No significant relationship was found between having a

waiver and comfort in managing patients with pain serious illness and addiction ($\chi^2(4)$ =2.6, p=.62). In contrast, clinicians who actively prescribed buprenorphine were significantly more comfortable in treating patients with serious illness, addiction, and pain (χ^2 (2)= 7.08, p= .029), compared to those who were waivered only but not prescribing buprenorphine. Barriers to buprenorphine were similar in all PC clinicians including lack of cross-coverage, insufficient knowledge, lack of mentorship and support, and prior authorizations.

Conclusions:

Interest in buprenorphine prescribing is high among PC clinicians, however multiple barriers hamper widespread adoption of buprenorphine prescribing. Reducing barriers to buprenorphine prescribing is an urgent issue in serious illness care. Importantly, prescribing buprenorphine improves clinician comfort in managing OUD and pain in palliative care populations.

Implementation of the Nurse Care Manager Model of Office-Based Opioid Treatment for People with Co-Occurring Opioid Use and Mental Disorders

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Background: Co-occurring mental disorders in people with opioid use disorder (OUD) are common and associated with poor outcomes, yet only a minority receive adequate treatment. One approach to OUD treatment that involves coordinated care between prescribers and nurses is the nurse care manager (NCM) model. However, the NCM model has been primarily used in primary care and provides minimal guidance on treating co-occurring mental disorders.

Objective: To implement the NCM model for treatment of patients with co-occurring OUD and mental disorders in an addiction psychiatry clinic

Methods: We developed an office-based opioid treatment program involving nurses, prescribers (psychiatrists and psychiatric nurse practitioners), social workers, and a peer recovery coach. Nurses focused on medication management for OUD, prescribers on psychiatric medication management, social workers on delivering group and individual psychotherapy, and recovery coach on providing recovery support. We collected mental health diagnosis and symptoms (Depression Anxiety Stress Scale-21) and substance use data at enrollment (January 2019 to September 2020) and at 6 months. We conducted focus groups of patients (n=12) and clinicians (n=7).

Results: At time of enrollment, patients (n=172) had a mean age of 40.7, 43.6% were female, and 73.7% were white. All patients were diagnosed with at least one co-occurring mental disorder; most commonly anxiety disorders (49%), post-traumatic stress disorder (47%), and depressive disorders (39%). Six-month treatment retention was 58%. Among the 102 patients who completed a 6-month follow-up, depression scores decreased from 23.4 to 16.0 over 6 months (p<.001), anxiety from 20.7 to 15.6 (p<.001), and stress from 26.5 to 20.8 (p<.001). Any past 30-day opioid use decreased from 23% to 8% over 6 months (p=.001); any other substance use

decreased from 37% to 16% (p<.001). Major themes from focus groups included: 1) the NCM model increases patient engagement and access, 2) the program increased patient self-efficacy, and 3) the program addresses a significant need: treating co-occurring mental disorders.

Conclusions: The NCM model for the treatment of co-occurring OUD and mental disorders is feasible and acceptable to patients and clinicians. Further work on the effectiveness of the NCM model for co-occurring OUD and mental disorders is warranted.

Peer Providers and Linkage with Buprenorphine Care After Hospitalization: A Retrospective Cohort Study

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Background:People with opioid use disorder (OUD) are increasingly started on buprenorphine during hospitalizations. However, many of these patients do not subsequently link to outpatient buprenorphine care after discharge. Peer providers, people who are in recovery and are employed to support patients with substance use, are a growing part of addiction care, but there has been little research on the outcomes of peer provider programs.

Objective: Examine whether patients who were seen by a peer provider during a hospitalization had greater odds of linking with outpatient buprenorphine care

Methods: Retrospective cohort study of adult patients with OUD who were started on buprenorphine during hospitalization between March 1, 2019 and February 29, 2020, using clinical records and administrative data. The primary outcome was receipt of a buprenorphine prescription within 90 days of hospital discharge. Secondary outcomes included attendance at a follow-up visit with a buprenorphine provider, and hospital readmission within 90 days. Relative odds of each binary outcome for patients who were versus were not seen by a peer provider were tested using logistic regression.

Results: 111 patients met the study inclusion criteria, 31.5% of whom were seen by a peer provider. 65.8% received a buprenorphine prescription within 90 days of hospital discharge. Patients with versus without peer provider encounters did not significantly differ in the odds of receiving an outpatient buprenorphine prescription (OR 1.2, 95% CI 0.5-2.9, p=0.67), hospital readmission (OR 1.7, 95% CI 0.7-4.1, p=0.23), or attendance at a buprenorphine follow-up visit (OR 1.0, 95% CI 0.4-2.6, p=0.92) within 90 days of discharge.

Conclusions: There was no difference in multiple measures of buprenorphine follow-up between patients who were seen by a peer provider and those who were not. There is need for further investigation into what elements of peer provider programs contribute most to patient outcomes and which patients may benefit most from peer support.

2.4 Overdose

Trends in Drug Overdose Mortality Among People Experiencing Homelessness in Boston, 2003-2018

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Background:

People experiencing homelessness have been disproportionately impacted by drug overdose. However, trends in overdose patterns, including the types of drugs involved, remain unknown in this high-risk population.

Objective:

To describe temporal trends in drug overdose mortality among a large cohort of adults experiencing homelessness.

Methods:

We identified a cohort of individuals who received care at Boston Health Care for the Homeless Program (BHCHP) from 1/2003-12/2017. We ascertained deaths that occurred from 1/2003-12/2018 by linking the BHCHP cohort to the Massachusetts Registry of Vital Records and Statistics death occurrence files, using the underlying cause of death field to classify deaths as drug overdose and the multiple causes of death fields to identify the drugs involved in each overdose. We used indirect standardization to assess the trends in age- and sex-standardized drug overdose mortality rates in the BHCHP cohort compared to the general Massachusetts population. We then evaluated trends in the types of drugs implicated in overdose deaths in the BHCHP cohort.

Results:

In this cohort of 60,092 homeless-experienced individuals, drug overdose caused 1,727 (24.2%) of all deaths. Of drug overdose decedents, 456 (26.4%) were female, 1,185 (68.6%) were White, 194 (11.2%) were Black, 202 (11.7%) were Latinx, and the mean age at death was 43.7 years (SD 10.8). The standardized drug overdose mortality rate in the BHCHP cohort was 12-times higher than the general Massachusetts population. Opioids were involved in 91% of drug overdose deaths. Synthetic opioid mortality started to increase in 2014 and peaked in 2017, increasing by 1,856% between 2013 and 2017. Between 2004 and 2018, opioid only overdose mortality decreased by 13%, whereas polysubstance opioid-involved mortality increased by 441%. Among opioid-involved polysubstance overdose deaths, cocaine was the most common comorbid substance, with opioid plus cocaine overdose mortality increasing by 311% between 2004 and 2018.

Conclusions:

Drug overdose mortality increased markedly over the past 15 years among people experiencing homelessness, accounting for 1 in every 4 deaths. Clinicians serving this high-risk population should be aware that synthetic opioids have become the driver of drug overdose mortality with polysubstance involvement predominating.

Data Miner Beware: The Poor Sensitivity of Health System Records for Overdose

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Background:

A rise in overdoses has spurred efforts to identify people who might need risk mitigation. These efforts may rely on software calibrated to diagnoses in Electronic Health Records (EHR) to identify persons at risk. To date there has been little effort to assess the accuracy of these diagnoses in relation to overdose with opioids or other substances. We assessed the sensitivity and specificity of EHR diagnoses in relation to survey-based assessment of overdose among Veterans, treating self-report as the reference.

Objective:

To assess the sensitivity and specificity of EHR diagnoses in relation to self-reported overdose among Veterans with ongoing or recent homelessness (VH), treating self-report as the reference.

Methods:

Through a national, cross-sectional, paper-and-telephone survey of VH receiving Veterans Administration (VA) primary care, we examined self-reported, nonfatal, overdose events, based on the question "In the last 3 years, have you had an overdose where you needed to go to the emergency room or get medical care right away?" with follow-up query of all substances (e.g., alcohol, heroin/fentanyl). Overdose in EHR for that period (2015-2018) was based on ICD-9 or ICD-10 codes for overdose or poisoning in the same category of substance reported.

Results:

Among 5766 VH respondents (40% response rate), 379 affirmed nonfatal overdose: 192 (51%) with alcohol, 83 (22%) opioids, 55 (15%) cocaine, 23 (6%) sedatives, Other 103 (27%). While specificity was high (97-99%), the sensitivity of EHR diagnosis in relation to self-report was low: alcohol 26%(49/192), opioids 6%(5/83), cocaine 6%(3/55), sedatives 18%(6/23). However, among all respondents, a high percentages of those with overdoses recorded in the EHR did not self-report an overdose experience: alcohol 57%, opioids 87%, cocaine 81%, sedatives 82%.

Conclusions:

Among homeless-experienced Veterans, EHR records poorly capture self-reported nonfatal overdose. Conversely, the majority of overdoses in EHR were not affirmed by self-report. Programs of overdose risk mitigation calibrated only to EHR could miss targets for intervention, particularly for VH who do not report events to clinicians, or for those whose histories are not well-documented. Because prior overdose predicts future overdose, research should consider whether a direct screening question could help target prevention and treatment efforts more efficiently.

Development of Guidelines for Conducting Post-Overdose Outreach

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Background:

Novel partnerships between public health and public safety emerged to address the unprecedented rise in opioid overdose. Teams of public health and law enforcement conduct home-based outreach visits to overdose survivors, and often include caregivers and social networks. Services offered or discussed at visits vary, ranging from materials provision (e.g., naloxone) to behavioral health care (e.g., counseling) to basic needs (e.g., housing), and even legal action (e.g., involuntary civil commitment). Lacking robust research on these programs, best practice guidelines that draw consensus from across experts and extant data are needed to shape the rapid pace of program adoption and refine implementation.

Objective:

We conducted a modified Delphi panel to develop best practice guidelines for the conduct of post overdose outreach programs by public health and public safety partners.

Methods:

A panel of 14 nationally-recognized experts in public safety and public health were invited to a modified Delphi panel. Based on a systematic literature review and informed by prior quantitative and qualitative research of 157 programs in Massachusetts, we developed an online survey inquiring about outreach program components, approaches to persistent implementation challenges, and principles for operations and staffing. Each question required experts to indicate their confidence in the topic and offered open response options. In subsequent rounds, questions lacking consensus and ≥80% confidence were re-administered alongside anonymized peer data for reconsideration of initial responses. A final meeting was held virtually, where consensus (≥75% agreement) topics were synthesized as guidelines and research gaps discussed.

Results:

12 experts took part in the guideline development process. For all topic areas assessed, at least three experts informed each survey item with ≥80% confidence. Initial consensus was reached on appropriateness of outreach, data sharing, and materials provision; other topics required additional processes to finalize. Guidelines for post overdose outreach suggest that staffing and operational characteristics that adopt more public health principles should be prioritized; law enforcement activities and involvement should be minimized in outreach. Future efforts are needed to better address racial disparities and support outreach following stimulant overdose.

Conclusions:

An expert-driven consensus approach derived best-practice guidance to inform the implementation of post-overdose outreach programs as community response strategies.

Use and Perception of Involuntary Civil Commitment Among Post-Overdose Outreach Teams in Massachusetts

Emily R. Cummins, PhD; Jennifer J. Carroll - Boston Medical Center

Background:

In response to increasing opioid overdose rates, novel partnerships between public safety and public health agencies emerged across Massachusetts to conduct outreach visits at residences of overdose survivors. Services are offered or discussed during visits, including involuntary civil commitment (ICC). This process involving court-mandated inpatient addiction treatment has mixed evidence of benefit, raising ethical concerns. Factors that lead to ICC discussions during post-overdose outreach are not well understood.

Objective:

In this mixed-methods study, we aimed to describe whether and how ICC was used as a tool in post-overdose programs. We describe perceptions of ICC among outreach staff.

Methods: We analyzed structured surveys and semi-structured interviews to identity factors associated with discussion of ICC during outreach. A two-phase cross-sectional survey was sent to 157 post-overdose outreach programs across Massachusetts. Survey data were analyzed using Pearson chi-square/Fisher's exact test to compare characteristics of post-overdose programs by frequency of discussing ICC. Thirty-eight semi-structured interviews with program staff were coded using thematic analysis.

Results: Surveys suggest half of programs who discussed ICC at >50% of outreach visits (25/50) discuss ICC as a first step to treatment, compared to 23% (20/55) of programs who discuss ICC on <50% of outreach visits. Qualitative interviews reveal staff in abstinence-oriented programs are more likely to bring up ICC at visits compared to staff in harm-reduction oriented programs. Many staff reported that family members of survivors were particularly interested and motivated for assistance petitioning for ICC for overdose survivors.

Conclusions: ICC is commonly but variably deployed during post-overdose outreach. Families of survivors are particularly drawn to ICC as a tool to help. Programs' focus on abstinence vs. harm-reduction shape how staff present [the benefits and costs of] ICC to community members. Research-based guidance is needed to inform whether and how ICC should be incorporated into post-overdose outreach

"Cry This Out Real Quick": Compassion Fatigue and Secondary Trauma in Post-Overdose Outreach Response

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Background:

Post-overdose outreach programs are an emerging response to the overdose crisis. For professionals implementing these programs, conducting outreach to overdose survivors and their social networks can be stressful and result in secondary trauma and compassion fatigue (CF). Little is known about these experiences among post-overdose outreach staff and whether programs support staff in navigating these experiences.

Objective:

This mixed-methods study used secondary data from a descriptive study of post-overdose outreach programs in Massachusetts to: (a) describe experiences of traumatic stress and CF among post-overdose outreach staff and (b) identify factors associated with the presence of support activities for staff.

Methods:

Experiences of secondary trauma and CF were examined through analysis of qualitative semi-structured interviews with 38 outreach staff, including law enforcement, social workers, recovery coaches, and harm reductionists from 10 program sites. We analyzed cross-sectional survey data from 137 programs to examine associations between community and program factors and the presence of grief support activities.

Results:

Team members described the enduring memory of difficult visits (particularly fatal overdoses), experiencing overwhelming emotion or desensitization, and delayed processing of visit-related trauma. Strategies for coping with secondary trauma included an acceptance of limits, compartmentalization, developing self-care practices, and employing "dark humor". Interviewees described relying on other team members for processing due to a lack of structured debrief activities.

More than half of programs (74/137) reported grief support activities for staff. Outreach programs indicated that they have protocols, but the extent or content of these activities remains unknown. The presence of support activities was significantly associated with the program being in operation longer, reviewing cases before visits, having written operating procedures, having protocols for social network grief support, offering training on compassionate/trauma-informed care and self-care, having more outreach team members, being more public health oriented, and conducting more hours of outreach per month.

Conclusions:

As post-overdose outreach programs proliferate, they should consider developing structured activities for supporting staff in coping with secondary trauma and CF. To ensure the sustainability of programs and prevent staff burnout, brief, adaptable interventions after outreach visits could help staff process difficult work and promote resilience.

Implementing a Scalable Statewide Emergency Department Take Home Naloxone Program

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Background:

The mortality risk of patients treated in the emergency department (ED) for a nonfatal overdose is high, particularly within the first 2 days. ED-based take home naloxone programs are one recommended harm reduction strategy to prevent overdose deaths. However, program implementation has failed to get traction in most EDs in Michigan due to limited resources.

Objective:

To describe and draw generalizable conclusions from the real-world implementation of ED take-home naloxone programs across 9 diverse hospital EDs in Michigan.

Methods:

Using the expertise of the Michigan Opioid Prescribing Engagement Network (MOPEN) and Michigan Emergency Department Improvement Collaborative (MEDIC), we recruited hospital sites and clinical champions interested in improving ED care for people who use drugs. Our MEDIC-MOPEN team surveyed each hospital regarding their existing opioid harm reduction services, and then developed naloxone educational resources, identified our targeted population based on CDC recommendations, developed local protocols for storage, ordering, and tracking naloxone kits, utilized a train-the-trainer model to educate nursing staff, and organized acute care-specific waiver courses aimed at increasing the number of ED-based buprenorphine

prescribers. To further assist other EDs, we developed a naloxone implementation guide with our training materials and protocols.

Results:

The hospital sites had annual ED visits ranging from 54,700 to 114,000 and were in urban (n=4), suburban (n= 4), and rural (n=1) areas. Although 3 of the 9 had existing take-home programs, only one ED had a well-established program. In our pilot year, we distributed >800 naloxone kits. The successes of our project were based on receiving seed funding that allowed leveraging of expertise in quality improvement and opioid harm reduction within a project management structure in partnership with frontline ED clinicians. Despite this, challenges still existed to the implementation of the program due to hospital contract negotiations, IRB approvals, and other competing priorities, including COVID-19 pandemic and other opioid-related projects.

Conclusions:

We have demonstrated that a statewide, inter-hospital network ED take-home naloxone program is scalable across geographically diverse communities and hospital networks. We believe this program can expand across Michigan and other states, and can provide the basis for sustainable, cost-effective models in future iterations.

A New Model for Widespread High-Volume, Low-Barrier Emergency Department Based Naloxone Distribution

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Background:

Emergency Departments (EDs) are key locations for high-volume, low-barrier naloxone distribution programs (NDPs). 28% of adult ED patients screen positive for substance use disorder (SUD). Many of those who screen positive only access healthcare through the ED. Nonfatal overdoses are treated almost exclusively in the ED, with an increase in mortality risk in the first 72 hours post-ED discharge. EDs are always open, well distributed geographically, and mandated to treat everyone regardless of ability to pay.

Unfortunately barriers to ED-implementation exist, including restrictive medication storage and dispensing regulations; stigma towards drug use; and limited staff capacity.

Objective:

1. Measure the pre and post implementation rates of naloxone distribution at the pilot ED;
2. measure the impact of a guide outlining the process of establishing ED-based NDPs by
    1. the number of EDs implementing distribution, and
    2. the total number of kits made available statewide for free distribution

Methods:

STATA software used to analyze pilot site ED prescriptions for 2018.

MS-Excel used to total the number of naloxone kits distributed since April 2019 program implementation.

Drawing on their implementation experience, the pilot site team created a guide outlining a novel low-barrier, high-volume NDP process permitting all staff classifications to distribute naloxone quickly, easily, and anonymously.

The guide was promoted via the CABridge.org website, presentations, and direct outreach to hospitals, government agencies, and nonprofit organizations within California, Illinois, and Arizona.

Results:

The pre-implementation naloxone distribution rate was 7 kits per month. 7 months after NDP implementation the rate was 452 kits per month representing a 65-fold increase.

9 local community programs began naloxone distribution as a direct result of the pilot site NDP. 47 California EDs have used the guide to establish NDPs and obtain 34,656 kits for free distribution. The guide is being adapted for use in Arizona and Illinois.

Conclusions:

Developing a novel high-impact ED-based NDP process, then distributing a guide outlining this process is a successful strategy for dramatically increasing naloxone distribution in EDs, which are high value targets for distribution, and at the pilot site catalyzed community NDP establishment. Our initial experience suggests this process has the potential for widespread expansion statewide and across state borders.

2.5 Pregnancy, Adolescents

Interpreting Unexpected Positive Fentanyl Test in Abstinent Pregnant Patient

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Background: Urine drug testing (UDT) during pregnancy is high-stakes for the parent-baby dyad. Fentanyl testing is relatively new to many clinicians and hospitals. Accurate interpretation of fentanyl tests is critical for obstetrics, pediatrics, and addiction clinicians who care for pregnant patients with opioid use disorder (OUD).

Learning Objectives:

This case will teach learners to:

- Recognize the possibility of delayed norfentanyl clearance
- Seek collaboration with laboratory colleagues to determine type of fentanyl assay and request quantitative testing to confirm unexpected results
- Interpret results of fentanyl testing for patients and interdisciplinary care teams

Case Presentation: A nulliparous patient with severe OUD entered prenatal care at 14 weeks gestation. She attempted buprenorphine inductions twice but ultimately presented to an Opiate Treatment Program (OTP) for methadone at 28 weeks gestation. She reported abstinence at 36 weeks while on methadone 100mg BID.

By week 37, despite reported abstinence and negative immunoassay results at OTP, hospital-based fentanyl testing was positive. The differential included ongoing fentanyl use versus delayed norfentanyl clearance. Quantitative LCMS testing was performed (Table 1). Laboratory colleagues were able to explain that different immunoassays were used at OTP (fentanyl immunoassay) and the hospital (norfentanyl immunoassay). Quantitative tests demonstrated slow decline and prolonged presence of norfentanyl in urine samples, which supported the patient's report of abstinence.

Table 1:

	OTP		Hospital		Patient report
Week of gestation	screen	LCMS fentanyl/ norfentanyl (ng/mL)	screen	LCMS Fentanyl/ norfentanyl (ng/mL)	
36	+	30.6/>200			last use <48h prio
37	-	1.3/72.1			abstinent
38	-	1.1/26.7	+	0.5/15.7	abstinent
39	-	0/4.7	+	0.5/11.7	abstinent

Discussion: Multiple reports describe delayed norfentanyl clearance in pregnant and non-pregnant people. Factors contributing to clearance rates include pregnancy status, CYP3A4 polymorphisms, and BMI. Quantitative testing should be performed and trended when screening results are inconsistent with patient report. Providers should include delayed clearance in the differential for positive fentanyl testing and be prepared to interpret results for multi-disciplinary team members given serious implications of ongoing substance use peripartum for child welfare services involvement.

Multidisciplinary Prenatal and Substance Use Treatment: A Patient-Centered Programmatic Evaluation

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Background: Substance use disorders, including opioid use disorders (OUD) in pregnant women, have been on the rise and shown to have adverse fetal outcomes. In 2019, 11-20% of pregnancy-related deaths in the United States were related to opioid use. Urgent systems-level change, including expanded treatment availability, is needed to mitigate the effects of this disorder.

Objective: We conducted interviews among postpartum women at a multidisciplinary prenatal and substance use treatment program to elicit their views about programmatic factors contributing to their successful pregnancy and recovery and their recommendations for improvements to care.

Methods: We utilized qualitative research methodology by conducting semi-structured, open-ended interviews with 14 patients at a multidisciplinary prenatal and substance use treatment program in an urban academic medical center. The interviews were audio-recorded and analyzed using a grounded theory approach to identify emerging themes and subthemes.

Results: Participants discussed programmatic factors across three distinct stages of involvement in the program including initiation of care, experiences in the program, and transition out of care. Participants feared denial of care, judgment, and stigma during their initiation of care. However, once they established care, 100% *(n*=12) of respondents felt that the multidisciplinary program treated them in a nonjudgmental manner. During care, patients valued feelings of mutual respect, trust, and understanding with their providers. While some felt that the program could have done more to prepare them for state-mandated involvement of Child Protective Services (CPS), 70% (*n*=10) of respondents felt adequately prepared. When transitioning out of care, 91% (*n*=11) of respondents preferred to remain in the program for 6 months or longer. Their resistance often stemmed from their fear and discomfort towards finding and establishing a relationship with a new provider.

Conclusions: Given the existing gap in OUD treatment availability for perinatal patients, research is needed in order to guide the creation of patient-centered treatment programs. Our study provides such a guide by outlining the programmatic factors valued by this patient population. Clinicians can utilize these findings in order to implement models of care that improve outcomes for perinatal women with OUD and their neonates.

Providing Non-Medical Resources to Pregnant Women with Co-Occurring Opioid Use Disorder and Intimate Partner Violence: Care and Service Provider Perspectives on Integrating Care

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Background: Co-occurring opioid use disorder (OUD) and intimate partner violence (IPV) among pregnant women have been widely documented in literature. Given the novelty of programs integrating care for these linked issues, it is important to understand beliefs and

attitudes regarding aspects of care (e.g., housing, transportation) that are not explicitly medical from the perspective of health and service providers.

Objective: To describe health and service provider perspectives on resources outside direct medical care in an integrated care model for pregnant and postpartum women with co-occurring OUD and IPV.

Methods: We conducted semi-structured interviews with substance use care providers of pregnant and postpartum women with co-occurring OUD and IPV. We asked providers (1) what care looks like for these women in their line of work, (2) what barriers and facilitators exist in coordinating integrated care, and (3) what additional services would be crucial in an integrated care model for these women.

Results: Ten providers, ranging from addiction medicine physicians to OUD peer navigators, were interviewed regarding the feasibility of an integrated care model. These providers listed housing (90%), childcare (80%), transportation (60%), and peer support (50%) as the most needed non-medical resources. Regarding integrating care, we found that providers: (1) admitted lacking knowledge of existing resources, (2) felt they overly relied on social work to make referrals for patients, (3) expressed a need for a "resource coordinator," and (4) conveyed interest in establishing formal partnerships with organizations that provide various resources.

Conclusions: Care providers of pregnant and postpartum women with co-occurring OUD and IPV acknowledge being unaware of resources outside of direct medical care despite recognizing these are necessary aspects of an integrated care model. Being unaware of resources facilitates the delegation of responsibilities to social workers, which can be offset by introducing resource coordinators and establishing formal partnerships with organizations (e.g., shelters).

Practice Implications: An integrated care model for pregnant and postpartum women with co-occurring OUD and IPV should not be limited to only medical treatments. Provider training on resources, establishing resource coordinators, and arranging formal partnerships with organizations are necessary in implementing an integrated care model for these women.

Stigma Surrounding Pregnant Women with Substance Use Disorders: A Qualitative Study of Underlying Cultural Beliefs

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Background: The potential for substance use during pregnancy to harm the developing baby has led to strong public discourse stigmatizing pregnant women with addictions. This has led to an increase use of punitive measures (e.g. criminalization of substance use in pregnancy, child custody loss). These policies have not improved this public health dilemma and can be counterproductive by decreasing women's willingness to access prenatal care, mental health treatment, and addiction services.

Objective: Success at altering public opinion and advocating for policy change is more likely when scientific findings are presented in a way that is informed by research on effective

communication strategies. To advocate for this population, it is important to identify the cultural beliefs that impact perceptions of pregnant women with addictions. Communication strategies can then be developed to counteract unhelpful beliefs and capitalize on more helpful beliefs. We thus sought to first identify cultural beliefs that are activated by discussing addiction during pregnancy.

Methods: Twenty participants completed a semi-structured interview eliciting opinions, attitudes, and understanding of pregnant mothers with substance use disorders. Participants were selected to represent diversity of ethnicity, gender, age, conservatism/liberalism, religiousness, and United States location. Interviews were audio-recorded, transcribed, and analyzed using NVivo software and inductive and deductive analytic coding.

Results: Qualitative analysis of interview data resulted in the emergence of the following themes related to why participants believe women use substances during pregnancy: (1) lack of education about the impact on the baby, (2) selfishness, (3) external stressors, and (4) addiction prior to pregnancy.

Conclusions: Individuals tends to call upon individualistic cultural beliefs, often focusing on the decision to use substances during pregnancy rather than taking a societal view of the factors that impact this public health crisis. This may lead to solutions that are focused on the individual (e.g. providing more education, increasing willpower). Communication strategies that focus on how addressing addiction during pregnancy can support a healthy and thriving society are likely to be effective as they will deemphasize beliefs about individual choices.

