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**Best Research Abstract Award**

Changing the Default for Tobacco: Using Delayed Consent and Adaptive Trial Design to Test a Radically New Approach to Treatment

Kimber Richter, PhD, MPH; Babalola Faseru, MD, MPH; Delwyn Catley, PhD; Byron J. Gajewski, PhD; Theresa Shireman, PhD; Edward F. Ellerbeck, MD, MPH; Taneisha Scheuermann, PhD; Laura M. Mussulman, MPH; Niaman Nazir, MBBS, MPH; Elena Shergina, MS - University of Kansas Medical Center

A Six-Site Evaluation of Innovation-Enhanced Harm Reduction Programming to Augment Services and Link to Care

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Traci C Green, PhD; Jennifer Carroll, MPH, PhD; Michelle McKenzie, MPH; Julie Burns - Brandeis University, Brown University

**The John Nelson Chappel Curriculum, Quality Improvement, and Program Abstract Winner**

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Miriam Komaromy, MD; Jessica Taylor, MD; Robert Koenig, MBA; Alicia Peterson MBA; Stephanie Martinez, RN; Grace Vogelzang MBA - Boston Medical Center, Boston University

**Best Curriculum, Quality Improvement, and Program Abstract Runner-up**

Multidisciplinary Team Approach to Stimulant Use Disorder

Marielle Baldwin, MD, MPH; Logan Puleikis, BA; Ann Claude, RN; Justin Alves, MSN, RN, ACRN, CARN, CNE; Rachel Xue, BA; Meghan Brett, LICSW; Shay Rainey, BA; Alicia Ventura, MPH; Colleen Labelle, MSN, RN-BC, CARN - Boston University Medical Center
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Elizabeth Abbs, MD\textsuperscript{1,2}, Devora Keller, MD, MPH\textsuperscript{2}, Megan Kennel, MSN\textsuperscript{2}; Michelle Nance, NP; Alice Moughamian, NP; Bryce Bridge, LMFT; Christina Couch, EMS - (1)University of California, San Francisco, (2)San Francisco Department of Public Health

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Nicolas Bertholet, MD, MSc; Elodie Schmutz, MSc; Joseph Studer, PhD; Angéline Adam, MD; Gerhard Gmel, PhD; John A Cunningham, PhD; Jennifer McNeely, MD, MSc; Jean-Bernard Daeppen, MD - Lausanne University Hospital

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Kumar F Vasudevan, MD; Maria Khan, PhD; James Zhou, MD; Talia Rosen, BS; Joshua Lee, MD Sc; Noa Appleton, MPH; Jasmine Fernando, MPharm; Carla King, MPH; Jeniffer McNeely, MD, MSc - NYU Langone Hospital; Woodhull Hospital, UCLA - Reagan Hospital

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Ximena A. Levander, MD, MCR; Thomas Carmody, PhD; Ryan R Cook, PhD, MSPH; Jennifer S. Potter, PhD, MPH; Madhukar H. Trivedi, MD; P. Todd Korthuis, MD, MPH; Steven Shoptaw, PhD - Oregon Health & Science University

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Nicholaus J Christian, MBA, MD\textsuperscript{1}, Stephen Holt, MD\textsuperscript{2}; Dana Cavallo, PhD - (1)Yale Program in Addiction Medicine, (2)Yale University School of Medicine

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Amy Liang, MD\textsuperscript{1}, Erik S Anderson, MD\textsuperscript{2}; Monish Ullal, MD; Andrew Herring, MD - (1)University of California San Francisco, (2)Alameda Health System - Highland Hospital

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Daniel P. Alford, MD, MPH; Jacqueline S. German, MPH; Sara Messelt; Kendra Gludt, MPH; Jacey Greece, DSc, MPH; Candice Bangham, MPH; Amy Harlowe, M Phil; Nicole Kitten, MPH; Sarah Brown, MPH; Ilana Hardesty, MA; Dawn Levinson, MSW; Vincent C. Smith, MD, MPH - Boston Medical Center, Boston University School of Medicine

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Sharif R Nankoe, FASAM, MA, MD, MPA\textsuperscript{1}, Pamela R Tsinteris, MD, MPH\textsuperscript{1}; Peter Friedmann, MD, MPH; Jeffrey Baxter, MD - (1)Spectrum Health Systems
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Gail Groves Scott, MPH - Health Policy Network, LLC, University of the Sciences/St. Joseph's University

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Erik S Anderson, MD; Evan Rusoja, MD PhD; Joshua Luftig, PA-C; Monish Ullal, MD; Ranjana Sharda; Henry Schwimmer, MD; Alexandra Friedman, MD; Christian Hailozian; Andrew Herring, MD - Alameda Health System - Highland Hospital

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Jordana Laks, MD, MPH; Theresa W. Kim, MD; James Evans, RN; Jessica Kehoe, RN, NP; Morgan Younkin, MD, MPH; Jessica L. Taylor, MD - Boston University School of Medicine

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Arianna Danielle Campbell, PA-C; David Jay, PhD - US Acute Care Solutions, Marshall Medical Center

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Jason M. Fox, MSN, RN, ANP-BC, CARN-AP¹, Kristin Wason, MSN, AGPCNP-BC, CARN¹; Donna Beers, MSN, RN-BC, CARN; Maggie Faulds, MSN, RN-BC, CNL; Nicole Lincoln MS, RN, CCNS, FNP; Mary Woodruff, MA; Nancy W. Gaden, DNP, RN, NEA-BC; Miriam Komaromy, MD, FACP, DFASAM - (1)Boston Medical Center

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Marina Gaeta Gazzola, MD1,2,3, Nicholas J Christian, MBA, MD4; Iain D. Carmichael, PhD; Xiaoying Zheng; Lynn M. Madden, PhD; Declan T. Barry PhD - (1)Yale School of Medicine, (2)the APT Foundation Inc., (3)NYU Grossman School of Medicine/Bellevue Hospital Center, (4)Yale Program in Addiction Medicine

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Anthony Spadaro, MD, MPH; Abeed Sarker, PhD; Karen O'Conner, MS; Sahithi Lakamana, MS; Jennifer Love, MD; Rachel Wrightman, MD; Jeanmarie Perrone, MD - Perelman School of Medicine at the University of Pennsylvania

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Thomas J Stopka, MHS, PhD; Bridget Whitney; David de Gijsel, MD, MSc, MPH; David L Brook; Peter Friedmann, MD, MPH, DFASAM, FACP; Lynn E Taylor, MD, FACP, FAASLD; Judith Feinberg, MD; Mai T Pho, MD - Tufts University School of Medicine

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Anna K Martin, BS; Sabrina A. Assoumou, MD, MPH; Tyshaun Perryman, CARC; Judith Bernstein, PhD; Ricardo Cruz, MD, MA, MPH; Jessica Taylor, MD; Jordana Muroff, PhD; Benjamin Linas, MD; Jeffrey Samet, MD, MA, MPH - Boston Medical Center

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Alane O’Connor, DNP¹, Kinna Thakarar, DO¹, Caroline B. Zimmerman, MPP²; Katherine Ahrens, PhD - (1)Maine Medical Center, (2)MaineHealth

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Mary Geist, Medical Student; Andrea Radick MS, Judith Tsui, MD MPH, Kendra Blalock MS, Addy Adwell RN, Elsa Tamru RN, Nancy C. Connolly MD, Jocelyn R. James MD - University of Washington

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Nichole Moore, BA, MD Candidate; Michael Kohut, PhD; Henry Stoddard, MPH; Deb Burris; Frank Chessa, PhD; Monica K. Sikka, MD; Daniel A. Solomon, MD; Colleen M. Kershaw, MD; Ellen Eaton, MD; Rebecca Hutchinson, MD, MPH; Kathleen M. Fairfield, MD, DrPH, MPH; Thomas J. Stopka, PhD, MHS; Peter Friedmann, MD, MPH; Kinna Thakarar, DO, MPH - Tufts University School of Medicine

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Leslie W. Suen, MD, MAS; Stacy Castellanos, MA, Brad Shapiro, MD, FASAM, Scott Steiger, MD, FACP, FASAM, Barrot Lambdin, PhD, Kelly R. Knight, PhD - University of California, San Francisco at Zuckerberg San Francisco General Hospital

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Lore Lisa Garten, MD, PhD - Acacia Network

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Amanda J. Abraham, PhD; Christina M. Andrews, PhD; Samantha J. Harris, PhD; Melissa A. Westlake; Colleen M. Grogan, PhD - University of Georgia

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Amanda J. Abraham, PhD; Melissa A. Westlake, MSW; Sadia Jehan, MS; Amanda J. Abraham, PhD; Colleen M. Grogan, PhD; Samantha J. Harris, PhD - University of Georgia

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Sarah Kawasaki, MD; Rachel Zimmerman, MSc; Aleksandra Zgierska, MD PhD - Penn State Health

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Judy S. Chertok, MD¹, Margaret Lowenstein, MD, MSHP¹; Garcia, K. Pamela, MD - (1)University of Pennsylvania

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Adam Viera, MPH; Ryan Alexander, DO, MPH; Robert Heimer, PhD; Lauretta, Grau, PhD - Collaborative to Advance Health Services

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Benjamin A. Howell, MD, MPH, MHS; Anne C Black, PhD; Lauretta E Grau, PhD; Hsiao-Ju Lin, PhD; Robert Heimer, PhD; Kathryn Hawk, MD, MHS; Gail D'Onofrio, MD, MS; David A Fiellin, MD; William C Becker, MD - Yale University School of Medicine

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Caroline L. Stotz, BA; Julie Bosak, DrPHc, CNM, MSN; Karsten Lunze, MD, MPH, DrPH; Samantha W. Lang; Galya Walt, BA; Linda Sprague-Martinez, PhD; Tracy Battaglia, MD, MPH; Deborah Chassler, MSW; Greer Hamilton, MSW, PhD; Craig McClay; Faizah Gillen, BA; Sandra Rodriguez, MPH; Erin Kim, MS; Sydney Bell, BA; Bethany Medley, MSW - Boston Medical Center

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Jordan Ferreira, Medical Student; Elsa Lindgren, MD; Callan Fockele, MD; Jamie Shandro MD, MPH; Joshua Jauregui, MD - University of Washington School of Medicine

- Parents and Families

Family Members’ Understanding of and Attitudes About Medication for Addiction Treatment: A Qualitative Analysis

Alicia S Ventura, MPH; Samantha Blakemore, MPH; Matthew Heerema, MS; Sarah M. Bagley, MSc, MD; Judy Bartlett, MPH, PhD - Section of General Internal Medicine, Boston Medical Center, Grayken Center for Addiction, Boston Medical Center

Parenting with Opioid Use Disorder: Parents’ Perceptions of the Effects of Opioid Addiction and Recovery on Their Children

Angela J Nash, PhD; Christine Bakos-Block PhD, LCSW-S; Tiffany Champagne Langabeer MBA, PhD - Cizik School of Nursing at University of Texas Health Science Center-Houston

"I was working with the experience and knowledge I had at the time:" Perceived Barriers to Treatment of Parents with Opioid Use Disorder

Christine River Bakos-Block, PhD1, Angela J Nash, PhD2; Tiffany Champagne-Langabeer PhD - (1)University of Texas Health Science Center at Houston, (2)Cizik School of Nursing at University of Texas Health Science Center-Houston
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Erin C Work, BA; Serra Muftu, BS; Kathryn Dee L. MacMillan, MD, MPH, Jessica R. Gray, MD, Nicole Bell, Mishka Terplan, MD, MPH, Hendree E. Jones, PhD, Julia Reddy, MA, Timothy E. Wilens, MD, Shelly F. Greenfield, MD, MPH, Judith Bernstein, RN, PhD, Davida M. Schiff, MD, MSc - (1)MassGeneral Hospital for Children

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Deepa R Camenga, MD; Caleb Lusk, MD; Benjamin Oldfield, MD; Logan Stern, APRN; MaryPat Lamberti, APRN; Maryellen Flaherty-Hewitt, MD; Jeanette Tetault, MD - Yale School of Medicine

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Samantha L Saloom, BS; Nicole Boss, MA; Judy Chang, MD, MPH; Fahmida Hossain, PhD; Gale Richardson, PhD; Natacha De Genna, PhD - University of Pittsburgh School of Medicine

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What About Nights, Weekends, and Wait Times? Adding an On-Demand Mobile Telemedicine Component to a Community-Based, Post-Overdose Peer Support Outreach Program

Rachel Winograd, PhD; Katherine Brown, MPA, MSW, LCSW; Chelsey Wilks, PhD; Devin Banks, PhD; Ryan Carpenter, PhD; Wendy Orson, MS, LPC; Christie Becker-Markovich, BA; Megan Zychinski, MSW, CADC, LMSW; Bradley Wing, PhD; Rithvik Kondai, BA; Sarfaraz Jasdanwala, MD - University of Missouri, St. Louis

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Saad T Siddiqui, MPH; Anna La Manna MPH, MSW; Elizabeth Connors, LCSW, CRADC; Ryan Smith, BA; Claire A Wood, PhD; Katherine Brown, MPA, MSW, LCSW; Jeremiah Goulka, JD; Leo Beletsky, JD, MPH; Rachel P Winograd, PhD - Missouri Institute of Mental Health

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Simeon Kimmel, MA, MD; Ziming Xuan, ScD, SM; Shapei Yan, MPH; Scott W. Formica, PhD; Traci C. Green, PhD, MSc; Jennifer J. Carroll, PhD, MPH; Sarah M. Bagley, MD, MSc; Alexander Y. Walley, MD, MSc - Boston University School of Medicine; Boston Medical Center

Suicide-Related Care among Patients Who Have Experienced an Opioid-Involved Overdose

Scott P. Stumbo, MA; Bobbi Jo Yarborough, PsyD; Brian K. Ahmedani, PhD; Lisa Matero, PhD; Deborah S. Ling Grant, PhD, MPH, MBA; Joslyn Westphal, MPH; Stefan Massimino, MPH; Matthew Stefanko; Jessica Hulsey Nickel; Douglas Hulst; Mary Jean Coleman; Clayton P.A. Carson; Marcia Lee Taylor; Cambria Bruscheck, Jon Swanson, Anna Leonard, Karen J. Coleman, PhD - Kaiser Permanente Northwest

Missed Opportunities Following Overdose among People Who Use Substances in Boston, MA

Alykhan Nurani, BS, MSc; Ranjani Paradise, PhD; Jeff Desmarais, MA; Andres Hoyos-Cespedes, MPH, CPH; Shannon O’Malley, MS; Jaylen Clarke, MSc; Angela R. Bazzi, PhD, MPH; Sunday Taylor, PhD; Dan Dooley; Simeon D. Kimmel, MD, MA - Boston Medical Center
Process and Outcome Evaluation of Recovery Opioid Overdose Team Plus (ROOT+): A Post-Overdose Community Outreach Program Utilizing Peer Recovery Coaches: A Mixed Methods Study

Chin Hwa (Gina) Dahl, PhD, FNP-C, FAANP1; Brianna A Dobbs, BA2; Mary Dwan, International Studies Major - (1)Center for Drugs, Alcohol, Smoking, and Health, (2)Home of New Vision

- **Primary Care, Prescribing, and Pharmacies**

Provider Incentives to Prescribe Buprenorphine for Opioid Use Disorder in Primary Care: A Preference Analysis

Alan Taylor Kelley, MD, MPH, MSc; Jordynn Wilcox; Jacob D. Baylis, MPH; Norah L. Crossnohere, PhD; Jake Magel, PT, PhD, DSc; Audrey L. Jones, PhD; Adam J. Gordon, MD, MPH; John F.P. Bridges, PhD - University of Utah School of Medicine, VA Salt Lake City Health Care System

Barriers and Facilitators to Assessing and Treating Trauma in Primary Care: Perspectives from Prescribers of Medications for Opioid Use Disorder.