Treatment Initiation and Engagement for Adolescents and Young Adults with Substance Use Disorder

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Background: The prevalence of substance use disorder (SUD) is rising among adolescents and young adults. Quality of treatment varies widely, and little is known about rates of timely treatment initiation and engagement.

Objective: To determine rates of treatment initiation and engagement for adolescents and young adults with SUD using specifications from the corresponding 2019 Medicaid Adult Core Set quality measure (IET-AD).

Methods: We used a sample of publicly insured adolescents (13-17 years) and young adults (18-25 years) across 10 states from the IBM Watson/Truven MarketScan Medicaid 2018 data. Using measure specifications, we identified new SUD diagnoses (index episode in any clinical setting with no diagnosis in the preceding 60 days) and treatment initiation and engagement (defined as ≥1 claim within 14 days and ≥2 claims within 34 days of diagnosis, respectively, where claims with SUD diagnosis may or may not include specific behavioral or medication treatment). We

calculated unadjusted treatment rates and then used multivariable analysis adjusting for sociodemographic and comorbid clinical conditions to calculate adjusted rates.

Results: We identified 33,072 Medicaid-insured youth with a new SUD diagnosis between January-November 2018, including 13,411 (41%) adolescents and 19,661 (59%) young adults. Overall, 51% were male; 55%, non-Hispanic white; 33%, non-Hispanic black; and 3%, Hispanic. Use disorders included cannabis (65%), alcohol (20%), opioid (11%), and other (32%), and 22% had polysubstance use. The adjusted treatment initiation rates for adolescents and young adults were 24% and 27% for any SUD; 20% and 36%, opioids; 26% and 25%, cannabis; 18% and 21%, alcohol; and 13% and 18%, other substances ($p<0.05$ for differences between adolescents and young adults for all SUDs). Among those initiating treatment, adjusted engagement rates for adolescents and young adults were 65% and 62% for any SUD; 70% and 69%, opioids; 68% and 61%, cannabis; 58% and 58%, alcohol; and 51% and 53%, other substances ($p<0.05$ for any SUD and cannabis).

Conclusions: Three-fourths of adolescents and young adults do not receive timely initiation of treatment for SUDs. Once in treatment, a majority meet performance expectations for engagement, but there remains room for improvement. Drivers for successful SUD treatment initiation and engagement among youth should be further investigated.

Buprenorphine Utilization Among Adolescents and Young Adults During the COVID-19 Pandemic: An Interrupted Time Series Analysis

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Background: The COVID-19 pandemic has resulted in healthcare disruptions and increasing overdose fatalities. Adolescents and young adults (AYA) comprise 10% of annual opioid overdose fatalities in the US yet are less likely than adults to receive addiction treatment, and specifically medication such as buprenorphine. The impact of the COVID-19 pandemic upon buprenorphine utilization among AYA with opioid use disorder is unknown.

Objective: To characterize changes in buprenorphine utilization during the COVID-19 pandemic among US AYA, and evaluate whether insurance served as an effect moderator.

Methods: We performed an interrupted time-series analysis using the IQVIA all-payor anonymized prescription dataset of all prescription data throughout the US. We included AYA ages 12-29 with at least one buprenorphine prescription fill between January 2018 through August 2020. We stratified analyses by patient age group and insurance, and used descriptive statistics to estimate the effect of the COVID-19 pandemic on AYA buprenorphine utilization.

Results: A total of 413,152 AYA age 12-29 filled at least one buprenorphine prescription between January 2018 and August 2020; prescriptions per month ranged between 90,932-120,740. The monthly rate of buprenorphine prescriptions per 100,000 youth decreased 10.8% during the pandemic among AYA age 18-24 (pre-COVID 499.0; 95% CI, 473.3-524.8; during-COVID 445.2; 95% CI 421.8-468.7) and decreased 5.7% among AYA age 25-29 (pre-COVID

1791.0; 95% CI, 1744.2-1837.8; during-COVID 1688.4; 95% CI 1648.9-1728.0); Medicaid prescriptions rates did not significantly change during the pandemic among AYA age 18-24 (p=0.918) and 25-29 (p=0.068). Meanwhile, private insurance prescriptions decreased 19.1% among AYA age 18-24 (p=0.0081) and 14.9% in 25-29 year olds (p<0.0001), and cash/other prescriptions decreased 24.1% (p=0.0002) and 21.9% (p<0.0001) in 18-24 and 25-29 year olds, respectively. Among younger AYA age 12-17, the overall monthly rate increased by 9.7% (pre-COVID 25.0; 95% CI, 24.4-25.6; during-COVID 27.4; 95% CI 26.1-28.7), with small absolute increases in Medicaid and private insurance prescriptions, and a decrease in prescriptions filled with cash.

Conclusions: During the COVID-19 pandemic, buprenorphine prescriptions filled with private insurance or cash among US AYA age 18-24 and 25-29 significantly decreased, suggesting a possible unmet need among AYA with private insurance or who are uninsured.

Co-Occurring Intimate Partner Violence and Substance Use: Care Providers' Perceptions of Systems-Level Barriers to Integrated Services

Vanessa L. Murray, BS[1], **Esther Kim, BS**[1]; Judy C. Chang, MD, MPH; Chelsea Pallatino, PhD, MPH - (1) University of Pittsburgh

Background: A well-established link exists between intimate partner violence (IPV) and opioid use disorder (OUD). Health and service providers generally support the coordination of services for IPV and OUD for pregnant and postpartum women. Despite this, effective co-location and coordination of these interventions is often complicated by bureaucratic policies and practices.

Objective: To describe health and service providers' perspectives on the systemic factors that influence effective coordination of IPV and OUD services for pregnant and postpartum women.

Methods: We conducted semi-structured interviews with substance use care providers with experience treating women with co-occurring IPV and OUD. Interviews focused on their experiences providing care to these women, barriers and facilitators to coordinating care, and suggestions for practices to better serve this population.

Results: 10 providers working in Pittsburgh in the fields of medicine, social work, and behavioral health participated. With regard to factors that affect care coordination, several themes emerged: (1) A need for co-location of services was endorsed by most providers, who mentioned that the current geographic distribution impedes provider coordination. (2) Interdisciplinary collaboration with intra-agency conferences and meetings was seen as beneficial by all providers to share knowledge of resources and mitigate confidentiality issues. (3) While all providers agreed with the importance of dual-diagnosis treatment in this population, they also noted that lack of provider availability in the community leads to long wait times for appointments and difficulties connecting patients to care. (4) Many providers expressed support for an integrated model of care, but noted that limited funding was a barrier to development of such programs.

Conclusions: Participants in this study support co-location of services and interdisciplinary collaboration among providers of IPV and OUD services for pregnant and postpartum women. A

dearth of available outpatient dual-diagnosis treatment facilities and lack of funding were identified as barriers to a model of coordinated care.

Practice Implications: Although providers express interest in a coordinated model of care for pregnant and postpartum women with co-occurring IPV and OUD, systems-level barriers must be considered. Policies are needed that promote ease of collaboration among providers and address current resource gaps and funding challenges.

2.6 Alcohol, Stimulants, Benzodiazepines, Opioids

Barriers to Continuing Extended-Release Naltrexone Post-Discharge for Alcohol Use Disorder

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Background:

Only 1.6% of US individuals with alcohol use disorder (AUD) receive AUD pharmacotherapy. Most evidence for extended-release naltrexone (XR-NTX) for AUD is limited to outpatient settings. However, people with AUD may benefit from initiating XR-NTX during hospitalization given decreased follow-up rates and medication adherence. We implemented XR-NTX administration to hospitalized patients with moderate-severe AUD. Here, we describe follow-up for XR-NTX after hospitalization and the most common scenarios for XR-NTX discontinuation.

Objective:

Identify reasons for XR-NTX discontinuation after hospital initiation

Methods:

This is a retrospective chart review of hospitalized patients with moderate-severe AUD, who received XR-NTX between November 2019 – December 2020 and linked to outpatient clinics for continued XR-NTX doses. We describe scenarios where XR-NTX was discontinued following hospital discharge.

Results:

Seventy-two individuals received an initial XR-NTX dose during hospitalization. Twenty-six patients (36%) had follow-up outside our health system, and we were unable to verify continued doses. Of the remaining 46 patents, 22 (48%) received one or more additional XR-NTX doses within three months following hospitalization. Of the 46, 24 (52%) discontinued XR-NTX within six months. The most common reasons for discontinuing XR-NTX are:

Reasons*	Scenarios
Oral-NTX preferred	Oral-NTX initiated to overcome some of the barriers listed below (n
Provider difficulty in ordering	Process for XR-NTX ordering and insurance coverage unclear (n=1
Barriers to attending outpatient care	Transportation, no telephone, insurance loss, limited English profici lockdown orders (n=6)
Recovery	No further alcohol cravings (n=5)
Adverse effects	Injection site reactions (n=4)
Medical comorbidities	Hepatitis, provider/patient preference to address comorbidities befor (n=3)
Other AUD treatment preferred	Gabapentin, psychosocial treatment preferred (n=3)
Death	Death (n=3)

*Reasons are not mutually exclusive

Conclusions:

Half of our patients did not continue XR-NTX after hospital initiation. The most common reasons for XR-NTX discontinuation include patient preference for oral formulation, provider difficulty ordering XR-NTX and determining insurance coverage, and barriers to attending outpatient follow-up appointments. We must focus systems improvements on reducing provider barriers to ordering XR-NTX, educating providers on AUD treatment, and addressing the social factors that decrease access to XR-NTX treatment for individuals with AUD.

Rates of Alcohol-Related Care Among Veterans with Unhealthy Alcohol Use by Long-Term Opioid Therapy Receipt

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Background: Unhealthy alcohol use contributes to risk of opioid overdose.

Objective: We assessed whether receipt of alcohol-related care differs by long-term opioid therapy (LToT) receipt.

Methods: We conducted a retrospective cohort study using the Women's Veterans Cohort Study database from October 2009 to January 2018. We included all Veterans ≥18 years with a positive AUDIT-C (score≥5). We excluded those with prior short-term opioid receipt or prior diagnosis of alcohol use disorder (AUD), opioid use disorder, or cancer diagnosis. LToT (primary exposure) was defined as outpatient prescription opioid receipt of ≥ 90 days with ≤ 30 days between prescription refills one year prior to positive AUDIT-C. Primary outcome was receipt of brief intervention (BI) within 14 days of AUDIT-C. Among the veterans who received an AUD diagnosis at the time of positive AUDIT-C, we assessed a secondary outcome of receipt of medication for alcohol use (MAUD) within 30 days of positive AUDIT-C. Bivariate analysis and

multivariable modified poison regression models adjusting for differences between groups were used to assess outcomes by LToT receipt.

Results: Of 113,961 Veterans with a positive AUDIT-C, 6,222 Veterans received and 107,739 did not receive LToT. Veterans receiving LToT were more likely than those not receiving LToT to be older (36 vs. 35 $p<0.001$), male (93.2% vs. 92.8%, $p<0.001$), white (68.0% vs. 64.7%, $p<0.001$), and have lower AUDIT-C scores (mean: 6.72 vs. 6.81, $p<0.001$). Veterans with LToT were less likely to receive BI (67.5% vs. 70.1%, $p<0.001$). Of Veterans with new diagnosis of AUD, Veterans receiving LToT were less likely to receive MAUD (3.6% vs. 5.4%, $p=0.30$). After controlling for differences between groups, LToT receipt was associated with lower rates of BI (1.93 vs. 1.94, $p < 0.001$) and MAUD in patients diagnosed with AUD (1.94 vs. 1.97, $p = 0.032$).

Conclusions: Among Veterans with unhealthy alcohol use, Veterans with LToT were slightly less likely to receive brief intervention. Among Veterans who had AUD, Veterans with LToT were also less likely to receive MAUD. These results suggest that additional interventions are needed to increase rates of alcohol-related care within this high-risk population.

Alcohol-Induced Peripheral Neuropathy Leading to Wheelchair Need in a Patient With Alcohol Use Disorder

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Background:

Chronic alcohol use affects both the central and peripheral nervous systems. There is a high incidence of peripheral neuropathy (46.3%) and myopathy (40-60%) among people with chronic alcohol use.[1,2] Clinical evaluation is confounded by nutritional deficiencies that may cause similar presenting symptoms. The effects of alcohol on the nervous system can be debilitating for patients and irreversible even with alcohol cessation.

Learning Objectives:

1. Describe a severe clinical presentation of alcohol-induced peripheral neuropathy and myopathy and the relation of nutritional deficiencies.
2. Identify risk factors for alcohol-induced peripheral neuropathy.

Case Presentation:

A 58-year-old man with a history of severe alcohol use disorder and four prior intensive care unit admissions for alcohol withdrawal presented to the emergency department after being found down at home. The patient's reported alcohol use was 1.75 liters of vodka every three days for at least the past 10 years. Clinical presentation was notable for acute on chronic lower extremity weakness, urinary and fecal incontinence, with findings of muscle wasting, decreased rectal tone, and diffuse hyperreflexia. MRI spine was negative for cauda equina and showed no epidural abscess or infectious findings. Workup was notable for low zinc and magnesium. The patient

was also initiated on thiamine and folate supplementation. After two months, the patient was discharged to a long-term skilled nursing facility. An outpatient electromyography six months after last alcohol use demonstrated a severe sensorimotor large fiber neuropathic process. The patient remained unable to ambulate secondary to lower extremity weakness and required a wheelchair for mobility.

Discussion:

- Chronic alcohol use commonly leads to peripheral neuropathy and myopathy, which in its severe presentation can be confused for a spinal emergency like cauda equina.
- Though nutritional deficiencies are often seen in conjunction with alcohol use, weakness and neuropathy can persist even after nutritional repletion and alcohol cessation.
- The most important risk factor for alcohol-related neuropathy is total lifetime alcohol use. Other risk factors include duration of alcohol use and family history of alcohol use disorder.[1,3]

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Heart Plus: Contingency Management to Increase Clinical Attendance and Reduce Stimulant Use Among High-Risk Patients with Heart Failure in an Urban Safety-Net Hospital

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Background: Stimulant use can cause dilated cardiomyopathy (SA-CMP) and pulmonary hypertension resulting in frequent hospital admissions and higher mortality compared to non-SA-CMP. While no FDA-approved medications for stimulant use disorder (SA-UD) exist, contingency management (CM) is an effective behavioral therapy to treat SA-UD. However, there is no published data in its application to people with SA-CMP.

Objective:

- Demonstrate the effectiveness of a CM program in an urban safety-net hospital among patients with active SA-UD complicated by CMP.
- Explore barriers to participation, attendance, and abstinence.

Methods: We recruited participants with a recent admission for HF with reduced ejection fraction (<40%) with active SA-UD (cocaine and/or methamphetamine) to participate in Heart

Plus, a pilot 12-week addiction/cardiology CM program. Participants attended twice weekly in-person and telephone visits. They received rewards—ranging from affirmations to $5-$100 gift cards—for both attendance and stimulant-negative urine toxicology.

Results: Of the 38 patients deemed eligible between Aug 2020-March 2021, we consented 12 participants; 92% were male, 50% Black, 33% Filipinx, 1.7% White, with a mean age of 56 years. Three were engaged in outpatient cardiology care at baseline. Forty-two percent were experiencing homelessness and 50% were living in single-room-occupancy apartments. Majority (75%) used methamphetamine, 25% used cocaine. Nine weeks into the program, 1 participant had perfect attendance, 5 other participants had >75% attendance, and 4 participants were lost to follow-up. Poor telephone and reception access affected 67% participants leading to missed appointments. The highest earning thus far is $345, with mean earnings of $111. One participant has maintained abstinence from stimulants, while all patients report reduced use. Two participants have had a HF readmission after the start of the program.

Conclusions: Heart Plus addiction/cardiology co-management pilot displayed high acceptability and feasibility in delivering CM treatment to a racially and ethnically diverse patient population. We saw no differences among people who used methamphetamine versus cocaine. Telephone encounters overall expanded access to care, however other socioeconomic factors such as housing instability and poor Wi-Fi connection affected attendance. The pilot increased clinic engagement among medically and psychosocially complex patients with SA-CMP not previously engaged in outpatient care.

Retention of Patients with Co-Morbid Opioid and Methamphetamine Use Disorder after Instituting Low-Threshold Care in a Rural Alaskan Outpatient Buprenorphine Treatment Program

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Background:

Methamphetamine overdoses tripled in Alaska between 2015-2019, and the escalating use of methamphetamine by patients with opioid use disorder (OUD) increases overdose risk. Buprenorphine therapy reduces mortality; but methamphetamine with OUD users have lower retention in treatment in outpatient buprenorphine opioid treatment programs (OBOT).

Objective:

Our rural Alaska clinic cares for under-served remote villages and Alaska native populations, and we performed a retrospective analysis to see if retention of patients with OUD who use methamphetamine increased after adding low-threshold care services.

Methods:

Our rural OBOT added low-threshold services in 2018. We reviewed EMR records for all patients admitted to our OBOT program during the periods of May 2016-April 2018 (n=74,

treatment as usual-TAU), and May 2018-May 2020 (n=74, low-threshold) to identify patients who used methamphetamine. Patients were included if they met criteria for methamphetamine use disorder (16 patients from TUA group and 27 patients in low-threshold group), and excluded from study if they demonstrated 6 months of abstinence from methamphetamine use during treatment. PDMP records were reviewed to compare weeks of buprenorphine therapy for patients in each group.

Results:

The incidence of co-morbid amphetamine use disorder in our OBOT patients increased from 25% in the 2016-2018 group to 36% in the in the 2018-2020 group. Weeks of buprenorphine therapy was significantly increased in the low-threshold group vs the TAU group (23 weeks vs 9 weeks, P<0.05). The use of XR Buprenorphine in low-threshold group was associated with longer retention vs SL buprenorphine (32 vs 13 weeks, p<0.05). Peer support utilizers also showed increased retention in treatment (28 vs 16 weeks, p<0.05).

Conclusions:

The institution of low-threshold services in our rural Alaska OBOT was associated with significant increased duration of buprenorphine treatment in patients who use methamphetamine. Peer support and the use of XR buprenorphine were associated with a significant increase in treatment duration. This data supports the use of low-threshold care in the rural setting, and the use of peer support and XR Buprenorphine in this population to increase retention. This study is limited by its small population size, and future studies should pool data from multiple rural OBOTs to increase statistical power.

A Tale of Two Tapers: Lessons Learned From Two Outpatient Benzodiazepine Tapers in a Resident Primary Care Clinic

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Background:
Despite well established risks of long-term use, benzodiazepines are commonly prescribed to treat anxiety disorders. Patients may require or request discontinuation of benzodiazepine therapy, which necessitates a taper to avoid life-threatening withdrawal. Outpatient benzodiazepine tapers have both wide practice variety and various degrees of success.

Learning Objectives:

- Review best practices for outpatient benzodiazepine tapers
- Consider predictive patient-level factors for successful outpatient benzodiazepine tapers

Case Presentation:
Both outpatient benzodiazepine tapers occurred in the same urban, safety net primary care clinic. Both patients were middle aged men with anxiety disorders who had been prescribed benzodiazepines by previous providers, and neither met criteria for benzodiazepine use disorder

at the time of voluntary taper initiation. Both initiated SSRI therapy concurrent to their taper. Patient A had a history of alcohol use disorder in remission for over twenty years. Patient B had a history of alcohol use disorder in remission for seven years and current opioid use disorder on methadone maintenance therapy. Patient A was prescribed clonazepam for ten years by his previous primary care doctor. He tapered by 25% of total daily dose monthly for four months; he did not use benzodiazepines again, and his anxiety improved. Patient B was prescribed alprazolam for three years by a pay-only provider. He was unable to tolerate a monthly dose reduction of 12.5% of his total daily dose, so after three months he was switched to clonazepam and was tapered by 25% every three months with great difficulty. After ten months, he began using non-prescribed alprazolam at prior dosage, and his taper was discontinued.

Discussion:
Various guidelines suggest tapering benzodiazepines between 5% to 25% of total daily dose every one to four weeks, though no professional consensus exists. While all tapers require individualization and flexibility, tapers over six months may worsen long-term outcomes. Switching to a long-acting benzodiazepine may mitigate withdrawal and allow for a smoother taper experience. Little is known about patient-level predictors, but those with active or recent substance use disorders may be at most risk for discontinuation, as was seen in this case comparison.

Key Levers in Addressing the Opioid Crisis: The Role of Health Plans in Massachusetts

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Background: Opioid overdoses continue to increase, and mounting evidence suggests that the opioid crisis has been exacerbated by the COVID-19 pandemic. Health plans are key players in the delivery of opioid use disorder (OUD) treatment and the sustainability of innovative interventions, yet have been challenged in responding to the opioid crisis, especially during the pandemic.

Objective: This paper is part of the HEALing Communities Study (HCS) funded by NIH, which seeks to facilitate communities' adoption of activities that might reduce overdose deaths, such as wider access to medication for opioid use disorder (MOUD). We examine how health plans in one state (Massachusetts) encourage activities that some communities may adopt to address OUD with a focus on adaptations made during the pandemic.

Methods: We conducted semi-structured interviews with managers of behavioral health services at 10 health plans in Massachusetts that have Medicare, Medicaid, and commercial lines of business. Three plans in this sample contract with a specialized behavioral health organization ("carve-out"). The interviewees also completed a survey on policies regarding access to treatment and opioid prescribing. Interviews were recorded, transcribed, and thematically analyzed.

Results: All health plans expressed interest in increasing access to treatment for OUD, primarily through eliminating pre-authorization for MOUD. Health plans considered their provider

contracts as a key lever to boost treatment initiation, although expanding provider networks is challenging. Health plans encourage physicians to offer MOUD, but most do not provide incentives or training. Identifying high-risk populations is a key strategy in the HCS, and health plans use claims data to identify high-risk members and provide them with care navigation services. Most health plans take measures to influence opioid prescribing in conjunction with a pharmacy benefit manager. All health plans rapidly deployed policies during the pandemic to change the delivery of care.

Conclusions: This study provides insight into how health plans develop strategies to address the rise in OUD and fatal opioid overdoses, many of which are key in the HCS initiative. There is a high degree of variability in how active a role health plans play in increasing access to care, even within the insurance industry in one state (Massachusetts).

Trajectories of Prescription Opioid and Heroin Use From Adolescence to Age 50

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Background:

Due to a reduction in the availability of prescription opioids in the U.S., the potential transition from prescription opioids to heroin is a public health concern.

Objective:

We assessed unique trajectories of both nonmedical prescription opioid (NMPO) and heroin use from adolescence (age 18) to adulthood (age 50).

Methods:

We used panel data on 26,569 individuals from eleven cohorts of U.S. high school seniors (1976-1986) who were followed until age 50 (2008-2018). We measured past-year NMPO and heroin use at baseline and at ten follow-ups. Outcomes included substance use disorder (SUD) symptoms based on DSM-5 criteria for alcohol, cannabis, and other drug use disorders.

Results:

Of the respondents who indicated NMPO use, an estimated 7.5% had used heroin by the age of 50, while 70.3% of individuals who reported heroin use indicated NMPO use. The latent profile analyses assessing individuals who reported both NMPO and heroin use during the 32-year study period found four unique trajectory groups: (1) “age 18 concurrent use” (81.2%); (2) “mid-30s NMPO-to-heroin use transition” (10.7%); (3) age 19/20 NMPO-to-heroin use transition, followed by 40s heroin-to-NMPO use transition (4.3%); and (4) “mid-20s NMPO-to-heroin use transition” (3.7%). While all four of the NMPO/heroin trajectories had greater odds of indicating two or more SUD symptoms in middle adulthood (ages 35-50), respondents in the “mid-30s NMPO-to-heroin use transition” trajectory group had the highest odds of indicating two or more

SUD symptoms between ages 35-50. Individuals who engaged in only NMPO use with no history of heroin use had at least two times greater odds of indicating two or more SUD symptoms during middle adulthood relative to peers who never used NMPO or heroin. We identified several baseline risk factors that were significantly associated with belonging to high-risk trajectories.

Conclusions:

This is the first prospective study to assess NMPO and heroin use trajectories among a national probability-based sample followed from age 18 to 50. Any NMPO or heroin use is a significant risk factor for the development of SUD symptoms. Concurrent NMPO and heroin use in the mid-30s is an especially concerning trajectory, given the high risk of SUD.

2.7 Hospitals

An Innovative Hospital-Based Opioid Stewardship Program (OSP) in Vancouver, Canada: Descriptive Results One Year Post-Implementation.

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Background: Rates of prescription opioid use in Canada have tripled over the past decade. Parallel to increased opioid prescribing has been an increasing number of overdose deaths. Hospitals are often overlooked as a major contributor to the opioid epidemic.

Objective: To address this, a novel Opioid Stewardship Program (OSP) was developed and implemented at St. Paul's Hospital in Vancouver, Canada in January 2020. The OSP's goal was to improve opioid prescribing practices in a hospital setting to reduce or prevent adverse opioid-related events while improving or maintaining adequate pain control. Descriptive results from the first year of the program are presented here.

Methods: An audit-and-feedback approach to care was adopted. Patients admitted to hospital were screened for ≥ 1 high-risk opioid prescribing order (from 13 pre-defined and evidence-based criteria). Critical care admissions or patients followed by addiction/palliative/acute or chronic pain services were excluded. The OSP clinical team then triaged identified patients based on the number of high-risk opioid orders. A chart review (+/- patient discussion) was completed on included patients and, if appropriate, recommendations were provided. Beyond this, the OSP also provided consultative services upon request to hospital healthcare providers.

Results: In the OSP's first year, 5,931 unique patients admitted to hospital were identified to have ≥ 1 high-risk opioid order and contributed a total of 10,246 patient encounters. Two-thirds (67%) of patients were opioid naïve at the time of hospitalization. A total of 1,084 patient encounters were reviewed by the OSP with 1,599 recommendations made among 576 patient encounters. Acceptance of recommendations among prescribers was 93%. The most common recommendations offered included: stopping as-needed opioid medications (28%), optimizing non-opioid analgesics (18%), patient education (15%) and adjusting opioid dosages (11%). Over

the 12 month period, 49 consultations were requested with monthly variation observed (minimum = 1 consultation in January, maximum = 9 consultations in June).

Conclusions: Preliminary results of an innovative OSP indicate a high prevalence of high-risk opioid prescribing in an acute care setting, particularly among opioid-naïve patients. Implementation of a hospital-based OSP appears to be a widely accepted intervention to support hospital-based prescribers optimize their opioid prescribing patterns and pain management.

Perspectives on Caring for Hospitalized Patients With Opioid Use Disorder

Catherine Callister, MD; Steven Lockhart, MPH; Kaitlyn Hoover, BA; Jodi Summers, PhD, MCHES; Susan Calcaterra, MD, MPH - University of Colorado Anschutz Medical Campus

Background: In response to the opioid epidemic, addiction consultation services (ACS) provide dedicated hospital-based addiction treatment to hospitalized patients with opioid use disorders (OUD).

Objective: To assess hospitalist and staff perceptions of how the presence of two hospital's ACS affected care provided to patients with OUD and ongoing challenges in care delivery.