Abigail Winiker, MPH, MSPH; Omeid Heidari, PhD, MPH, ANP-C; Sarah Pollock, Shereen Sodder, Karin Tobin, PhD - Johns Hopkins Bloomberg School of Public Health

Anti-Stigma and Harm Reduction Training for Primary Care Staff: A Crucial Step in Addressing the Overdose Crisis

Surabhi Nirkhe, MD1; Tatyana Roberts, MPH2; Lucy Zhang, BA; John Halifax, BS; Jar-Yee Liu, BS; Joanna Eveland, MD; Ro Giuliano; Kelani Clark; Cassie ChiChian; Jennifer Jeffries - (1)San Francisco Department of Public Health, (2)University of California, San Francisco

'Red Flags' and 'Red Tape': Telehealth and Pharmacy-Level Barriers to Buprenorphine in the United States

Lauren M Textor, MD Candidate, PhD1; Shoshana V Aronowitz, CRNP, MSHP, PhD2 - (1)Department of Anthropology, UCLA and the Center for Social Medicine at David Geffen School of Medicine, (2)University of Pennsylvania

Using Secret Shopping to Verify Naloxone and Nonprescription Syringe Access in Community Pharmacies

Jeffrey Paul Bratberg, PharmD1; Traci C Green, PhD2, Derek Bolivar, BS3; Mary Gray, PhD - (1)University of Rhode Island, (2)Brandeis University, Brown University, (3)Brandeis University

Unsolicited Reporting Notifications and Providers’ Prescribing Behaviors: An Evaluation of Maryland’s Prescription Drug Monitoring Program (PDMP)

Rachel H. Alinsky, MD, MPH; Masoumeh Amin-Esmaili, MD, MPH; Renee M. Johnson, PhD, MPH; Taylor Parnham, MPH; Natasha Oyedele, MS; Madison Nuzzo; Lyra Cooper; Lindsey Goddard, MPH; Anna Gribble, MPH, MSW; Ryoko Susukida, PhD - Johns Hopkins University School of Medicine

- **Race and Racial Disparities**

A Scoping Review of Race Concordance Between Patients and Clinicians in Substance Use Disorder Treatment for Black Patients

Corinne A. Beaugard, MSW; Heidi Thomas, Sheila Chapman, MD, Avik Chatterjee, MD, MPH, Daniel Do, LICSW, MPH, Daneiris Heredia-Perez, MSPM. Karen E. Lasser, MD, MPH, Christina S. Lee, PhD, Farhabi Talukder, Amy Yule, MD, Kaku So-Armah, PhD, Miriam Komaromy, MD - Boston University
90 Years Later: Redlining and Prevalence of Fatal Opioid Overdose in Massachusetts

Rebecca Smeltzer, MPH; Jennifer Pustz, PhD, MS, MPH; Pedro Alvarez, BA; Trevor Baker, MS; Deborah Chassler, MSW; Nathan Erwin, MA; LaShawn Glasgow, DrPH; Marc LaRochelle, MD, MPH; Emmanuel Oga, MD, MPH; Allyson Pinkhover, MPH, CPhT; Maria Quinn, MSN, PMHNP-BC; Rafael Rodriguez; Thomas Stopka, PhD MHS; Alexander Walley, MD, MSc; Avik Chatterjee, MD, MPH - Boston Medical Center

Data-Driven Program Design: Utilizing an EHR Dashboard to Design and Refine SUD-Focused Services

Miriam Komaromy, MD1,2; Andrea Stone, MSc1; Brendan Concannon, MPA; Mary Tomanovich, MA; Elena Mendez-Escobar, Ph.D. - (1)Boston Medical Center, (2)Boston University

Examining Increasing Opioid Overdose Deaths among Black Individuals in St. Louis, Missouri: A Spatial Clustering Analysis

Maria Paschke, MPP; Devin E. Banks, PhD; Stephen Scroggins, MSc; Justin Vilbig, MS; Enbal Shacham, PhD; Rachel P. Winograd, PhD; Patricia Cavazos-Rehg, PhD - University of Missouri, Missouri Institute of Mental Health

Racial Disparities in Emergency Department Initiated Buprenorphine Across 5 Healthcare Systems

William E. Soares III, MD, MSc; Wesley C. Holland, BS; Fangyong Li, MPH, MS; Bidisha Nath, MBBS, MPH; Molly M. Jeffery, PhD; Maria Stevens, MPH; Edward R. Melnick, MD, MHS; James D. Dziura, PhD; Rachel Skains, MD, MSPH; Gail D’Onofrio, MD, MS - University of Massachusetts Medical School - Baystate

Disparities in Buprenorphine Prescribing in Pregnant and Non-Pregnant Reproductive-Aged Women with Opioid Use Disorder

Kevin Y Xu, MD, MPH; Jeannie C Kelly MD MS; Ebony B Carter MD MPH; Laura J Bierut MD; Richard A Grucza PhD; Davida Schiff MD; Hendree Jones MSc - Washington University School of Medicine in St. Louis

• Poster Session

Promoting Health Equity Through Integrative Care Teams- A Medication Treatment Curriculum

Michael D. Brubaker, PhD1; Angela Clark, PhD2; Shauna P. Acquavita, PhD, MSW, LISW-S; Saundra Regan, PhD; Harini Pallerla, MS; Shanna Stryker, MD, MPH - (1)University of Cincinnati, (2)Barnes Jewish College

Implementation of a Medical Student Peer Education Initiative Aimed at Recognizing and Reducing Stigmatizing Language for Patients with Substance Use Disorders

Michael Incze, MD, MEd; David Chen, MD; Nicola Lanier, BS; Samuel Johnson, BS; Jaime Talleh, BS - University of Utah

High Engagement in Care in a Pediatric Medical Home for Children Impacted by Parental Substance Use

Sara N Stulac, MD; Jill Baker, LICSW; Kristin Reed, BS; Mei Elansary, MD, MPhil; Karen Lasser, MD - Boston University
Hep C-Ya Never: Facilitators and Barriers to HCV Treatment among Inpatients Seen by an Addiction Care Team

Adam M Alyafaie, BS¹, Pardeep S Dhillon, BS²; Stephen John Cruz, BS; Shizra Sipra, BS; Andrew Contreras, BS; Rojina Nekooman, BS; Marlene Martin, MD; Pierre Cedric Crouch, PhD, ANP-BC - (1)University of California, San Francisco, (2)UCSF School of Medicine

Evaluating Outcomes of a Primary-Care Based Transition Clinic for Patients Newly Initiating Buprenorphine for Opioid Use Disorder

Sonia L Sehgal, Medical Student; Michael Incze, MD, MEd; Laura Stolebarger, RN, CM; Nicola Lanier; Luke Garcia; Annika Hansen - University of Utah School of Medicine

Examining the Feasibility of Patient Self-Administration of the Two-Part Tobacco, Alcohol, Prescription Medication, and Other Substance (TAPS) Screener on Paper in Behavioral Health

Joanna H Kramer, BA; Lily Morgan; Denisa Ramseier; Amy Yule, MD - Boston Medical Center

Complicating and Contextualizing Substance Use in Social Work Education

Stephanie Elias Sarabia, PhD - Ramapo College of New Jersey

Improving Opioid Use Referrals Following Emergency Department Visits

Safina Adatia, MD, MSc; Philip Leger, MD; Marie-Louise Daigneault, MD; Keith J. Todd, MD, PhD; Vanessa Pasztor, MD - McGill University

Implementation of an Educational Curriculum on Care of Older Adults with Opioid Use Disorder in Long-Term Care

Rossana P Lau-Ng, MD¹, Sung Won Kang, MSc¹; Hollis D. Day, MD, MS, MHPE - (1)Boston University School of Medicine

An Immersive Training Model for the Treatment of Substance Use Disorders: Evaluating Changes in Confidence among Social Work Students

Jennifer Putney, PhD; Rebekah S. Halmo, LCSW, MSW; Cali-Ryan Collin, LICSW, PhD - Simmons University

Opioid and Stimulant Misuse Prevention on a University Campus: Curriculum Infusion as a Prevention Strategy

Jessica Samuolis, PhD; Victoria Osborne-Leute, Ph.D., MSW - Sacred Heart University

Peers Helping Peers: An Evaluation of Missouri’s Specialty Peer Instruction Program

Bridget Coffey, MSW, MA; Aaron Ruiz, BA; Brittany Blanchard, MPH, RN; Lindsey Kon, MSW; Katie Brown, MPA, MSW, LCSW; Rosie Anderson-Harper, MA; Rachel P. Winograd, PhD - University of Missouri - St Louis

Outcomes of an Interprofessional Opioid Workforce Training Program for Graduate Students in Nursing and Social Work

Susanne Astrab Fogger, DNP; Colleen Fisher, PhD, MSW, Mary Jacque Carroll, MSW, LICSW, Victoria McDonald, MPH, Chris Walker, MSW - University of Alabama at Birmingham
Beyond the Curriculum: Equipping Medical Students to Respond to the Opioid Epidemic

Kyle Bivins, BS, MD Candidate, MSHI¹; Jasmine Mortazavi, BS, MD Candidate¹; Lia Bennett MPH; Cara Poland MD, MEd; Jamie Alan PharmD, PhD - (1)Michigan State University College of Human Medicine

Impact of Interprofessional Substance Use Disorder Education on Students’ Perceptions of Addiction and Ability to Respond to an Opioid Overdose

Kami E Johnston, PharmD Candidate; John Moore, MSW; Lindsey Loera, PharmD; Lucas Hill, PharmD - The University of Texas at Austin College of Pharmacy

Promoting a Patient-Centered Treatment Approach and Attitude Change among Providers Treating Substance Use Disorders

Meaghan B. Elliott, BS; Annabelle Belcher, PhD; Dena Smith, PhD; Thomas Cole, MA; Sarah Sweeney, MSW, MPH; Kelly Coble, LCSW-C; Devang Gandhi, MBBS, MD; Eric Weintraub, MD - University of Maryland School of Medicine

Inpatient vs. Outpatient Initiation of Hepatitis C Treatment among Hospitalized Patients Who Inject Drugs: Lessons from a Quality Improvement Project

Leah Madeline McCrary, MD; Katelyn Roberts, MA, MSW; Robyn Jordan, MD, PhD; Mary Catherine Bowman, MD, PhD; Asher J. Schranz, MD, MPH - UNC

Destigmatizing Substance Use Disorder Curricula in Undergraduate Medical Education

Irina Kryzhanovskaya, MD; Caroline Nguyen, MD; Tatyana Roberts, BS, MPH; Ciaran Murphy, BS; Jar-Yee Liu, BS; Jason Satterfield, PhD - University of California, San Francisco

Training Generalist Physician Educators to Teach Addiction Medicine: Virtual versus In-Person Outcomes

Daniel P. Alford, MD, MPH; Agata Bereznicka, MPH; Ve Truong, BS; Angela Jackson, MD; Jeanette M. Tetrault, MD; Alexander Y. Walley, MD, Msc; Ilana Hardesty, MA; Na Wang, MA; Jeffrey H. Samet, MA, MA, MPH - Boston Medical Center, Boston University School of Medicine

Early Implementation of Contingency Management in Publicly-Funded Substance Use Treatment Programs in Missouri: Process and Lessons Learned

Rachel Winograd, PhD; Bridget Coffey, MA, MSW; Aaron Ruiz, BA; Jeremiah Weinstock, PhD; Brittany Blanchard, MPH, RN; Paul Thater, BS; Katherine Brown, MPA, MSW, LCSW; Christine Smith, BA - University of Missouri-Saint Louis

An Interprofessional Case-Based Discussion on Opioid Use Disorder: An Intervention for Health Professional Students to Increase Knowledge, Address Stigma, and Build Provider Confidence and Collaboration

Stephanie Slat, BS¹, Chin Hwa (Gina) Dahlem, PhD, FNP-C, FAANP¹; Megan Brace, BS; Colin Macleod, MA; Chasity Falls, MS, DMSc; Drew Hilbrands, MS; Christopher Frank, MD, PhD; Elizabeth Kuzma, DNP; Pooja Lagisetty, MD, MSc - (1)University of Michigan

Implementing Alcohol Screening and Brief Intervention (ASBI) in Reproductive Healthcare Using Adaptive Design and Quality Improvement Methods

Faith A Ozer, MPH; Diane K. King, PhD; Corrie Whitmore, Ph.D. - University of Alaska, Anchorage
Transformative Addiction Education in Undergraduate Medical Education

Dr. Cara Anne Poland, MD, MEd; Lia M. Bennett, MPH; Jamie Alan, PharmD, PhD; Rob Malinowski PhD, DVM, MA - Michigan State University, College of Human Medicine

Nurse-Led Intervention to Increase Hepatitis C Screening, Testing and Treatment in an Open Access Opioid Treatment Program

Benjamin J Mahoney, APRN; Jeanette M. Tetault, MD; Ivy M. Alexander, PhD, APRN; Joy Elwell, PhD, APRN; Lynn Madden, PhD; Declan Barry, PhD; Julia Shi, MD - University of Connecticut, APT Foundation

Identification of Multiple Risk Factors to Prevent Alcohol-Exposed Pregnancies: Gaps in the Traditional Alcohol Screening and Brief Intervention (SBI) Model

Janice Vendetti, MPH; Bonnie McRee, PhD, MPH; Jessica Johnson, BSW; Lauren Rosato, IMBA - University of Connecticut, School of Medicine

Training Primary Care Teams About Preventing Fetal Alcohol Spectrum Disorders: Assessing Virtual and In-Person Outcomes

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

A Simulation-Based Exercise in Disclosing Adverse Events

John Rogers Minner, MD; Michael Pineau MS RN VHA-CM; Gabriela Garcia Vassallo MD - Yale University

Utilizing Mixed Reality Simulation in Substance Use Training

Rikki Patton, PhD¹, Jessica L Chou, PhD²; Asif Zaarur, B.A., Phyllis A. Swint, Ph.D., Yue Dang, Ph.D., Heather Katafiasz, PhD - (1)University of Akron, (2)Drexel University

Expanding Addiction Medicine Training for Internal Medicine Residents in Bronx, New York

Tiffany Y Lu, FASAM, MD, MSc¹, Kristine E. Torres-Lockhart, MD²; Laila Khalid, MD, MPH; Sadyn Angeles, BA; Melissa Stein, MD - (1)Montefiore Medical Center, Albert Einstein College of Medicine, (2)Montefiore Medical Center, Division of General Internal Medicine, Albert Einstein College of Medicine

Rapid Investigation and Response to Increased Overdoses in San Francisco Shelter-In-Place Housing and Hotels During the COVID-19 Pandemic

Caroline Cao Zha; Alexander Bazazi, MD, PhD; Phillip Coffin, MD, MIA, FACP, FIDSA; Hali Hammer, MD; Rob Hoffman; Eileen Loughran; Jamie Moore, RN, MSN; Ellen Stein, MPH; Barry Zevin, MD; Hillary Kunins, MD, MPH - City and County of San Francisco Department of Public Health

Impact of a Primary-Care Based Collaborative Care Model on Alcohol Use Disorder Treatment

Erica M Heiman, FACP, MD, MSc; Shavonne Collins, MD; Elizabeth McCord, MD; Marsha Stern, MD, MPH; Lauren Gensler, MD; Valerie Brown, RN, BSN - Yale University

MOUD for Persons who are Hospitalized while Experiencing Incarceration in Kentucky – A Case Example
Challenges and Opportunities in Linkage to Opioid Treatment Programs from the Hospital Setting

Katherine P Mullins, MD1, Kristine E. Torres-Lockhart, MD2; Aaron Fox, MD, MS - (1)Family Health Centers at NYU Langone, (2)Montefiore Medical Center, Division of General Internal Medicine, Albert Einstein College of Medicine

24 Hour Transition from Methadone to Buprenorphine/Naloxone Maintenance Using a Microinduction Protocol in a Medically Monitored Detox Setting

Lori DiLorenzo, FASAM, MD - Spectrum Health Systems, Inc, University of Massachusetts School of Medicine

Three's a Crowd! Subcutaneous Long-Acting Buprenorphine Contains Three Components, One of Which Caused a Cutaneous Allergic Reaction

Kelsey Levinson, MD Candidate; Stacy Shoshan, MD, PhD; Michael Medved, MD - Faculty of Medicine, Tel Aviv University

Challenges And Successes of Treating Adolescents with Opioid Use Disorder in a Pediatric Primary Care Clinic

Kristen O'Connor, CARN; Nadia Al-Lami RN MSN CPNP; Raelene Walker, MD FAAP - Santa Cruz Community Health

Chasing the Elusive Bupe Start: Exploring the Possibilities and Limitations of Patient-Centered, Innovative Approaches to Buprenorphine Initiation in the Hospital Setting

Natalie Stahl, MD, MPH1, Kimberly L Sue, MD, PhD1; Melissa B. Weimer, DO, MCR - (1)Yale University School of Medicine

Rapid Methadone Titration in a Hospital Inpatient Setting: A Case Report

Edmond Hakimi, DO; Aamani Chava, MD - Brigham and Women's Hospital

Using a Capabilities Approach to Reimagine Substance Use Programming

Christopher Rusk, LSW1; Stephanie Elias Sarabia, PhD2 - (1)Bergen New Bridge Medical Center, (2)Ramapo College of New Jersey

What's the Fuss About Phenibut: Case Report

Gigi J Simmons, MD - University of California San Francisco

Acute Eosinophilic Pneumonia in Patient Receiving Injectable Naltrexone

Gabriela Milagro Steiner, MD Candidate, MSc; Alexander Logan, MD - University of California, San Francisco

Addressing Maladaptive Behaviors in Patients with OUD in the Hospital Setting

Sheria Yolanda Francis, LCSW; Payel Jhoom Roy, MD, MSc - UPMC Presbyterian Shadyside
Baclofen Treatment of a Healthcare Worker with Phenibut Withdrawal

Stephen Supoyo, MD1; Jared Wilson Klein, MD, MPH2 - (1)Swedish Medical Center, (2)University of Washington; Harborview Medical Center

“It just depends on their stability”: A Qualitative Examination of Factors Influencing Providers’ Contraceptive Counseling Approaches for Patients with Substance Use Disorders

Elizabeth Charron, PhD; Rwina Balto, MSN; Jennifer Brooks, BS - University of Utah

Assessing the Readability of Online Patient Education Materials for Naloxone

Avik Chatterjee, MD, MPH; Nhu Dang, BA; Mihir Khunte, BS; Anthony Zhong, BA; - Boston Medical Center, Boston University School of Medicine

Safety of Rapid Inpatient Methadone Initiation Protocol: A Retrospective Cohort Study

Savitha Racha, MD1, Megan E Buresh, MD2; Sapan M Patel, BA; Layal T Bou Harfouch, BS, MSc; Olivia Berger, PharmD, BCPS - (1)Johns Hopkins School of Medicine, (2)Johns Hopkins University School of Medicine

Disparities in Maternal-Infant Drug Testing, Social Work Assessment and Custody Decisions at Five Hospitals

Sam Cohen, MD; Timothy Nielsen, MPH; Joseph H. Chou, MD, PhD; Bettina Hoeppner, PhD; Kathleen J. Koenigs, MD; Sarah N. Bernstein, MD; Nicole A. Smith, MD, MPH; Nicola Perlman, MD; Leela Sarathy, MD; Timothy Wilens, MD; Mishka Terplan, MD, MPH; Davida M. Schiff, MD, MSc - Boston Medical Center

Examining the Primary Care Experience of People with Opioid Use Disorder

Michael Incze, MD, MEd; David Chen, MD; Patrick Galyean, BS; Elisabeth Kimball, MS; Susan Zickmund, PhD - University of Utah

Privacy and Information Sharing in Massachusetts's Post Overdose Outreach Programs

Corinne A. Beaugard, MSW; Jennifer J. Carroll, PhD, MPH; Scot Formica, PhD; Emily R. Cummins, PhD, MA; Owen Cheung; Haley Cinq-Mars, MPH; Alexander Y. Walley, MD, MSc - Boston University

Prevalence of Patient-Directed Discharge and Oral Antibiotic Prescription among A Population Using IV Drugs with Patient-Directed Discharge

Anna-Maria South, MD; Nicole M. Robertson, MD Candidate, MPH; Anthony Mangino, PhD; Laura Fanucchi, MD, MPH - University of Kentucky College of Medicine

Jail Releases During the COVID-19 Pandemic Unlikely to Explain Increases In Community Opioid Overdoses in Massachusetts

Peter D Friedmann, MD, MPH; Devon Dunn, MPH; Pryce Michener, BS; Dana Bernson, MPH; Thomas J. Stopka, PhD, MHS; Ekaterina Pivovarova, PhD; Warren J. Ferguson, MD; Rebecca Rottapel, MPH; Randall Hoskinson, Jr., BA; Donna Wilson, MS; Elizabeth A. Evans, PhD. - University of Massachusetts Chan Medical School - Baystate

Cluster Analysis to Identify Typologies of Pregnant Persons with Opioid Use Disorder
Similarity of Engagement Across Age Groups of Patients Treated with a Prescription Digital Therapeutic for Opioid Use Disorder

Maria A Sullivan, MD, PhD; Emily Peckham; Maxine Stitzer, PhD; Robert Gerwien, PhD; Stephen Braun; Gigi Shafai, PharmD; Brendan Hare, PhD; Yuri Maricich, MD; Brian Pfister, PhD - Pear Therapeutics

An Electronic Chart Intervention to Improve Safety for Patients on Chronic Opioid Therapy, a 12-Month Longitudinal Study

Huiqiong Deng, MD - Stanford University School of Medicine

Assessing Male and Female Differences in Adverse Respiratory Symptoms with Cannabis Vaping with ENDS

Carol J Boyd, FAAN, FIAAN, PhD, RN; Philip Veliz, PhD - Center for the Study of Drugs, Alcohol, Smoking and Health, University of Michigan School of Nursing; Institute for Research on Women and Gender

The Effect XR-Buprenorphine Utilization on Treatment Retention in Patients with OUD Who Use Methamphetamines in Rural Alaska

Sarah Spencer; Annette Hubbard, Alaskan Behavioral Health Aid, Chemical Dependency Councilor - Ninilchik Community Clinic

Low Dose Initiation of Buprenorphine in Hospitalized Patients Using Buccal Buprenorphine: A Case Series

Shawn Matthew Cohen, MD1, Melissa B. Weimer, DO2,3,4; Kathleen K. Adams, PharmD, BCPS; Michael E. Guerra, PharmD - (1)Yale University Program in Addiction Medicine, (2)Yale Program in Addiction Medicine, (3)Yale New Haven Hospital, (4)Yale University School of Medicine

Jail-Based Reentry Programming to Support Continued Treatment with Medications for Opioid Use Disorder: Qualitative Perspectives and Experiences among Jail Staff in Massachusetts

Peter D Friedmann, MD, MPH; Atsushi Matsumoto, PhD; Claudia Santelices, PhD; Elizabeth Evans, PhD; Ekaterina Pivovarova, PhD; Thomas Stopka, PhD; Warren Ferguson, MD - University of Massachusetts Chan Medical School - Baystate

Feasibility of a Timeline Follow-Back Method to Assess Opioid Use, Non-Fatal Overdose, and Treatment

Nicole C. McCann, BA; Vanessa M. McMahan, PhD; Sarah L. Johns MPH; Sarah Kosakowski MPH; Shae Wolfe BA; Sarah Brennan BA; Phillip O. Coffin MD; Alexander Y. Walley MD, MSc - Boston University School of Public Health

Home-Based Family Recovery Supports: Feasibility and Acceptability of Training Home-Visitors in “Mothering from the Inside Out”

Elizabeth Peacock-Chambers, MD1, Peter D Friedmann, MD, MPH1; Amanda Lowell, PhD; Amanda Zayde, PsyD; Briana Jurkowski, BS; Savannah Kangas BS; Jessie Borelli, PhD; Nancy Byatt, DO, MS, MBA; Emily Feinberg, ScD, CPNP - (1)University of Massachusetts Chan Medical School - Baystate
Psychedelics Use among Young Men with Unhealthy Alcohol Use: Is There an Association with Future Drinking Outcomes?

Clement Ciccone, MD Candidate; Nicolas Bertholet, MD, MSc; Joseph Studer, PhD; Gerhard Gmel, PhD; Louisa Deligianni, MD - Centre Hospitalier Universitaire Vaudois (CHUV)

Advancing Health Equity: Evidence That a Prescription Digital Therapeutic for Opioid Use Disorder Enables Healthcare Access Across Geographic Regions

Audrey Kern, MD; Heather Shapiro, PhD; Robert Gerwien, PhD; Keely Boyer, MBA; Yuri Maricich, MD; Andrea Barthwell, MD, DFASAM - Pear Therapeutics

HIV Pre-Exposure Prophylaxis (PrEP) Uptake Indicators among Women Who Use Drugs and Implications for Interventions

Caroline K. Darlington, CRNP, MSN; Rachele Lipsky, MSN, PhD; Anne M. Teitelman PhD, FNP-BC, FAAN, FAAN; Beryl A. Koblin, PhD; Annet Davis, RN, MSW, CCRC; Melonie Walcott, DrPH, MPH; Peggy A. Compton, PHD, RN, FAAN; Hong-Van Tieu, MD, MS - University of Pennsylvania

Clinician Interaction with a Prescription Digital Therapeutic for OUD: Engagement and Outcomes

Maria A Sullivan, MD, PhD; Heather Shapiro, PhD; Robert Gerwien, PhD; Gigi Shafai, PharmD - Pear Therapeutics

Remotely Provided Buprenorphine Treatment for OUD: BAM, HRQOL, and Participant Satisfaction with Telehealth

Stephen Alexander Martin, MD, EdM, FASAM; Katharina Wiest, PhD, MSPH; Kellie Perl, MPH; Ritwika Petluri, BS; Canyon Foot, BA; Kim Hoffman, PhD; Ximena Levander, MD, MCR; Brian Chan, MD, MPH; Stephen Martin, MD, EdM; P. Todd Korthuis, MD, MPH - UMass Chan Medical School, Boulder Care

Referral to Telehealth Addiction Services Via Syringe Services Program: A Case Series

Bradley M Buchheit, MD, MSc; Alison Vasa, MD; Chris Hext, MD - Oregon Health & Science University

“I feel like they’re actually listening to me”: A Pilot Study of Hospital Discharge-Decision Making for Patients with Injection Drug Use-Associated Infections

Kinna Thakarar, DO; Michael Kohut, PhD; Henry Stoddard, MPH; Debra Burris, RN, CRC; Monica Sikka, MD; Daniel Solomon, MD; Colleen Kershaw, MD; Ellen Eaton, MD, MSPH; Frank Chessa, PhD; Rebecca Hutchinson, MD, MPH; Kathleen Fairfield, MD, DrPH, MPH; Peter Friedmann, MD, MPH; Tom Stopka, PhD, MHS - Tufts University School of Medicine, Maine Medical Center

Research with Pregnant and Postpartum Risky Drinkers: Comparing Recruitment Strategies

Sarah Dauber, PhD; Alexa Beacham, BA; Allison West, PhD; Johannes Thrul, PhD - Partnership to End Addiction

Hitching Up Hope: A Clinical Case Presentation of a Mobile Medical Unit

Michelle Leon; Kelly Celata, LADC, MSc - Brockton Neighborhood Health Center

Hospital to Outpatient Transitions of Care in Tobacco Treatment
Primary Care-Based Opioid Use Disorder Treatment for Adolescents and Young Adults: A Qualitative Study of Barriers, Facilitators and Care Recommendations

Lauren Arnold Bell, MD, MPH1, Safina Adatia, MD, MSc2, Connor Buchholz, MPH, MSc3; Sarah M. Bagley, MD, MS; Scott E. Hadland, MD, MPH, MS - (1)Indiana University School of Medicine, (2)McGill University, (3)Massachusetts General Hospital

Unsolicited Reporting Notifications from Maryland's Prescription Drug Monitoring Program (PDMP): Characteristics of Providers

Rachel H. Alinsky, MD, MPH; Masoumeh Amin-Esmaeili, MD, MPH; Ryoko Susukida, PhD; Taylor Parnham, MPH; Natasha Oyedele, MS; Sarah Sowden, MS; Himani Byregowda, MPH; Ju Nyeong Park, PhD, MHS; Lindsey Goddard, MPH; Anna Gribble, MPH, MSW; Renee M. Johnson, PhD - Johns Hopkins University School of Medicine

An Exploration of Barriers and Facilitators to Buprenorphine Access via Telehealth

Shoshana V Aronowitz, CRNP, MSHP, PhD1, Rebecca A. Hosey, BSN, MPH, RN1; Laura Starbird, PhD, RN; Zachary Meisel, MD, MPH - (1)Prevention Point Philadelphia

Perceived and Structural Barriers to Buprenorphine Treatment Prescribing among X-Waivered Practitioners in Michigan and Beyond

Valencia Lyle, MPH1, Kate Boulton, MPH, JD2; Eric G Hulsey, MA, PhD2 - (1)Michigan Department of Licensing and Regulatory Affairs, (2)Vital Strategies

Association of Urine Norfentanyl and Urine Fentanyl Concentrations with Emergency Department Presentation for Opioid Withdrawal

Anthony Spadaro, MD, MPH; Sophia Faude, MD Candidate; Ashish Thakrar, MD; M. Kit Delgado, MD, MS; Margaret Lowenstein, MD MPhil MSHP; Lewis S. Nelson, MD; Jeanmarie Perrone, MD, Austin S. Kilaru MD - Perelman School of Medicine at the University of Pennsylvania

Young Pregnant Women’s Concerns About Prenatal Marijuana Use and Child Welfare Involvement

Nicole Boss, MA; Samantha Saloom, BS; Judy C Chang, MD, PhD; Fahmida Hossain, PhD; Gale Richardson, PhD; Natacha De Genna, PhD - University of Pittsburgh Medical Center

Community-Based Service Providers Illuminate Drivers of Opioid Overdose among Black People Who Use Drugs in St. Louis

Alex Duello, MPH; Devin Banks, PhD; Maria Paschke, MPP; Sheila R. Grigsby, PhD, RN, MPH, APHN-BC; Rachel P. Winograd, PhD - The University of Missouri St. Louis - Missouri Institute of Mental Health

Adapting Contingency Management to Support Hospitalized Patients with Stimulant Use Disorder

Linda Peng, MD; Hope Titus, BS; Provo Roellich, BA; Honora Englander, MD - Oregon Health & Science University

A Qualitative Analysis of Barriers and Facilitators to Implementation of the Consult for Addiction Treatment and Care in Hospitals (CATCH) Program in New York City Safety Net Hospitals
"Living as Opposed to Surviving": Navigating a Sustained Recovery from Opioid Addiction

Daly Trimble, Medical Student; Karen Hacker, MD, MPH; Simone Taubenberger, PhD; Noelle Spencer, MPH; Judy Chang, MD, MPH; S. Fabre BS; B. Jagessar, BS; R. Roberto, BA; P. Gill, BS; E. Hulsey, BS; A. Arnold, BS - Magee-Womens Research Institute

Characterizing the Target Population for a Hospital Addiction Consult Service in New York City Public Hospitals: A Descriptive Analysis of Patients with Opioid Diagnoses in the Six ‘Consult for Addiction Treatment and Care in Hospitals (CATCH)’ Hospitals

Carla King, MPH; Jennifer McNeely, MD, MSc; Medha Mazumdar, MS, Noa Appleton, MPH, Jasmine Fernhardt, MPharm, Roopa Kalyanaraman Marcello, MPH, Charles T. Barron, MD, John Billings, JD, Scarlett Wang, MPH, MS - NYU Grossman School of Medicine

Digitally Assisted Recovery Coach to Facilitate Linkage to Outpatient Treatment Following Inpatient Alcohol Withdrawal Treatment: A Proof-of-Concept Study

Veronica Szpak, MSc1, Sara Prostko, BA1, Lisa Vercollone, MD, PharmD2,3, Samata R. Sharma, MD, MPH1,2; Joji Suzuki MD; Frank Loguidice BA, CARC; Carol Garner MD; David Ahern MD - (1)Brigham and Women's Hospital, (2)Brigham and Women's Faulkner Hospital, (3)Harvard Medical School

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Stefan G Kertesz, MD, MSc; Allyson L. Varley, PhD; April E. Hoge, MPH; Kevin R. Riggs, MD, MPH; Anne Fuqua, BSN; Thomas E. Joiner, PhD; Adam J. Gordon, MD, MPH; John R. Blosnich, PhD; Caitlin Wolford-Clevenger, PhD; Megan B. McCullough, PhD - Birmingham VA Medical Center, Heersink UAB School of Medicine

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Jennifer McNeely, MD, MSc; Jennifer McNeely, MD, Aimee Wahle, MS; Margaret Kline, MS; Sarah Wakeman, MD; Timothy Wilens, MD; Joseph Kannry, MD; Richard N. Rosenthal, MD; Angeline Adam, MD; Noa Appleton, MPH; Sarah Farkas, MA; Carmen Rosa, MS; Seth Pitts, BA; Goldfeld, K., John Rotrosen, MD; Leah Hamilton, PhD - NYU Grossman School of Medicine

Cannabidiol Effect on Cue-Induced Craving for Individuals with Opioid Use Disorder Treated with Buprenorphine: A Small, Proof-of-Concept, Open-Label Study

Sara Prostko, BA; Bianca Martin, BA; Peter R. Chai, MD, MMS; Roger D. Weiss, MD; Joji Suzuki, MD - Brigham and Women's Hospital

Experiences and Characteristics that Influence Medical Students’ Desire to Work with Patients With Substance Use Disorder

Rameesha Shaheen, MPH1, Tabitha E. H. Moses, MS1; Eva Waineo, Mark K. Greenwald - (1)Wayne State University School of Medicine

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Jennifer McNeely, MD, MSc; Rebecca Stone, MPH; Noa Appleton, MPH; Amanda M. Bunting, PhD; Geetha Subramanaim, MD; Jennifer McCormack, MS; Tobie Kim; Ashely Case, BS; Margaret Kline, MS; Rebecca Price, BS; Eve Jelstrom, MBA, CRNA; Travis Lovejoy, PhD, MPH; Lillian Gelberg, MD; Jane M. Liebschutz, MD, MPH, FACP - NYU Grossman School of Medicine

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Melinda D'Ippolito, LICSW, MPH, MSW; Mary Jo Larson, PhD; Cynthia Tschampl, PhD; Micaurys Guzman, Jessica Mateo, Melisa Canuto, LICSW; Diliana De Jesus, MA; Emily Stewart, BS; Veronica Rojas; Asanya Wawlagala; Laurie Song; Jolie Black; Lena Lundgren, PhD - Brandeis University, Heller School for Social Policy and Management

Approaches and Economic Impact of Personalized Interventions for SUD: A Systematic Literature Review.

Erminia Fardone, PhD; Iván D. Montoya, MPH; Marissa Singer Rosenberg; Kathryn E McCollister, PhD - University of Miami Miller School of Medicine

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Michael A Lawson, PhD; Bingqing Lu, PhD; Shanna McIntosh, MS; Audra Morrison, MSW - University of Alabama

Deployment of Targeted Outreach Interventions Utilizing a Novel Overdose Predictive Model in West Virginia.