Methods: Qualitative study utilizing focus groups and key informant interviews for data collection. Transcripts were analyzed using a mixed inductive-deductive approach. Emergent themes were identified through an iterative, multidisciplinary team-based process based on a directed content analysis. Hospitalists (n=20), nurses (n=13), social workers (n=11), and pharmacists (n=18), in a university hospital and safety-net hospital in Colorado.

Results: In response to the availability of an ACS, hospitalists described increased confidence using methadone and buprenorphine to treat opioid withdrawal which they believed contributed to improved patient outcomes and job satisfaction. However, staff expressed concern about inconsistent care provided to patients with OUD based upon the physician's background and training level. Nurses and hospitalists reported frustrations with pain control among patients with OUD. Lastly, pharmacists reported various buprenorphine dosing strategies for OUD and acute pain, leading to concerns of inadequate analgesia or return to opioid use.

Conclusions: An ACS may offer positive benefits to patients, but benefits may not be uniform across patients. Given differing perceptions of challenges by professional groups, various strategies, including education and training or incentives to consult the ACS, may address these challenges. Future work could further examine other interventions to address hospitalized patients with OUD.

A Generalist Approach to Improve Care for Hospitalized Patients With Opioid Use Disorder

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Background: Patients hospitalized with opioid use disorder (OUD) do not commonly receive medications for opioid use disorder (MOUD) or linkage to community-based treatment. Building management pathways for OUD at institutions without expansive infrastructure or specialty-driven addiction care is important to scale improvement in clinical outcomes and reduce readmissions.

Objective: To create an OUD consult service, run by generalists, using Agile Project Management (APM) techniques to rapidly implement evidence-based care for hospitalized patients with OUD.

Methods: An interdisciplinary team, including generalist clinicians and pharmacists, and members from social work, nursing, quality, informatics, and data and analytics, was formed in 2019 to improve care for patients with OUD at a large, urban academic medical center caring for an underserved patient population. Using APM methodology, this team rapidly implemented a series of process improvement interventions that has included launching and scaling an inpatient OUD consult service, expanding inpatient uses of MOUD, developing informatics tools, creating a community-based treatment referral process, providing education for clinical staff, and increasing the number of X-waivered providers. The OUD program uses an informatics dashboard to track outcomes for hospitalized patients with OUD, including readmissions rates, length of stay, receipt of MOUD during hospitalization, and receipt of naloxone and bridging buprenorphine-naloxone scripts at discharge.

Results: To date this fiscal year (July 2020-April 2021), 296 OUD Consults have occurred. Consult patients were primarily African-American (85%), insured by Medicaid (69%), and male (61%). In total, 103 (35%) were managed and discharged with buprenorphine. An additional 118 (40%) were managed with methadone. Over 65% received naloxone at discharge. Length of stay averaged 8.4 days. Patients with OUD who had an OUD consult had a similar 30-day readmission rate to the institution-wide metric (11.6% vs 11.7%). Patients with OUD who did not receive a consult had higher readmission rates (14.9% if received MOUD during admission, 18.1% if did not receive MOUD during admission).

Conclusions: In settings with limited existing infrastructure for delivery of care for hospitalized patients with OUD, creation and scaling of an OUD consult service run by generalists, using APM facilitated rapid cycle implementation of evidence-based best practices, has led to improvements in clinical outcomes.

Lower Postsurgical Readmission For Patients With Opioid Use Disorder With Better Nurse Education and Staffing

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Background: Patients with opioid use disorder (OUD) are at increased risk of postsurgical readmission. Evidence suggests that outcomes of complex patients are better when patients are cared for in hospitals with better nurse education and staffing levels.

Objective: To determine whether surgical patients with and without OUD experienced lower odds of readmission when cared for in hospitals with better nurse education and staffing.

Methods: Cross-sectional secondary analysis of three linked data sources: 1) RN4CAST-US 2016 Nurse Survey, 2) American Hospital Association Annual Survey and 3) patient discharge data. Logistic regression models that included interactions between hospital-level measures of nurse education and staffing, separately, and patient OUD status, were used to estimate the association between nurse education (percentage of nurses with a Bachelor of Science in Nursing [BSN]) and nurse staffing (patients-per-nurse), separately, and odds of 7, 30, 60, and 90-day readmission. We generated margin plots to display the predicted probabilities of readmission at varying levels of nurse education and nurse staffing for surgical patients with and without OUD.

Results: The sample included 919,601 surgical patients in 448 hospitals in California, Florida, New Jersey, and Pennsylvania. Surgical patients with OUD accounted for 1.3% of patients. In the fully adjusted model controlling for patient and hospital characteristics, each 10% increase in the proportion of BSN-educated nurses was associated with significantly lower odds of readmission for surgical patients with OUD: 15% lower odds for 7-day readmission; 17% for 30-day readmission; 14% for 60-day readmission; and 15% for 90-day readmission, compared to 5% lower odds for those without OUD at each timepoint (Figure 1 shows 7-day readmission). Each additional patient per nurse was associated with 13% and 10% higher odds of 7- and 30-day readmission, respectively, for surgical patients with OUD.

Conclusions: Having a better educated nursing workforce and better nurse staffing improves the odds of good outcomes for surgical patients, and especially those with OUD. Hospital administrators should consider taking action to increase the percentage of nurses with a BSN and to improve nurse staffing levels to improve outcomes.

Figure 1. Predicted Probability of 7-day Readmission at Varying Percentage of BSN Nurses

Opioid Use Disorder Treatment Uptake in the Hospital: A Qualitative Study of Patients Who Received Hospital-Based Addictions Care and Hospital-Based Providers

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Background:

Hospitalizations related to the consequences of opioid use disorder (OUD) are rising. Addiction consultation services (ACS) increasingly provide OUD treatment to hospitalized patients.

Objective:

We examined barriers and facilitators to hospital-based OUD treatment uptake from the perspective of patients with OUD and from hospitalists, nurses, social workers, and pharmacists who care for hospitalized patients with OUD.

Methods:

We generated qualitative data by conducting key informant interviews with patients who received OUD treatment from an ACS during their hospitalization. Following their hospitalization, we interviewed nine patients with self-reported recovery from opioids since hospital discharge and 11 patients with self-reported active opioid use who were subsequently re-hospitalized (n=20). We conducted six focus groups (n ≈ 9 participants per group) and eight key informant interviews with hospital-based providers (n=62). Data were coded using ATLAS.ti software and emergent themes were identified through an iterative, multidisciplinary team-based process based on a directed content analysis.

Results:

Emergent themes related to hospital-based OUD treatment uptake included: benefits of in-hospital addiction expertise to provide education and support for patients and hospital-based providers, expanded use of methadone or buprenorphine to treat opioid withdrawal to improve the patient-provider relationship, the triad of hospitalization, self-efficacy, and low barrier treatment as a motivator for change in opioid use, inadequate pain control and unstable mental health conditions limited successful recovery from OUD, and stable housing and social support were prerequisites for sustained recovery from OUD.

Conclusions:

Modifiable factors to increase hospital-based OUD treatment uptake included early provision of opioid agonist therapy to mitigate opioid withdrawal symptoms, easily accessible, low barrier opioid agonist treatment continuation during hospitalization and after discharge, and, when possible, availability of addiction trained clinicians to support patients and hospital-based providers. Further research and public policy efforts are needed to address the barriers to OUD treatment uptake raised by study participants regarding lack of stable housing, chronic, uncontrolled mental health and medical illnesses, and lack of social support for this vulnerable population.

“Missing” Chronic Pain, Cascading Acute Pain and Discharge Against Medical Advice Among Hospitalized Patients with Opioid-Related Conditions

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Background: Patients with substance use disorders (SUDs) are more likely than those without to leave the hospital against medical advice (AMA), putting them at risk for worsening of illness, readmissions and death. Inadequate pain management has been identified as a potential factor in this phenomenon.

Objective: To describe characteristics of AMA discharges from Philadelphia hospitals in 2017 among persons with opioid-related conditions, including the relationship to chronic and acute pain.

Methods: We conducted a secondary analysis on a large database (Pennsylvania Health Care Cost Containment Council) of discharges from general acute hospitals in Philadelphia in 2017, including logistic regression to understand how chronic and acute pain indicators correlate with AMA discharge, adjusting for length of stay, gender, age, and housing insecurity.

Results: Almost 16% of the 7,972 admissions involving opioid-related conditions culminated in a discharge AMA, which is five times higher than in the general population. Consistent with prior research, AMA rates were positively associated with polysubstance use, nicotine dependence, depression, and homelessness. Over half (59.4%) of the hospitalizations for the quarter of patients (N=956) with multiple admissions during 2017 culminated in discharge AMA. Chronic pain diagnoses were inconsistent for these patients appearing, for the same patient, in one admission but not in subsequent admissions ("missing" chronic pain). In adjusted analyses, documented chronic pain was negatively associated with AMA discharge (OR=0.57, 95%CI: 0.44-0.73), and "missing" chronic pain (OR=1.97, 95%CI: 1.51-2.57) and presence of acute pain (OR=2.03, 95%CI: 1.78-2.30) were positively associated with AMA discharge. Missing chronic pain indicators were more common among unstably housed patients (25.07% vs 9.64%, $p<0.0001$).

Conclusions: Discharge AMA is common among people with opioid-related hospitalizations. Risk of leaving AMA is associated with the identification of chronic and acute pain. Leaving AMA also fits within a pattern of increasing infectious morbidity. The observed relationship between housing instability, "missing" chronic pain and leaving AMA raises troubling evidence of potential bias in pain assessment and its role in a pattern of incomplete care. These findings underscore the importance of pain care in disrupting a process of self-discharge, intensifying harm, and preventable financial cost and suffering among patients with opioid-related conditions.

Hospitalist Perspectives on Buprenorphine Treatment for Inpatients With Opioid Use Disorder

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Background:

Overdose deaths due to fentanyl and fentanyl analogs are on the rise. Accidental overdose is now the leading cause of death in Americans under age 50. There is a critical need to reduce harms associated with heroin and fentanyl and to increase access to buprenorphine, one of the medications for opioid use disorder (OUD).

While there has been substantial research regarding the initiation of buprenorphine for OUD in the emergency department and outpatient settings, there has been scant research on initiation of buprenorphine in the inpatient setting. Hospitalists, the providers that work in inpatient settings,

may have a unique opportunity to intervene on behalf of these patients. Yet their experiences with and attitudes towards buprenorphine for patients with OUD are unknown.

Objective:

To understand hospitalist perspectives and attitudes on buprenorphine treatment for inpatients with OUD

Methods:

As part of a larger study examining hospitalist perspectives on treating inpatients with OUD, we conducted semi-structured qualitative interviews with hospitalists from one major metropolitan university hospital and one urban community hospital in a city with a high prevalence of OUD and overdose deaths. Hospitalists were asked about their experiences, successes, and difficulties in prescribing buprenorphine to hospitalized patients with OUD. Interviews were transcribed and coded by the analysis team using NVivo 12.

Results:

22 participants were interviewed. Among these, 14 identified as female, 8 identified as male, 16 identified as White, 4 identified as Black/African American, 4 identified as Asian. Mean age was 37 years (range 29-54), and 63.6% reported having a personal connection to addiction. Providers cited a lack of outpatient infrastructure, a lack of training in OUD management, and difficulties obtaining authorization to prescribe buprenorphine as barriers to inpatient initiation of the medication.

Conclusions:

Hospitalization due to acute illness or complication of drug use represents a potential intervention point to initiate buprenorphine for patients with OUD. While hospitalists exhibit willingness to prescribe buprenorphine, they identify training and infrastructure barriers that must first be addressed.

Identifying Factors That Contribute to Burnout and Resiliency Among Hospital-Based Addiction Medicine Providers

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Background:

Hospital-based addiction consultation services can provide lifesaving care to vulnerable patients at high risk of death. Little is known about the experience of providers working on addiction consult services, and if and how they experience burnout and compassion fatigue versus engagement and resiliency within their practice. It is important to identify the factors that contribute to burnout and resiliency in order to create a sustainable workforce.

Objective:

To identify factors contributing to burnout and resiliency among inpatient addiction medicine providers.

Methods:

Participants, including MDs (16), SWs (7), and PA/NPs (3), were recruited via email from 12 institutions across the country. Semi-structured interviews were conducted to investigate factors contributing to burnout and resiliency within each of the key components of a previously established model for burnout and resiliency. Interviews were recorded, transcribed and then coded in Atlas.ti. The codebook was developed by a multidisciplinary team and reconciled by 3 team members. Queries for each code were summarized and analyzed by team members. Emerging themes were discussed at team meetings.

Results:

Emerging themes included: the importance of serving as an advocate for marginalized populations, the prevalence of stigma toward people who use drugs, and the role of the addiction medicine consult service in relation to other services and the larger hospital system. With respect to the last theme, two key factors were found to contribute to burnout during interactions with other services in the hospital: (1) feelings of responsibility for all patients with substance use disorders, and (2) feeling ignored by other services. Resiliency was created through consult interactions when other services were receptive to the treatment recommendations, advocacy, and education work of the addiction medicine providers.

Conclusions:

Inpatient addiction medicine providers derive a deep sense purpose through working with stigmatized, marginalized populations and are strongly motivated advocates. While many providers find meaning in their consult, education, and advocacy work, it is also a main source of burnout, particularly when consult recommendations are ignored, patients feel stigmatized, and education and advocacy work fails to "move the needle".

2.8 Harm Reduction

The Overdose Surge Bus: A Mobile, Low Barrier Opioid Use Disorder Treatment and Harm Reduction Model in Philadelphia

Margaret Lowenstein, MD, MSHP; Ellena Popova, MD; Kristina Pamela Garcia, MD; Judy Chertock, MD - University of Pennsylvania, Prevention Point Philadelphia

Background:

Access to treatment and harm reduction services for opioid use disorder (OUD) are critical for reducing morbidity and mortality. To address the overdose crisis in Philadelphia – which has the

highest overdose death rate of any large US city, - Prevention Point introduced its mobile overdose response unit. The unit combines two initiatives: 1) mobile buprenorphine induction and linkage to treatment and 2) overdose prevention interventions, including distribution of naloxone and fentanyl test strips.

Objective:

To lower barriers to evidence-based treatment and overdose prevention services in neighborhoods with high burden of overdose and limited connection to health and social services.

Methods:

The mobile unit is staffed by rotating University of Pennsylvania faculty physicians, medical trainees, a medical case manager, and two overdose prevention specialists. The team reviews citywide overdose data to determine areas of high concentrations of overdoses, and the mobile unit is deployed to those areas for a period of several months. Patients presenting to the mobile unit are assessed by the case manager and physician, and receive same-day buprenorphine initiation, followed by weekly stabilization and maintenance visits. Patient are seen between 2-8 weeks and then referred to partner community treatment providers. Evaluation metrics include patient characteristics, number treated, and linkages to longitudinal care.

Results:

From 9/2020-5/2021, the program initiated buprenorphine in 125 patients at 4 sites. Patients were majority male (72%) with a mean age 44. Most were publicly insured (80%) or uninsured (11%). Patients were 60% Black, 28% white and 4% Asian. 52% reported prior non-fatal overdose. 46% were homeless or unstably housed, 23% had a primary care provider and 1% had a mental health provider at enrollment. 93% of patients returned for at least one visit. 33% completed a handoff to longitudinal care, 32% remain in the program, 25% were lost to follow-up, and 4% were discharged. 86% of referrals went to primary care-based OUD treatment sites.

Conclusions:

A low-barrier, harm reduction treatment model is a feasible way to in engage patients with OUD in high-risk communities. This model was able to reach a diverse group of patients who were largely disconnected from health services.

Heroin Pipe Distribution to Reduce High-Risk Drug Consumption Behaviors Among People Who Use Heroin: A Pilot Pretest-Posttest Quasi-Experimental Study

Thomas Fitzpatrick, MD[1], **Vanessa M. McMahan**[2,3]; Shilo H. Jama, Noah Frank; Sara Glick; Lauren Violette; Lisa Al-Hakim; Madeline Kramer; Shantel Davis - (1) University of Washington, (2) San Francisco Department of Public Health, (3) The People's Harm Reduction Alliance

Background:

Heroin can be consumed in several ways, including injection and smoking. Heroin pipe distribution may encourage people who use heroin (PWUH) to transition from injecting to smoking heroin, reducing harms associated with injection drug use. A syringe services program (SSP) in Seattle, Washington led by PWUH developed a heroin pipe distribution program.

Objective:

We conducted a pretest-posttest quasi-experimental study to evaluate the impact of heroin pipe distribution on drug consumption behaviors and health outcomes among PWUH.

Methods:

SSP clients were surveyed during three weeklong timepoints before and four weeklong timepoints after heroin pipe distribution. Surveys collected information on drug consumption behaviors, health outcomes, pipe use, and perceived impact of heroin pipe distribution. Primary outcomes were change in proportion of SSP clients who exclusively injected heroin, exclusively smoked heroin, and both injected and smoked heroin in the past seven days comparing the pre- and post-intervention periods.

Results:

694 unique respondents completed 957 surveys across the seven observation timepoints. Multiple responses from a single respondent in a given period were collapsed, resulting 360 pre-intervention and 430 post-intervention records. Heroin use was reported in most pre-intervention (55.8% 201/360) and post-intervention records (58.4% 251/430). Compared to pre-intervention behaviors, the proportion of respondents who exclusively injected heroin was lower after heroin pipe distribution (31.9%, 80/251 vs 42.7%, 86/201 p=0.02), while the proportion of respondents who both injected and smoked heroin was higher (45.0%, 113/251 vs 35.8%, 72/201, p=0.048). 43.8% (110/251) of respondents who used heroin during the post-intervention period used a heroin pipe from the SSP, of which 33.6% (37/110) reported heroin pipe distribution had reduced their heroin injection frequency.

Conclusions:

Heroin pipe distribution was associated with a decrease in the proportion of SSP clients who exclusively injected heroin. Larger randomized studies with longer follow-up periods are needed to investigate whether heroin pipe distribution reduces heroin injection and improves health outcomes associated with drug use. Limited intervention exposure, loss to follow-up, and pipe availability from other sources pose methodological challenges to evaluations of route transition interventions in community settings. This pilot study highlights the potential for organizations led by PWUD to develop, implement, and evaluate novel public health programming.

Treatment Outcomes in a Low-Threshold Syringe Services Program-Based Buprenorphine Treatment Program

Andrea Jakubowski, MD, MS; Benjamin Hayes, MD, MSW, MPH; Brent Gibson, PhD; Christine Fitzsimmons, ASN; L. Synn Stern, RN, MPH; Franklin Ramirez, BA, Mercedes Guzman, MPH; Susan Spratt, BA; Pia Marcus, BA; Brianna Norton, DO, MPH; Aaron Fox, MD, MS - Montefiore Medical Center, Albert Einstein College of Medicine

Background: Low-threshold buprenorphine treatment aims to reduce barriers to evidence-based treatment for opioid use disorder (OUD) by adopting a flexible, harm reduction-oriented treatment approach. In February 2019, a large urban syringe services program (SSP) and an academic medical center partnered to develop a buprenorphine treatment program onsite at the SSP. Little is known about buprenorphine treatment outcomes in SSP settings.

Objective: To describe retention in and adherence to buprenorphine treatment over time.

Methods: This retrospective study included all SSP participants who received one or more buprenorphine prescriptions from Feb 5, 2019 to October 9, 2020. We collected data on patient characteristics, substance use, buprenorphine prescriptions, and urine drug test (UDT) results from standardized clinic intake forms and the electronic health record. We evaluated patient retention using buprenorphine prescription data and evaluated buprenorphine adherence using UDT results. We operationalized retention in two ways: 1) the percentage of patients retained at 30, 90 and 180 days, and 2) total percentage of days "covered" with a buprenorphine prescription during the first 180 days of treatment.

Results: From Feb 5, 2019 to October 9, 2020, 118 patients received one or more buprenorphine prescription. The majority of patients were middle-aged (mean age 44, SD 1), male (68%), Hispanic (31%) or Non-Hispanic Black (32%), homeless (46%), with current heroin (90%) and crack/cocaine (62%) use and current injection drug use (59%). Sixty-two percent were retained for 30 or more days, 43% for 90 or more days, and 31% for 180 or more days. The median percentage of days covered with a buprenorphine prescription during the first 180 days of treatment was 43% (IQR 8-92%). Of the 82 patients who completed two or more UDTs, the median percentage of buprenorphine-positive UDTs was 71% (IQR 40-100%).

Conclusions: In an SSP-based low-threshold buprenorphine treatment program, approximately one third of patients continued buprenorphine treatment for 180 days or more, comparable to other low-threshold settings; buprenorphine adherence was high during treatment episodes. SSPs are promising locations to provide low-threshold buprenorphine treatment to patients at high risk for opioid-related harms.

Meeting Hospitalized Patients Who Use Substances Where They are: Implementing Harm Reduction Kits

Rachel Perera, BS[1], **Marlene Martin, MD**[2]; Louise Stephan, BS; Ro Giuliano MS; Robert Hoffman; Mitch Aman BA; Paula Lum MD, MPH; Marlene Martin MD - (1)San Francisco General Hospital, Addiction Care Team, (2)University of California, San Francisco

Background: Harm reduction (HR) reduces "the physical, social, emotional, and economic harms associated with substance use and other behaviors on individuals and their community" (SFDPH,

2021). Hospital-based substance use disorder (SUD) care has focused on withdrawal management and initiating medication for addiction treatment. Existing U.S. hospital HR efforts are limited to naloxone prescribing. Offering on-site HR supplies and education allows hospitals to better care for individuals with SUD. We describe an HR supply and education intervention via an addiction consult service, the Addiction Care Team (ACT), at San Francisco General Hospital, an urban, safety-net hospital.

Objective: To describe the feasibility and acceptability of an emergency department (ED) and hospital HR intervention geared at reducing stigma, improving SUD care, and linking patients to HR community based organizations (CBOs).

Methods: We performed a patient HR needs assessment. We then partnered with the San Francisco AIDS Foundation (SFAF), a CBO that receives city general funds to provide local HR services. SFAF provided supplies including needles, pipes, cookers, and fentanyl test strips.

Simultaneously, we engaged executive, regulatory, and nursing leadership. After ensuring regulatory compliance, participating in HR trainings, and developing a workflow, we piloted HR kits on two medical-surgical floors before expanding throughout the ED and hospital.

Results: The needs assessment included 30 patients. Between August 2020 and April 2021 we distributed 115 kits.

Patient feedback

Many patients were unaware stimulants merit overdose prevention, that fentanyl test strips and an overdose prevention hotline exist, and that cookers can transmit infections. Recently relocated individuals reported reusing needles and welcomed learning about local CBOs. Patients found the intervention destigmatizing.

Staff and provider feedback

Staff and providers appreciated the educational opportunity to expand HR knowledge beyond naloxone. Providers show increased HR receptiveness marked by more ACT consults for HR.

Conclusions: HR kit implementation was feasible and effective in our safety-net hospital. We performed a needs assessment, partnered with a CBO, and obtained wide support. Patients, staff, and providers accepted kit implementation. The intervention opened conversations about substance use, stigma, and HR education. We will focus next steps on expanding HR kits to when ACT members are offsite, and further evaluation.

Drug User Health Hubs in New York State (NYS): Results of a Qualitative Study Describing Services Offered in a Novel Co-Located Harm Reduction and Treatment Model

Mercy Ude, MPH; Czarina N Behrends, PhD MPH; Kitty Gelberg, PhD MPH; Rebecca Goldberg; Shea Kelly, MPH; Rakkoo Chung; Shu-Yin Leung, MA; Bruce R Schackman, PhD; Shashi N Kapadia MD - Weill Cornell Medicine

Background: Co-located models of care at syringe service programs (SSPs) can improve health outcomes for persons who inject drugs (PWID). The NYS Department of Health (NYSDOH) has provided enhanced funding to some SSPs, designating them as “Drug User Health Hubs,” an innovative program designed to promote services that addresses opioid overdoses, including the provision of buprenorphine as treatment for opioid use disorder. An improved understanding of the implementation of services to address opioid overdoses as a Health Hub in contrast to standalone SSPs is crucial for optimizing service delivery.

Objective: We sought to understand implementation of co-located care through a qualitative descriptive study of the services offered by Health Hubs compared to standalone SSPs in upstate NYS.

Methods: We conducted semi-structured interviews with 6 staff-members from 3 Health Hubs and 5 staff-members from 3 standalone SSPs. Participants were selected based on participation in an ongoing evaluation study of the Health Hubs program. Interviews were conducted over WebEx, recorded and transcribed. We used content analysis to code interviews, aiming to describe the services offered and elicit contrasts between Health Hubs and standalone SSPs.

Results: We found that Health Hubs uniquely offered co-located buprenorphine treatment in a “low barrier” model. Health Hubs received more referrals to their services and referrals from more diverse sources than standalone SSPs; respondents attributed this to an increased community profile after being designated as a Health Hub. Additional Health Hub partnerships included those with emergency departments (ED), medical providers and local law enforcement. Both Health Hubs and standalone SSPs provided client navigation services, infectious diseases testing, and overdose aftercare, but more Health Hubs provided aftercare through collaborative efforts with the local ED.

Conclusions: In addition to enabling buprenorphine treatment, the Health Hub program allowed for unique community relationships as evidenced by the wider variety of referral sources and collaborations reported by Health Hubs. Both Health Hubs and SSPs offered critical services such as infectious disease testing and overdose aftercare. Future studies should investigate how Health Hubs and standalone SSPs understand their role in providing care to PWID and determine which services to prioritize.

HIV Exposure Prophylaxis Delivery in a Low-Barrier Substance Use Disorder Bridge Clinic During a Local HIV Outbreak at the Onset of the COVID-19 Pandemic

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Background: People who inject drugs (PWID) are disproportionately affected by human immunodeficiency virus (HIV) and experience gaps in access to biomedical HIV prevention. Emerging data support the benefits of integrating HIV post-exposure and pre-exposure prophylaxis (PEP, PrEP) into the services already accessed by PWID, many of which experienced operational disruptions due to the coronavirus 2019 (COVID-19) pandemic.

Objective: We describe PEP and PrEP eligibility and prescribing patterns in a low-barrier substance use disorder (SUD) bridge clinic in Boston, MA, an area experiencing an HIV outbreak among PWID, at the onset of the COVID-19 pandemic.

Methods: We performed a retrospective chart review of new patients seen in a SUD bridge clinic in Boston, MA between January 15, 2020–May 15, 2020 to determine rates of PEP and PrEP eligibility and prescribing.

Results: Among 204 unique HIV-negative patients, 85.7% were assessed for injection-related HIV risk factors and 23.0% for sexual HIV risk factors. A total of 49/204 (24.0%) met CDC eligibility criteria for HIV exposure prophylaxis, including 7/204 (3.4%) eligible for PEP and 48/204 (23.5%) eligible for PrEP. Four of 7 PEP-eligible patients were offered PEP and all 4 were prescribed PEP. Thirty-two of 48 PrEP eligible patients were offered PrEP, and 7/48 (14.6%) were prescribed PrEP. Additionally, six PWID were offered PrEP who did not meet formal CDC criteria. On average, there were 2.0 PEP/PrEP prescriptions/month prior to modified COVID-19 operations, and 3.5 PEP/PrEP prescriptions/month after operational changes, which included a partial shift to telemedicine.