Raj Masih, MPH¹, Paige Mathias, BS¹, Stephanie Stout, BA¹; Barbra S Masih, LPC - (1)Potomac Highlands Guild

Prescription Benzodiazepine Use, Misuse and Substance Use Disorder Symptoms During Middle Adulthood in the US

Sean Esteban McCabe, PhD; John E. Schulenberg, PhD; Timothy E. Wilens, MD; Ty S. Schepis, PhD; Vita V. McCabe, MD; Philip Veliz, PhD - University of Michigan, University of Michigan School of Nursing

Does Screening Mode Matter? Comparing Results of Computer Self-Administered versus Clinician-Administered Screening of Youth Substance Use in a Large Pediatric Primary Care Database

Maddie O'Connell, MPH; Barbara Howard, MD; Raymond Sturner, MD; Julia A. Plumb, BS; Cynthia Tran MS; Lydia A. Shrier, MD, MPH; Sion Kim Harris, PhD - Boston Children's Hospital

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“Sign Me Up” – A Qualitative Study of Video Observation Therapy (VOT) for Patients Receiving Expedited Methadone Take-Home During the COVID-19 Pandemic

Judith I. Tsui, MD, MPH; Elenore Bhatraju, MD, MPH; James B. Darnton, MD; Kristin Beima-Sofie PhD MPH; Alyssa Michaels MS; Kevin Hallgren PhD; Sean Soth; Paul Grekin MD; Steve Woolworth - (1)University of Washington

Plans, Attemps, and Methods Used to Quit Vaping in the US and UK

Nathalia Munck Machado, PhD; Eleanor Leavens, PhD; Erica Cruvienel, PhD; Keith Feldman, PhD; Kimber Richter, PhD - University of Kansas Medical Center

Provision of Tobacco Treatment and Smoke-Free Policies in Behavioral Health Facilities in the Midwest

Nathalia Munck Machado, PhD; Rick Cagan; Won Choi, PhD; Babalola Faseru, PhD; Kimber Richter, PhD - University of Kansas Medical Center

Association between Arthritis and E-Cigarette Use by Traditional Cigarette Smoking Status

Soryan Kumar, BS - Warren Alpert Medical School of Brown University

ADHD Symptoms and Cannabis Use in Emerging Adults: An Event-Level Analysis Using Ecological Momentary Assessment

Abby L Goldstein, PhD; Alexandra Shifrin, MA; Camara Azubuike, BA - University of Toronto

Perceptions of an Integrated Care Approach to Healthcare Delivery in a Non-Congregate Shelter: A Qualitative Study of Persons with Lived Experience

Karen B Alexander, PhD, RN; Courtney Nordeck MPH; Alexander Collins BA; Jan Gryczynski PhD - Friends Research Institute

Social Vulnerability in Hospitalized Patients Seen by an Addiction Consult Service

Shawn Matthew Cohen, MD; Melissa B. Weimer, DO; Rebecca Minahan-Rowley, LMSW; Kaicheng Wang, MD, MPH - (1)Yale University Program in Addiction Medicine, (2)Yale University School of Medicine, (3)Program in Addiction Medicine, Yale School of Medicine

Timely Receipt of Addiction Treatment Following an Opioid Overdose in Connecticut, April 2016 to December 2017

Benjamin A. Howell, MD, MPH, MHS; Anne C. Black, PhD; Lauretta E. Grau, PhD; Hsiu-Ju Lin, PhD; Robert Heimer, PhD; Kathryn Hawk, MD, MHS; Gail D’Onofrio, MD; David A. Fiellin, MD; William C. Becker, MD - Yale University School of Medicine

Neurodevelopmental Outcomes of Infants 0-2 Years of Age Exposed to Methadone or Buprenorphine to Treat Opioid Use Disorder, A Review.

Abbigail Lee Behmlander, MD Candidate; Bailey Braum, MD Candidate; Eneka Lamb, MD Candidate; Cara Poland, MD, MEd, FACP, DFASAM; Barbara Thompson, PhD - Michigan State University College of Human Medicine
A Wound Care and Immunization Needs Assessment for Clients of a Mobile Syringe Services Program in Austin, Texas

Taylor R Britton, PharmD Candidate¹, Michaela Rose Clague, PharmD Candidate², Lucas G. Hill, BCACP³, Lindsey J Loera, PharmD⁴, Claire M Zagorski, LP, MSc⁵; Lindsey Sobarzo, PharmD Candidate; Angella Zhang, PharmD Candidate; Jessica Moore, PharmD Candidate; Shelly Tran, PharmD Candidate - (1)University of Texas- College of Pharmacy, (2)University of Texas at Austin College of Pharmacy, (3)The University of Texas at Austin, (4)The University of Texas at Austin College of Pharmacy

Impact of the COVID-19 Pandemic on Violence Exposure and Alcohol Use among Adults Living in the San Francisco Bay Area

Akua O. Gyamerah, MPH; Erin C. Wilson, DrPH, MPH; Janet Ikeda, M.Ed; Willi McFarland, MD, PhD; Glenn-Milo Santos, PhD, MPH - University at Buffalo

Barriers and Facilitators to Methadone Induction for Emergency Department Patients with Opioid Use Disorder: A Qualitative Study

William E. Soares III, MD, MSc; Pryce Michener, BA, BS; Benjamin Potee BS; Elizabeth Schoenfeld, MD, MS; Lauren Westafer, MD, MPH, MS; Carol Renneburg MS; Samantha Beck, BS; Peter Friedmann MD, MPH - University of Massachusetts Medical School - Baystate

Periconception Cannabis Use - Prevalence and Risk Factors

Qian Leng, MD, MPH; Alice Graham, PhD; Kristen Mackiewicz Seghete, PhD - Veterans Affairs - Portland Health Care System

Perspectives on Emergency Department-Initiated Buprenorphine among Pharmacists: A Multi-Site Qualitative Study

Kathryn Hawk, MD, MHS; Marissa Justen, Gail D’Onofrio, MD; David Fiellin, MD; Marek Chawarski, PhD; Patrick O’Connor, MD; Patricia Owens, MS; Shara Martel, MPH; Edouard Coupet, MD; Lauren Whiteside, MD; Ethan Cowan, MD; Michael Lyons, MD; Lynne Richardson, MD; Richard Rothman, MD; Evan Zahn, PharmD; E. Jennifer Edelman, MD; Kathryn Hawk MD, MHS - Yale University School of Medicine

Substance Use During an Acute Hospitalization: Current Policies and Best Practices

Zina Huxley-Reicher, MD; Lisa B Puglisi, MD; Jeanette M Tetrault, MD; Melissa B Weimer, DO; Meg Stellini, MPH, Kathryn Thomas PhD JD, Joseph H Donroe, MD - Yale New Haven Hospital

Buprenorphine Initiation for Pregnant Patients with Opioid Use Disorder: A Multicenter Observational Study of California Bridge Sites

Amy Liang, MD; Erik Anderson, MD; Mariah Kalmin, PhD; Hannah Snyder, MD; Aimee Moulin, MD; Arianna Campbell, PA-C; Andrew Herring, MD - Alameda Health System - Highland Hospital

Trends in Use and Costs of Presumptive and Confirmatory Urine Drug Tests for Patients Receiving Buprenorphine for Opioid Use Disorder

Ricardo Cruz, MD, MPH; Jiayi Wang, BS; Jake R. Morgan, PhD; Marc Larochelle, MD, MPH - Boston University School of Medicine, Boston Medical Center

Associations Between Opioid Dose Trajectories and Substance-Related Outcomes
Abstract Award Session

Best Research Abstract

Changing the Default for Tobacco: Using Delayed Consent and Adaptive Trial Design to Test a Radically New Approach to Treatment

Kimber Richter, PhD, MPH; Babalola Faseru, MD, MPH; Delwyn Catley, PhD; Byron J. Gajewski, PhD; Theresa Shireman, PhD; Edward F. Ellerbeck, MD, MPH; Taneisha Scheuermann, PhD; Laura M. Mussulman, MPH; Niaman Nazir, MBBS, MPH; Elena Shergina, MS - University of Kansas Medical Center

Background: The current treatment default requires people who use tobacco to “opt in” to care by affirming they are willing to quit.
Objective: This population-based Bayesian adaptive trial compared the effects of opt-out care—presumptively providing medications/quit support to all—versus opt-in care for people who smoke cigarettes admitted to hospital for care.

Methods: To minimize selection bias the study randomly selected for inclusion all inpatients who smoked cigarettes, randomized/treated all eligibles, and conducted delayed consent at 1-month follow up. The primary outcome was cessation at 1-month post-discharge. At hospital bedside, counselors screened for eligibility, conducted baseline assessment, randomized patients to study arm, and provided opt-out or opt-in care as randomized. Counselors/medical staff provided opt-out patients with inpatient NRT, scripts for post-discharge medications, a 2-week medication starter kit, inpatient counseling/treatment planning, and 4 outpatient counseling calls. Patients could opt out of any or all elements of care. Opt-in patients willing to quit were offered each element of treatment described above. Opt-in patients unwilling to quit received brief “5R” based counseling.

Results: Most (74%) of 1,000 randomized patients consented and enrolled at 1-month follow up. Adaptive randomization assigned 64% to Opt-out and 36% to Opt-in. Verified quit rates for Opt-out vs Opt-in were 22% vs 16% at month 1 and 19% vs 18% at 6 months. The Bayesian posterior probability (BPP) that Opt-out outperformed Opt-in was .97 at 1 month and .59 at 6 months. Treatment utilization for Opt-out vs Opt-in was 60% vs 34% for post-discharge cessation medication (Cohen’s d=0.59), and 89% vs 37% for completing ≥1 post-discharge counseling call (Cohen’s d=1.44). Opt-out patients reported stronger therapeutic alliance with providers (3.4 vs 3.2, 4-pt scale, Cohen’s d=0.31). The incremental cost effectiveness ratio (ICER) was $678.6, which represents the cost of getting one more person to quit in the opt out condition.

Conclusions: Opt-out care achieved better 1-month quit rates and increased the reach of evidence-based treatment by providing more cessation-oriented care to more people who smoked cigarettes. Rather than alienating patients, Opt-out care strengthened therapeutic alliance. Future trials should examine the impact of periodic follow-up to improve long-term cessation.

Best Research Abstract Runner-up

A Six-Site Evaluation of Innovation-Enhanced Harm Reduction Programming to Augment Services and Link to Care

Traci C Green, PhD; Jennifer Carroll, MPH, PhD; Michelle McKenzie, MPH; Julie Burns - Brandeis University, Brown University

Background: In 2020, an estimated 2,106 people died from opioid overdose in Massachusetts. To address overdose risk and boost linkage to care, six community-based organizations launched innovations that enhanced harm reduction services in several ways, including integrating with a community meals program, boosting street outreach, starting online harm reduction support groups, and beginning community drug checking.

Objective: We aimed to evaluate the programs’ impacts on services, reach, and care linkage over a three-year period.

Methods: The evaluation applied the Consolidated Framework for Implementation Research, and employed a three-pronged, mixed-methods data collection approach (observations from 13 in-person and virtual site visits; monthly services and materials reporting via surveys; 93 individual staff and client interviews). Descriptive statistics and thematic coding of qualitative data triangulated findings.

Results: Programs served over 1,700 participants each month and distributed over 5 million harm reduction materials. Programs refined unique programming such as co-locating harm reduction services with provision of 71,000 meals and healthy snacks and offering clients the chance to check the content of their drugs using cutting-edge technologies. In so doing, the programs linked 1,114 new patients and re-engaged 344 patients into buprenorphine treatment, and extended assistance in medication treatment with methadone and other addiction treatment to 2700 participants. Adaptations during COVID-19 doubled the volume of supplies distributed, demonstrating program resilience and responsiveness. Program facilitators included funding flexibility, strong harm reduction culture, and multiple communication structures. The primary barriers to program implementation surrounded the policy and/or community environments in which they operate. Harm reduction successes, where they occur, were achieved in spite of current policies and community relations,
Conclusions: Enhancing harm reduction service innovations across a range of organization types and structures can improve services uptake, reach, and linkage to care. Law and policy changes are needed to facilitate swifter diffusion of innovations and ensure their sustainability.

The John Nelson Chappell Best Curriculum, Quality Improvement, and Program Abstract Winner

Combining Low-Barrier Housing with Stabilizing Treatment for Substance-Related Problems to Facilitate Exit from Encampments

Miriam Komaromy, MD; Jessica Taylor, MD; Robert Koenig, MBA; Alicia Peterson MBA; Stephanie Martinez, RN; Grace Vogelzang MBA - Boston Medical Center, Boston University

Background: Tent encampments in the neighborhood surrounding Boston Medical Center (BMC) grew to include 336 individuals between 2019-21, prompting humanitarian and public health concerns.

Objective: BMC, the City of Boston, and the Commonwealth of Massachusetts partnered in 1/2022 to offer low-barrier housing to people living in encampments and provide clinical stabilization services for people experiencing homelessness who have substance use disorders (SUDs).

Methods: In a former hotel, BMC established: 1. 60 beds of transitional housing for encampment residents, with housing not contingent on substance use status; 2. Low-barrier SUD-focused urgent care clinic offering medications for SUD and infection screening/prevention services; and 3. A 24/7 short-stay stabilization unit to manage over-intoxication, withdrawal, and complications of substance use (e.g., abscesses, HIV risk, psychosis). A secure medication dispensing cabinet allows methadone administration for opioid withdrawal management under the provisions of the 72-hour rule. Housing program key performance indicators include persistence in housing, transition to permanent housing, and engagement in SUD treatment and case management. Clinical program key performance indicators include patient volume, rates of BH and SUD diagnoses, rates of initiation on medication for SUD, and impact on ED utilization.

Results: Between mid-January and mid-February, 50 former encampment residents and 12 additional unhoused people were housed. One resident was discharged, one resident died (presumed overdose), and 3 transferred to permanent housing. No residents have returned to homelessness (average length of stay 72 days to-date). Sixty-one (98%) engaged with case management, and 42 (67%) engaged with SUD treatment. Clinical: In the first eight weeks, 306 patients had 892 visits. Forty patients received emergency opioid withdrawal management with methadone and were referred to an Opioid Treatment Program (OTP). Overall, 89% of patients had a non-SUD BH diagnosis. The most common SUD diagnoses were opioid (76%), cocaine (52%) and alcohol (50%). Early data suggests approximately a 1/3 reduction in Emergency Department visits for patients seen in the clinical units.

Conclusions: Low-barrier transitional housing combined with clinical stabilization care resulted in former encampment residents remaining housed, and provided SUD stabilization services to a substantial population of people experiencing homelessness in the first 2 months of clinical operation.

Best Curriculum, Quality Improvement, and Program Abstract Runner-up

Multidisciplinary Team Approach to Stimulant Use Disorder

Marielle Baldwin, MD, MPH; Logan Puleikis, BA; Ann Claude, RN; Justin Alves, MSN, RN, ACRN, CARN, CNE; Rachel Xue, BA; Meghan Brett, LICSW; Shay Rainey, BA; Alicia Ventura, MPH; Colleen Labelle, MSN, RN-BC, CARN - Boston University Medical Center

Background: Stimulant-involved overdoses have increased at an alarming rate, calling attention to the need for specialized treatment options for people with stimulant use disorders (StUD). Racial and sexual-gender minoritized
Objective: Describe the Stimulant Treatment and Recovery Team (START), a novel StUD treatment program piloted at Boston Medical Center.

Methods: START is a collaboration between Office-Based Addiction Treatment, Family Medicine, Behavioral Health, and Psychiatry utilizing the nurse-care manager model to employ evidence-based treatment for StUD including: contingency management, exercise-supported recovery, group medical and behavioral health visits, and access to a psychiatrist experienced in psychosis treatment. The clinic aims to provide low-barrier care through its street-level location and dedicated space for patients presenting with symptoms of stimulant intoxication. Specialized training and ongoing technical assistance was provided to clinicians/staff. Detailed information on engagement, demographics, and substance use was assessed from the Boston Medical Center electronic medical record.

Results: From June 2021-April 2022, START received 350 referrals, completed 165 intakes, and ended with 143 active enrollments. Fifty-two percent of patients were from racially minoritized groups and 29% from sexual-gender minoritized communities. Polysubstance use was prevalent, 78% of patients used at least two substances. The most commonly used substances, excluding stimulants, were cannabis (57%), opioids (48%), and alcohol (44%). Comorbid medical conditions such as liver disease (35%), HIV (22%), and cardiovascular disease (13%) were highly prevalent at intake. One-third of patients received primary care through START, of which 49% had no prior primary care provider. Co-occurring psychiatric disorders were present in 78% of patients, including post-traumatic stress disorder (26%), bipolar disorder (12%), and attention deficit hyperactivity disorder (10%). Of the 27% of patients referred to therapy, 56% completed their initial visit.

Conclusions: START is a promising model for engaging people with StUD, particularly for communities highly impacted by stimulant use and historically excluded from treatment. Further research is required to assess the efficacy and sustainability of the program related to treatment outcomes.

Alcohol and Stimulants

Complex Care Utilization for Patient in Novel Managed Alcohol Program

Elizabeth Abbs, MD1,2, Devora Keller, MD, MPH2, Megan Kennel, MSN2; Michelle Nance, NP; Alice Moughamian, NP; Bryce Bridge, LMFT; Christina Couch, EMS - (1)University of California, San Francisco, (2)San Francisco Department of Public Health

Background: The San Francisco Department of Public Health created a Managed Alcohol Program (MAP) in 2020 as a COVID-19 response to curb emergency care utilization among-individuals with severe alcohol use disorder (AUD). The MAP program provides participants individual motel rooms, three meals daily, nurse administered standard dose equivalents of alcohol, and connection to primary care and mental health services. To date, the program has served 27 patients for 33 total episodes and demonstrated modified healthcare utilization, reduced alcohol related complications, and improved perception to quality of life.

Learning Objectives: We aim to explore the role of MAP among high-risk populations with severe AUD and to harbor discussion around patient autonomy, quality of life, and goals toward independent housing.

Case Presentation: Patient is a 59-year-old woman with prior stroke, pulmonary emboli, post-traumatic stress, bipolar disorder, at-risk stimulant use, 20 years of homelessness, and severe AUD complicated by frequent falls with more than 90 emergency utilizations in the 6-months prior to MAP. In the 22 months she was enrolled in MAP, she connected to primary and mental health providers, started psychiatric medications, stopped stimulant use, modified her drinking patterns, and reduced her falls and emergency utilization (24 visits while in MAP). The patient opted to transition to an independent permanent supportive housing (PSH). Despite team support to honor patient autonomy and prepare her to self-manage alcohol, the patient had countless falls, 11 hospital presentations and five head computed tomography scans within the first two weeks in PSH after leaving MAP.
**Discussion:** MAP provides stabilizing medical-psycho-social support for high-risk people with AUD with direct value to the individual and the healthcare system. Despite patient interest in independence via PSH, her trajectory poses question of existing limitations in present housing models in managing high-risk patients struggling with severe AUD. Future PSH and MAP design must be tailored to integrate medical, social and cultural programming to foster risk reduction and long-term enhancement in quality of life.

**Smartphone-Based Secondary Prevention Intervention for University Students with Unhealthy Alcohol Use: A Randomized Controlled Trial**

Nicolas Bertholet, MD, MSc; Elodie Schmutz, MSc; Joseph Studer, PhD; Angéline Adam, MD; Gerhard Gmel, PhD; John A Cunningham, PhD; Jennifer McNeely, MD, MSc; Jean-Bernard Daeppen, MD - Lausanne University Hospital

**Background:** Unhealthy alcohol use is a leading cause of morbidity and mortality among university students. Smartphone-based interventions have the potential to reach large parts of the student population. We developed a proactive smartphone-based intervention for unhealthy alcohol use with the involvement of students.

**Objective:** To test the efficacy of a smartphone-based intervention for unhealthy alcohol use in a randomized controlled trial.

**Methods:** 1770 students with unhealthy alcohol use identified by screening from four Swiss higher education institutions were randomized to receive access to a smartphone-based intervention (i.e. smartphone application) (n=884) or to a no-intervention control condition (n=886). Follow-ups were at 3 and 6 months. Primary outcome was number of standard drinks per week (SDW) at 6 months. Secondary outcome was number of heavy drinking days (HDD; past 30 days) at 6 months. The intervention effect on SDW and HDD were tested using negative binomial generalized linear mixed models with participants and recruitment sites as random effects and intervention and time as fixed effects (with an intervention by time interaction term). Models were adjusted for age and gender.

**Results:** Mean (SD) age was 22.34 (3.07), 54.1% were female; 66.0% were Bachelor students, 30.1% Master, 2.4% PhD, and 1.4% other. Baseline mean number of drinks per week was 8.60 (8.17). Baseline number of HDD, past 30 days was 3.53 (4.02). Follow-up rate was 96.4% and 95.9% at 3 and 6 months, respectively. Of the 884 randomized to receive access to the intervention, 738 (83.5%) downloaded the smartphone application. All participants (n=1770) were included in the analyses. Compared to the no-intervention condition, those who received access to the intervention reported significantly fewer SDW (intervention by 3-month follow-up interaction, IRR [95%CI] 0.88 [0.82, 0.96]; intervention by 6-month follow-up interaction, 0.88 [0.81, 0.95]) and significantly fewer HDD (intervention by 3-month follow-up interaction, IRR 0.90 [0.81, 0.99]; intervention by 6-month follow-up interaction, 0.88 [0.80, 0.98]).

**Conclusions:** Providing access to a smartphone-based secondary prevention intervention was efficacious to reduce unhealthy alcohol use among university students. The intervention has the potential for widespread implementation.

**How Healthcare Utilization for Patients with Alcohol Use Disorder is Associated with Medications After Hospitalization: A Retrospective Cohort**

Kumar F Vasudevan, MD; Maria Khan, PhD; James Zhou, MD; Talia Rosen, BS; Joshua Lee, MD Sc; Noa Appleton, MPH; Jasmine Fernando, MPharm; Carla King, MPH; Jeniffer McNeely, MD, MSc - NYU Langone Hospital; Woodhull Hospital, UCLA - Reagan Hospital

**Background:** In the United States, Alcohol Use Disorder (AUD) costs nearly 100,000 lives and 349 billion dollars annually, yet only 8-12% of people with AUD are ever offered one of three FDA-approved medications. There is evidence these medications moderately reduce hazardous drinking, but preliminary results suggest they may be more useful in affecting healthcare utilization. This study evaluates whether receiving medication for AUD is associated with a reduction in emergency room visits and hospitalizations.

**Objective:** Establish an association between prescription of alcohol use disorder medication and healthcare utilization.
Methods: Retrospective cohort study (n = 142) of patients with AUD hospitalized at a safety net hospital in New York. The primary outcome is for each patient, the change in emergency room visits between the six months after and the six months before the index hospitalization. The secondary outcome is change in hospital admissions in the same timeframe. We used logistic regression models to evaluate different medication regimens and their associations with changes in ED visits & hospitalizations. We created an adjusted logistic regression model for race, age, gender, socioeconomic status, insurance status and health comorbidities.

Results: Of the 142 charts reviewed, 61 patients received naltrexone, injectable naltrexone, acamprosate and/or gabapentin and 81 received no medications for AUD. In the comparator group who did not receive medication, average number of ED visits increased by 1.6, while patients who received medication reduced their ED visits by 2.9, creating a beta coefficient of -4.46 (p = 0.008). Any alcohol medication was also associated with a reduction in hospitalizations beta coefficient of -0.70 (p=0.014). Vivitrol (long-acting intramuscular naltrexone) compared to no medication was associated with a significant reduction of hospitalizations and a beta coefficient of -2.1.

Conclusions: AUD medications are under-prescribed by our healthcare system. With a low side effect profile and a significant association with a reduction in ED visits and hospitalizations, more patients with alcohol use disorder should be offered medication when hospitalized. The impact of FDA-approved (naltrexone, acamprosate, disulfiram), and non-FDA approved (gabapentin, topiramate) AUD medications on healthcare utilization warrants further study in prospective randomized trials.

A Gender-Based Analysis of ADAPT-2: Response to Combined Naltrexone and Bupropion Treatment in Women with Methamphetamine Use Disorder

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Background: Sociocultural and biological differences contribute to sex and gender-based variations in psychostimulant susceptibility. These differences may affect treatment responsiveness amongst women with methamphetamine use disorder (MaUD).

Objective: To evaluate how women with MaUD respond to active medication combination (AMC) with intramuscular naltrexone (380mg/3 weeks) and extended-release oral bupropion (450mg daily). To evaluate how hormonal contraceptive (HMC) use affects treatment responsiveness and side effects.

Methods: This is a gender-focused sub-analysis of the randomized, double-blind, medication trial – Accelerated Development of Additive Treatment for Methamphetamine Disorder (ADAPT-2), which used a sequential, parallel comparison design at eight U.S. sites between May 2017-July 2019. Participants were randomized in two stages of six weeks (12 weeks total) to AMC versus placebo. Primary outcome was treatment response – providing a minimum of three negative methamphetamine urine drug tests in the last 2 weeks of each stage; treatment effect was the difference between the weighted treatment responses of the two stages. Chi-squared and Wilcoxon 2-sample tests, and generalized linear mixed effects models tested for associations.

Results: Of 403 participants, 126 (31.3%) were women; average age 40.1 years (SD 9.6), predominantly White (82.5%). At baseline, more women used methamphetamine orally (5.01% v. 1.45%, p=0.022) and fewer via injection (15.44% v. 23.12%, p=0.05) compared to men; more had anxiety (59.5% v. 47.6%, p=0.027) and eating disorders (8.73% v. 1.81%, p=0.001) (MINI verified). Of 113 (89.7%) women reporting they could become pregnant, 32 (28.3%) used HMC. In stage one, 29%, and in stage two, 5.6% of women on AMC had a treatment response compared to 3.2% and 0% on placebo, respectively. A treatment effect was found independently for females and males (p<0.001); the within-sex treatment effect difference between females and males was not significant (0.1426 vs 0.1032; p=0.41). There was no significant difference in treatment effect for women using HMC compared to no use (0.1553 v. 0.1283; p=0.77). Side effect severity did not differ significantly by HMC status.

Conclusions: Women with MaUD receiving AMC had modest treatment response rates that exceeded women receiving placebo. Future research should explore HMC use among women with MaUD and how estrous hormones may affect medication treatment response.
Integrating Contingency Management Into an Academic Outpatient Addiction Clinic for Patients With Cocaine Use Disorder

Nicholaus J Christian, MBA, MD1, Stephen Holt, MD2; Dana Cavallo, PhD - (1)Yale Program in Addiction Medicine, (2)Yale University School of Medicine

Background: Cocaine is the most commonly used non-prescribed substance present in urine drug screens (UDS) in primary care.1 Contingency management (CM) is the most effective treatment for cocaine use disorder (CUD),2 however few programs have been implemented in primary care.3 Addiction Recovery Clinic (ARC) is a specialty clinic embedded within a Federally Qualified Health Center (FQHC) that cares for patients with substance use disorders. A CM program was developed at ARC to serve patients with CUD and to expose trainees to CM.

Objective: To implement a CM program for patients with cocaine use disorder in an academic outpatient addiction clinic embedded in a FQHC.

Methods: In 2015, a $5,000 gift to establish a CM program to treat CUD was secured. Eligibility into the program included: age > 18, a diagnosis of CUD, presence of cocaine metabolites on at least one UDS, and willingness to attend twice-weekly clinic appointments. A 12-week payment schedule was developed. Patients were awarded cash for every UDS negative for cocaine, and could earn up to $405 if they provided negative samples for 24-appointments. If a patient tested positive for cocaine, the payment ladder would reset. A revised payment schedule was developed during the COVID-19 pandemic to accommodate weekly visits. Internal bookkeeping was maintained for quality improvement purposes to track the number of patients in the program and total money paid per patient.

Results: From October 2015 through July 2021, 29 patients participated in the CM program. Patients started the program an average of 1.6 times. Patients were engaged in the program an average of 33 days, and earned $117 on average. A total of $3,394.50 was awarded to patients through the program.

Conclusions: ARC sustained a CM program with minimal funding and administrative support, providing a model that could be implemented at academic outpatient clinics throughout the United States. The Biden-Harris administration has pledged to address policy barriers to expanding CM.4 Integrating CM programs into academic outpatient clinics and FQHCs will be critical to expanding patient accessibility to this evidence-based treatment.

Implementation of Mirtazapine for Emergency Department Patients with Problematic Methamphetamine Use

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Background: Problematic methamphetamine use has dramatically increased in the last decade with concurrent rises in user mortality, medical and psychiatric complications, and health care utilization. However, no treatment protocol has been described. A 6-site CA-Bridge collaboration of emergency departments (EDs) developed a consensus protocol for ED initiation of mirtazapine as medication for addiction treatment (MAT) for problematic methamphetamine use.

Objective: To describe the mirtazapine protocol and present clinical details and treatment outcomes among patients with problematic methamphetamine use.

Methods: This quality improvement project aimed to initiate mirtazapine as MAT for problematic methamphetamine use. Each of the 6 sites had a designated clinical champion and substance use navigator. Throughout the study period, the collaboration met weekly to improve and adapt the implementation strategy; for providers, didactic sessions, online resources, and specialty addiction consultation were available during regular hours. The protocol recommended ED treatment of psychosis or paranoia with olanzapine (10mg rapid dissolving tablet) followed by oral mirtazapine 30mg. Clinicians counseled patients that mirtazapine could improve mood, sleep, and drug cravings. Patients with problematic methamphetamine use who received ED-administered mirtazapine were identified by retrospective review of the medication administration record, and follow up was determined by chart review.
**Results:** Between 1/15/2021 and 4/15/2022 at a single ED, 16 patients were treated with mirtazapine for problematic methamphetamine use. Most (75%) were male with a median age of 36. 25% were Black; 56% were Hispanic; 12% were white. Only one patient’s triage note mentioned “methamphetamine.” Other reasons for ED visit were more common: 38% medical, 25% psychiatric, 19% medical clearance. Mirtazapine dosing adherence to the protocol was moderate: 81% were administered 30mg; 19%, 15mg. Antipsychotic medication was administered to 31%. All were discharged home, and most (88%) were prescribed mirtazapine; 31% were prescribed an antipsychotic. A follow-up visit where methamphetamine use was addressed occurred in 44% of patients within 3 months of ED discharge. There were no adverse events.

**Conclusions:** These are the first data on ED initiation of MAT for problematic methamphetamine use. Protocol adoption was low; however among patients who received treatment, follow-up was comparable to follow-up rates for opioid use disorder.

**A National Fetal Alcohol Spectrum Disorders Learning Collaborative for Prenatal and Pediatric Healthcare Teams**

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**Background:** Prenatal alcohol exposure (PAE) resulting in fetal alcohol spectrum disorders (FASD) is the most common preventable cause of permanent intellectual and developmental disabilities in the U.S. Healthcare teams can play a critical role in preventing, diagnosing, and managing FASD; however, they are unprepared to do so.

**Objective:** The HRSA-funded SAFEST Choice Learning Collaborative trained community health center (CHC) teams to: 1) prevent FASDs by reducing alcohol use during pregnancy and 2) improve identification and management of pediatric patients suspected of, or diagnosed with, an FASD.

**Methods:** CHCs from New England and the Upper Midwest enrolled in prenatal and/or pediatric Project ECHO® groups. From 6/2021 to 4/2022, each group met ten times for one hour. The curriculum included an FASD foundational science webinar, core content modules and case discussions. Enrolled CHCs received a modest stipend; participants received continuing education credits. A pre-, mid-, and post-study design was used to examine provider changes in FASD knowledge, self-efficacy, and self-reported practice behaviors. Reported here are the pre- and midpoint findings.

**Results:** Enrolled participants (n=72) were from 15 CHCs in 7 states; 58 completed the pre-survey and 39 completed the midpoint survey. Participants included physicians, nurse practitioners, nurses, social workers among others, with 62% of prenatal and 78% of pediatric participants attending at least 80% of the ECHO sessions. At midpoint, a high proportion of participants reported: increased knowledge about screening for PAE both during pregnancy (100%) and among children with possible FASD (93%); improved self-efficacy to screen for PAE (96%), and counsel families about both PAE (93%) and FASD (89%); and increased their practice of screening for, and counseling patients with alcohol use during pregnancy (100%) and screening for PAE among children with suspected FASD (96%). At midpoint, of the 31 matched surveys, there were significant increases in self-efficacy and confidence in FASD indicators compared to baseline.

**Conclusions:** An FASD Project ECHO® for prenatal and pediatric healthcare teams provided a means of educating about FASD prevention, diagnosis, and management. Preliminary data suggest that this mode of learning increases provider FASD knowledge and self-efficacy and promotes improvements in clinical practice.

**Criminal Justice**

**MOUD Diversion Infrequent in Massachusetts’ New Prison Opioid Treatment Programs**

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**Background:** Incarcerated persons have a high prevalence of substance use disorder and a risk of death from overdose post-release 120 times that of the general population. Given the critical need for opioid use disorder (OUD) treatment in jails and prisons, the Massachusetts CARE Act of 2018 mandated the provision of all FDA approved forms of medications for opioid use disorder (MOUD) to individuals with OUD in the Massachusetts Department of Correction. With the implementation of opioid treatment programs (OTPs) in correctional facilities, concerns have been voiced about the risk of diversion of orally-administered agonist medications, buprenorphine and methadone.

**Objective:** For process evaluation purposes, to assess the incidence of buprenorphine and methadone diversion within five newly established OTPs in the Massachusetts Department of Correction over 13 months.

**Methods:** We collected data on the total number of doses of crushed sublingual buprenorphine/naloxone tablets, liquid methadone, and oral naltrexone tablets administered in five prison OTPs operated by Spectrum Health Systems (Worcester, MA), as well as all diversion incidents detected in these programs between March 1, 2021 and March 31, 2022.