Conclusions: In spite of variability in sexual and injection risk behavior assessment, SUD bridge clinics serve patients with high rates of CDC-defined PEP and PrEP eligibility. In this study, the majority of patients with identified PEP/PrEP eligibility were offered PEP/PrEP, suggesting that future bridge clinic work focus on increasing identification of PEP/PrEP eligible patients in this setting. Multiple PrEP offers to PWID who did not meet formal CDC criteria also suggested provider concern regarding the sensitivity of CDC criteria in this population. Overall, SUD bridge clinics represent a promising clinical setting in which to scale biomedical HIV prevention services to PWID.

The Impact of the COVID-19 Pandemic on People Who Inject Drugs Accessing Harm Reduction Services in a Rural Context

Kinna Thakarar, DO, MPH; Michael Kohut, PhD; Rebecca Hutchinson, MD, MPH; Deb Burris, RN CRC; Hannah Loeb BS; Rebecca Bell MD; Kathleen Fairfield MD, DrPH, MPH - Maine Medical Center, Tufts University School of Medicine

Background: The impact of social distancing policies during the COVID-19 pandemic on people who inject drugs (PWID) has varied across regions.

Objective: Our study objective is to describe the impact of the pandemic on PWID access to harm reduction services in a rural state.

Methods: We conducted semi-structured interviews with rural and urban PWID, community stakeholders, and providers in Maine. We explored how changes made during the pandemic impacted access to harm reduction services, including basic services (i.e., shelter), syringe service programs (SSPs), low barrier treatment, and peer support. Interviews were audio-recorded, professionally transcribed and analyzed using the framework method. We used Penchansky's model of access, with Saurman's modification, as a theoretical framework to

identify six dimensions of access—accessibility, availability, acceptability, affordability, adequacy, awareness.

Results: We interviewed n=36 stakeholders (n=9 community stakeholders, n=9 providers, n=18 PWID). Mobile outreach, mail delivery of equipment, and relaxed telemedicine regulations facilitated accessibility to SSPs and low barrier treatment. Elimination of the one-for-one needle exchange increased availability, acceptability (i.e., perception of service), and affordability. On the other hand, one-for-one needle exchange implementation reduced availability and adequacy of SSPs. Distrust and stigma were barriers that reduced acceptability of treatment, peer support services, and basic services **(Table)**.

Conclusions: The COVID-19 pandemic has impacted access to harm reduction services among PWID. We identified several facilitators and barriers around accessing these services, particularly in rural areas. Our results can inform policies to mitigate the negative impacts on PWID.

Dimension of Access	**Facilitators**	**Barriers**
Accessibility	- Outreach - Outdoor services - Mailing equipment - Relaxed policies	- COVID-19 screening - No cell phone coverage - Inclement weather
Availability	- Relaxed policies - SSPs collaborating - Resilience	- Changing locations - One-for-one needle exchange - Increased drug use
Acceptability	- Face to face outreach - Trust - Relaxed policies - Mobile outreach	- Masking - Social distancing - Stigma - Lack of trust - Law enforcement
Affordability	- Relaxing rules	- Unemployment - Higher drug costs
Adequacy	- Community resilience - COVID-19 screening	- Limited service hours

<table>
<tr><td>Awareness</td><td>- Trust in outreach</td><td>- Miscommunication around policies
- Stigma</td></tr>
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Injecting Alone: Practices and Preferences Among People Who Inject Drugs in New York City

Lindsey R. Riback, MPH; Bilal T Abbas, MPA, MSW; Andres E Perez-Correa, MD; Megan M Ghiroli; Teresa López-Castro, PhD; Aaron D. Fox, MD MS - Albert Einstein College of Medicine, Montefiore Medical Center

Background: Injecting alone is a suspected risk factor for opioid overdose death. Developing safe injection spaces could reduce overdose risk, but they would require people who inject drugs (PWID) to inject around others, while they may prefer to inject alone. Little has been published in the public health literature on the injection preferences of PWID.

Objective: The objective of this study was to determine injection practices and preferences among PWID attending syringe exchange programs (SEPs).

Methods: We surveyed 101 PWID with opioid use disorder from 3 SEPs in New York City between November 2020 and April 2021 to ascertain addiction treatment and harm reduction preferences. Eligible individuals were at least 18 years old with self-reported injection opioid use. We conducted a secondary analysis examining preferences for injection behaviors, reasons for these preferences, and self-reported non-fatal lifetime overdoses.

Results: Most participants were male (75%) and Hispanic (72%), with a median age of 42 years. Slightly more participants preferred injecting alone (57%) than with others (43%). Most participants in both groups reported experiencing prior non-fatal overdoses (71% vs 67%, $p=0.73$), with those injecting alone reporting a slightly higher average number of lifetime non-fatal overdoses (4.0 vs. 3.1, $p=0.43$), although differences were not significant. Commonly reported reasons for preferring to inject alone were privacy (85%), confidence in injecting self (83%), and not wanting to be judged (74%). Commonly reported reasons for preferring to inject with others were having someone present in case of overdose (91%), comradery (67%), and sharing drugs (60%). Nonetheless, a majority of those in both groups reported injecting alone most of the time (91% vs 54%, $p < 0.01$).

Conclusions: While preference for injecting alone was not associated with self-reported prior overdose, injecting alone was common among SEP participants and likely still carries risk for future overdose. Reasons for preferences, such as injecting alone due to perceived stigma or injecting with others in case of an overdose, can inform a rational public health response. Innovative harm reduction measures, such as safe injection spaces, can address both preferences - reducing stigma and providing an overdose response - and may mitigate overdose risk.

Best Research Abstract and Runner-Up Presentations

Racial Inequities in Clinicians' Illicit Drug Test Ordering Proclivities for Pregnant People

Abisola Olaniyan, MBBS, MPH, PhD; Mary E. Hawk, DrPH, LSW; Dara D. Mendez, PhD, MPH; Steven M. Albert, PhD, MS; Judy C. Chang, MD, MPH - University of Pittsburgh Graduate School of Public Health

Background:

The American College of Obstetricians and Gynecologists recommends universal verbal screening for substance use in pregnancy but not universal urine toxicology testing. Clinicians' decision to test for illicit drugs in pregnancy could expose a woman and her newborn to varying legal and social consequences. There is, therefore, a need to investigate for racial differences in testing despite the lack of evidence of racial disparities in substance use in pregnancy.

Objective:

This study aims to measure racial disparities in prenatal illicit drug testing in pregnant people based on their illicit drug use disclosure pattern.

Methods:

We utilized data from an NIH-funded parent study (Talking to Pregnant Patients), an observational study of patient-clinician communication regarding substance use in first prenatal visits. Study participants were pregnant people attending their first prenatal visit and their obstetric clinicians. We collected data for this study from audio recordings of initial obstetric visits, post-visit questionnaires including patient reports of their race/ethnicity, medical record abstraction documenting the conduct of urine drug testing. We assessed the independent association of race and receipt of urine toxicology testing after controlling for potential confounders. We stratified the data based on the patient's illicit drug use disclosure pattern to the clinician during the initial prenatal consultation.

Results:

Of the 341 participants, 70 disclosed illicit drug use at the initial visit, and 50 (71%) of these participants were tested for illicit drug use. Two-hundred seventy-one (271) participants did not disclose illicit drug use to their clinician; 38 (14%) of them received urine toxicology testing. For those who revealed illicit drug use, Black patients were more likely to be tested for illicit drugs than their White counterparts in both the unadjusted (OR = 3.1) and adjusted (OR = 11.8) model. For those who didn't disclose illicit drug use, White patients were more likely to be tested (OR = 2.0) than their Black counterparts in the unadjusted model.

Conclusions:

We identified racial differences in illicit drug use testing rates between Black and White pregnant people. Our results highlight the presence of clinician's racial bias and the importance of interventions to address racial bias in healthcare.

High Interest in Injectable Hydromorphone Treatment Among Syringe Services Participants With Refractory Opioid Use Disorder in NYC

Bilal T. Abbas, MPA, MSW; Lindsey Riback, MPH; Andres Perez-Correa, MD; Megan Ghiroli; Teresa López-Castro, PhD; Aaron Fox, MD, MS - Albert Einstein College of Medicine, Montefiore Medical Center

Background: Despite the worsening opioid overdose crisis, the Unites States (US) Food and Drug Administration has not approved new medications to treat opioid use disorder (OUD) in almost two decades. Injectable hydromorphone (HDM) is an approved treatment option in Canada for individuals with OUD refractory to first-line medications. Prior studies demonstrate that injectable HDM reduces illicit opioid use, improves health, and reduces illegal activity among people who inject drugs (PWID), but patients' attitudes about this novel treatment in the US are unknown.

Objective: To identify PWID who may be interested in and benefit from injectable HDM treatment within a US setting.

Methods: We recruited 101 PWID with OUD from 3 syringe services programs (SSP) in New York City (NYC). Eligibility criteria were: age ≥18 year and self-reported injection opioid use. We assessed interest in injectable HDM on a 4-point scale and considered a score of 3 or 4 as being interested. We conducted bivariate analyses to examine whether opioid use, prior OUD treatment episodes (detoxification, inpatient, outpatient, or pharmacotherapy), public injection, or illegal activity other than drug possession (all self-reported) were associated with interest in injectable HDM.

Results: Participants were predominantly male (75%) and Hispanic (72%) with a median age of 42 years. Most (62%) were interested in injectable HDM treatment. There were no sociodemographic differences between participants who were and were not interested in injectable HDM; however, those reporting interest reported more: 1) lifetime OUD treatment episodes (13.6 vs. 10.5, p=0.04); 2) heroin use in the prior 30 days (26.4 days vs. 22.3 days, p=0.01); 3) public injection (46.9 times vs. 21.6 times, p=0.02); and 4) illegal activity (38% vs. 11%, p <0.01).

Conclusions: SSP participants reported great interest in injectable HDM. Participants were very treatment experienced, yet used heroin almost daily and frequently injected in public. The association between injectable HDM interest and heroin use, public injection, and illegal activity suggests that those who most want this innovative treatment are those most at-risk for opioid-related harms. There is an unmet need for injectable HDM treatment, which warrants clinical trials in the US to test feasibility, acceptability and effectiveness.

John Nelson Chappel Best Curricula, Quality Improvement And Program Abstract and Curricula, Quality Improvement and Program Abstract Runner-up Presentations

A Podcast for Fetal Alcohol Spectrum Disorders (FASD) Education: Using Alternative Educational Delivery for Provider Training

Jacqueline S. German, MPH; Amy K. Harlowe, MPhil; Candice Bangham, MPH; Jacey Greece, DSc, MPH; Daniel P. Alford, MD, MPH, - Boston University School of Medicine

Background: Prenatal alcohol exposure (PAE) is the most common preventable cause of permanent intellectual and developmental disabilities in the U.S. and can lead to fetal alcohol spectrum disorders (FASDs). With mixed messages from community, media, and even health care, it is crucial that providers have accurate knowledge of PAE risks in order to educate their patients to prevent FASDs.

Objective: The CDC-funded B SMART Program, aimed to prevent FASDs through educating community-based healthcare teams, shifted to virtual learning during COVID-19, including creating an educational podcast. This 3-part podcast was promoted through multi-media avenues and existing agency collaborations. It features interviews with an FASD expert, a patient advocate, a mother whose child has an FASD, and a public health social worker who reviews brief interventions in two simulated provider-patient enactments. Free continuing education credit is available for those who complete the series. Through tracking software, we determined the number and location of podcast downloads. A post-test only design examined provider knowledge, self-efficacy, and practice behaviors related to FASD prevention.

Methods: Podcast metrics were obtained from *Megaphone*, a podcast hosting platform that tracks downloading data. A post-test was completed by all listeners claiming continuing education credit via the Boston University School of Medicine Office of Continuing Medical Education website.

Results: Two months since launching the podcast in March 2021, there have been 654 downloads, across 10 U.S. states and 10 countries. During this time, 45 users claimed continuing education credit. Of those, 58% were nurses, 22% physicians, and 20% other. Over 85% felt better able to educate patients about unhealthy alcohol use, PAE risk and FASDs. The majority (69%) intend to change practice based on what they learned (e.g., better patient education), and there were high reports of knowledge retention.

Conclusions: Podcasts provide an innovative means of education given the broad reach and ease of access, especially as healthcare providers rely more on virtual education including podcasts. Our data suggest that podcasts are accessible and may improve provider knowledge, promote change in practice and increase self-efficacy.

Substance Abuse Research Education and Training Program (SARET)

Mia Malone, BA[1], **Kathleen Hanley, MD**[2]; Jennifer McNeely, MD; Danielle Ompad, PhD; Jennifer Manuel, PhD; Michelle Knapp, DNP; Lukasz Witek, PhD; Marc Gourevitch, MD MPH - (1) NYU Grossman School of Medicine, (2) NYU School of Medicine

Background: Innovative initiatives to build the ranks of health professionals engaged in conducting substance use (SU) research are needed.

Objective: The NIDA-funded inter-professional Substance Abuse Research Education and Training (SARET) program aims to stimulate dental, medical, nursing, social work, and public health students' interest and pursuit of careers in substance use research through exposure to its two main components: stipend-supported mentored research and an online curriculum. In 2019, SARET implemented a companion Visiting Mentor Development Program (VMDP) to foster the creation of similar substance use research programs at institutions across the U.S.

Methods: We evaluated the long-term impact of SARET research program participation with a survey emailed to all past student participants in 2020-2021. The survey assessed involvement in substance use research and the influence of SARET on expanding knowledge of substance use etiology, screening, and treatment. We additionally tracked student participants' presentations, publications, and career trajectories. For VMDP participants, quarterly phone calls with SARET leaders assessed their progress in developing and implementing SU mentored research programs in their home institutions.

Results: Students: Since its start in 2007, 142 students participated in SARET's mentored research program. The survey was sent to 126 participants having valid emails, and 91 responses were collected (72% response rate). Respondents reported that SARET increased interest in SU research (n=86, 95%); increased knowledge of SU and SU research (n=88, 97%); and expanded research skills (n=85, 93%). 40 (44%) are somewhat-very involved in research; 22 (24%) are somewhat-very involved in SU research; 42 (46%) have authored professional publications; and 38 (42%) are still in contact with SARET mentor. Mentorship students additionally reported positive impact on their vision of SU-related clinical care and more positive attitudes about research and interprofessional collaboration. Visiting mentors: The VMDP program has hosted 10 visiting mentors, of which 3 (30%) have implemented pilot inter-disciplinary SU mentored research programs at their home institutions.

Conclusions: The SARET program has stimulated enduring SU research interest and resulted in some early research successes among student participants. The VMDP program shows promise as a model for fostering the development of interdisciplinary SU mentored research programs at other institutions.

Poster Session 1 (#1-28)

A Delayed Injection Site Reaction to Intramuscular Naltrexone in a Pregnant Woman with Alcohol Use Disorder

Amy J. Kennedy, MD, MS[1], **Kevin Artiga, BS**[2]; Tirah Samura, MD - (1) VA Puget Sound Healthcare System, (2) Charles Drew University

Background: Naltrexone (NTX) is an effective oral and intramuscular (IM) medication to treat alcohol use disorder (AUD) due to its ability to reduce craving levels and heavy drinking. Two delivery pathways for NTX exist: oral and intramuscular (IM). IM injection is beneficial as a once monthly extended-release injection rather than a daily oral tablet. Adverse effects including delayed intramuscular injection reactions are scarce but there have been reports of severe site

reactions, prompting more attention to these cases. To our knowledge, there have been no reports of adverse reactions in pregnant women receiving IM NTX.

Learning Objectives: To highlight the potential for severe delayed injection site reactions to IM naltrexone among pregnant women.

Case Presentation: The patient is a 28-year-old woman with history of anxiety who presented for treatment of alcohol use disorder (AUD). She reported heavy intermittent alcohol use, was diagnosed with a moderate AUD, and offered medication treatment. Oral naltrexone (NTX) was prescribed while waiting for insurance authorization for intramuscular injection (IM) NTX. She tolerated the oral NTX and was started on IM NTX one week later. Three days after IM NTX, the patient reported increased nausea and emesis and was discovered to be pregnant. One week later the patient was evaluated for a large, painful, firm lump on her right hip at the site of the NTX IM. An ultrasound was performed showing soft tissue edema but no fluid collection. She was discharged home. The pain and swelling continued to worsen over the next week and she re-present to the emergency department and was found to have a small "irregular" fluid collection at the site of the injection. She was treated with clindamycin for a potential abscess and discharged home. The swelling slowly improved over the next several weeks. She was offered oral NTX but declined further medication for AUD during her pregnancy.

Discussion: Naltrexone is a safe and effective treatment for AUD in pregnant women. This case highlights that severe delayed injection site reactions can occur, and that alternatives such as oral naltrexone or other FDA approved medications can safely be used in pregnant women.

In Their Own Words: Peer Recovery Coaches

Tammy Slater, DNP, MS, ACNP[1], **Deborah S. Finnell, DNS, RN, CARN-AP, FAAN**[2]; Tamar Rodney, PhD, RN, PMHNP-BC, CNE - (1) Johns Hopkins University, (2) Johns Hopkins University School of Nursing

Background: Peer Recovery Coaches (PRCs) are increasingly integrated into healthcare teams to help engage people in and link to treatment and provide ongoing recovery supports. In 2015, SAMHSA led efforts to identify 12 categories of core competencies foundational for the role. These competencies have the potential to guide delivery of and promote best practices for peer support services. This case presentation focuses on how the competencies are evident in the work undertaken by PRCs who described what they do in their roles and how their lived experience is instrumental in what they do.

Learning Objectives:

1. State the 12 categories of core competencies for the role.
2. Examine examples of core competencies articulated by PRCs in their own words.
3. Discuss the value of PRCs as members of the healthcare team.

Case Presentation: A short (~ 6 minute) video was produced based on interviews of four PRCs of different ethnic/racial backgrounds with equal gender representation. The PRCs were asked to

describe how and why they got the PRC position, explain what they do, and discuss some of the challenges and rewards of the role.

Discussion: Representative quotes from one or more PRCs corresponded to the 12 categories of competencies. In their own words, the PRCs articulated core activities that have been identified in the literature. Specifically, PRC may have the ability to improve outcomes for individuals with whom they interact. One PRC summed up their initial approach to the person as, "I'm just like you. I suffered just like you suffer and if you let me, I can help you get out of it." PRCs discussed how they provide guidance from their own experiences, grounded on building trust and buy-in to more tangible system navigation. A major theme across the four PRCs is their ability to bring their authentic self to the role. Each PRC characterized specific approaches and strategies they use to connect, establish trust, and engage with the person. The compelling first-person accounts may help healthcare providers and patients alike understand and utilize these valued members of the healthcare team.

Buprenorphine Treatment for Poppyseed Tea Use in the Setting of Chronic Pain: A Case Report

Kellene Eagen, MD; Glenn Kauppila, DO - University of Wisconsin

Background: The seeds of the poppy plant *Papaver somniferum* are a potential source of morphine and codeine and may be under-recognized by clinicians as a source of opiates. Poppy seeds are legally available for purchase in the United States and unwashed or unprocessed seeds can be made into a "tea" that contains opium alkaloids. Use of the tea for the purpose of intoxication or self-treatment of pain or opioid withdrawal syndrome can result in the development of opioid use disorder (OUD).

Learning Objectives:

- To recognize poppy seed tea (PST) as a source of opioids legally available without prescription.

- To understand the risk of developing opioid use disorder among patients who use PST.

- To highlight the success of buprenorphine treatment for OUD and chronic pain in a patient using PST.

Case Presentation: A 65 year old male with chronic pain, depression, PTSD and AUD in sustained remission was identified at a multidisciplinary pain clinic as using poppy seed tea which he described as becoming problematic in his life. The patient brewed PST at home using seeds purchased legally online for the purpose of pain treatment. His PCP had previously discontinued prescription opioids for pain in the setting of marijuana use. The pain clinic's addiction medicine physician made a diagnosis of OUD and offered treatment with buprenorphine. Using a home initiation protocol, the patient quickly stabilized on buprenorphine-naloxone 8-2 mg total daily (split dosing for pain) and experienced "the best pain relief in years." Due to the COVID state of emergency, patient care was rendered via telemedicine.

Discussion: Poppy seeds can be obtained legally in the United States and brewed into a tea containing clinically significant amounts of opioids. Using DSM-V criteria, a diagnosis of OUD can be made in the setting of PST use. OUD treatment with buprenorphine is an option to manage PST use and provide pain control in patients with chronic pain. Clinicians in a variety of settings including addiction medicine, primary care and pain should be aware of poppy seed tea as a source of opioids and the implications that PST may have on patient health.

Addiction and Motherhood: Substance Use and Its Impact on the Maternal Role

Margret Chang, MD[1]; **Brittany L Carney, DNP, FNP-BC**[2] - (1) University of Massachusetts - Medical School, (2) University of Massachusetts - Medical School

Background:

Despite increasing prevalence, little attention has been given to factors affecting substance use disorder (SUD) in women of childbearing age. Women with SUD are uniquely impacted during the pregnancy and post-partum phase, and continue to be affected in powerful ways postpartum and beyond. We present two case studies that illustrate the subtleties of substance use disorder in this population, both in regards to clinical presentation and management.

Learning Objectives:

1. Recognize the role of trauma in the presentation and course of substance use disorder in women, particularly in those who are mothers
2. Identify key social determinants of health factors that are barriers to women seeking care for substance use disorder
3. Develop interdisciplinary care plans to provide comprehensive care for women with substance use disorder

Case Presentation:

EV is a 38 year old female with PMH of severe opioid use disorder, severe alcohol use disorder, anxiety, depression and PTSD who presents for treatment of her opioid Use Disorder (OUD) after recent incarceration. She initially was maintained well on buprenorphine/naloxone after the birth of her youngest son. However, her recovery course is complicated by involvement of the state Department of Children and Families (DCF), the loss of custody of her children, and incarceration secondary to substance use.

HG is a 39 y.o female with PMH severe opioid use disorder secondary to chronic pain. She presents to your care because she is newly pregnant and is misusing prescription opioids. Her treatment course is notable for multiple attempts to wean off of her medication prematurely, and for occasional absence of buprenorphine from her urine. Her delivery and perinatal course was uneventful, though the patient discloses how traumatized she was by DCF involvement in her case during her hospital admission.

Discussion: Women of childbearing age, particularly those who are mothers, have distinct barriers that prove challenging for management of substance use. These challenges are multifaceted and include legal encounters, untreated psychiatric trauma, and additional stigma related to their gender and maternal roles. Helping this population engage in care requires attention to such details, and frequently benefits from collaboration between healthcare providers, behavioral health, case management, law enforcement, and community services.

Inpatient Buprenorphine Induction Via Micro-Dosing Protocol: A Case Series

Marc Larsen-Hallock, DO, MS; Anna Maria South, MD; Adam Kolnik, MD; Laura Fanucchi, MD - University of Kentucky

Background: Buprenorphine is the standard of care for persons with opioid use disorder (OUD). Inpatient initiation can be challenging if patients require acute pain control, as standard induction requires a short period of opioid withdrawal. Buprenorphine decreases mortality in persons with OUD while also treating pain, withdrawal, and cravings. Buprenorphine micro-dosing is a novel protocol for buprenorphine induction while continuing full opioid agonists.

Learning Objectives:

- Discuss inpatient buprenorphine micro-dosing in patients with OUD and pain to transition them to outpatient medications for opioid use disorder (MOUD)
- Demonstrate micro-dosing as successful transition to MOUD in different acute pain clinical scenarios

Case Presentation: In a series of four cases involving hospitalized patients with OUD, the following buprenorphine micro-dosing protocol was implemented for treatment of OUD in the setting of acute pain management. While continuing full opioid agonists, buprenorphine was administered daily to slowly displace the full mu agonist from opioid receptors. Starting with sublingual buprenorphine 0.5mg on day one, then 0.5mg BID on day two, and continued up-titration to 16mg on day 8. Full agonists were discontinued on day 6-8 without taper. Clinical opiate withdrawal score demonstrated no significant withdrawal.

Case 1: A 37-year-old woman with a necrotizing soft tissue infection requiring skin grafting had high opioid requirements for acute post operative pain.

Case 2: A 40-year-old woman with epidural spinal abscesses and acute on chronic pain after multi-level spinal decompression and fusion.

Case 3: A 26-year-old woman with infective endocarditis and painful septic emboli.

Case 4: A 37-year-old woman with metastatic ovarian cancer complicated by injection related osteomyelitis on high dose full agonists.

All patients reported adequate pain control, denied any withdrawal symptoms, and continued buprenorphine outpatient after inpatient micro-dosing induction.

Discussion: Buprenorphine micro-dosing for the initiation of OUD treatment is an effective therapeutic strategy for inpatient management of pain and withdrawal in a clinically diverse and medically-complex patient population. Our case series highlights successful buprenorphine micro-dosing in patients with pain related to infection, malignancy, and the acute post-operative period. Inpatient micro-dosing empowers patients to complete their hospitalization while also transitioning to outpatient addiction care on MOUD.

Looking Beyond the Chief Complaint: The Provision of Comprehensive Care for Adolescents and Young Adults Who Use Substances

Maria Christina Herrera, MD; Sarah Bagley, MD; Krishna White, MD; Nadia Dowshen, MD; Scott Hadland, MD - CHOP

Background:

A physician covering the pediatric ward overnight at a community hospital receives a call from the emergency department (ED) that patient RC returned after a patient-directed discharge earlier in the evening. RC is a 17-year-old who has a history of injection drug use, multiple suicide attempts, and unstable housing who was apprehended by police after leaving the hospital.

Learning Objectives:

- Understand adolescent brain development, addiction as a disease of adolescent onset, and common health complications seen with substance use in this age group.
- Review strengths-based communication strategies to engage adolescents in harm reduction.
- Highlight the importance of interdisciplinary teams for behavioral healthcare.
- Discuss recommended practices for addressing sexual/reproductive healthcare needs among adolescents.

Case Presentation:

Begin with review of the differential diagnosis for knee pain in an adolescent patient yielding an infectious diagnosis of abscess based on history, laboratory and imaging evidence. The patient reported current cannabis and methamphetamine use and remote heroin use prompting a review of harm reduction strategies and evidence-based treatment options. Discuss the nuances of the antibiotic treatment and pain management plan in the context of an admission under an involuntary 5150 hold. Close with the integration of sexual and reproductive healthcare (SRH) services provided during the hospitalization as this patient requested long-acting reversible contraception (LARC) and was found to have a diagnosis of late latent syphilis which involved both treatment and counseling around pre-exposure prophylaxis (PrEP) for HIV prevention.

Discussion:

This case has numerous teaching points starting with an evaluation of the ED presentation and the diagnostic and treatment considerations for the acute concern of joint pain with this patient's

symptoms and medical history. Stimulate a rich discussion of the evidence-based treatment options for substance use disorders among adolescents, complications of substance use and the impact of substance use on adolescent clinical care. Delve into the additional psychosocial history elicitation and key assessments made by interdisciplinary team. Review the right for adolescent minors to access confidential care, which is protected to some degree in every U.S. state. Address comprehensive SRH provision in this population as our patient requested a LARC, required syphilis treatment and met criteria for PrEP.

Ingestion Induced Hypoglycemia: Who's The Culprit?