**Results:** During the study period, 161,332 doses of MOUD were delivered to 995 persons with OUD. Of these doses, 79.4% were methadone, 19.9% were buprenorphine/naloxone, and 0.7% were naltrexone. There were 21 detected incidents of methadone diversion, and 57 incidents of buprenorphine diversion among 62 patients, of which 16 diverted more than once. No diversion was reported for naltrexone. Buprenorphine diversions comprised 1.78 per 1,000 buprenorphine doses administered. The rate of methadone diversion was 0.16 per 1,000 methadone doses administered. The overall agonist diversion rate was 0.49 per 1,000 agonist doses administered. Methadone had a lower rate of diversion than buprenorphine (relative risk 0.092, 95% CI 0.06 to 0.15; absolute risk difference 0.16%, 95% CI 0.12% to 0.21%; P<0.0001).

**Conclusions:** Within five newly established OTPs in Massachusetts prisons, the rate of detected medication diversion was low. Liquid methadone had a lower rate of diversion than crushed sublingual buprenorphine/naloxone tablets, but the clinical and policy significance of this difference depends on program size, security context, and other factors.

**Characteristics of Mothers with Substance Addiction that Predict Graduation from the Family Treatment Court**

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**Background:** In the United States, substance addiction is a major contributing factor to incarceration of mothers and separation of children from their families. Five hundred Family Treatment Courts (FTC) operate across the country to combat the growing problem of women addicted to drugs. The FTC model provides mothers with substance addiction treatment, intensive judicial monitoring, repeated drug testing, counseling, incentives or sanctions, and case management with the goal of reaching long term sobriety and reunification with their children.

**Objective:** Understanding characteristics that may influence graduation from the Family Treatment Court will provide valuable information on developing interventions to support participants’ success and to guide nursing practice, nursing education and nursing research.

**Methods:** This retrospective study examined the relationship of socio-demographic characteristics and substance use characteristics, in predicting participants’ graduations from the FTC program. Characteristics that were collected include: age, race, marital status, employment status, place of residence, education level, drug of choice, previous criminal history, previous participation in drug court, mental health diagnosis, LSI-R score, participation in evidenced based Cognitive Behavioral Therapy, whether the minor children are living in foster care or with family, whether the participant graduated from the program and total number of days in the program.

**Results:** Study findings suggest when graduates of the FTC program were compared to nongraduates, those participants who completed the program were older, completed CBT training, remained in the FTC program longer, had children that resided with the participant during treatment, and had completed high school.
Conclusions: These results convey the need for development of interventions tailored to each participant’s individual characteristics to maximize the success of the FTC participants and further research studies to expand scholars’ understanding of substance addiction.

Barriers and Facilitators to Collaboration Between Community-Based Medication for Opioid Use Disorder Providers and Drug Treatment Courts

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Background: Drug Treatment Courts (DTC), diversionary programs that mandate addictions treatment, have traditionally prohibited individuals from receiving medications for opioid use disorders (MOUD). Recent legal and system-wide changes have resulted in adaptation of national policies that potentially increased use of MOUD. However, gaps in treatment remain, in part because of the absence of established connections and poor linkages with community based MOUD providers. Identifying ways to improve collaboration between DTCs and MOUD providers may increase access to and retention in MOUD of individuals at high risk for overdose.

Objective: To identify barriers and facilitators to collaborations between community based MOUD providers and DTC staff.

Methods: We conducted individual interviews with DTC staff (n=21) and MOUD providers (n=22). Semi-structured interviews were guided by the Consolidated Framework for Research (CFIR) constructs and were adapted to each group of interviewees. All interviews were transcribed, redacted for identifying information, and double coded. Inductive and deductive approaches were used to define salient themes.

Results: Overall, both DTC staff and MOUD providers recognized the need for improved communication between their agencies. They each described existing limitations, including lack of established relationships, non-response by the other agency, and limited time to engage with their counterparts. One of the biggest barriers to collaboration was mutual distrust. Providers were concerned that communicating with DTCs would result in incarceration of their patients. DTC staff perceived providers as conducting inadequate clinical evaluations and overprescribing medication. MOUD providers and DTC staff reported lack of knowledge about operations of their counterpart agency, with few opportunities to learn. Communication was described as one-side, with DTC staff requesting information without sharing their observations (e.g., urine toxicology reports). Barriers between the agencies were especially pronounced with methadone facilities. Facilitators included active communication, personal connections, use of liaisons, and engaged staff.

Conclusions: Findings indicate the critical need to improve communication and collaboration between DTCs and MOUD providers to assure access to and retention in MOUD treatment for individuals with legal involvement. Interventions should be aimed at improving trust, knowledge of agency operations, and use of liaisons to form direct and sustained relationships.

A Prescription Drug Illegal Marketing Case: “Dead Baby” Messaging, a Billion-Dollar “Product Hop” and the Buprenorphine Public Health Campaign That Wasn’t

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Background: The 2002 approval of buprenorphine/naloxone (Suboxone™) was ground-breaking for public health.

1) first office-based opioid use disorder treatment.

2) first block-buster addiction medicine ($1 billion/annual sales).

But the manufacturer used illegal tactics to deter generic competition, and extend its market dominance and profits. A decade later, a subsidiary pled guilty criminally, two executives went to jail, and the company and its parent group paid a record $2 billion total settlement.
Objective: Analyze the first illegal marketing case to be prosecuted against an addiction medicine company, focusing on the alleged anticompetitive actions from 2009-14. Gain insights to regulatory gaps, ethical lapses, industry tactics, and policy implications.

Methods: Case study. Analyze and synthesis data from legal, regulatory, and industry documents, government hearings, and academic literature, informed by auto-ethnographic data.

Results: A multi-pronged company strategy coerced patients and doctors to switch to a new formulation through a false public health "sales story," pricing changes, and other tactics. A disingenuous FDA citizen petition sought to further delay generic market entry. Sales messages included “dead baby” child poisoning stories, and false public health superiority claims.

The manufacturer was willing to cannibalize sales of its buprenorphine tablets to further force a “hard switch” to the new Film product—resulting in an anti-competitive "product hop."

Examples of ethical lapses extended outside of the company: Addiction physicians were recruited by company sales reps and medical liaisons to influence insurance formulary coverage (especially Medicaid). One example: legal documents quote a Massachusetts doctor requesting gifts from the manufacturer as payment, including a Harley Davidson motorcycle and donation to his foundation.

Conclusions: The buprenorphine product hop was among the most successful in pharma history (85% market share). The artificially higher cost, for an effective treatment in the midst of an opioid overdose crisis, harmed patients, plans, and tax payers. The reputation of office-based treatment with buprenorphine was impacted as well, due to negative publicity and stigma resulting from the illegal marketing case, a true public health loss.

Policy changes have been proposed, but may be difficult to implement. Criminal charges and financial penalties provide unknown efficacy for deterrence.

Treatment Continuity of Medication for Opioid Use Disorder After Incarceration: A Qualitative Study with Community-Based Treatment Organizations

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Background: Persons with histories of incarceration in Massachusetts have a 120 times higher risk of fatal opioid overdose compared to those without histories of incarceration. Provision of medication for opioid use disorder (MOUD) treatment was mandated in Massachusetts county jails beginning in 2019. Little is known about MOUD treatment continuity during the high-risk transition from jails to community-based providers, a uniquely poised partner in treatment continuity.

Objective: To assess community-based MOUD providers perspectives of and experiences with barriers and facilitators to MOUD treatment continuity post-release.

Methods: Qualitative interviews were conducted with 36 medical, supervisory, and administrative staff at MOUD programs that serve patients referred from jails. We used the Exploration, Preparation, Implementation, and Sustainment (EPIS) implementation science framework to guide the development of instruments and analyses with a focus on the inner, bridging, and outer contextual dimensions of MOUD continuity. We employed deductive and inductive coding, and a grounded theory analytical approach to identify salient themes.

Results: Inner context findings highlighted the importance of correctional staff buy-in and training. In some cases, differing beliefs between community and correctional staff impeded collaboration (e.g., viewing agonists as contraband, or a crutch, favoring abstinence-based recovery). Bridging results highlighted the importance of dedicated care coordination staff to facilitate highly integrated coordination and communication between correctional and community care teams. Unexpected releases, especially releases from court, presented major challenges to implementing immediate
community treatment. Pre-release planning, reliable exchange of medical information (e.g., last dose letters), and bridge prescriptions to avoid treatment gaps were viewed as paramount to success and were largely facilitated by care coordinators. Outer context domains were largely tied to social determinants of health, including lack of shelter, food insecurity, lack of employment, poor access to transportation and communication, and challenges with insurance reactivation.

**Conclusions:** Supporting continuous MOUD treatment for patients is a key strategy to address the alarming and increasing fatal opioid overdose rates in this high-risk population. Qualitative findings from interviews with community-based MOUD treatment staff point to the need for investments in care coordination, staffing, and funding to reduce barriers.

**ED-Based Care**

**Impact of Substance Use Navigators on Addiction Treatment and Outcomes for Emergency Department Patients in an Integrated Public Health System**

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**Background:** There is strong evidence to support emergency department (ED) initiated addiction treatment and continuation of treatment with a warm handoff to a partnered low-threshold ambulatory clinic. To complement this infrastructure many medical systems have chosen to employ dedicated substance use navigators (SUNs) to optimize program effectiveness.

**Objective:** We describe patient outcomes of a mature ED-initiated substance use program vertically integrated with a low-threshold Bridge Clinic under two conditions: (1) when the ED team was operating without a SUN and (2) when a SUN initiated services at the bedside in the ED.

**Methods:** This was a retrospective cohort study of adult patients discharged from one of three EDs within an integrated public health system between September 1, 2021 through January 2022 with cocaine, methamphetamine, alcohol, and opioid use related diagnoses. The primary outcome was follow-up attendance for substance use treatment within 30 days of ED discharge among patients with and without SUN services in the ED. We used logistic regression and nearest neighbor propensity score matching without replacement to control for confounding effects.

**Results:** There were 1,328 patients in the overall cohort, 119 (9.0%) of whom had SUN services at bedside in the ED; 50.4% of the patients with SUN services and 15.9% of patients without SUN services attended follow-up within 30 days of ED discharge (difference in proportions 34.5%, 95% confidence interval [CI]: 25.3-43.8%). SUN services were associated with higher odds of follow-up after ED discharge for patients with alcohol diagnoses (odds ratio [OR] 7.1; 95% CI: 3.4-14.7), opioid diagnoses (OR 2.5; 95% CI: 1.4-4.2), and cocaine diagnoses (OR 16.8; 95% CI: 2.2-125.3); but were not for patients with methamphetamine related diagnoses (OR 2.2; 95% CI: 0.5-10.7). In the adjusted multivariable model, SUN services were associated with higher odds of follow-up (aOR 3.7, 95% CI: 2.4-5.8). In the propensity score matched analysis, SUN services were associated with 5.3 higher odds of follow-up (95% CI: 2.9-9.8).

**Conclusions:** Receipt of patient navigation services among ED patients with opioid, alcohol, and stimulant use disorders was strongly associated with improved quality of care and improved follow-up engagement in addiction treatment.

**Implementation of Emergency Department-Initiated Buprenorphine for Opioid Use Disorder**

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While ED-initiated buprenorphine (ED-BUP) increases patient engagement in addiction treatment, gaps in adoption exist. We evaluated an implementation facilitation (IF) strategy on provision of ED-BUP and engagement in OUD treatment on day 30.

**Objective:** To compare a grand-rounds (GR) presentation with implementation facilitation (IF) on adoption of emergency department (ED) initiated buprenorphine (BUP) and referral for opioid use disorder (OUD).

**Methods:** A hybrid type-3 implementation-effectiveness study conducted in 4 geographically diverse urban-academic EDs, compared a 60-minute GR with IF on adoption of ED-initiated BUP (ED-BUP). IF provided a bundle of implementation activities tailored to sites. Site report of X-waivered clinicians and electronic medical record data on BUP and naloxone administered/prescribed were recorded between 4/17-11/20. A 12-month observational cohort of ED patients with untreated OUD were enrolled after the GR (Baseline-Eval) and after 6-months of IF activities (IF-Eval). Rates of provision of ED-BUP (implementation) and engagement in formal addiction treatment on day 30 (effectiveness) were determined.

**Results:** 137 ED clinicians attended the GRs. The number of unique ED-BUP prescribers and those with X-waivers increased from 162 to 449, and 11 to 196 respectively. The number of ED visits with BUP administered/prescribed and naloxone dispensed/prescribed increased from 259 to 1256 and 535 to 1091 respectively. A total of 394 patients were enrolled in Baseline-Eval and 362 in IF-Eval period, with 86% study retention. Patient characteristics were similar: 70% male; 52% white, 60% unstable housing. Compared to Baseline-Eval, rates of ED-BUP increased during IF-Eval (2/394 [0.5%] vs 53/363 [14.6%], p<.0001). Rates of patients in treatment on 30th day increased (40/394 [10.2%] vs 59/362 [16.3%] p=0.011). The effect of IF varied by site: implementation (p<0001), effectiveness (p=0.036). During IF-Eval, patients in OUD treatment on 30th day for those receiving ED-BUP was (19/53 [35.8%] vs no BUP 40/309 [12.9%], p<0.001).

**Conclusions:** IF increased the number of X-waivered clinicians and rates of ED-BUP and naloxone provision. During IF-Eval, more patients received ED-BUP and were engaged in treatment. Patients receiving ED-BUP were more likely to be engaged in treatment than those who did not.

**Low Incidence of Precipitated Withdrawal in ED-Initiated Buprenorphine, Despite High Prevalence of Fentanyl Use**

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**Background:** Fentanyl use among those with opioid use disorder (OUD) is high. Anecdotal and limited reports cite concerns regarding precipitated withdrawal (PW) with standard buprenorphine (BUP) induction among those using fentanyl.

**Objective:** To determine the incidence of PW in a trial of ED-initiated BUP.

**Methods:** We report data from an ongoing trial, ED INNOVATION from 7/12-12/10/21 in 28 diverse U.S. emergency departments (ED). Patients >18 with untreated OUD, Clinical Opiate Withdrawal Scale (COWS) score of > 4 and urine negative for methadone are randomized to sublingual (SL-BUP) or 7-day extended-release injectable (XR-BUP) induction. SL-BUP patients receive instructions for unobserved BUP initiation if COWS (4-7) or 8-12 mg SL-BUP administered in the ED if COWS > 8; XR-BUP is administered for COWS > 4. Patients receiving any ED BUP are observed for 2 hours. Possible PW events are reviewed by an expert panel.

**Results:** Among 925 enrolled, 67% were male; 58% White, 30% Black, 2% American Indian. Urines had fentanyl (76%), multiple drugs (82%), cocaine (34%), marijuana (46%) and opiates (45%). Sixteen percent of patients were enrolled with COWS 4-7. Ten patients (1%) experienced PW; 6 in SL-BUP group and 4 in XR-BUP. Of those with PW, 70% were male, mean age of 40 years, 30% were White, 60% Black, 10% American Indian. Most (80%) had urine with multiple drugs; fentanyl (100%), cocaine (50%), marijuana (30%) and opiates (30%). Among those with PW, mean
baseline COWS score was 16 with a range of (8-29). Patients presented in different stages of withdrawal: 3 mild (COWS of 8-12); 6 moderate (13-24); and 1 severe (29). The average number of hours since last opioid use by self-report was 16 hours (range 8-24). All cases of PW improved with protocol-driven treatment and were discharged; 2 were placed in ED observation overnight and discharged the following day.

Conclusions: One percent of patients initiated on BUP in 28 EDs across the U.S. experienced PW, despite high prevalence of fentanyl use. Patients who use fentanyl may be less likely to experience PW than the anecdotal reports. PW can be effectively treated.

A Nation-Wide Emergency Department Quality Initiative to Improve Care of Patients with Opioid Use Disorder

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Background: To enhance dissemination of evidence-based resources and assess practices related to the emergency department (ED) care of patients with opioid use disorder (OUD) we developed the American College of Emergency Physicians (ACEP) Emergency Medicine Quality Network (E-QUAL) Opioid Initiative.

Objective: This national ED-focused practice-based learning network seeks to increase provision of naloxone and medication for OUD (MOUD) by supporting local quality improvement (QI) through a curated toolkit with webinars and resources, a QI chart review to assess and benchmark ED care and dissemination of best practices.

Methods: EDs completed a chart review of 30 randomly selected ED visits between September 2020-February 2021 (baseline) with ICD-10 codes for opioid overdose or OUD on the following measures: substance use evaluation, naloxone offer/provision, MOUD administration (methadone or buprenorphine), buprenorphine prescription at discharge, documented overdose prevention or harm reduction provision, and referral to OUD treatment. In November 2021, EDs were requested to review and submit metrics from 30 charts for visits between July 2021-October 2021 (follow-up). Descriptive statistics and student’s t-tests were used to evaluate differences.

Results: Among 385 participating EDs, the median annual adult ED visit volume was 14,552, with 138 (36%) rural and 43 (11%) critical access EDs. Chart review data were submitted for 4,877 visits during the baseline and 5,629 visits during follow-up period. Between the baseline and follow-up periods, substance use evaluation increased from 89% to 93%(p<0.001) and OUD referral rate increased from 63% to 84%(p<0.001). Overall, documented discussion or provision of naloxone (34% to 27%;p<0.001) and the documentation of overdose prevention and harm reduction counseling (67% to 60%;p<0.001) decreased, but naloxone discussion/provision increased (36% to 43%;p<0.001) among patients with opioid overdose. ED MOUD provision (1% to 4%;p<0.001) and outpatient prescription of buprenorphine (2% to 3%;p<0.05) also increased.

Conclusions: EDs participating in a national practice-based learning network demonstrated improvement in several measures of ED OUD care. This study represents the first feasibility assessment of collection of measures from a nationwide sample. Although improvements were modest, they suggest participation in an online learning collaborative amidst the COVID-19 pandemic demonstrate the importance and potential for ongoing education and quality improvement.

Treating Benzodiazepine Withdrawal with Intensive Outpatient Benzodiazepine Tapers in a Substance Use Disorder Bridge Clinic

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Background: Benzodiazepine-involved overdose fatalities are rising, exacerbated by the increasing supply of counterfeit benzodiazepine pills mixed with fentanyl. For patients with a benzodiazepine use disorder, rapid inpatient benzodiazepine tapers are often the only option for medically managed withdrawal but are associated with high relapse
rates. Substance use disorder (SUD) bridge clinics can provide the intensive monitoring required for longer benzodiazepine tapers.

**Objective:** To describe the development, implementation, and early outcomes of a benzodiazepine taper protocol to safely address benzodiazepine withdrawal in a low-barrier SUD bridge clinic.

**Methods:** Our clinic developed a 4-6 week benzodiazepine taper protocol. Patients were eligible if they had benzodiazepine withdrawal, lacked a prescriber, wanted to stop benzodiazepines completely, and agreed to daily visits. Self-reported benzodiazepine use was converted to an equivalent daily diazepam dose (maximum 40 mg/24 hours). Patients presented daily for withdrawal assessment and one-day diazepam prescriptions. Urine drug testing occurred 2-3 times/week. We evaluated benzodiazepine taper completion (i.e., reaching a dose of diazepam 10 mg/day or less) for patients treated from April 1, 2021-May 31, 2022. We also described clinical challenges and corresponding protocol adaptations.

**Results:** Among 50 patients initiating a bridge clinic benzodiazepine taper, 44% were female and 88% were non-Hispanic white. Nine patients (18%) completed their taper with a median taper duration of 39 days (IQR 23-42 days). For patients with co-occurring opioid use disorder, distinguishing benzodiazepine from opioid withdrawal was difficult. We adapted our protocol to require initiation of buprenorphine or methadone before starting the taper in these cases to avoid overestimating benzodiazepine withdrawal. The high prevalence of counterfeit benzodiazepine pills presented challenges to estimating an equivalent starting diazepam dose. We revised the protocol to limit eligibility to patients with benzodiazepine-positive urine drug tests. Some patients benefited from daily visits to address other medical needs.

**Conclusions:** Treating benzodiazepine withdrawal with an intensive outpatient taper in a bridge clinic is feasible and may offer substantial benefits for select patients who wish to stop using benzodiazepines. However, more work is needed to optimize eligibility criteria and taper approach given the high observed rates of taper non-completion.

**Substance Use Disorder Committee Drives Improved Care for People Who Use Drugs in a Rural Hospital**

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**Background:** In a rural hospital with no addiction medicine department or addiction psychiatry support, there are challenges to create a shared understanding of evidence-based substance use disorder treatment practices and decrease stigma amongst healthcare workers who care for people who use drugs.

**Objective:** The primary focus of the development of the substance use disorder committee is to convene clinicians, navigator and persons caring for people who use drugs. The focus of this committee is to provide collaboration, sharing of best practices, and accountability to improve outcomes for patients cared for in the emergency department and hospital setting who are identified with a substance use disorder.

**Methods:** A substance use disorder committee was formed as a hospital committee to improve care for people who use drugs. The committee meets monthly to discuss challenges related to access to evidence-based care for substance use disorder, educational deficits in the hospital, collaboration with bridge clinics, data regarding treatment and referral patterns as well as analysis of gaps in care. Members of the committee include emergency department champion, hospital champion, pediatrics champion, obstetrics champion, nurse champion, project coordinator, bridge navigator, bridge clinic champion and executive champion. Through this committee, improved pathways to treat substance use disorder were created and revised. The group also designed a mandatory nurse training was implemented which included a perspective taking exercise coupled with neurobiology of addiction talk.

**Results:** The number of patients, both in the emergency department and hospital, treated with buprenorphine increased. An innovative program to provide emergency department initiated harm-reduction services, including naloxone distribution, was implemented. The number of available bridge clinics providing follow-up care for substance use disorder increased in the community. After the nurse training was conducted, there was an immediate increase in naloxone distribution and survey feedback that the 2 hour course immediately changed nursing practice in the care for people who use drugs.
Conclusions: The establishment of a hospital-based substance use disorder committee improves care for people who use drugs, especially in rural communities where there is a lack of substance use disorder specialty services.

Education

The Creation of an Addiction Nursing Fellowship Program for Registered Nurses

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Background: It is estimated that more than 20 million Americans have a substance use disorder (SUD). Registered nurses (RN) are well-positioned to care for and treat patients with SUDs, however there have been no identified RN-level addiction fellowship programs in the United States.

Objective: In September 2020, through a joint effort of the Department of Nursing and the Grayken Center for Addiction at Boston Medical Center (BMC) in Boston, MA, the Grayken Addiction Nursing Fellowship was launched. This six-month fellowship includes two fellows per cycle with goals of enhancing nurse’s proficiency related to comprehensive care of patients with SUDs and preparing nurses to serve as clinical champions for interprofessional teams. Here we describe the creation of this innovative fellowship with the hope that it may be replicated in healthcare systems across the United States.

Methods: Phases of program creation include: 1) Educational model development, 2) Gathering institutional and financial support, 3) Recruitment of faculty, 4) Curriculum development, 5) Establishing fellowship clinical rotations and, 6) Inviting applications and selection of nursing fellows.

Results: Six nurses have completed the fellowship, five female and one male, with an average age of 42 years, representing Medical-Surgical, SICU, Labor & Delivery and Critical Care settings. Fellowship programming totals twelve hours weekly, of which eight hours is spent at clinical sites, largely nurse-led addiction treatment programs, and four hours of education comprising: live didactics, self-directed learning, mentorship meetings with board-certified addiction nurses, and webinars. Throughout the fellowship, nursing fellows continue to work twenty-four hours per week on their nursing unit to maintain full employment and leverage their new skills and knowledge. Participation in the Grayken Addiction Nursing Fellowship program is available to nurse fellows at no-cost, due to support from the BMC Department of Nursing and the Grayken Center for Addiction.

Conclusions: As frontline staff providing direct patient care, nurses are vital to the care of patients with SUDs and their families. Due to a lack of specialized addiction training, there is a clear need for further professional development for RN prepared nurses. The Grayken Addiction Nursing Fellowship Program is designed to address this need.

Medical Student Experiences and Perceptions of Substance Use among Healthcare Workers

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Background: Approximately 20% of US adults, including healthcare trainees, report past-year use of an illegal drug, and most report lifetime alcohol or nicotine use. The majority of those who use drugs do not develop a substance use disorder (SUD) and recreational use does not impact professional behavior; yet, drug-use misperceptions can foster stigma and bias. Developing SUD as a healthcare worker can have far-reaching consequences, so it is vital to improve understanding of substance-use patterns and attitudes among medical trainees.

Objective: Examine medical students’ exposure to different types of substance use and beliefs surrounding the impacts of substance use and SUDs on physicians.
Methods: Third-year students (N=171) completed a survey related to SUDs, overdose, and harm reduction. Information obtained included demographics, knowledge/experiences with substance use, and opinions regarding substance use among physicians.

Results: Respondents reported knowing any medical students who used alcohol (86.5%), cannabis (66.9%), illegal drugs (29.4%), or prescription drugs not prescribed to them (28.2%). Yet, 26.3% believed physicians who only use illicit substances outside work should not be allowed to practice medicine and 5.3% believed the same for alcohol. Almost all (93.5%) agreed a medical student should disclose concerns about an impaired colleague and 87.7% believed they were trained to do so. Although students believed physicians with a SUD should receive treatment, 43.9% believed physicians who develop a SUD should be disallowed from practicing medicine.

Conclusions: Medical students more strongly disapprove of physicians who used illicit substances than alcohol, despite comparable harms. This disparity represents an area for education that may improve interactions between medical trainees, their peers, and their patients. While most medical students feel confident about what to do if their colleague is impaired, it is concerning that almost half believe physicians with a SUD should be disallowed from practice. Medical training should teach how to respond to an impaired colleague, about differences between recreational and problematic substance use, how/when a colleague might need professional support, and the impact of treatment on healthcare providers.

Preparing Fourth Year Medical Students to Care for Patients with Opioid Use Disorder and How This Training Affects Their Plans to Learn More About Addiction Care During Residency

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Background: In April 2021 the United States recorded 100,000 annual deaths from drug overdose for the first time, with these deaths now representing the most frequent cause of death in adults under age 55. Medical students matriculating into residency face a unique challenge, as the integration of care for substance use disorders (SUDs) into undergraduate and graduate medical education is not well established.

Objective: It is unclear whether a short course on the management of opioid use disorder (OUD) offered during a Transition to Residency course could increase graduating students’ knowledge and preparedness to treat these disorders.

Methods: We designed a 2-hour interactive case-based session on patient care for OUD and delivered it virtually to fourth-year medical students as part of a Transition to Residency course. A retrospective pre-/post-test assessment instrument was used to determine the impact of this session on students’ perceived knowledge, confidence and intention to seek further learning.

Results: Of 144 participants, 58 students (40.3%) completed the retrospective pre-post survey after completion of the session. There were statistically significant (p<0.001) improvements in perceived knowledge and attitudes of the 12 items in the survey. The largest gains in perceived knowledge on a 5-point scale occurred regarding buprenorphine initiation (pre 2.9; post 4.22), managing inpatient opioid withdrawal (pre 2.84; post 4.27), and the role of methadone in treating withdrawal (pre 3.16; post 4.29). 100% (n=58) of survey respondents would recommend the training to a colleague and felt that the session would benefit their professional practice. 93.1% (n=54) of respondents planned on seeking additional learning opportunities for the care of patients with SUD during residency.

Conclusions: An interactive 2-hour case-based teaching session delivered during a Transition to Residency course resulted in improvements in perceived knowledge, attitudes, and future interest in obtaining education around OUD. Students had low pre-test scores in perceived knowledge about buprenorphine initiation and managing opioid withdrawal in inpatient settings, indicating a critical need for targeted education prior to starting residency. As the opioid epidemic shows no sign of abating, we would advocate for the inclusion of OUD and SUD education as part of Transition to Residency courses.

Accelerating Interdisciplinary Education in Opioid Use Disorder and Harm Reduction: Two Year Results of the AIROH Program
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**Background:** Maryland is among the top five states in incidence of opioid-related deaths, and Baltimore remains an epicenter of the Opioid Use Disorder (OUD) epidemic. Primary care physicians trained in Family Medicine (FM) or Internal Medicine (IM) are critical to the diagnosis and treatment of OUD. However, prior to 2020, there was no OUD curriculum within the FM or IM residency programs at the University of Maryland School of Medicine.

**Objective:** The objective of the AIROH curriculum is to augment the physician workforce equipped to provide evidence-based, harm-reduction-focused care to patients with OUD.

**Methods:** AIROH consists of a longitudinal, 12-hour didactic curriculum completed by every IM and FM PGY-1 resident, including waiver training. All residents completed a “Knowledge of and Attitude towards OUD” (KAO) survey before and after the training. The proportion of residents expressing confidence in aspects of OUD care in the pre-training KAO were compared via chi-square. Data collection for post-training KAO are ongoing.

**Results:** A total of 84 PGY-1 completed the pre-training KAO. 46.4% self-identified as female, 48.8% male, and 3.6% transgender/non-binary. Few residents expressed confidence with taking a substance use history (21.4%) or counseling patients on harm-reduction (28.6%), though 51.2% expressed confidence with identifying symptoms of opioid withdrawal. While 59.5% agreed that patients with OUD have a right to receive MOUD, only 15.5% expressed comfort with counseling patients on MOUD, and 20.2% with providing primary care services to patients with OUD. Statistically significant associations were identified between medical school region and comfort collecting a drug use history (p = 0.047), self-identified race and recognition of symptoms of opioid intoxication and/or withdrawal (p = 0.031) and residency specialty and comfort with having a patient with OUD (p=0.021; IM>FM).

**Conclusions:** Results from the AIROH study indicate that PGY-1 believe that patients with OUD deserve access to evidence-based care, but lack the confidence to do so in the absence of additional training. No demographic or undergraduate medical education factors were consistently associated with greater confidence at baseline. These data suggest that a comprehensive educational investment in OUD education and training in residency is necessary to provide skills to front-line physicians facing the opioid epidemic.

**Addressing Clinician Stigma Toward Perinatal Substance Use Through Art: Proof of Concept and Initial Feasibility of ArtSpective**

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**Background:** Approximately 50% of perinatal nurses have stigmatizing attitudes toward perinatal substance use which adversely affects care and outcomes for this vulnerable population. However, few interventions are available that directly target and reduce stigmatizing attitudes of clinicians. To address this gap, we developed ArtSpective™, an arts-based intervention informed by Corrigan’s model of stigma and the Emancipatory Theory of Compassion. ArtSpective™ facilitates perspective taking using curated art exhibits, creative writing, and clinical education and is intended to improve stigmatizing attitudes towards perinatal substance use and ultimately reduce care disparities.

**Objective:** The purpose of this study was to examine proof of concept and initial feasibility of ArtSpective™.

**Methods:** We recruited eleven participants from a Midwest nursing school (senior undergraduate and graduate students) interested in maternal-infant health or currently working in perinatal health. Participants completed ArtSpective™ synchronously over Zoom and participated in 30-minute, post-intervention focus groups (N=2 groups). Focus groups used a semi-structured interview guide developed for this study to measure demand and practicality, were recorded, and then analyzed using content analysis. Participants completed a 6-item acceptability survey following the intervention which was analyzed using descriptive statistics. To preliminarily explore the effect of ArtSpective™ on attitudes, participants completed the Modified Attitudes About Drug Use in Pregnancy Scale before and immediately following the intervention. Pre-post attitude scores were analyzed using paired t-tests.
Results: We observed a significant improvement in attitudes toward PSU (t = 4.11, p = .002; Cohen’s d = .633). Participants reported high satisfaction (M=4.6, SD=0.1; 1-5 scale) and all participants reported high demand for the intervention. Although highly satisfied with the novel intervention, participants had numerous recommendations to improve the intervention, including decreasing the time to completion and delivering it remotely and individually to allow for personal reflection, self-guidance, and self-pacing.

Conclusions: Our initial pilot and proof of concept testing suggests ArtSpective™ is an effective and favorable intervention that could help clinicians address conscious and unconscious stigma towards perinatal substance use and ultimately reduce care disparities for mothers and infant affected by perinatal substance use. However, it must be adapted to an asynchronous and digital version to improve scalability.

Use of Novel E-Learning Programs to Expand Education to Multi-Disciplinary Addiction Care Teams

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**Background:** Drug overdose deaths continue to rise in the U.S. There is a need to rapidly strengthen and expand the addiction workforce. E-learning has shown to be a promising platform for the delivery of health education. It meets the needs of the field by reaching larger and more diverse professionals, and the learner by offering tailored, convenient content.

**Objective:** To describe the breadth and reach of a novel state-based e-learning program for addiction care teams.

**Methods:** A novel Massachusetts-based training and technical assistance program utilizing e-learning was developed to remove barriers to timely, widespread, and quality education for addiction care teams. The e-learning platform offered resources and training accessed through a single website. Free educational materials were created to appeal to different learning styles (e.g., videos, clinical decision-making algorithms, manuals, clinical guidelines, fillable forms). Almost all e-learning opportunities were associated with free continuing education. Live training using a video teleconferencing platform mimicked in-person experience, emphasizing speaker engagement and professional networking. Pre-recorded video training was also offered. Participant demographic information was collected and used to describe program reach. Google Analytics was used to assess website utilization.

**Results:** Between May 1, 2020 and April 30, 2021 a total of 14,856 individuals attended 378 live virtual trainings on addiction-related topics. 20% of participants were nurses, 15% advanced practice providers, 11% mental health providers, 6% physicians, and the remainder of participants filled over 18 distinct roles on care teams. Instructional videos (e.g. for the administration of injectable buprenorphine, animated shorts covering topics such as pharmacotherapy for alcohol use disorder) received more than 54,000 views. Website data from Google Analytics showed 48,591 individuals interacted with the central website, representing users from all 50 states and the District of Columbia, and 149 countries.

**Conclusions:** E-learning removed barriers and challenges to providing evidence-based education on addiction treatment. Virtual training can reach learners in geographic regions that wouldn’t be possible otherwise. Electronic resources, accessed knowingly or discovered through internet searches, also provide important education to health professionals across the globe.

### Harm Reduction

**Feasibility of Paying Peers Cash Stipends to Facilitate Secondary Naloxone Distribution and Perform Harm Reduction Services Within Their Social Networks**

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**Background:** Naloxone prevents opioid overdose fatalities. Peer models are an important part of harm reduction, yet paying people who utilize a syringe service program (SSP) cash stipends to do secondary distribution of naloxone within networks of people who use/inject drugs (PWU/ID) is not well described.