Caroline Nguyen, MD; Irina Kryzhanovskaya, MD - University of California, San Francisco

Background:

There have been several case series and animal studies of methadone causing hypoglycemia, typically in a dose dependent fashion. However, little is known about the mechanism of this hypoglycemia. Similarly, accidental ingestion of sulfonylureas when disguised as street drugs have been reported. In the cases of multiple substance ingestions and hypoglycemia, it can be difficult to identify the cause of hypoglycemia.

Learning Objectives:

1. Identify methadone as a potential cause of hypoglycemia
2. Recognize clinical syndromes of accidental ingestion of sulfonylureas and their analogues when disguised as street drugs

Case Presentation:

CW is a 61M with epilepsy, opioid use disorder with intermittent methadone use who was brought to the ED for status epilepticus and was successfully treated for his seizures, but had persistent severe hypoglycemia, so was admitted and started on a D10 infusion. With a blood sugar of 42, standard hypoglycemia labs were sent which revealed an elevated insulin and C peptide. His sulfonylurea screen was negative. His urine toxicology screen detected morphine, methadone, heroin, cocaine, fentanyl, and benzodiazepines. On HD3, the D10 infusion was stopped in order to attempt a 72 hour fast, and his home methadone was restarted. He experienced no further episodes of hypoglycemia so the fast was terminated.

Discussion:

In the setting of hypoglycemia, elevated C peptide and insulin levels suggest an insulin-dependent process. Methadone effect was considered, as prior studies showed that it can cause hypoglycemia in a potentially insulin dependent mechanism. However, he remained euglycemic after his home methadone was restarted. Accidental ingestion of a sulfonylurea was considered, in light of reports of accidental sulfonylurea ingestions when patients who intended to buy other substances actually bought sulfonylureas. Though his sulfonylurea screen was negative, it is possible he ingested an analogue that did not appear on the screen. Similarly to Mr. CW, patients

who use drugs who are then hypoglycemic should be evaluated for typical causes of hypoglycemia and monitored inpatient until they no longer require a dextrose infusion. Diagnostic tests should be interpreted with the knowledge that methadone can cause hypoglycemia independently and that accidental sulfonylurea ingestion is a possibility.

Describing Ohio Certified Peer Recovery Supporters' Employment Status and Recovery Service Delivery

Trevor Moffitt, MA, LPC; Pam, Salsberry, PhD - Ohio State University

Background: In response to the rise in drug overdose deaths across the state, peer-based services, in which former substance users support others with substance use history, are being prioritized throughout Ohio. As formative research for studying the effects of delivering peer services on recovery for Ohio's certified peer recovery supporters (PRS), we designed a brief online survey for a sample of PRSs listed in a public licensure database. The study's primary goal was to determine a preliminary estimate of PRS employment status and involvement with delivering peer recovery services. The study also served as a pilot in data collection with the PRS population and an estimate of Ohio PRS demographic characteristics as no such data is publicly available.

Learning Objectives: Individuals who read this poster will be able to: 1) review the need for more PRS-centric research, 2) discuss the challenges and recommendations for recruiting PRS participants, and 3) recognize the variety of "peer service interaction" after achieving PRS certification

Case Presentation: Of the 550 PRSs who were emailed a survey invitation, only 39 responded (7.1%). The majority of respondents reported being white (74%), educated with at least some college attendance or greater (72%), employed (80%), and in a peer recovery position (59%). The low response rate was surprising compared to other PRS studies, but those have typically used snowball or purposive sampling.

Discussion: We learned that if we still intend to recruit all Ohio certified PRSs, we must dramatically improve our recruitment strategy. Potential solutions include an advisory board comprised of PRSs and key stakeholders to share recruiting announcements, better branding of recruitment materials and project name, and adding credibility through a university project email and website. Importantly, the results demonstrated feasibility in using employment status as a means of comparison in future PRS research.

Methadone for the Treatment of Opioid Use Disorder in a Pregnant Patient: Reducing Harms and Effective Treatment Strategies

Ruchi M. Fitzgerald, MD FAAFP[1], **Michelle M. Kavouras, Peer Recovery Coach**[2], **Francesco Tani, DO**[3]; Nicholas Chien, MD - (1) PCC Community Wellness/Rush University, (2) Live4Lali, (3) Rush University

Background: A pregnant person with an opioid use disorder (OUD) is at increased risk of mortality due to overdose. Team providers feel ill-prepared to care for pregnant patients prescribed methadone and to address the opioid treatment program (OTP) system of care as it is siloed from the health care system wall and frequently does not offer split dosing as is required by metabolic changes of pregnancy. The pregnant person and fetus are thus subject to unsafe daily episodes of opioid withdrawal--an unacceptable clinical scenario.

Learning Objectives:

1.Name a consequence of inappropriate methadone dosing in persons who are pregnant affected by OUD.

2.Describe effective patient-centered tips to use alongside a pregnant person's treatment plan with an OTP.

3.Create a perinatal harm reduction plan.

Case Presentation: The case will describe comprehensive efforts to stabilize a pregnant patient's OUD treatment using methadone split dosing. Ongoing withdrawal symptoms every evening triggering heroin use were reported to the physician. A shared decision making process allowed for inpatient stabilization at our safety-net hospital. Switching to split dosing, nursing observation for sedation, and effective advocacy/communication techniques used with the patient's OTP will be presented.

Discussion:

OUD treatment stabilization is essential in the treatment of any person with OUD. Tips for success with methadone split dosing using our team's study of manuals from Europe can inform clinical practice. Perinatal harm reduction is of critical importance considering the leading cause of maternal mortality in many states is drug overdose. A discussion on opioid overdose reversal in the pregnant patient, including the harms of naloxone reversal on the fetus if inappropriately used will conclude the presentation.

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Evaluation of Provider Knowledge and Attitudes Toward Implementing Safer Psychostimulant Smoking Kits at a Large Academic Medical Center Before and After Education

Zoe Karavolis, PharmD; Kimberly Mills, PharmD Candidate 2021, Alyssa M. Peckham, PharmD, BCPP, Dinah P. Applewhite, MD - University of Pittsburgh Medical Center Western Psychiatric Hospital

Background:

The use of, and deaths resulting from, psychostimulants have been exponentially rising for the past decade. Psychostimulants, particularly cocaine and crystal methamphetamine, are commonly used via injection or inhalation(smoking or insufflation) with known harm regardless of route of use. The increased attention towards injection-related harm reduction mechanisms amid the opioid crisis are translatable to stimulants, though harm reduction efforts to reduce stimulant-specific and smoking-related adverse outcomes are lacking. Similar to safe injection kits, safe smoking kits are imperative to reduce risks associated with inhalation drug use such as burns, infection, and lung damage; however, there exists a lack of harm reduction programs that educate patients on safer inhalation drug use and provide the supplies to do so.

Objective:

The primary objective of this initiative is to evaluate provider knowledge of potential harms resulting from inhaled stimulants and drug inhalation-related harm reduction efforts before and after education. The secondary objective is to evaluate provider attitudes towards the implementation of safer smoking kits and willingness to teach patients safer inhalation practices before and after education.

Methods:

An online survey via Qualtrics was distributed to providers working in the Substance Use Disorders Initiative at a large academic medical center to assess knowledge and attitudes. Surveys were collected and then providers received targeted education via webinar and pocket guide infographic that detailed harms related to inhaled stimulant use and how to teach patients safer use methods. Six weeks later, the same Qualtrics survey was administered to the same providers. The results of the pre and post survey were compared.

Results:

The average performance on the knowledge retention quiz amongst all providers was 34.1% in the pre-education group and 40.0% in the post-education group. Strongly agree responses to the attitude question, “I feel comfortable discussing the risks specifically associated with poor

inhalation/intranasal practices of crack, cocaine, or crystal meth", were 25% in the pre-education group and 34% in the post-education group.

Conclusions:

Providers and support staff at substance use disorder clinics could benefit from harm reduction education related to safer smoking of psychostimulant substances in order to improve knowledge and attitudes and decrease stigma associated with use.

Evaluation of DATA Transfer of Perinatal Hepatitis C VIRUS Exposure Risk DATA in a Multisite Health System

Mary Geist, Medical Student; Amy Schumacher, MD; Leisha Nolen, MD, PhD - University of Washington

Background:

Ensuring adequate testing for children born to mothers infected with hepatitis C virus (HCV) is imperative to identify and treat HCV-exposed children. Previous studies have indicated <30% of exposed children are appropriately tested for HCV infection. One key part of follow-up is accurate transfer of HCV test results from the maternal to infant chart. We evaluated data transfer in our regional clinics.

Objective:

Qualitatively evaluate the transfer of data of HCV test results from maternal to infant chart to generate ideas to improve data transfer and follow up of infants born to HCV positive mothers.

Methods:

To evaluate the data sources and documentation related to HCV infection, we performed qualitative interviews with clinical staff at six large clinics that provide prenatal and newborn care within Alaska's Southcentral Foundation, all of which share a single electronic medical record system. Variation in provider type was incorporated within the selection of interviewees.

Results:

Most interviewees (12/13) noted inconsistency regarding the placement of HCV information within both maternal and infant records and how this increases time spent reviewing charts. Five participants reported that maternal HCV data could be provided in six different locations within the chart note, with variability between departments. Inconsistent placement of information was also noted regarding the location of infant HCV information and the placement of infant HCV exposure information.

Many interviewees (9/13) identified a benefit of direct communication, either verbal or through a patient message, between the obstetrics and pediatric teams to bring attention to infant HCV

exposure. suggested including follow up instructions in the discharge summary for infants at risk of perinatal HCV infection. Six interviewees identified the ideal solution for ensuring proper transfer of HCV data as an add-on within the medical record program that would automatically transfer all maternal laboratory data into the infant chart.

Conclusions:

We conducted interviews with different clinicians, many of whom identified a lack of consistent data reporting and placement as key issues regarding data transmission of HCV information from the maternal chart to infant chart. While representing a small subgroup of providers, this information can help identify ways to improve data transfer.

Taking Action to Address Opioid Misuse: New Curricula to Better Prepare PAs for Treatment of Substance Use Disorder

Amy Elizabeth Parins, PA-C; Michelle Ostmoe, BS - University of Wisconsin

Background: The coronavirus (COVID -19) pandemic has collided with the opioid epidemic to cause even more challenges for those with substance use disorders. Wisconsin is facing record opioid overdose deaths during the pandemic.1 We may not understand the full devastation of these two epidemics for several years.

The University of Wisconsin-Madison Physician Assistant (PA) Program decided to take action! In the Spring of 2020, when the students were pulled from clinical rotations due to COVID 19 we implemented virtual training to enhance our students' readiness to screen, diagnose, and treat substance use disorders. This curriculum was offered to the next class in Summer 2020 while clinical rotations were still suspended.

Objective: Prepare PA students to screen, diagnose, and treat substance use disorders.

Methods: The PA Program took the AAAP online MAT waiver training curriculum and enhanced it with curriculum around OUD/addiction medicine, motivational interviewing, and an interprofessional workshop with real patient stories to create an engaging interactive 1-week Addiction Medicine / Pain Management Module. After completion of this curriculum and upon graduation from the program students are eligible for their MAT waiver and to prescribe buprenorphine, one of three medications approved by the FDA for the treatment of OUD.

Students were expected to complete two evaluations to measure the impact and effectiveness of the curricular innovation. Questions included quantitative and qualitative around self-efficacy, assessment strategies and confidence in prescribing of naloxone.

Results: Data around all of these evaluation methods will be shared on the poster if accepted. In summary, with a 98% student response rate, review of data shows that completion of this rotation furthered students' understanding of the biology of addiction, understanding of the impact of addiction on one's support system and family members, and understanding of the use of MAT.

Conclusions: Employment survey results show that nearly 10% of the Class of 2020 is currently using their DATA waiver and crediting this to the training they received while in the program.

Fitting the Standardized Patient Encounter to a Virtual Platform: Lessons Learned From an Online Clinical Skills Training Activity for MSW and FNP Students.

Sylvie Rosenbloom, DNP, APRN, FNP-BC, CDCES; Victoria A. Osborne-Leute, PhD, MSW; Kathleen M. Sullivan, BSW - Sacred Heart University

Background: Interprofessional education (IPE) is an essential component of healthcare education, shown to ameliorate communication skills, teamwork and mutual respect. Family nurse practitioners (FNP) and social workers often collaborate in the care of patients who present with sensitive issues (SI) such as opioid misuse, interpersonal violence and transgender care which can be challenging for novice providers.

Objective: This IPE simulation utilized FNP and Social Work (MSW) students virtually caring for a standardized patient (SP) presenting with a SI. The purpose was to assess attitudes towards IPE pre- and post- activity and to help develop students' interprofessional skills.

Methods: Students completed the SPICE-R prior to the simulation to assess IPE attitudes. Students, as a dyad (one FNP and one MSW), encountered the SP together. Last year, a similar IPE was conducted in the College of Nursing's primary care suites. Due to Covid-19, simulations were held virtually (Zoom), modeling a telehealth visit. Dyads were assigned to breakout rooms with their SP who presented with a SI and used motivational interviewing to build rapport and discuss the presenting problem. After the encounters, students returned back to the main room for a debrief with faculty and SPs and completed the SPICER-R.

Results: Quantitative data analysis using paired t-tests revealed no significant differences between SPICE-R pre and post scores. Qualitative data from debriefing revealed that most dyads worked collaborated effectively. Students reported the interactions as being beneficial in collaborating with another profession and increased knowledge of professional roles.

Lessons learned included the inability for faculty to view the dyads in breakout rooms unlike in the simulation lab where faculty could view the exam rooms via video. Students also reported preferring to conduct the encounters in person rather than virtually.

Conclusions: Pairing students together to encounter a SP as a team seems to improve confidence and understanding professional roles in patient care. While virtual simulations were useful, there were some logistic limitations. Students prefer in-person over virtual encounters, though the experience was helpful for students to gain confidence in conducting a virtual visit.

An Open Line of Communication: Feasibility and Acceptability of Pre-Paid Phones During the COVID-19 Pandemic Among Patients With Substance Use Disorder

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Zoe M. Weinstein MD, MS - (1)Boston Medical Center, (2)Boston University School of Medicine, (3)Grayken Center for Addiction

Background: The COVID-19 pandemic drove significant disruptions in access to treatment programs and harm reduction services for people with substance use disorder (SUD). Healthcare delivery via telemedicine became the norm, including for SUD treatment, rendering phone access a necessity for care engagement. To mitigate the access barriers faced by patients with SUD who lacked technology needed for telemedicine, our institution distributed pre-paid phones with up to 1500 minutes over 3 months to facilitate in-hospital and outpatient communication.

Objective: To understand the feasibility and acceptability of pre-paid phone distribution and impact on linkage to care.

Methods: 141 adult patients with SUD received phones from the inpatient addiction consult service, low-barrier bridge clinic, HIV and STD testing center and integrated psychiatry SUD program between April and December 2020. To determine phone retention and assess acceptability and feasibility, one phone call was attempted to each prepaid phone within 1-7 months of phone distribution. Consenting patients completed a 15-question telephone survey consisting of Likert scale and multiple-choice questions. Descriptive statistics of demographic and survey responses were calculated.

Results: Sixteen percent (23/141) of patients were reached on the distributed phone number on a single attempt, with a mean 2.7 months from phone receipt to call attempt. Among those who were reached, nearly half (11/23) consented to survey participation. Respondents were mean age 41, 35% female, 20% Black, 67% white, 64% homeless, and majority English speaking. Respondents rated phone ownership as extremely important and over 80% reported it made them feel safe. Over 90% utilized the pre-paid phone, and over 60% felt the phone helped them attend a healthcare appointment. Phone turnover was common, with a mean of 2.7 phones owned in the preceding 6 months.

Conclusions: Approximately 1 in 6 recipients of 3-month pre-paid phones remained reachable on that number 2.7 months after receipt. Those completing a survey reported that phone distribution was acceptable and potentially helped in linking to care; however, response rates were low, likely owing to a single call attempt after free minutes expired. Further studies are needed to optimize phone distribution strategies to vulnerable patient populations and should evaluate options to extend pre-loaded minutes.

A State and Local Partnership to Support Patients With Opioid Use Disorder After an Abrupt Buprenorphine Clinic Closure

Nicole O'Donnell, BA, CRS[1], **Margaret Lowenstein, MD, MSHP**[1], **Jeanmarie Perrone, MD**[1]; Jared Shinabery, MPH; Meghna Patel, MA; Jeffrey Hom, MD, MPH; Alix Gustafson, MPH; - (1)University of Pennsylvania

Background:

Precipitous closure of medical practices due to prescriber violations can result in displacement of large numbers of stable patients receiving prescription opioids or buprenorphine-naloxone. Patients unable to quickly access new prescribers are at risk for opioid withdrawal, use of non-prescribed opioids, recurrence of opioid use disorder (OUD) symptoms, or overdose. Although a few states have programs to address such events, descriptions are limited. The Pennsylvania Patient Advocacy Program (PAP) is a statewide initiative to rapidly respond to clinic closure events and triage patients to local resources.

Objective:

Our aim is to describe a partnership between local providers and the PAP to mitigate risks for patients after the abrupt closure of multiple buprenorphine clinics in Philadelphia County.

Methods:

After the closure of four medical clinics prescribing buprenorphine in Philadelphia County, a team from the University of Pennsylvania (Penn) partnered with Pennsylvania's PAP to cultivate a rapid response for displaced buprenorphine patients. We created a direct line from the PAP team to a local substance use navigator to rapidly triage and connect patients to treatment using in-person and telehealth supports. Our evaluation consisted of review of navigator notes and telephone follow-up with patients.

Results:

Notice of clinic closure occurred on 2/27/2021. From 2/25/21-4/23/21, the Penn team assessed 36 patients referred by PAP. Mean age was 46 (range 29-70). Patients were 56% female, 53% white, 39% black, and 8% Hispanic/Latino. All patients received same-day telephone contact and triage; 20% received an in-person consult. 36% of patients were co-prescribed benzodiazepines, with 20% requiring ED evaluation for benzodiazepine withdrawal. Of the 36 patients, 22% were referred to academic primary care clinics, 26% to a low-barrier buprenorphine program through a harm reduction organization, 14% self-referred to community primary care, and 38% were referred to other community providers. We received emergency naloxone doses from the Philadelphia Department of Public Health, with 100 doses distributed to patients and the community surrounding closed clinics via street outreach.

Conclusions:

Unplanned disruptions in buprenorphine access threaten successful recovery for OUD. Rapid Response Programs coordinated at the state and local level can mitigate harms of sudden care disruptions.

Assessing Current State of Medical Faculty and Staff Knowledge, Attitudes and Bias Towards Substance Use Disorders in Hospitalized Patients at an Academic Institution.

Jessica Tyler Ristau, MD - University of California, San Francisco

Background: Up to 11-25% of hospitalized patients have a substance use disorder (SUD) and yet many hospital providers and staff have limited SUD education and experience. At institutions where addiction specialty resources are absent or developing, current state data is crucial to develop curriculum to improve care for patients with SUDs.

Objective:

- Identify demographics and interest in addiction curriculum of medical providers and staff self selecting to engage in an elective addiction conference
- Evaluate the current state of knowledge, attitudes and practices of interprofessional faculty and staff attending an elective addiction medicine conference

Methods: A free, two-day elective conference offering CME was developed at an academic hospital with no formal addiction medicine service. Attendees completed anonymized surveys before the conference, quantitative data was analyzed.

Results: Of 74 participants, 70 completed the pre-survey: 64% were physicians or advanced practice providers (43% hospitalists, 23% primary care, 34% specialty), 14% social workers, 11% nurses and 9% pharmacists, 43% had >10 years in their field, 80% female, 56% White, and of eligible participants 34% had an X-waiver. 37% experienced moral distress in treating patients with SUD, 96% perceive SUD as a treatable chronic illness and 60% believe patients with SUD are more challenging. Only 46% regularly screen for SUDs (45% providers, 70% for SW), and when caring for patients with SUDs 70% do not address it (71% providers, 80% SW). When asked about barriers for starting treatment, 53% note limited experience, 25% lack of confidence. Rates of high confidence using non stigmatizing language was 59% and diagnosing a SUD was 21%. Rates of initiating MOUD in eligible patients was 5% for buprenorphine and 14% for methadone, 52% regularly discussed harm reduction. 70% were not satisfied with the current addiction training.

Conclusions: At an academic institution without a formal addiction medicine consultation service or fellowship program, there is interest and perceived need for providing addiction level education and training experience. Despite low rates of self-reported bias towards patients with SUDs and knowledge gap, there is a low level of screening, diagnosis, use of non-stigmatizing language and initiating treatment for SUDs. The primary self perceived barrier was lack of experience.

So You Want to Implement Contingency Management: A Technical Assistance Package to Establish Readiness Among the Multi-Tiered Personnel of an Opioid Treatment Program

Bryan Hartzler, PhD; R. David Jefferson, MSW SUDP; Kelsey Payne-Smith, BA CDAC II QMHA; John McIlveen, PhD, LMHC - University of Washington, Northwest Addiction Technology Transfer Center

Background:

Contingency management (CM) is efficacious for addressing stimulant use, and technical assistance is increasingly sought by addiction care settings, such as opioid treatment programs (OTPs).

Objective:

To describe a CM-focused technical assistance (TA) package, and its utility to establish organizational readiness amongst multi-tiered personnel of an OTP to implement a customized protocol targeting reduced stimulant use among its new patients.

Methods:

A centerpiece of this TA package was an online training[1], with distinct modules for tiers of executive, supervisory, and direct-care personnel. Beyond a universal didactic orientation to core CM principles and practices, these respective modules offered: 1) a guided opportunity for executives to draft a protocol customized to setting needs/resources; 2) a resource toolkit, with fidelity-monitoring activities for clinical supervisors to apply in individual/group supervision; and 3) clinical demonstration of six fidelity domains common to delivery of all CM protocols and prompts for direct-care staff to engage in corresponding role-play exercises. Initially, OTP needs were elicited in meetings with executive staff, who also drafted a customized protocol amidst completing their training module. This voucher-based CM protocol targeted stimulant abstinence via weekly urinalyses during patients' initial six months of care, included gift cards from local vendors as earned reinforcers, and incorporated priming and escalating reinforcement features. In completing a collaborative design process[2], protocol adjustments enhanced patient reinforcement opportunities at care outset. Subsequently, the OTP's clinical supervisor and five direct-care staff completed their training modules, additionally participating in four hours of virtual coaching that emphasized trainer demonstration and role-playing of this customized CM protocol. Organizational readiness, based on staff members' CM fidelity ratings[3] (1=Very Poor, 7=Excellent), was assessed by performances during a standardized patient encounter.

Results:

Upon aggregating across the six CM fidelity rating domains, collective staff performances exceeded an *a priori* benchmark (24) signifying readiness to implement[3] (M=31.33, S.D.=3.72; Range 27-38). Similar pattern was observed across each of the six fidelity domains, suggesting robust and reliable skill attainment.

Conclusions:

Empirical support is documented herein for this TA package, which paired the online training with consultative executive meetings and virtual coaching for clinical staff, for achieving organizational readiness amongst multi-tiered OTP personnel to implement CM.

Development of a Statewide, Multi-Disciplinary Addictive Substances and Pain Management Curriculum for Health Professional Students (ALAHOPE)

Heather D. Martin, MSBA; Sue S. Feldman, RN, MEd, PhD; F. Darlene Traffanstedt, MD - University of Alabama at Birmingham

Background: The National Academy of Medicine (NAM) recently identified health professional gaps related to treating those with substance use disorder (SUD) and/or pain and determined the education system must collaborate across health care professions to address these gaps. Alabama's (AL) health professional schools, including medical, nursing, physician assistant, pharmacy, dental, optometry, and veterinary schools, have common goals for teaching around SUD and pain. However, no such multi-disciplinary, core curriculum exists. These topics may be taught in siloed cultures lacking multi-disciplinary perspectives which hinders patient outcomes. Moreover, AL dispenses the most opioids in the U.S. AL's future prescribers should be educated about diagnosing and appropriately treating people with SUD and/or pain.

Objective: Using an adapted form of the Kern Model for Curriculum Development, a modular, multi-media core addictive substances and pain management curriculum was developed.

Methods: Requirements gathering included a stakeholder round table discussion, stakeholder surveys, documentation of curricula content in 6 programs outside AL, documentation of prescribing controlled substances regulatory codes, and 17 subject matter expert interviews. A thematic analysis was performed on each information source, followed by a cross-thematic analysis of all assessments to develop broad curriculum goals and specific learning objectives which were then mapped to curriculum content and delivery methods.

Results: Two major curriculum units, Pain and Substance Use, were identified, with six and eight modules, respectively. Each module contains one or more lectures. Lectures include interactive, online information delivery as well as short subject matter expert videos and learner knowledge check points.

Conclusions: An adapted form of the Kern Model of Curriculum Development was used to create a statewide, multi-disciplinary, online curriculum around addictive substances and pain management for AL health professional schools. The analysis indicated that the content should be high level, comprehensive, longitudinal, and streamlined to be easily integrated into existing curricula programs and applied in different settings with various SUD and/or pain resources. Many subject matter experts reported that stigma, language, and referrals to specialists should be priority topics, and a multi-disciplinary approach is needed for best patient outcomes around SUD and pain. These results were used to inform curriculum content and delivery methods.

The Wild World of Virtual Practice Sessions in a Graduate-Level Motivational Interviewing Course

W. Henry Gregory, PhD[1], **Victoria L. Selby, PhD, CRNP-PMH, PMHNP-BC, CARN-AP**[1]; W. Henry Gregory, PhD - (1) University of Maryland School of Nursing

Background: Motivational interviewing (MI) is a therapeutic communication style that attends to change in "an atmosphere of acceptance and compassion" (Miller & Rollnick, 2013, p.29) used in addictions treatment and other settings. A three-credit MI course is one of four courses in

a new online graduate certificate program in addictions for RN and APRN nurses at the University of Maryland, also available as a graduate-level elective. Supervised practice with coaching helps students to apply, develop, and sustain MI skills aligned with the spirit of MI (Miller et al., 2004). The challenge was to incorporate supervised practice in an online environment when MI is traditionally taught face-to-face.

Objective: In an online learning environment, students will demonstrate knowledge, skills, and attitudes consistent with the spirit of MI.

Methods: Students completed weekly asynchronous modules to gain knowledge and five synchronous practice sessions to apply learning. An online education platform with audio-video, call-in, and chat capability was used. Practice sessions included: 1) demonstrations done by faculty, 2) role-play and real-play (actual student issues) enacted by students, and 3) feedback following each role-/real-play by faculty, then students. Students were graded on preparation (e.g., knowledge of the MI skills learned to that point), active participation, demonstration of MI, and responses to feedback.

Results: 15 graduate nursing students from diverse clinical backgrounds and a variety of graduate programs took the course as an elective. Students engaged from their location mostly by audio-video. Students engaged in skills such as open-ended questions, affirmations, reflections, and summaries (Miller & Rollnick, 2013). Students used the chat box to prompt other students, add comments, and volunteer. Faculty used the chat to help engage students. Students were observed to be increasingly confident as they developed skills over the semester. After the last session, students verbalized value in practice sessions to hone skills. They reported using MI with their real-life patients, gaining confidence, listening more, being attentive, being able to apply skills, and benefit to their nursing practices. Formal course evaluations are in progress.

Conclusions: Synchronous virtual MI practice sessions are effective for demonstrating knowledge, skills, and attitudes. Student feedback suggests benefit and efficacy.

"Let's Talk Addiction Med!": Developing an Interprofessional Addiction-Focused Student Discussion Group

Haley Allcroft; Hye Won Chung, BS, MSN; Hannah Batchelor, BS; Kenneth Morford, MD, FASAM - Yale School of Public Health, Yale University School of Medicine

Background: There is a gap in addiction medicine education for health professional students. Student interest groups can supplement important addiction-related content missing from core curricula. The Yale Addiction Medicine Collaborative (AMC) is an interprofessional interest group of students from the Yale Schools of Medicine, Nursing, Public Health, and Physician Associate Program aimed to deepen students' understanding of addiction.

Objective: To provide interdisciplinary learning during the COVID-19 pandemic, AMC students developed, implemented, and facilitated a series of monthly virtual podcast discussion groups focused on addiction medicine topics.

Methods: AMC launched “Let’s Talk Addiction Med!” a monthly podcast discussion session delivered via Zoom in spring 2021. Each 60-minute session featured a podcast highlighting an addiction medicine topic. Sessions were advertised via email and social media to all students enrolled in programs affiliated with AMC. Participants were encouraged to listen to the podcasts prior to each session. The first 40 minutes of each sessions were devoted to small-group, student-led discussions, followed by 20 minutes of Q&A with a content expert. Attendees were asked to complete a 10-item Qualtrics survey for feedback on overall satisfaction, event structure and content.

Results: To date, AMC has hosted three “Let’s Talk Addiction Med!” sessions with 8-16 participants per session, representing all four AMC-affiliated programs. The first session focused on a harm reduction episode from “Any Positive Change” and featured content expert Dr. Kimberly Sue. The second session focused on correctional health justice and featured Dr. Lisa Puglisi who was the guest on the highlighted podcast, “Flip The Script.” The third session focused on clinical pearls of addiction treatment and featured Dr. Carolyn Chan who was the guest and co-producer of the highlighted podcast, “The Curbsiders.” Survey respondents (n=7) indicated that they learned something new and the majority were “extremely likely” to attend a future event. All respondents suggested more time spent with the content expert.

Conclusions: “Let’s Talk Addiction Med!” demonstrated that interprofessional virtual podcast discussion events on addiction-related topics is feasible and perceived as a valuable learning experience for health professional students at Yale.

Building Evidence: Innovative Alcohol Detox Simulation for Interprofessional Healthcare Education

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Background: Alcohol use greatly increases risks of mortality, disease, harm to others, injury, economic loss, and disabilities (Lancet, 2018; NIAAA, 2021). In particular, alcohol withdrawal delirium can be fatal with a mortality rate of up to 37% (Rahman & Paul, 2020). Alcohol withdrawal occurs after quitting or reducing heavy and prolonged use. Treatment necessitates an interdisciplinary healthcare team to ensure high-quality, person-centered care.

Objective: The objectives of the alcohol detox simulation are to (1) teach healthcare professionals from multiple disciplines to utilize an alcohol detox protocol while ensuring patient safety; (2) have students use therapeutic communication effectively; (3) foster interprofessional collaboration to improve healthcare delivery; (4) establish the sustainability of the simulation by incorporating quality improvement feedback mechanisms across disciplines.

Methods: Students are asked to complete pre-reading, which includes familiarization with assessment tools and relevant medications. The simulation has five phases, covering seven days of the patient’s experience, from intake to discharge.The inpatient nurse acts as the main

provider and consults with other professions including psychiatric nurse practitioners, psychology, and social work. Students from all disciplines reflect on the experience through a debriefing and a survey. Insights from these reflections are used for continuous improvement of the simulation.

Results: Qualitative commentary from participating students provided evidence of mutual learning regarding roles and responsibilities of the healthcare team. Quantitative survey results revealed 95% of pre-licensure nursing students reported confidence in their ability to report information to the health care team, while 100% of psychiatric mental health nurse practitioner students reported increased comfort in AUD management—a 30% increase from pre-simulation. In addition, 82% of social work students indicated they gained new knowledge about the role of social workers in a medical setting.

Conclusions: This simulation is an innovative delivery of realistic and dynamic interprofessional education, with participants reporting increased confidence and knowledge. Future priorities include incorporating medical students and utilizing a standardized survey for quantitative feedback across all disciplines. We believe these simulations play a vital role in increasing interprofessional collaboration which is key to effective practice, with research demonstrating benefits such as higher patient satisfaction, shorter hospital stays, and lower costs (Greiner et al., 2003).

Continuous Quality Improvement of the Maryland Addiction Consultation Service: Impact on Program Implementation

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Background:

Nationally there has been growing interest in applying the Child Psychiatry Access Program (CPAP) model to addiction medicine. CPAPs have demonstrated success in improving access to behavioral healthcare, and in 2017, Maryland first applied the CPAP model to addiction medicine through the Maryland Addiction Consultation Service (MACS). Early implementation outcomes provided evidence of its promise as a feasible model for states seeking to increase access to substance use treatment. However, the target audience and scope of services provided have expanded significantly since program launch to best meet the identified needs of prescribers.

Objective:

To describe program development outcomes that resulted from the continuous quality improvement (QI) efforts using Plan-Do-Study-Act (PDSA) cycles.

Methods:

Using PDSA quality improvement methodology, MACS monitors implementation of MACS components and impact on participating prescribers. Five PDSA cycles were conducted over a 40-month period. Data is collected on prescriber demographics and service utilization.

Results:

Between October 2017 through April 2021, MACS enrolled 1,020 prescribers, completed 700 consultations, and provided training at 145 events. Prescribers are made up of primarily of physicians (42%) or nurse practitioners (30%) from a variety of practice settings and specialties.

Changes implemented included a scope expansion inclusive of all substance use and chronic pain. The model was expanded to include individualized technical assistance for the full treatment team. Additionally, trainings were enhanced by offering free continuing education credits, launching Project ECHO, and waiver qualifying trainings.

Conclusions:

Results of each PDSA cycle resulted in an expansion of MACS scope. QI efforts drove outreach to underserved areas, especially to non-physicians and those treating chronic pain. QI results highlighted the complexity of requests from practices starting or expanding capacity to prescribe buprenorphine that required an expansion of the model into technical assistance. Increasing demands for trainings statewide illustrated a need for tele-based trainings, such as Project ECHO. Currently MACS is preparing to launch a targeted maternal health expansion with MACS for MOMs. Lessons learned may be of benefit to other states looking to implement similar addiction medicine access programs.

Expanding Nursing Education on Addictions: Responding to the Learning Needs of Nurses

Victoria L. Selby, PhD, CRNP-PMH, PMHNP-BC, CARN-AP; Alison Trinkoff, ScD, MPH, RN, FAAN; Charon Burda, DNP, PMH-CRNP, PMHNP-BC, CARN-AP; Katherine Fornili, DNP, MPH, RN, CARN, FIAAN; W. Henry Gregory, PhD; Tae Joon Park, BSN, RN, PMH-BC, CARN - University of Maryland School of Nursing

Background: Substance use and substance use disorders (SU/SUDs) are a major health concern that consumes extensive financial and health care resources. As SU/SUDs are so prevalent, nurses in all settings encounter many patients with SU/SUDs, along with comorbid care needs, yet addictions education in most nursing schools is quite limited, restricting nurses' ability to provide optimal care to those affected by SUDs (Savage, et al., 2014; USDHHS, 2016). Furthermore, evidence indicates that those with SUDs often receive inadequate or deficient care (Rosenthal, et al., 2016; Tiako, et al., 2018). Our current opioid epidemic has been exacerbated by the pandemic, with 2020 being the worst year ever for drug overdose deaths, 81,000 as of May, 2021 (CDC). Due to the urgent addictions care needs, we set out to address these educational deficits with a nimble, largely online curriculum designed for nurses.

Objective: Describe new addictions nursing curriculum offerings for different educational levels to address unmet care needs in substance use and addictions.

Methods: Students at the University of Maryland School of Nursing were surveyed on their SU/SUDs education needs. To address these needs, faculty with experience working in addictions developed an evidence-based curriculum at undergraduate and graduate levels. An advisory board contributed perspectives on workforce needs and gave curricular feedback. Course and program approvals were obtained.

Results: Students (n=567) endorsed importance of being educated in addictions (96%), wanted addictions specialist nurses in their practice settings (96%), and were interested in courses (80%) and a certificate program (61%). For undergraduate students, a focused plan of study was created, including motivational interviewing (MI), addictions and the role of nursing, and the required community health course, with clinical placements targeted towards addictions. For graduate students, a 4-course certificate program was developed that includes addictions foundations, MI, special topics (e.g., lifespan, trauma-informed care), and a practicum tailored to the student's interests in their locale.

Conclusions: This curriculum has been well received thus far, as it advances nurse education and facilitates professional growth, using practical knowledge and skills to enable nurses to provide addictions care for individuals, families, and communities affected by SU/SUDs.

California Opioid Multi-Agency Response Initiative (Cal-OMRI) Fosters Cross Agency Collaboration with Public Health and EMS Services to Address the Opioid Crisis

Herbert Hern, MD; Andrew Herring, MD; Ori Tzvieli, MD; Senai Kidane, MD, Mariah Kalmin, MD - CA Bridge Program, American Medical Response

Background:

Efforts to address the opioid crisis have included increasing access particularly through the use of EDs and acute care hospitals. Public Health and Emergency Medical Services are uniquely positioned to collaborate to find novel solutions to the opioid crisis. After partnering with the California Bridge and the California Department of Public Health, Contra Costa County launched an innovative, multi pronged project named the Opioid Multi-agency Response Initiative (Cal-OMRI).

Objective:

This project relies on four interventions which expand the EMS response into phases both before and after a 911 activation. Our objectives were to foster this innovative approach and result in more referrals to treatment services and decrease opioid deaths.

- First, the establishment of a public access naloxone distribution program via the 911 EMS Agency.
- Second, the establishment of an automated electronic trigger and data sharing with the department of public health for patients experiencing overdose or at high-risk of an OUD.
- Third, the establishment of a hospital as an "Overdose Receiving Center" with resources and personnel specifically trained in the treatment of OUD.

- Fourth, the initiation of medication assisted treatment with buprenorphine by paramedics in the field for patients experiencing withdrawal symptoms, or the EMS Buprenorphine Use Pilot (EMSBUP).

Methods:

Each Case of either the warm data handoff to Public Health and the Initiation of MAT are reviewed on a weekly basis with the team including 3 of the agency medical directors involved (EMS, Public Health, 911 Transport) for areas of improvement.

Results:

The Leave Behind Narcan program has distributed over 150 doses of naloxone to the community and has had 10 reversals attributed to LBH naloxone. There have been 318 Opioid OD triggers and referrals made to 89 of those patients.. 11 of 37 patients who have been candidates for EMS initiated MAT received Buprenorphine. Of those 4/11 were still receiving MAT at 7 days.

Conclusions:

The Cal-OMRI project has successfully bridged across the Public Health and EMS areas of excellence to reach patients in the EMS field who may never go to the hospital and get regular treatment referrals and services.

Developing, Implementing and Evaluating Specialized Training for Addiction Assessment Nurses in an Acute Care / Emergency Setting

Simran Riarh, RPN; Emma Garrod, MSN, RN; Nicole Cowan RN,BSN - Fraser Health Authority

Name: Simran Riarh, *RPN, MHSU Regional Substance Use Clinical Nurse Educator, BCCSU 2020-2021 Addiciton Nursing Fellow, RN/RPN Suboxone Prescriber*

Background:

The Surrey Memorial Hospital emergency department (SMHED) is the second largest hospital in British Columbia and provides specialized care to people from across the region. SMHED had Substance Support Liaison Nurses (SSLNs) to ensure patients with substance use disorders (SUD) receive excellent care. An evaluation of the SSLN role conducted in winter 2020 revealed opportunities to improve care for patients with SUD accessing the SMHED. To this end, the role was renamed; Addiction Assessment Nurses (AANs), a training procedural manual was developed, implemented and evaluated to optimize the AAN role in the SMHED.

Objective:

The main objectives for this role were to help with access and flow and help connect patients with community Substance Use treatment facilities.

Methods:

An AAN training manual was developed to include (1) required and recommended education resources specific to the AAN role, (2) visits to community sites including Safepoint, Creekside Detox, Intensive Case Management Team and the Rapid Access Addiction Care Clinic, (3) all preprinted orders and nursing care standards, (4) AANs roles and responsibilities, (5) communication and documentation workflows. Evaluation of the AAN training procedures included monthly individual and group meetings with AANs and confidential surveys, to learn about any gaps in care. A chart review of patients who presented to SMHED with SUD was also conducted.

Results:

Feedback from the AANs surveys identified a need for further education on SMHED protocols, policies and procedures. A gap in communication with patients regarding their substance use, treatment options and referral to community based SUC was also identified. We also identified a gap in communication within the interdisciplinary team members. Futher education was provided to close these gaps.

Conclusions:

A specialized training program for SMHED AANs was required to ensure patients receive excellent SUC while in hospital and referrals to appropriate community based SUC services prior to discharge.

Addressing the Opioid Epidemic Through Interdisciplinary Coordination: A Community-Based Hub-and-Spoke Ecosystem

Katie McCormick, LMSW; **Lori Holleran Steiker, PhD** - University of Texas at Austin

Background: Substance Use Disorders (including Opioid Use Disorder (OUD)) are one of the most critical public health issues in the U.S., with opioid use and overdose deaths reaching epidemic proportions. Despite the opioid epidemic being broad, pervasive and multi-faceted, it has been addressed with a disaggregated acute care model. A coordinated multi-pronged approach that utilizes available evidence to develop and sustain robust interdisciplinary expertise across systems is required.

Objective: The objectives of this presentation are to: 1) outline the original Hub-and-Spoke ecosystem of OUD care, 2) describe the community-informed, evidence-supported expansion of the ecosystem required for addressing the opioid epidemic.

Methods: To design such a system, researchers conducted a focus group of community stakeholders (n=18), scoped existing peer-reviewed literature, conducted in-depth semi-structured interviews (n=23) and consulted with national legal, economic and clinical opioid experts (n=11).

Results: An expanded Hub-and-Spoke ecosystem should consist of six major components. The first (Prevention) consists of a public awareness and education campaign, education of PreK-12th grade and college students, as well as the education and training of healthcare workers. The second component (Treatment) consists of systems that direct people with OUD to treatment (i.e., drug courts, drop-in centers, mobile outreach), medication-assisted treatment, and systems to help people stay in treatment (i.e., peer support services, recovery community organizations, recovery residences). The third component (Harm Reduction) consists of Naloxone distribution and syringe service programs. The remaining components consist of individualized psycho-social grief therapy for those who have lost someone to an overdose death, a robust health information technology system, and a research and evaluation structure to support successful ecosystem implementation.

Conclusions: The opioid epidemic is the deadliest drug epidemic in the history of the U.S. and one of the worst systemic crises in the Nation's history. To successfully and substantially address the epidemic, interdisciplinary coordination and collaboration is required to advance person-centered care and ultimately, community wellbeing. This community-based expansion of the Hub-and-Spoke ecosystem acts as one such model that can be adapted by communities across the nation.

It's Not Their Fault: Medical Students' Perceptions of Mutual Aid Groups' Core Values

Kelly Rhea MacArthur, PhD; Alëna A Balasanova, MD; Alison DeLissa, PhD - University of Nebraska Omaha

Background: The medical model of addiction is based on the idea of addiction as a brain disease rooted in biology, whereas mutual aid groups (MAGs), such as 12-step programs, tend to conceptualize addiction as a spiritual deficiency requiring social interventions. Research has not established whether and how these contradictory models are reconciled among those who are learning how to develop treatment plans for patients with substance use disorders (SUDs).

Objective: The purpose of this study is to examine to what extent the medical and MAGs models of addiction are in conflict with each other according to medical students. Specifically, this study seeks to identify what medical students believe MAGs' core values are and whether these understandings are consistent with the medical model of addiction.

Methods: To address these research questions, we conducted an interpretive thematic analysis of 138 reflection essays written by medical students in response to attending a MAG meeting, which was required as part of their third-year psychiatry clerkship at a public medical school in the Midwestern U.S.

Results: Although medical students report concerns about MAGs, we found that medical students generally view the core values of MAGs favorably. Through this educational experience, students appear to develop compassion for their future patients and an appreciation for how crucial social support is for treatment, which they believe MAGs are best suited to provide. Results show that, in negotiating the role of physicians in addiction treatment, through reflecting on their observations of a MAG meeting, medical students come to adopt a balanced

view of addiction and its treatment—not simply a product of individual choice and responsibility but as a chronic disease in need of medical intervention.

Conclusions: We conclude that medical students' perceptions of MAGs can be characterized as in alignment with the biopsychosocial model of addiction and, contrary to expectations, medical students do not view the philosophies of MAGs and the medical approach to addiction treatment as in conflict. We discuss these findings in the context of their implications for the likelihood that physicians will incorporate recommendations for MAGs as an adjunctive support to the treatment of addiction.

Concurrent Use of Alcohol and Marijuana and its Association with Mental Health in a National Sample of College Students

Jessica Samuolis, PhD; Jocelyn Novella, Ph.D. - Sacred Heart University

Background: Rates of concurrent use of alcohol and marijuana are problematic among college students. Mental health issues have been associated with substance use among college students, however less is known about the association between concurrent use of alcohol and marijuana and mental health issues among this age group. **Objective:** The goals of the current study were to identify rates of concurrent alcohol and marijuana use in a national sample of college students, investigate the extent to which depression and anxiety predicted concurrent use, and examine the role of flourishing as a potential moderator. **Methods:** Data from the 2017-2018 Healthy Minds Study, an annual web-based survey assessing health and health-related behaviors of college students across the United States, was utilized. Criteria for the current study included being an undergraduate student between the ages of 18 to 25 and having completed the scales of focus. As a result, 24,106 cases from the original dataset of 53,760 students were utilized in the analyses and this final sample was comprised of 7,103 males and 17,003 females. In addition to responses on standard demographic and substance use questions, data from the Patient Health Questionnaire-9, Generalized Anxiety Disorder-7, and Flourishing Scale were used. **Results:** Rates of concurrent use of alcohol and marijuana were 25.7% for males and 19.7% for females. Depression was associated with greater odds of concurrent use for both females ($b=.09$, $p<.001$, $OR=1.09$ (95% CI: 1.06, 1.12)) and males ($b=.05$, $p<.01$, $OR=1.05$ (95% CI: 1.01, 1.09)), however neither anxiety nor flourishing were associated with concurrent use. Although an interaction effect was found for depression and flourishing among females, further research is needed to clarify this relationship. **Conclusions:** Concurrent use of alcohol and marijuana among college students, as well as the complex role of indicators of mental health, warrant further research.

Poster Session 2 (#29-59)

Availability of Buprenorphine/Naloxone Films and Naloxone Nasal Spray in Community Pharmacies in California

Talia Puzantian, PharmD, BCPP[1], **Lucas G. Hill, PharmD, BCPS, BCACP**[2]; Narine Karapetyan, PharmDc 2022; Maryam J. Saffari, PharmDc 2022; Bahaar A. Shaw, PharmDc 2023; Sarbjot Singh, PharmDc 2023; Farhan Bokhari, PharmDc 2023; Kelly R. Reveles,

PharmD, PhD, BCPS; Sorina B. Torrez, PharmDc 2022; Lindsey J. Loera, PharmD - (1) Keck Graduate Institute, (2) University of Texas at Austin

Background:

In 2019, opioid-related overdose deaths in California ranked among highest in the nation (6,198 in 2019), with a rate of 15 per 100,000 persons. Annual buprenorphine treatment per 1000 patients in the U.S. increased between 2009-2018 from 1.97 to 4.43, reflecting increased need. Access to buprenorphine/naloxone films (BUP/NX) and naloxone nasal spray (NNS) can help prevent opioid-related events in persons with an opioid use disorder (OUD).

Objective: This study assessed availability of BUP/NX and NNS in community pharmacies in California.

Methods:

From January 6 to February 3, 2021, trained interviewers conducted a telephone audit of 1000 randomly selected community pharmacies licensed in California. Using a standardized script, interviewers asked to speak to a pharmacist at each pharmacy to determine willingness to dispense BUP/NX and NNS. Primary outcomes included availability of a one-week supply of BUP/NX and a single unit of NNS, overall and by pharmacy type. Secondary outcomes included willingness and estimated timeframe to order BUP/NX if unavailable. Pharmacies were excluded if they were not reached after three attempts, refused to disclose information, or were not a community pharmacy. Chi-square test was used to compare categorical data, and Wilcoxon rank sum test was used to compare continuous data by pharmacy type.

Results:

Of the 1000 pharmacies sampled, 157 were excluded and 28 were classified as non-responders, resulting in a 96.7% response rate. Of the 815 pharmacies (505 chain, 310 independent) included in the final analyses, 230 (28.2%) were prepared to dispense a one-week supply of generic BUP/NX and a single unit of NNS. Independent pharmacies were significantly less likely than chain pharmacies to have both available (19.7% independent vs 33.5% chain, $p<0.0001$). Differences in availability by pharmacy type were also observed individually for NNS (45.8% vs 73.7%, $p<0.0001$) and generic BUP/NX (21.9% vs 36.8%, $p<0.0001$). Of the 561 pharmacies with generic BUP/NX unavailable, 353 (62.9%) indicated willingness to order, with independents significantly less likely (45.9% vs 75.9%, $p<0.0001$).

Conclusions:

Less than one-third (28.2%) of California pharmacies audited were prepared to dispense BUP/NX and NNS, with deficiencies more pronounced in independent pharmacies. Further research is needed to identify underlying factors for these barriers to access.

The Impact of Stress on Nurses: How Do They Cope?

Tamar Rodney, PhD, RN, PMHNP-BC, CNE - Johns Hopkins University School of Nursing

Background: Within the nursing profession, there are multiple factors that increase stress, and coping strategies are infrequently explored. Given the potential negative impact it is critical to understand how nurses cope and the potential impact on the care given to their patients and their profession. Negative coping strategies and its untreated consequences include early retirement, loss of job, disability, and addiction.

Objective: The purpose of this study is to determine the impact of stress among US nurses, and to examine how severity of stressful symptoms are associated with coping strategies.

Methods: An online survey was used, utilizing the questions of the PCL-5 that screens for severity of stress symptoms. Qualitative questions explored the impact of stress and the coping methods used.

Results: The impact of stress on this sample were highlighted as negative job performance impacting mental fatigue and workplace attrition. Primary coping skills included mindfulness, social networks, exercise and alcohol.

Conclusions: Nurses are frequently exposed to experiences which has an impact on their mental health and wellbeing and ability to successfully perform their jobs. The choice of coping strategies is often viewed as helpful, however it includes the use of harmful substances. This indicates that there are multiple modifiable factors that impact the severity of stressful experiences. Addressing environmental, organizational and intrapersonal changes are key components in alleviating the negative impact experienced by nurses and highlights the need to address addiction among nursing staff.

Impact of COVID-19 on Pregnant and Postpartum People Receiving MOUD

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Background: The COVID-19 pandemic has exacerbated the opioid crisis and led to decreased rates of accessing care. This is concerning for pregnant people with opioid use disorder (OUD) because of the potential for adverse obstetric (OB) outcomes (e.g., preterm labor, still birth, and maternal mortality). Integrated programs co-locating addiction and OB services are associated with better parental and child outcomes, including retention of individuals receiving medication for opioid use disorder (MOUD); however, it is unclear if integrated programs could also prevent treatment discontinuation during the pandemic. **Objective:** Our aim was to: 1) examine access and engagement with OUD and OB services during the COVID-19 pandemic and 2) evaluate the impact of COVID-19 on pregnant and postpartum people (PPP) receiving MOUD. **Methods:** We conducted retrospective chart reviews to: 1) compare appointment retention rates during March-October of 2019 and 2020 using chi-square analyses and 2) determine the percentage of telehealth visits in 2020. Additionally, we conducted semi-structured interviews with established patients (n = 5; 60% pregnant, 40% postpartum, 80% white) to understand how the pandemic affected them. Rapid qualitative analysis was performed to identify key themes within the data.

Results: The rate of missed MOUD appointments in 2019 and 2020 was not significantly different: $\chi^2(1) = 0.89$, $p = 0.345$. The rate of missed OB appointments in 2019 and 2020 was not significantly different: $\chi^2(1) = 0.77$, $p = 0.380$. Between March-October of 2020, 19.6% of MOUD appointments and 9.6% of OB appointments were conducted virtually. Coding of qualitative data revealed that 80% of patients utilized telehealth at least once and had a positive experience. 100% reported that the quality of interaction with their medical providers, both remote and in-person, remained the same or improved, and that their access to OB care remained about the same. However, 80% of patients expressed concerns about COVID-19 restrictions, including limitations on who could accompany them to appointments, their delivery, or the NICU. **Conclusions:** Findings suggest that both remote and in-person visits retained most patients receiving OUD and OB care during the COVID-19 pandemic. Additionally, telehealth services were successful in maintaining the frequency of care present before COVID-19.

Assessing Faculty and Student Readiness to Use Virtual Reality to Practice Clinical Interviewing and Assessment Skills.

Victoria A. Osborne-Leute, PhD, MSW; Courtney A. Cardona, BSW - Sacred Heart University

Background: Although students in health professions, nursing, and social work learn clinical skills in the classroom, they don't receive much hands-on practice. Experiential learning can include simulations with "standardized patients (SPs)": actors who portray the patient, to make the encounters more real. While the use of SPs is highly effective, it can be resource-prohibitive. Also, online students cannot take part in these simulations.

Virtual reality (VR) platforms are beginning to be used for clinical skills training, specifically around medical or surgical procedures. There is paucity of research examining the use of VR to teach students to take a patient history, assess mental health or educate patients.

Objective: Because creation of a VR platform is costly and time-consuming, it was necessary to assess students' and faculty's readiness and openness to using VR as an option for clinical skills practice.

Methods: Surveys were developed to assess the readiness to learn and utilize VR for the purposes of practicing clinical skills. Faculty and students from the nursing, social work and health professions were recruited to participate.

Results: Results from n=37 students and n=40 faculty show support for developing a VR platform for assessment skills training. 81.1% of students and 70.3% of faculty are willing to try VR. Over 80% of students and of faculty are open to using VR in the curriculum. Over 70% of students and faculty strongly agree that adding VR can improve skills. However, only 51.3% of faculty and 56.6% of students reported that they would feel more confident practicing clinical assessment skills with SPs than with avatars in a VR environment. A significant correlation was found between students' perceptions that VR encounters would be a suitable alternative for live SP interactions and having a higher level of confidence in practicing clinical skills in a VR environment than with a live SP ($r=0.631$, $p<0.01$).

<u>Conclusions</u>: Both faculty and students appear open to learning and using VR as a beneficial way to practice clinical assessment skills. Ensuring proper training in VR use is essential. Creating a virtual environment can be especially helpful for online learners.

Effects of Using Different Death Rate Metrics on the Analysis of Drug-Overdose Death Rates and Socioeconomical Factors

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Background:

Age-adjusted death rate (ADR) used in drug-overdose studies typically involves death-record data and population-survey data. Difference can exist between the two data sources, leading to the so-called dual data-source error. Proportionate mortality (PM) avoids the error; however, no studies have been done comparing the conclusions drawn from ADR and PM.

Objective:

To evaluate the differences and merits of using different death-rate metrics in overdose analysis.

Methods:

Drug overdose deaths in the US from 2010 to 2019 were analyzed, with side-by-side comparisons in using ADR due to drug overdose (ADOD) and PM due to drug overdose (PMOD).

Results:

(1) Variation with age and sex: ADOD were similar for different age groups. However, PMOD highlighted that the 25 – 34 years old group had much higher PMOD than other age groups; nearly 30% of all deaths in this group were related to drug overdose. Additionally, while ADOD were lower for females than males, PMOD for females were similar to males. PMOD for 15 – 24 years old females were even higher than their male counterparts, highlighting the vulnerability of young females to drug overdose. (2) Variation with race: ADOD were higher among American Indians than White Americans, whereas PMOD were higher among White Americans. For the age 25 – 34 group, PMOD among White Americans was nearly twice of that for American Indians. (3) Change from 2010 to 2019: ADOD increased for both the Black and White populations, with higher ADOD among White populations. However, PMOD indicated a much faster increase among the Black population from 2013 to 2019, their PMOD surpassing the White population since 2017. (4) Variations of ADOD and PMOD with educational attainment also had different characteristics: PMOD decreased steadily with increasing education, while the trend of ADOD vs education was not as consistent.

Conclusions:

In drug overdose analysis, differences existed in conclusions drawn by using different death-rate metrics. The PM metric provided additional insights on the association of drug overdose deaths with socioeconomic factors. For more complete understanding of the drug overdose epidemic, the PM metric should also be considered in addition to the standard ADR metric.

Street-Drug Lethality Index: A Novel Methodology for Predicting Unintentional Drug Overdose Fatalities in Population Research

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Background: Emerging evidence suggests the composition of local illicit drug markets varies over time and the availability and relative lethality of illicit drugs may contribute to temporal trends in overdose mortality. Law enforcement drug seizures represent a unique opportunity to sample the makeup of local drug markets. Prior research has associated shifts in the types of drugs seized and trends in unintentional drug overdose mortality. The present report builds on this work by demonstrating a novel methodology, the Street-Drug Lethality Index, which may serve as a low-lag predictor of unintentional overdose deaths.

Objective: To predict unintentional drug overdose deaths via the Street-Drug Lethality Index.

Methods: Data included administrative records of law enforcement drug seizures and unintentional drug overdose deaths in Ohio from 2009 -to- 2018. Death records and lab results from drug seizures occurring during the calendar year 2017 were transformed via the described procedure to create lethality indices for individual drugs. These indices were then summed annually to create the independent variable for a linear regression model predicting unintentional overdose deaths for all years during the study period.

Results: The regression model explained 93 % of the year-to-year variance in unintentional overdose fatalities (slope = 0.009480; CI = 0.007369 to 0.011590; t_{10} = 10.355942; P = 0.000007; Y = 11.808982 + 0.009480X, r^2 = 0.931).

Conclusions: These findings contribute to a growing body of evidence that changes in the composition of the drug supply may predict trends in unintentional overdose mortality. The proposed methodology might inform future overdose prevention and response efforts as well as research.

Analyzing Trends in Substance Use Among SBIRT Patients Engaged in Alabama Health Centers From 2017~2021

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Background:

Substance abuse remains a serious social and economic threat to health and social welfare of Rural Communities in Alabama and elsewhere in the United States.

Objective:

The purpose of this research is to analyze the trends of substance use among different sub-populations of patients who "screen in" for SBIRT services using data from Alabama health centers serving low-income patients from 2017~2021.

Methods:

Regression and Chi-Squared analyses were used to identify different risk factors for substance use and mental health difficulty for over 40000 patients with qualifying DAST-10 or Audit scores.

Results:

Several impact factors are identified to be related to screen in rate, such as patient age, race/ethnic status, military experience, and gender. Importantly, healthcare setting appears to moderate some of these relationships. For example, our analysis supported statistically significant differences in screen-in rates by gender at the Alabama Department of Public Health (ADPH) with ($X^2= 131.3$ and $p<0.001$), indicating that gender is linked to the screen-in rates. Specifically, men are more likely to be screened-in than women. However, gender does not influence screen-in rates at the Veteran's Affairs Medical Center (VA) ($X^2=2.3$ and $p=0.13$).

Conclusions:

Developing appropriate identification and treatment strategies for low-income clients continues to pose unique challenges for healthcare workers working in primary care settings. The risk factors identified in this research offer promise for the development of more targeted training modules for supporting brief intervention and treatment in primary care.

Undertreatment of Psychiatric Morbidity Among Pregnant Women with Opioid Use Disorder

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Background: Due to the opioid epidemic, the prevalence of opioid use disorder (OUD) among pregnant women has been steadily increasing over the past two decades. Psychiatric diagnoses increase the severity of OUD and contribute to higher relapse risks.

Objective: We sought to determine if pregnant women with OUD and a co-occurring psychiatric diagnosis receive psychiatric evaluation.

Methods: This is a retrospective cohort study identifying 2,091 pregnant women with opioid use disorder admitted to Magee-Womens Hospital. ICD9 codes were used to identify psychiatric diagnoses. 198 charts were randomly selected for detailed chart review. We assessed the relationship between psychiatric diagnoses and psychiatric consultations.

Results: Of the participants, 122/198 (61.6%) had a psychiatric diagnosis. Psychiatric diagnoses mainly included depression (24.6%) and anxiety (18.0%). Less common where bipolar disorder (9.8%) and psychiatric disorder (0%). A combination of these disorders accounted for 47.6% of the diagnoses. Of these women with OUD and a psychiatric diagnosis, only 71/122 (58.2%) received a psychiatric consultation during their admission, whereas 51/122 (41.8%) did not receive a psychiatric consultation. Most striking was 3 of 5 patients diagnoses with depression, anxiety, and bipolar disorder did not receive a consultation. Similarly, none of the 2 patients diagnosed with a psychotic disorder received a consultation.

Conclusions: We found a gap in consultation rate for pregnant women diagnosed with opioid use disorder and a co-occurring psychiatric disorder. To optimize treatment for pregnant women with opioid use disorder, co-occurring psychiatric diagnoses must be evaluated as a component of OUD treatment in an attempt to reduce the severity of OUD

Exploring Technical Assistance Themes for the Behavioral Health Workforce During COVID-19

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Background: The SAMHSA-funded Technology Transfer Center (TTC) networks are composed of the Addiction Technology Transfer Center Network, Mental Health Technology Transfer Center Network, and Prevention Technology Transfer Center Network. The TTCs are tasked with building the capacity of the behavioral health workforce to deliver evidence-based practices across the prevention, early intervention, treatment, and recovery continuum of care. TTCs provide training and technical assistance (TTA) through a field-driven conceptual Technology Transfer model and within a Technical Assistance (TA) conceptual framework that differentiates among three types of TA: basic, targeted, and intensive (ATTC, 2011; Cross TTC, 2020; Fixsen, et al., 2009). Recently, the TTCs examined TTA for a six-month period prior to and during COVID-19 restrictions and found that expanded access to TTA services via virtual formats did not come at the expense of quality (high satisfaction levels) (Cross TTC, in review 1).

Objective: The objective of the present study was to examine TA type across eight thematic themes of the TTA content.

Methods: The TTCs conducted an initial analysis of COVID-related TTA provision changes due to COVID-19 and identified eight TTA themes (see figure 1) (Cross TTC, in review 2). Data

compiled from the TTC training and events database were analyzed across the themes from March through July 2020 (N = 393).

Results: The TTCs found that 80% (n = 316) of all events included in this study had been categorized in terms of the level of TA, with approximately 44% categorized as universal (n = 139), 52% as targeted (n = 163), and 4% as intensive (n = 14) TA (figure 1). The most common themes were Support Services (20%), Networking (20%), and Self-Care (18%). Within the theme of Support Services (defined as how to support and serve behavioral health consumers experiencing COVID-19-related issues), 25% of the participants identified as a social worker, counselor (19%), health education (12%), and psychologist/psychiatrist (10%).

Conclusions: Innovative models are needed to provide intensive TA for the thematic areas of health equity, telehealth, and self-care. Future studies should examine methods that would diversify TA type across the TA framework.

Link to Figure 1

https://docs.google.com/document/d/1-WawlAiqbbwbGvnIogT-Q8ThRmwvjm-gSv9jxorA9QY/edit?usp=sharing

Medication-Assisted Treatment (MAT) for Opioid Use Disorder During COVID-19: To Tele-MAT

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Background:

In March 2020, state and federal guidelines related to the COVID-19 pandemic required Medication-Assisted Treatment (MAT) programs for Opioid Use Disorder (OUD) to transition to virtual care.

Objective:

This study aimed to determine the role that the COVID-19 pandemic had on the treatment of MAT patients at an urban Federally Qualified Health Center (FQHC) and to identify gaps in services due to the transition to virtual care.

Methods:

In the summer of 2020, electronic medical records from the FQHC were reviewed to collect data on 33 patients receiving Suboxone treatment in the MAT program. Data was de-identified, and information was recorded on demographics and adherence/retention metrics for appointments, reported illicit drug use, and urine drug screen results. Data was also logged for the mode of telehealth appointment. This information was collected at four time points over a nine month period to capture points before and during the COVID-19 pandemic.

Results:

In October 2019, 100% of patients attended all of their required appointments. By June 2020, only 62.5% of patients were fully attending their required appointments. In October 2020, 26.7% of MAT patients reported illicit drug use, including cocaine, unprescribed benzodiazepines, and amphetamines. In June 2020, 12.5% of patients reported illicit use. Pre-pandemic, 100% of patients were receiving monthly urine drug screens (UDS). During the pandemic, only 40% of patients have had a UDS. Of the patients that have had a UDS during the pandemic, 15% screened positive for illicit substances, as compared to 27.6% that screened positive in October 2019. 97% of patients have video capabilities; however, only 19% of patients are being seen via video-conferencing with providers.

Conclusions:

The data suggests that there are gaps in care in this MAT program, with lack of adherence to urine drug screens and lowered attendance at appointments. Engaging MAT patients in productive virtual care will help to mitigate the negative impacts in terms of attendance and adherence to the program. Intentionally designing a telehealth MAT program will allow both patients and providers to benefit, as shaping patient expectations should improve patient adherence and retention as we continue telehealth.

The Impact of Social Media on Body Image and Substance Misuse in College Students During COVID-19 Quarantine

Victoria A. Osborne-Leute, PhD, MSW; Taylor Rose Rogan, BS - Sacred Heart University

Background:

With community lockdowns, removal of daily routines, and campus shutdowns, students could experience a rise and intensity dealing with mental health issues. Behaviors such as substance misuse and disordered eating and exercising can manifest in confined spaces especially during periods of high anxiety and stress. Prior research has shown quarantines to be linked to issues such as anxiety, depression, loneliness, and anger (Sharan, 2020). Research has also shown that media can be perceived as negative due to its nature as a “highlight-reel”, and the messages and images seen on a daily basis could be harmful especially in terms of disordered behavior patterns. During the pandemic, social media also produced intensive news content, which could be overwhelming.

Objective:

The purpose of this study is to understand how mandated quarantines and regulations due to the COVID-19 pandemic have affected the mental health of college students, specifically with regard to symptoms of eating disorders, anxiety, and substance misuse.

Methods:

Undergraduate students in a northeastern university (n=64) participated in an online survey to assess behaviors and feelings during the period of March 2020-August 2020.

Results:

94% of the sample was female. Respondents reported drinking about the same amount of alcohol per week during the quarantine as before (42.2%, X=2.68 weekly beverages, sd=1.43). 75% reported skipping a meal 2-4 times/week in order to counteract effects of eating, and 56% reported exercising excessively 1-4 days/week in order to counteract effects of eating. Over 90% of the participants found hobbies such as exercise, walking, and reading beneficial ; 50% used meditation and self-care activities to reduce stress. 68% reported anxiety, depression, and sadness; 10% reported burnout and overall guilt. 78.1% reported feeling that social media content had a strong impact on feelings and behaviors. The most popular way to diminish social media overwhelm was to limit usage or place time limits (43.7%).

Conclusions:

Bringing awareness to mental health issues like symptoms of addictive behaviors (e.g., eating disorders, substance use disorder) and how they are intensified by periods of stress such as quarantine, can help students understand when to seek support from friends, family or mental health professionals.

Patient Characteristics Associated with Use of Video Directly-Observed Therapy for Office-Based Buprenorphine Treatment

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Background: Video directly-observed therapy (video DOT) can confirm buprenorphine adherence among patients with opioid use disorder in primary care settings, yet little is known about whether patients will use video DOT if made accessible as well as the patient characteristics associated with use.

Objective: Among participants randomized to a video DOT intervention, to describe video DOT utilization and to assess participant characteristics associated with video DOT use.

Methods: Sub-analysis of a pilot randomized controlled study of adults (≥18 years old) who recently initiated sublingual buprenorphine were recruited from office-based programs at two urban medical centers. The intervention was delivered via a HIPAA-compliant, asynchronous, mobile health technology platform for 12 weeks. Participants were instructed to record at least one daily video of buprenorphine self-administration. Associations between characteristics and number of submitted videos were assessed using Poisson regression models with robust standard errors.

Results: Out of 39 intervention participants, 28 (72%) used a study provided phone, 11 (28%) used a personal device. Out of 3,276 possible videos, 1,002 were submitted (31%), and, out of

those submitted, 804 (80%) were deemed acceptable. Participants submitted an average of 31% (standard deviation (SD) 34%) of videos; the median and interquartile range was 16% (4-54%). Baseline participant characteristics that were associated with video submissions over the 12-week study period were: 40 years old or older in age (relative risk (RR)=2.54 (95% confidence interval (CI): 1.31-4.91); p=0.006), non-white race (RR=0.43 (95% CI: 0.19-0.97); p=0.043), less than a high school education (RR=0.27 (95% CI: 0.10-0.74); p=0.010), 3 or more previous buprenorphine treatment attempts (RR=0.16 (95% CI: 0.07-0.37); p<0.001), and once a day buprenorphine dosing (RR=3.10 (95% CI: 1.76-5.48); p<0.001). Homelessness and illicit opioid use within the past 30 days were not associated with video submissions.

Conclusions: Overall use of the video DOT intervention was low in this sample of patients who had recently initiated buprenorphine treatment for opioid use disorder. There were significant differences in video DOT use by age, race and educational status. Such differences underscore that mobile-health interventions such as video DOT may not be equally utilized by all patients.

Availability of Buprenorphine/Naloxone Films and Naloxone Nasal Spray in Community Pharmacies in Florida

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Background:

In 2019, Florida ranked second in U.S. opioid overdose deaths, with 5,268 deaths. Persons with opioid use disorder prescribed buprenorphine/naloxone films (BUP/NX) and naloxone nasal spray (NNS) need to obtain them from a pharmacy promptly to avoid recurrence of use, overdose and death. Poor availability of BUP/NX and NNS can lead to dangerous treatment delays.

Objective:

Assess the availability of BUP/NX and NNS in community pharmacies in Florida.

Methods:

A telephone audit of 800 randomly selected pharmacies in Florida were contacted from Jan 2021 to Feb 2021. Trained interviewers asked to speak to a pharmacist to inquire about the availability of BUP/NX and NNS. Interviewers followed a script and recorded their interactions in a corresponding data collection template. Primary outcomes included availability of a one-week supply BUP/NX and a single unit of NNS. Secondary outcomes were willingness to order BUP/NX and estimated timeframe to order BUP/NX if unavailable. Data analysis was conducted using JMP Pro version 14.0 (SAS Institute Inc). The chi-square test was used to compare

categorical data, and the Wilcoxon rank sum was used to compare continuous data. Pharmacies were excluded if they were not able to be reached after 3 attempts, refused to disclose stock information, or were not a community pharmacy.

Results:

Ninety pharmacies were excluded and 24 were classified as non-responders, resulting in a 97% response rate. Of these, 196 (28.6%) were prepared to dispense a one-week supply of generic BUP/NX and a single unit of NNS. Considered separately, 226 (32.9%) pharmacies had a one-week supply of generic BUP/NX, and 473 (69%) pharmacies had at least one unit of NNS. Of the 460 pharmacies with generic BUP/NX unavailable, 269 (58.5%) indicated willingness to order with a median (IQR) order time of 3 (2-5) days.

Conclusions:

Less than one-third of Florida pharmacies audited were prepared to dispense BUP/NX and NNS. This demonstrates that pharmacies often present a barrier to timely access of these vital medications. Further research is needed to identify underlying factors and effective solutions.

Patterns in Change of Opioid Overdose Death Rate with the Day of the Week and Their Implications

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Background:

No prior researches have analyzed the patterns in the variations of opioid-overdose death rates (ODR) with the day of the week.

Objective:

Repeatable patterns, especially ones that are unique to opioid overdose deaths as compared to other deaths, can provide additional insights to the opioid-overdose epidemic, and should be considered in prevention efforts.

Methods:

Death records data in the mortality file published by the CDC were analyzed, including all deaths in the US from 2003 to 2019.

Results:

ODR were higher during weekends than during weekdays and were the lowest during the middle of the week. In contrast, no weekend-vs-weekday differences were observed for deaths related to diseases such as strokes and diabetes, indicating that the higher ODR in weekends were not caused by any reduced availability of medical services. For each year from 2003 to 2019, ODR

were consistently the highest on Saturdays and the lowest on Tuesdays. The peak-to-valley-difference (PVD), defined as the difference in ODR between Saturdays and Tuesdays, were around 30%. PVD value decreased steadily from 2003 to 2019. This decreasing trend may be related to increasing adoption of working-from-home arrangements.

Similar patterns of higher ODR in weekends were observed for populations with different age, race, and educational attainment. Differences were observed between males and females. Males had larger weekend-to-weekday difference in ODR than females. Furthermore, while males experienced decreasing PVD from 2003 to 2019, PVD for females stayed largely unchanged. The variation of PVD was also different for different types of opioids involved. From 2003 to 2012, PVD for deaths related to ICD-10 code T40.2 opioids (natural and semisynthetic opioids) and for T40.4 opioids (synthetic opioids) both followed a steadily decreasing trend. However, from 2012 to 2019, while PVD for T40.2 opioid continued the decrease, PVD for 40.4 opioids reversed the trend and increased rapidly.

Conclusions:

Weekend-vs-weekday difference in ODR may indicate that working or schooling environments in weekdays discourage substance abuse, rather than differences in the availability of emergency medical services. The steady decrease of PVD may be related to increasing adoption of work-from-home arrangements and flexible work schedules over time.

The Association of Prescriber Attitudes and Self-Reported Buprenorphine Prescribing Behaviors

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Background: An important strategy in increasing access to buprenorphine for Opioid Use Disorder (OUD) is to decrease access barriers among existing buprenorphine providers. Minimal research has examined factors associated with “low-threshold” prescribing behaviors. Two such factors are prescribers’ attitudes toward people with OUD and their attitudes toward naloxone use and distribution.

Objective: Determine whether prescriber attitudes regarding patients with OUD and naloxone are associated with self-reported buprenorphine prescribing and practice behaviors.

Methods: We surveyed providers (N=123) who completed X-waiver courses between March 2017 and September 2019. The survey asked questions about prescribing behaviors and included the Naloxone-Related Risk Compensation Beliefs (NARCC-B) and Attitudes toward Patients with OUD scales. Analyses consisted of a series of linear and logistic regressions with the NARCC-B and OUD Attitudes scales as predictors and indicators of prescribing behaviors. Age was included as a covariate.

Results: More favorable views of naloxone were associated with anticipating buprenorphine treatment would last longer ($p = .007$) and a greater likelihood of prescribing naloxone ($p <$

.001), but was not associated with buprenorphine-related prescribing behaviors. More favorable attitudes toward people with OUD were associated with prescribing a larger (a) induction buprenorphine dose (p=.016), (b) maintenance buprenorphine dose (p=.006), and (c) maximum daily buprenorphine dose (p=0.022). More favorable attitudes were also associated with discussing overdose risk and protective factors with a greater percentage of patients (p<.001), a greater likelihood of using telemedicine for buprenorphine appointments (pre-COVID-19) (p=0.041), and having a larger number of current buprenorphine patients on their caseload (p=.005).

Conclusions: Attitudes regarding patients with OUD were associated with a number of buprenorphine-related prescribing and practice behaviors, while attitudes toward naloxone largely were not. However, most participants reported highly favorable views toward naloxone, which may have limited our ability to detect associations. Though findings are correlational and not causal, these associations suggest that future prescriber trainings aiming to increase positive interactions with and attitudes toward people with OUD, as well as encourage flexible and "low-threshold" buprenorphine prescribing behaviors, may help increase patients' access to buprenorphine.

Naltrexone Injections on Therapeutic Anticoagulation: A Safe Option?

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Background: People with alcohol use disorders (AUD) often have medical conditions that require therapeutic anticoagulation. Individuals with high pill burdens, difficulty with adherence, or with a preference for long-acting formulations may benefit from extended release naltrexone (XR-NTX). Risks of XR-NTX injections for people on anticoagulation include hematoma and bruising, but the rate of adverse effects has not been studied. Clinical trials of XR-NTX excluded people on anticoagulation. XR-NTX became available at our urban safety-net hospital in 2019. We review cases of six individuals who received XR-NTX while on anticoagulation.

Objective: Identify complications of patients on anticoagulation who received XR-NTX for AUD.

Methods: Retrospective chart review of six individuals on anticoagulation who received XR-NTX during hospitalization.

Results: There were no documented complications on chart review of six people with AUD who received between 1-11 doses of XR-NTX on therapeutic anticoagulation.

Patient	Sex	Age	Co-morbidities	XR-NTX indication	Number of doses received	Anticoagulant	Time between Anticoagulation initiation and XR-NTX	Anticoagulation indication	AUD Severity

							injection		
1	M	48	Non-ischemic cardiomyopathy, Atrial flutter, Obstructive Sleep Apnea, Childs-Pugh A cirrhosis	Increase adherence	1	rivaroxaban	1 week	Left atrial thrombus	Severe
2	F	27	Anxiety, depression	Reduce pill burden, dysphagia	7	rivaroxaban	9 months	Provoked PE in 2019	Severe
3	M	61	Hypertension, Atrial fibrillation, Depression,	Increase adherence	2	apixaban	5 months	Unprovoked PEs	Severe
4	M	40	Stroke, hypertension, methamphetamine use, schizoaffective disorder	Increase adherence	1	enoxaparin	1 day	Embolic CVA due to protein C deficiency	Severe
5	M	73	Schizophrenia, depression, COPD	Increase adherence	1	rivaroxaban	10 months	DVT	Severe
6	M	60	CAD, hypertension, chronic pain, PTSD	Increase adherence	11	rivaroxaban	>1 year	unprovoked PE	Severe

Conclusions: XR-NTX is an effective medication for people with AUD and may be safely tolerated by patients on anticoagulation. Formal studies about XR-NTX administration in patients on anticoagulation are needed so providers can better discuss risks and benefits for shared-decision making with patients.

Free at Last! 30 Pioneering Patients in Israel Initiate Extended-Release Buprenorphine Despite COVID

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Background:

Israel has been experiencing a rapid rise in the rate of opioid prescribing which can lead to increased opioid misuse, addiction and overdose deaths. To expand the available opioid use disorder (OUD) treatment options, Israel became the second country in the world, after the United States, to approve monthly subcutaneous extended-release buprenorphine (XR-BUP).

Objective:

This report characterizes the first 30 Israeli patients to receive XR-BUP and evaluates their responses.

Methods:

Despite the COVID-19 pandemic, a 49-item questionnaire was completed by the first 30 Israeli patients who received subcutaneous XR-BUP between May 1 and July 12, 2020, via interviews and chart reviews.

Results:

Out of the 30 patients, 23 were male and 12 were immigrants. Ages were 24 to 63 with an average of 45. 9 were married, 12 divorced, 9 single, 17 had children. 24 were employed. 11 reported a criminal record. Participants were in treatment for OUD which included 17 heroin, 3 prescription opioids, and 10 both. Methods of ingestion included 17 injecting, 11 smoking, 19 snorting, and 8 oral. Prescribed opioids included 6 fentanyl, 7 oxycodone, 1 morphine, and 2 unspecified. Prescription source included 5 physician, 4 black market, or 3 both. Sublingual buprenorphine dosages ranged from 8mg to 24mg, with the average 16mg. At the time of XR-BUP injection, 5 participants were using illicit substances: 1 opioid, 2 cocaine, 1 synthetic cannabis, 1 benzodiazepines. 15 participants had a history of past alcohol use disorder, 3 currently drank alcohol.

Conclusions:

- XR-BUP offers another medication option for treating OUD in Israel, all of which cost $55/month at public MATs
- In light of COVID-19, XR-BUP was an especially favorable treatment option for stable patients to reduce the risk of virus transmission
- Patients reported that XR-BUP allowed them to “have a normal life” with less stigma because it freed them from taking daily medication and coming to the clinic weekly
- Patients felt that being “blocked” for an entire month served as a greater deterrent than daily medication, which could be stopped at any time
- Patients saw XR-BUP as a "transition to total abstinence" and not taking a daily medication helped them along this path

Frequency of Alcohol or Benzodiazepine Use Disorder As a Contraindication to Buprenorphine Treatment

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Background: Current clinical guidelines lack clarity about prescribing buprenorphine for opioid use disorder (OUD) to patients who also have alcohol or benzodiazepine use disorder. The sedating effects of alcohol and benzodiazepines could increase overdose risk with buprenorphine treatment; however, overdose risk is also high with untreated OUD.

Objective: To describe the frequency of alcohol or benzodiazepine use disorder (moderate or severe) among people with OUD who were screened in a buprenorphine treatment clinical trial.

Methods: We screened 73 syringe service program (SSP) participants who expressed interest in a randomized controlled trial of onsite buprenorphine treatment at SSPs. As part of the screening process, we applied a checklist with DSM-5 criteria for alcohol and benzodiazepine use disorders. Our protocol, which was developed with a data and safety monitoring board and approved by our institutional review board, required exclusion of potential participants who met criteria for alcohol or benzodiazepine use disorder moderate or severe. After the first seven months of screening and enrollment, this criterion was amended and those with moderate alcohol or benzodiazepine use disorders were included and enrolled in the trial for the last 21 months.

Results: Among 73 screened participants, 23 people with OUD screened out due to moderate or severe alcohol or benzodiazepine use disorder (31.5%). Five (6.8%) were excluded for moderate benzodiazepine (3) or alcohol (2) use disorder prior to the change in exclusion criteria, and 18 (24.6%) were excluded for severe alcohol (11) or benzodiazepine (7) use disorder throughout the entire study period. During the 21 months after we modified inclusion criteria, three people (4.1%) with moderate disorders were enrolled in the study.

Conclusions: Nearly one-third of SSP participants with OUD who requested buprenorphine treatment were excluded based on concerns about potential over sedation with concomitant buprenorphine and alcohol or benzodiazepine use. Food and Drug Administration guidance recommends balancing the risks of potential over sedation against the risks of untreated OUD for individual patients; however, few studies inform risk assessment. Future research should directly address safety of buprenorphine treatment in people with OUD and co-morbid alcohol or benzodiazepine use disorder.

Development and Content Validation of a Measure of Healthcare Professions Students' Attitudes and Competencies Relevant to Care of Patients with Substance Use Disorders

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Background:

Healthcare professionals frequently work with patients with substance use disorders (SUDs), but many graduating medical, nursing, and pharmacy students feel under-prepared to work with

patients with SUDs due to limited education and training. Curricular interventions have been shown to improve knowledge about addiction and attitudes towards those with SUDs. However, existing validated measures of these domains are designed for practicing professionals, not students, and do not encompass recent advances in addiction treatment including culture change regarding stigma.

Objective:

To develop and validate a survey assessing medical, nursing, and pharmacy student readiness to work with patients with SUDs in the domains of 1) attitudes, and 2) competencies, for use in future curricula evaluation.

Methods:

We conducted a literature review and iterative group discussions to develop initial survey items. We then performed cognitive interviews with 10 students from multiple healthcare professions for feedback and comprehension. Survey items were then sent to 8 medical, 8 pharmacy, and 8 nursing educators with SUD expertise. Experts rated items on a 3-point Likert scale as "not important (1)", "somewhat important (2)", or "very important (3)" to the readiness of their students to work with patients with SUDs and noted additional topics to include.

Results:

Our initial survey had 18 attitude and 35 competency items. Based on expert feedback, an additional 5 attitude items and 15 competency items were added. Mean attitude item rating was 2.52 (SD: 0.24). Mean competency item rating was 2.62 (SD: 0.21). Attitudes and competencies rated as "very important" by over half of experts directly related to medical aspects of SUDs (toxidromes, history, etiology, treatment), while items below this threshold were indirectly related to the medical care of people with SUDs (stereotypes, community services, policy). Additionally, several items addressing humanistic competencies were highly rated including: personal bias, stigmatizing language, social determinants of health, trauma-informed care, and perspective taking.

Conclusions:

Content validation by interprofessional addiction experts demonstrated the need for curricula that address both traditional medical aspects of SUDs and emerging topics in the medical humanities. We intend to construct validate this measure in a multi-institution sample of medical, nursing, and pharmacy students.

Differences in the Types of Withdrawal Symptoms Reported after Opioid Overdose Reversals Among Lay People and Emergency Responders

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Background: Despite their prevalence, research on precipitated withdrawal symptoms following opioid overdose reversals is limited. Specifically, little is known about how the person administering naloxone may be associated with the types of withdrawal symptoms experienced by the overdose survivor.

Objective: To examine the association between the person administering naloxone (i.e., lay person or emergency responder) and withdrawal symptoms reported following overdose reversals that occurred between December 2016 and August 2020.

Methods: We examined cross-sectional data from our voluntary, anonymous, and online Overdose Field Report (ODFR) system which tracks opioid overdose events and reversals in Missouri. The "type of person administering naloxone" variable was dichotomized as 'lay person' or 'emergency responder.' Reports on the presence/absence of withdrawal symptoms (e.g., vomiting, irritability) were categorized for each individual ODFR record as: none, physical, behavioral, or physical + behavioral. Multinomial logistic regression was used to estimate adjusted odds ratios (aORs) and 95% confidence intervals (CIs), adjusting for race, sex, and age.

Results: Data included a total of 5,256 overdose reversals, of which 61% were performed by lay people and 39% by emergency responders. Overdoses reversed by lay people were more likely to result in reported physical withdrawal symptoms than no symptoms (aOR=1.67, 95% CI: 1.45, 1.93) and physical + behavioral withdrawal symptoms than no symptoms (aOR=2.01, 95% CI: 1.61, 2.51) than overdoses reversed by emergency responders. There was no difference in reported behavioral withdrawal symptoms between lay people and emergency responders (aOR=0.90, 95% CI: 0.75, 1.08).

Conclusions: Overdose survivors who were rescued by lay people were more likely to report physical withdrawal symptoms (such as dope sickness and physical combativeness) following naloxone administration than those who were administered naloxone by an emergency responder. A likely explanation for this is that lay people (mostly friends and family members) generally spend more time with overdose survivors than do emergency responders, therefore lay people may be more likely to witness the development of physical symptoms. These results support the need for tailored education for the lay public, particularly those in relationship with people who use drugs, on how to effectively manage withdrawal symptoms following overdose reversals.

Attitudes of Emergency Responders' Toward People Who Use Drugs and Naloxone Access Following Naloxone Training

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Background: Little is known about the impact administering naloxone has on emergency responders' attitudes about overdose victims and naloxone access. Prior research suggests law enforcement officers (LEOs) who administered naloxone more frequently reported more negative attitudes toward the use of naloxone and drug treatment. However, the extent to which

this negative association also holds among EMS personnel and translates to attitudes about overdose victims remains unknown.

Objective: To examine the impact of profession (EMS vs LEO) and administration of naloxone in the six months following overdose education and naloxone distribution (OEND) training on participants' attitudes about overdose victims and naloxone access.

Methods: Missouri emergency responders (N=308; 236 LEOs, 72 EMS) attended OEND trainings and completed pre-, post-, and six-month follow-up surveys measuring Attitudes toward Overdose Victims and Naloxone-Related Risk Compensation Beliefs (NaRRC-B). We estimated separate path models to assess the impact of past six-month naloxone administration (Yes vs No), and the interaction between profession and naloxone administration, on follow-up attitudes and beliefs.

Results: Controlling for pre- and post-training scores, administering naloxone in the past six months did not predict Attitudes toward Overdose Victims (b=-.12, p=.162) or NaRRC-B (b=-.06, p=.513) at follow-up. The interaction of naloxone administration with profession did predict follow-up Attitudes toward Overdose Victims (p=.011), but not NaRRC-B (p=.652). A post-hoc multigroup path model demonstrated naloxone administration was only a significant predictor of negative attitudes at follow-up among EMS (b=-.30, p=.012), not among LEOs (b=-.25, p=.126).

Conclusions: Among EMS, having administered naloxone in the six months following OEND training was associated with having more negative Attitudes toward Overdose Victims than EMS who had not administered naloxone. This effect was non-significant for LEOs, although the association was in the same direction. Future research should work to understand why the act of administering naloxone and reversing overdoses may lead to more negative attitudes about overdose victims, and identify ways to mitigate this effect. For example, implementing incident debriefings, follow-up trainings and awareness of "success stories" about overdose survivors may help bolster feelings of efficacy and purpose among frequent overdose responders.

Availability of Naloxone/Buprenorphine Films in Community Pharmacies in South Dakota

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Background: In 2017 South Dakota was ranked third in the nation for the number of drug related deaths per 100,000 people. It is vital for patients with opioid use disorder to obtain buprenorphine/naloxone films (BUP/NX) and naloxone nasal sprays (NNS) promptly to avoid recurrence of use, overdose, and death. Lack of avaliability of both medications can lead to dangerous treatment delays.

Objective: Assess the availability of BUP/NX and NNS in community pharmacies in South Dakota.

Methods: A telephone audit of 166 randomly selected pharmacies in South Dakota were contacted from Dec 2020 to Feb 2021. Trained interviewers asked to speak to a pharmacist to inquire about the availability of generic BUP/NX and NNS. Interviewers followed a script and recorded their interactions in a corresponding data collection template. Primary outcomes included availability of a one-week supply of BUP/NX as well as a single unit of NNS. Secondary outcomes were willingness to order BUP/NX and estimated timeframe to order BUP/NX if unavailable. Data analysis was conducted using JMP Pro version 14.0 (SAS Institute Inc). The chi-square test was used to compare categorical data, and the Wilcoxon rank sum was used to compare continuous data. Pharmacies were excluded if they were not able to be reached after 3 attempts, refused to disclose information over the phone, or were not a community pharmacy.

Results: Sixteen pharmacies were excluded and 1 was a non-responder, resulting in a 99% response rate. Data from 149 pharmacies were included in the final analyses. Of these, 40 (26.8%) were prepared to dispense both a one-week supply of generic BUP/NX and a single unit of NNS. Considered separately, 56 (37.6%) reported availability of generic BUP/NX and 69 (46.3%) reported availability of NNS. Of the pharmacies with generic BUP/NX unavailable, 78/93 (83.9%) indicated willingness to order it with a median order time of 2 days (IQR 1-3 days).

Conclusions: Only about one-fourth of pharmacies in South Dakota are prepared to dispense BUP/NX and NNS.This study demonstrates that pharmacies often present a barrier to timely access of these vital medications. Further research is needed to identify underlying factors and effective solutions.

Monthly Subcutaneous Injectable Buprenorphine for Patients Hospitalized for Complications of Opioid Use Disorder: Who is Getting It, and Why?

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Background: Opioid Use Disorder (OUD) is an escalating public health crisis, with provisional data from the Centers for Disease Control estimating almost 89,00 drug overdose deaths nationally between October 2019 and October 2020, corresponding to a a 30% increase over the year. Buprenorphine is the standard of care for treatment of OUD and is usually prescribed as a daily sublingual film. Barriers to sublingual buprenorphine include provider access, stigma, and social and economic pressures to divert medication. Monthly subcutaneous injectable buprenorphine (Bup-XR) is a new formulation that addresses barriers to current therapy. The University of Kentucky Addiction Consult & Education Service started providing Bup-XR to hospitalized patients with OUD in 2019.

Objective: This review aims to identify characteristics of patients receiving Bup-XR and drivers of Bup-XR use among patients hospitalized for complications of OUD.

Methods: This review captured 27 patients with OUD who received Bup-XR upon discharge from one Kentucky hospital. Medical records review confirmed Bup-XR administration and

identified demographic characteristics of participants including non-urban home zip code defined by U.S. Census data, substance use disorder and treatment history, medical history, and reasons for choosing Bup-XR.

Results: The average age of patients was 37. Twelve patients were female and 19 were from non-urban zip codes. Twenty-five patients were insured through Medicaid and two were incarcerated. Most patients reported predominantly using heroin. Two-thirds of patients reported concurrent stimulant use disorders, mostly methamphetamine use disorder. Providers documented drivers of Bup-XR including: patient self-discontinuation of sublingual buprenorphine with subsequent return to opioid use, history of unintentional overdoses, difficulty with sublingual buprenorphine administration, concurrent stimulant use disorder, unstable housing, history of medication diversion or misuse, COVID-19 physical distancing requirements, incarceration, transportation problems, patient preference, and lack of family or residential treatment facility acceptance of daily medication. Concerns for Bup-XR use included lack of Medicaid coverage by states other than Kentucky and patient preference.

Conclusions: Bup-XR is an additional option for OUD treatment among patients who experience barriers to access medications for OUD and is non-inferior in treatment retention. Policies need to expand access and insurance coverage to both the sublingual and the extended-release product.

Associations of Psychological Distress and Alcohol Use Patterns Among Older Adults of Sexual Minority Status and Heterosexual Peers

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Background: Lesbian, gay, and bisexual (LGB) adults, 50 and older, are more likely than their heterosexual peers to have experienced mistreatment and discrimination, contributing to poor physical and mental health and risky behaviors, such as alcohol misuse. There is limited research investigating sexual orientation-related differences in older adults and its relationship with alcohol use.

Objective: The purpose of this study was to test the hypothesis that sexual minority status moderates the relationship between psychological distress and alcohol drinking patterns.

Methods: This study was a secondary analysis of data from the 2017-2018 National Survey on Drug Use and Health (NSDUH). Health outcomes among LGB older adults ($N = 462$) 50 years or older were compared with heterosexual ($N = 16,856$) peers using univariate analyses and logistic regressions. Interaction terms evaluated the influence of sexual orientation on psychological distress and alcohol consumption.

Results: Sexual orientation was a predictor of past year, past month, and any alcohol use ($p < .001$), but not in alcohol dependence or misuse, binge drinking, or heavy drinking. Heterosexual older adults were less likely to consume alcohol than those who identified as LGB. After adjusting for interaction terms, the odds of reporting past year, past month, any alcohol use, and

alcohol misuse or dependence were increasingly greater due to male gender and higher level of educational attainment. Being male predicted hazardous drinking in the past 30 days. Respondents not reporting psychological distress were less likely to drink alcohol, report alcohol dependence and misuse, or engage problematic drinking. However, there was no evidence that sexual minority status moderates the relationship between psychological distress and alcohol use.

Conclusions: Contrary to our expectations and inconsistent with previous studies, interaction terms of sexual orientation and psychological distress did not improve any alcohol use model predictions. Future research should examine the underlying causes of impaired health in the older LGB population and utilize those findings to conduct research to prevent and minimize alcohol misuse. Older LGB adults should be screened for mental health issues, including alcohol so that appropriate referrals and/or treatments can be initiated.

Transitions in Care Between Hospital and Community for Individuals with a Substance Use Disorder: A Systematic Review

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Background: For individuals with a substance use disorder (SUD), transitions in care from hospital to community are complex and challenging (e.g., inability to access community care, lengthy waitlists for specialized addiction care, increased overdose risk secondary to reduced tolerance). In the context of an unprecedented overdose crisis in the United States and Canada, hospitals are a critical point of connection to the health system and opportunity to implement effective and evidence-based interventions. Improving transitions in care may increase retention in addiction treatment, reduce hospital readmission, prevent overdose associated morbidity and mortality, and reduce the substance-use-related financial burden on our health care system.

Objective: This systematic review summarizes existing literature describing interventions for optimizing transitions in care from hospital to community for individuals with a SUD.

Methods: A systematic review was completed of studies identified from MEDLINE, CINAHL, and PsycInfo which 1) studied a population of individuals with SUD; 2) evaluated interventions acting prior to or during the transition period from hospital to community; 3) reported an outcome of post-discharge engagement in care and/or hospital readmission rate; and 4) published since 2010. We conducted a narrative synthesis employing a health systems framework.

Results: A total of 8,874 studies were identified. Title and abstracts of 2,338 studies were screened, with a further 105 full-text studies which met inclusion criteria included for review. In total, 34 criteria-meeting studies were included. Interventions were mostly in a single setting (91%), located in the United States (76%), reported short-term outcomes (e.g., 30-,60-, or 90-day hospital readmission; 41%), and focused on direct patient treatment (41%). Interventions included: pharmacotherapy (e.g., buprenorphine/naloxone; 17%), treatment linkage (56%), addiction consult services (21%), and recovery coaching (6%). Although interventions varied, most studies (88%) reported that implementation of the intervention had a beneficial impact on the measured outcome(s).

Conclusions: The findings of this review indicate that many interventions can increase engagement in care. There is heterogeneity in type, setting, and evaluation of these interventions. Future research should focus on long-term health and social outcomes related to transitional interventions to ensure individuals with a SUD can seamlessly transition from hospital to community with ongoing addiction care and support.

Is the Initial Opioid Fill for Acute Musculoskeletal Pain Deterred By Higher out-of-Pocket Costs?

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Background: To curb unnecessary prescription opioid use, Delaware, Minnesota, and New York have raised patients' out-of-pocket costs (OOPs) through opioid excise taxes and fees. However, the impact of OOPs on the likelihood of an initial opioid prescription fill (IOF) is unknown.

Objective: To investigate the effect of OOPs on IOF in a national cohort of privately-insured, opioid-naïve individuals presenting with acute back pain (aBP) in office-based clinics.

Methods: Retrospective cohort study using data from a nationwide healthcare claims repository. We excluded patients who received an opioid prescription or aBP diagnosis in the year prior to their index visit. Because prescription OOPs were censored for patients who did not receive a first opioid fill, we used the index office visit OOPS – the sum of each patient's copayment, deductible, and coinsurance – as a proxy. (A positive correlation between office and prescription OOPs has been shown with other medications.) We used logistic regression to analyze the effect of OOPs on IOF. We report the price elasticity of demand (PED) x 100 – i.e., percentage change in patients' IOFs resulting from a 100% increase (doubling) of OOPs.

Results: Of the 25,689 adults (median age=47 years, IQR=20; 45.5% male; median OOPs=$30, IQR=$42) diagnosed with aBP during quarter 1 of 2018, 2,631 (10.2%) had an IOF. In the multivariable regression, OOPs was unrelated to IOF (PED=-1.72%; P=0.327). Covariates associated with IOF were male (OR=1.38, P<0.001), age in 10-year intervals (OR=1.21, P<0.001), White race/ethnicity (OR=1.14, P=0.006), educational attainment >high school (OR=0.86, P<0.003), region (OR=1.46, P<0.001); Charlson comorbidity index>0 (OR=1.22, P<0.01), radiculopathy (OR=1.27, P<0.001), and antidepressant prescription use (OR=1.40, P<0.001). Insurance plan type, income, and healthcare utilization history were nonsignificant. In subgroup analysis by region, the PED for the central and southern states ("New Heartland") was PED=1.58% (P=0.429). However, for the remaining states, the PED was -9.47% (P=0.013).

Conclusions: IOF was price sensitive in the non-central-southern states only. This may reflect regional differences in the perceived availability of effective opioid substitutes as medications with close substitutes generally are more responsive to price. Policies that increase OOPs appear unlikely to reduce prescription opioid initiation in regions where alternatives are viewed as unsatisfactory.

Cascade of Care After Nonfatal Opioid Overdose: Identifying Predictors of Retention and Missed Opportunities

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Background: Overdose deaths have steadily risen since the late nineties. Nonfatal opioid overdose events have been associated with subsequent overdose events and mortality. Little research has been done to evaluate the cascade of care after non-fatal opioid overdose.

Objective:To determine the elements of the cascade of care after non-fatal opioid overdose (OD) associated with receipt of medication for opioid use disorder (MOUD) at select timepoints.

Methods: Using administrative data from the Veterans Health Administration (VHA), we identified all patients with an opioid-related OD leading to an emergency department (ED) visit or hospitalization between January 2016 to July 2019. We excluded patients receiving (1) MOUD in the 90 days preceding OD, (2) no VHA care in the year preceding OD, (3) cancer care within 90 days prior to OD through 60 days after discharge from the OD-recording facility, and those with death within 7 days of OD. We characterized VHA care within 30 days following discharge as frequency of unique medical contacts by contact type, stratifying on providers' having a DEA license (ie potential buprenorphine prescribers), and MOUD receipt at select timepoints. Using logistic regression we modeled MOUD receipt at 60 days as a function of VHA care elements.

Results: The cohort comprised 4186 patients, 88 (2.1%) of whom were prescribed MOUD at discharge. Within 30 days following discharge, 92% of patients received any VA medical care; 84% saw a potential buprenorphine prescriber, 47% were seen at least once in primary care and 62% in a mental health clinic. Rate of sixty-day MOUD receipt was 5.2%. Post-discharge medical contacts (OR 1.02 CI: 1.016-1.024) and MOUD receipt at discharge (OR 20.1 CI12.7-31.7) were independently associated with MOUD receipt at sixty days.

Conclusions: Receipt of MOUD 60 days post-discharge was significantly more likely among patients receiving MOUD at discharge and incrementally more likely with increased medical contacts. The high percentage of patients with outpatient encounters with potential buprenorphine prescribers, but low-rate of MOUD receipt suggests significant missed opportunities for medical treatment of OUD. These results highlight the need for increased preparedness at the individual provider level to initiate MOUD in a timely fashion.

Examining Neighborhood Walkability in Relation to Depressive Symptoms and Substance Use

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Background: Previous studies have found that people who use drugs have more negative perceptions of their neighborhoods, including aspects of perceived walkability. Other studies have shown that low walkability itself, rated objectively by external criteria, is associated with

depressive symptoms (in older adults). Mood and substance use disorders are frequently comorbid. Thus, associations between walkability ratings and clinical status may be bidirectional and differ with drug use.

Objective: To assess subjective and objective indices of neighborhood walkability among people with different patterns of drug use and levels of depressive symptoms.

Methods: We assessed 364 participants from a community sample in the Baltimore, MD area. Participants' subjective neighborhood walkability was assessed with the Neighborhood Environment Walkability Scale (NEWS) questionnaire, with a global score calculated by summing z-scores across its 9 subscales. Objective walkability of the same neighborhoods was expressed with Walk Score values provided by the Baltimore Neighborhood Indicators Alliance. were defined by participants' self-reported lifetime and past-30-day substance use and symptoms of substance-use disorders (SUDs): no drug use (NDU), current marijuana use (CMU), current opioid/stimulant use (COSU), and unclassified/former drug use (Unc/FDU). Depression risk was operationalized as scores >16 on the Center for Epidemiological Studies-Depression (CES-D) questionnaire. NEWS global score and Walk Score differences were examined by drug-use group, depression risk, and their interaction, using linear modeling controlling for participant demographics and indicators of socioeconomic status.

Results: For the subjective NEWS global score, only the main effect of depression risk was significant: participants with depression risk reported lower subjective neighborhood walkability ($F_{1,348}$=4.731, p=.031). For the objective Walk Score, only the main effect of drug-use group was significant ($F_{3,349}$=2.772, p=0.041). By pairwise comparison, Unc/FDUs had higher Walk Scores than CMUs ($p_{Bonferroni}$=0.041).

Conclusions: Subjective and objective ratings of walkability were differentially related to drug use and depression symptoms. Cross-sectional sampling and the time windows of the questionnaires limit our inferences about sequence and causation. Negative cognitive styles associated with depressive symptoms may have contributed to poorer subjective neighborhood evaluations even without significant differences in objective measures; at the same time, dissatisfaction with one's neighborhood may have led to negative mood.

Public Stigma and Opioid Addiction: The Role of Gender, Race and Opioid Type

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Background: The persistence of the opioid epidemic in the United States has caused devastating consequences to society. Research has shown that stigma toward opioid users may depend on characteristics such as gender, race or social class.

Objective: We aimed to better understand the degree to which race and other identity markers interact and drive the stigmatization of opioid users. Therefore, we examined public stigma of individuals who varied by race, gender and became addicted to prescription opioids or heroin.

Methods: A randomized, between-subjects case vignette study ($N = 1,843$) was conducted with a nation-wide online survey. To assess public perceptions of stigma, participants rated a hypothetical individual who became addicted to opioids on three conditions: 1) male versus female, 2) Black versus White and 3) an individual who transitioned to using heroin or who continued using prescription painkillers.

Results: Our results first showed that there was higher negative stigma towards an individual framed as a male, White and who transitioned to using heroin. In addition, there was more positive affect towards an individual framed as a female and who transitioned to using heroin. Lastly, assumptions of income and class varied by race and type of opioid used. Black and heroin were associated with assumptions of lower income and class.

Conclusions: Our findings provide further evidence that information about individuals who become addicted to opioids can influence stigma perceptions.

A Profile Analysis of Transtheoretical Model of Change Constructs for Reducing Cannabis Use Among Trauma Patients

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Background: The Transtheoretical Model (TTM) is a foundational framework of interventions targeting substance use behavior change. Profiles of successful substance use behavior change can be captured by comparing the scores of TTM constructs between changers and non-changers. However, no prior study has investigated TTM construct profiles among trauma patients with a history of substance use. Given the impact of traumatic events on substance use behavior change processes, TTM construct profiles may be unique for traumatic injury patients.

Objective: This study aimed to investigate TTM construct profiles for cannabis use behavior change among trauma patients.

Methods: Study data came from The Traumatic Injury Prevention Project (TIP), a three-group, single-site randomized clinical trial conducted in a level-1 urban trauma center. Participants included adults admitted for a traumatic injury with a history of past-month substance use. The TTM constructs of decisional balance (i.e., pros for use and cons for use), confidence to change, temptation, experiential processes of change, and behavioral processes of change for cannabis use were combined to form the construct profiles. Profile analysis (PA) was used to examine the end-of-treatment (3 months post-intake) mean profiles of TTM constructs for three cannabis use-outcome-based groups at 12-months post-intake (abstinence, moderate use, and heavy use). PA is a form of multivariate analysis of variance (MANOVA) for repeated measures that can be used when multiple dependent variables are measured simultaneously.

Results: PA results showed a significant parallelism effect ($p<.001$), indicating differences in the profiles of abstainers and those who reported moderate and heavy cannabis use at 12-months post-intake, respectively. Abstainers exhibited lower pros for cannabis use ($p<.05$), greater

confidence to change ($p<.001$), lower cannabis use temptation ($<.001$), and greater behavioral processes of change ($p<.05$) than moderate and heavy cannabis users.

Conclusions: Study findings suggest that emphasizing the TTM constructs of decisional balance, confidence to change, temptation, and behavioral processes of change may be salient for clinicians working with clients with a history of traumatic injury and cannabis use. Future research may consider replicating these findings for other substance use behaviors. Further study is needed to investigate how TTM construct profiles can be integrated into substance use interventions.

Rural Obstetric Health Care Professionals' Attitudes Toward Patients with Opioid Use Disorder: Associations with Screening, Brief Intervention, and Referral to Treatment

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Background: Stigmatization or negative attitudes of health care professionals (HCP) toward obstetric patients with opioid use disorder (OUD) is a common concern in rural regions and has been cited as a barrier to implementation of screening, brief intervention, and referral to treatment (SBIRT). While most research on this topic has been conducted among those serving the general population, knowledge among rural obstetric HCP is limited.

Objective: In a rural/frontier, racially-diverse community, we examined associations between obstetric HCP attitudes and their self-efficacy to use and actual use of SBIRT components.

Methods: *Design***.** This study was a cross-sectional, one-time close-ended/self-report electronic survey. *Setting*. The survey was distributed among all licenses HCPs within two high opioid prescribing/overdose counties in rural Utah. *Assessments*. Attitudes were assessed using the Survey of Attitudes and Perceptions in which assesses 6 domains: *role adequacy*, *role legitimacy*, *role support*, *motivation*, *task-specific self-esteem (positive and negative)*, and *satisfaction*. *Analyses*. We calculated descriptive statistics and employed linear regression to examine associations between attitudes and self-efficacy related to SBIRT delivery.

Results: A total of 82 obstetric HCP participated in the study, including nurses/nurse practitioners/nurse midwifes (56.1%), counselors/therapists/social workers (26.8%), physicians/physician assistants (9.8%), and other disciplines (7.3%). The median (IQR) of self-efficacy for using SBIRT components was 10.2 (3.9) out of a possible score of 16. Every attitudes domain was positively associated with self-efficacy to use SBIRT components (role adequacy: β = .72, 95% CI = .54-.90; role legitimacy: β = .63, 95% CI = .30-.97; role support: β = 1.02, 95% CI = .48-1.55; motivation: β = .66, 95% CI = .28-1.05; positive task-specific self-esteem: β = 1.49, 95% CI = .98-1.99; negative task-specific self-esteem: β = .68, 95% CI = .35-1.00; work satisfaction: β = .72, 95% CI = .36-1.07). Similarly, all domains except negative task-specific self-esteem were positively associated with actual use of SBIRT components.

Conclusions: Several attitude domains were positively associated with SBIRT self-efficacy and delivery. Future research and clinical care should work to develop and test the impact of interventions that improve HCP attitudes as a mechanism to increase SBIRT delivery for patients with OUD in rural obstetric settings.