**Objective:** To describe the feasibility of implementing a peer overdose prevention program with cash stipends at an existing SSP in Gloucester, MA to reach social networks of PWU/ID not otherwise connected to overdose prevention services and evaluate early outcomes.

**Methods:** A 6-month peer overdose prevention program pilot was developed via a collaboration between a community coalition and local SSP with $15,000 funding from the HEALing Communities Study. Peers received naloxone and other harm reduction supplies on a weekly basis along with a tracking sheet to document distribution and exchange of materials. Peers were compensated $150/week, distributed monthly in cash. We evaluated the number of naloxone and harm-reduction supplies distributed/exchanged during the first 4 months of implementation, January – April 2022.

**Results:** Three peers received cash stipends totaling $2,400/each during the monitoring period. The peers distributed 139 naloxone kits containing two 4mg/mL doses/each, increasing the SSP’s overall distribution of naloxone by 25%. Peers also distributed 2,908 syringes and collected 1,852 used syringes. They distributed 138 fentanyl test strips, 39 sharps containers, 38 safer injection kits, 17 safer smoking kits, and 15 safer snorting kits.

**Conclusions:** The underutilization of compensated peer models to distribute evidence-based harm reduction supplies is often attributed to funding and implementation barriers. This study demonstrates that providing cash stipends to peers is feasible and associated with a significant increase in naloxone distribution at an existing SSP. Cash stipends for peers offer promise in reaching people at high risk of overdose who are not already engaged in harm reduction services.

**Integrating Buprenorphine and Harm Reduction into Primary Care in the United States: A Cost-Effectiveness Study**

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**Background:** Primary care providers (PCP) are the largest clinical workforce in the U.S., but few provide addiction care. PCP practices are a practical place to expand access to addiction services, including prescribing buprenorphine (BUP) and providing harm reduction (HR) supplies. Expanding addiction services in PCP practices will likely improve clinical outcomes, but costs are unknown.

**Objective:** To estimate the long-term clinical outcomes, costs, and cost-effectiveness of integrated BUP and HR services in primary care for people who inject opioids.

**Methods:** We used a microsimulation model to compare: 1) PCP services with external referral to addiction care, status quo (SQ); 2) PCP services plus on-site BUP prescribing with off-site provision of harm reduction services (BUP only); and 3) PCP services plus on-site BUP prescribing and on-site provision of HR (BUP+HR). We derived model inputs from clinical trials and observational cohorts. All patients were adults (mean age=44) with history of or active injection drug use. Outcomes included life years (LYs), mortality from overdose (OD), severe skin and soft tissue infections (SSTI), and endocarditis (IE) (i.e., sequelae), costs, and incremental cost-effectiveness ratios (ICERs). Costs (USD) were from the payor perspective and annually discounted at 3%. We performed deterministic sensitivity analyses to address uncertainty.

**Results:** The SQ scenario resulted in 6.6 discounted LY at a discounted cost of $203,540/person. 11.1% of mortality was from OD, 5.8% from severe SSTI, and 38.9% from IE. Life expectancy was extended by each strategy: 0.16y with BUP only, 0.17y with BUP+HR. Compared to SQ, BUP+HR reduced sequelae-related mortality by 33%. The average/person cost of BUP only and BUP+HR were more than SQ, $209,410 and $209,390, respectively. BUP only was more expensive and provided worse outcomes than BUP+HR (dominated). Compared to SQ, BUP+HR was cost-effective with an ICER of $34,900/LY. Findings were robust in deterministic sensitivity analyses.
Conclusions: Expanding addiction services in primary care will improve clinical outcomes and only modestly increase costs. There is a clinical benefit of adding HR services onsite along with BUP that also reduces system-level costs compared to the next best strategy. Providing these life-saving tools in primary care should be a healthcare system priority.

Harm Reduction Education for Clinicians in the Veterans Health Administration: Lessons Learned and Next Steps

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Background: In 2021, legal guidance recognized that current federal prohibitions on purchase of syringes did not apply to the Veterans Health Administration. Furthermore, Veterans Affairs facilities could operate Syringe Services Programs in accordance with regional and local laws. Given that most facilities did not have operational Syringes Services Programs, new, formalized, and widespread education was needed to ensure clinicians were aware of available resources to reduce drug-related harms in veterans.

Objective: To provide education on harm reduction and implementation of Syringe Services Programs resources for clinicians in the Veterans Health Administration.

Methods: Early implementers and champions of Syringes Services Programs within the Veterans Health Administration collaborated on several virtual webinars to clinicians. Key learning objectives included: understanding how and why people use drugs; describing drivers of the overdose crisis; defining and describing the evidence for harm reduction and Syringe Services Programs; ending stigma and clarifying common objections to harm reduction; and offering practical strategies for offering harm reduction services to veterans.

Results: A total of 11 national webinars were provided between June 24, 2022 and April 28, 2022 to clinicians in the Veterans Health Administration. Audiences included clinicians such as pharmacists, psychiatric providers, primary care providers, pain specialists, and social workers. Key clinician feedback/lessons learned: 1) There’s a place and need for harm reduction integration directly into healthcare, but unique challenges exist (e.g., balancing access versus need for data collection); 2) Additional education is needed on reducing stigma, clarifying common objections, addressing legal concerns, and offering education and supplies beyond opioids (i.e., stimulants) and injection routes (i.e., snorting, smoking); 3) The structure of historically abstinence-based substance use treatment programs should be re-evaluated for incorporation of harm reduction strategies; and 4) Harm reduction concepts may challenge current practice, and clinicians may not yet feel comfortable with or have buy-in for offering harm reduction resources to veterans.

Conclusions: Virtual education on harm reduction and Syringe Services Programs was provided to a wide range of clinical staff within the Veterans Health Administration. Questions and conversation generated from this education presents the opportunity to examine and improve healthcare access and delivery around substance use.

Drug Checking as an Enhancement to Mobile Medical and Harm Reduction Programming in Brockton, Massachusetts

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Background: Robust drug checking services beyond fentanyl test strips are an emerging and quickly growing tool in preventing overdose deaths and promoting the health of people who use drugs (PWUD) in the United States.

Objective: In November 2021, Brockton Neighborhood Health Center (BNHC), a large FQHC in Brockton, Massachusetts, began providing drug checking services to people who use drugs (PWUD) via its mobile harm reduction program. Drug checking results have allowed for programmatic advancements for tailored risk reduction and overdose prevention unique to a participant and their drug sample.

Methods: PWUD who access mobile harm reduction services can access drug checking at no cost. In partnership with Brandeis University’s Massachusetts Drug Supply Data Stream (MADDS), BNHC has uses a complimentary three-
**Analysis of Drug Checking Protocol**

A drug checking protocol for checking remnants of street drugs that includes fentanyl test strips (FTS), Fourier Transform Infrared Spectroscopy (FTIR), and confirmatory Gas Chromatography Mass Spectrometry (GC-MS) testing. A comparison of FTS, FTIR, and GC-MS results is then also possible.

**Results:**

Between November 2021 and March 2022, BNHC staff tested 51 samples via FTS and FTIR. Twenty-three (23) samples with unusual FTIR results or concerning qualitative feedback from participants were sent for GC-MS testing. Findings of concern included: 1) presence of xylazine, a veterinary sedative, in 4 samples, 2) cutting agent levamisole, an anti-parasitic agent, present in 7 cocaine samples, and 3) concurrent presence of cocaine and fentanyl in 6 samples. One participant sought who drug checking services noted that a bag of fentanyl made him feel “very sleepy.” Upon testing the bag contained a high concentration of xylazine. This information was provided to the participant, along with education on xylazine. This person noted that he would seek an alternate source of fentanyl as a result and educated his peers about this finding. This case report highlights the value of drug checking services as a component harm reduction programming.

**Conclusions:** Drug checking is a developing tool that can promote the health and safety of PWUD and inform harm reduction practice. In an ever-changing illicit drug market, additional research and results from drug checking programs may help evolve public health approaches to America’s overdose crisis.

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**Extending Harm Reduction Education and Practices to a Hospital Setting -- Harnessing the Nursing Model**

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**Background:** Hospitalization is a critical touchpoint to engage patients with substance use disorder (SUD). Addiction Consult Services (ACS) promote adoption of harm reduction and overdose prevention strategies; however, ACS cannot see all patients. The harm reduction model often conflicts with hospital norms, which impose control and may struggle with practices such as safer use education and substance use equipment distribution.

**Objective:** Describe development of a nurse-led hospital-wide harm reduction intervention.

**Methods:** We describe efforts to design, fund, and elicit leadership buy-in at an urban academic medical center with well-established inter-professional ACS and decade-long successful partnership with Medicaid partners. In Nov 2021, ACS director met with Medicaid payers, and subsequently with nursing and hospital leaders, to describe widespread gaps in hospital-based harm reduction. Over a series of monthly meetings, ACS, nurse, and Medicaid champions developed a proposal and budget, and elicited support from hospital executives and strategic communications.

**Results:** For Medicaid payers, local overdose mortality data and limitations of current ACS staffing, coupled with potential to develop an approach that did not rely on ACS, compelled interest in investing in innovative approaches. ACS and hospital nurse champions agreed for need to disseminate harm reduction supplies, and recognized importance of nurse-to-nurse education and case-finding. They felt a registered nurse (RN) intervention, modeled after geriatrics and diabetes RNs, would be most effective. ACS leadership worried about senior leadership reluctance towards potentially controversial practices of syringe distribution, so she partnered with executive nurse allies who were willing to serve as champions. Medicaid partners’ willingness to fund a pilot simplified the ask for hospital executives and created an opportunity to focus on culture and best practices. Finally, ACS members recognized the need for an internal communications strategy and are co-developing a campus-wide media campaign to align international overdose awareness day and program launch. In April 2022, Medicaid payers agreed to fund a full time RN, ACS nurse practitioner support, and harm reduction kits.

**Conclusions:** ACS can catalyze change by engaging diverse stakeholders to secure leadership support and resources for integrated, hospital-wide harm reduction efforts.

**References:**


More Money? MO-FTS: Findings from a Pilot Fentanyl Test Strip Distribution Program Using Missouri’s Substance Use Workforce

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Background: The use of fentanyl test strips (FTS) for pre- and post-consumption use is an emerging and effective strategy for safer drug use, particularly for stimulant use given the increasing presence of fentanyl in the drug supply. Use of FTS is associated with behavioral changes to reduce risk of overdose. For the first time, in April 2021, SAMHSA granted permission for grantees to purchase and distribute FTS, opening up large channels of funding for this harm reduction tool that could help reduce fentanyl-involved deaths.

Objective: Design and implement a data-driven strategy for FTS distribution in Missouri (MO-FTS process) using multiple sectors of the substance use services workforce as distributors.

Methods: FTS availability was publicized through multiple statewide email channels. Requestors provided the following information: 1) number of kits requested, 2) estimated number of individuals who use stimulants served monthly, and 3) if they “conduct outreach with people who use drugs (PWUD).” Requests were accepted during August and September of 2021. Those serving people who use stimulants, conducting direct outreach with PWUD, and operating in parts of the state outside St. Louis, where drug supplies are less saturated with fentanyl, were prioritized for FTS distribution.

Results: Within the first 2 months of implementation, 20,590 FTS were distributed (4,118 kits, each kit containing 5 FTS and instructions) to 65 different entities across 6 distinct geographic regions in Missouri. The FTS distributed reflected 56.4% of the amount requested as funding was limited. On average, entities reported serving (monthly) 139 individuals who used stimulants and 69.2% reported conducting community outreach with PWUD. The majority (73.5%) of FTS were distributed outside St. Louis. Entities receiving FTS fell into five categories: treatment providers (receiving
49.5% of the total supply), harm reduction organizations (19.2%), recovery community centers (13.4%), individual outreach workers (10.6%), and public health departments (7.4%).

Conclusions: Grant administrators in Missouri developed a data-driven system for launching a novel, statewide FTS distribution program, MO-FTS, prioritizing regions and service entities most likely to benefit from FTS as a harm reduction tool. Other states should adopt similar prioritization processes instead of implementing a “first come, first served” model.

Hospital-Based Care and Peer Support

Understanding the Unique Role of Peer Counselors in Hospital Addiction Care: A Qualitative Analysis of Interviews with Staff and Patients of the Consult for Addiction Treatment and Care in Hospitals (CATCH) Program

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Background: Peer counselors (PCs) are increasingly incorporated into hospital care teams to support patients with substance use disorders (SUD), but limited research has explored the advantages and challenges faced by PCs working in these settings. The Consult for Addiction Treatment and Care in Hospitals (CATCH) is an addiction consult service in New York City that aims to engage patients with SUD in the hospital and link them to treatment. CATCH teams were implemented at six public hospitals between 2018 and 2020 and included addiction-trained physicians/nurse practitioners, social workers, addiction counselors, and PCs.

Objective: The purpose of this study was to qualitatively evaluate the role of the peer counselor through multiple perspectives.

Methods: Semi-structured interviews were conducted with 13 CATCH PCs, 46 other CATCH staff members, and 30 patients at the start of implementation and 9-12 months post-implementation. Interviews focused on barriers and facilitators to CATCH implementation, including the advantages and challenges faced by peers working in hospitals.

Results: Major themes that emerged included the need to define the PC role, and challenges adapting the PC role to professionalized hospital settings. Definitions of the PC role focused on sharing lived experience, but PCs also expressed that their role was wide-ranging and dynamic in adapting to the needs of vulnerable patients. The PC role sometimes overlapped with other roles on CATCH teams, especially that of the social worker and addiction counselor. Respondents described unique challenges that PCs face in needing to disregard the hospital culture of professionalism to facilitate connection with patients, while simultaneously developing “boundaries” to assimilate to the hospital environment and avoid burnout. PCs described gaining purpose and pride from hospital-based work, but some discussed needing more support and flexibility in work time. Patients reported feeling inspired by PCs; some wanted to become PCs themselves after connecting with CATCH teams.

Conclusions: The unique ability of PCs to offer self-reflective experience can help engage hospital patients with SUD. Triangulating perspectives of PCs, other staff, and patients helps to identify challenges and potential structural solutions to designing team-based care for these patients and offers insights into how to support the PC role.

Resistance to Treat Patients with Substance Use Disorder: A Qualitative Investigation of Difficulties Encountered by Hospital Clinicians

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Background: Working with substance use disorders (SUD) patients is largely held in low regard and many clinicians resist treating them, contributing to suboptimal care in mainstream healthcare setting. To address this situation, numerous
research projects assessed training program gaps and professional attitudes. Surprisingly, actual SUD clinical practices have been scarcely studied.

**Objective:** The aim of this study is to explore resistance towards working with SUD patients by examining the actual clinical difficulties that a wide variety of hospital professionals encounter when treating SUD patients.

**Methods:** Qualitative multiple method design including: (1) individual semi-structured interviews with SUD experts and educators; (2) video-elicited, cross self-confrontation interviews with clinicians working in a specialist addiction unit; (3) paired semi-structured interviews with clinicians working in non-specialist units. Participants were recruited within a university teaching hospital. Data collected at stages (1) and (3) relied on an interview guide and were analyzed using conventional content analyses. Data collected at stage (2) consisted of discussions of video recorded clinical interviews and were analyzed based on a participatory approach.

**Results:** Twenty-three hospital clinicians from seven hospital units participated. We identified forty-four clinical difficulties that we classified into six distinct categories: knowledge-based; moral; technical; relational; identity-related; institutional. Findings did not differ substantially across data sources as a large part of the difficulties were experienced by the three groups of participants. Seven cross-category themes were generated as key features of SUD clinical complexity: exacerbation of patient characteristics and required competences; multiplication of medical issues; hybridity and specificity of the medical discipline; experiences of stalemate, adversity, and role reversal when treating SUD patients.

**Conclusions:** Our study, providing a comprehensive analysis of the difficulties of caring for SUD patients, reveals a demanding and highly challenging clinical practice for a diversity of healthcare providers, including SUD specialists. Findings suggest that clinician resistance is related to actual clinical complexity, in addition to lack of training and negative attitudes. They represent an innovative approach to addressing resistance as an important feature of a complex clinical system and a valuable material to discussing professional preparedness.

**Addiction Consult Clerkship for Medical Students: 4 Years of Experience**

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- University of Washington; Harborview Medical Center

**Background:** Medical students are seeking experiences in addiction medicine and more institutions are establishing addiction consult services, creating an opportunity to provide learners with much needed clinical training.

**Objective:** We aim to introduce 4th year medical students to clinical addiction medicine by facilitating opportunities to evaluate and treat patients with substance use disorders, primarily in the inpatient setting.

**Methods:** We describe the creation of a clinical addiction medicine experience centered around an inpatient addiction consult service. We present demographic characteristics and assessment data from student evaluations of the clerkship.

**Results:** A 4-week addiction medicine clerkship was established in April 2018 and a 2-week version was created in July 2019 to expand access to additional students. For both clerkships, the core experience involved evaluating and following patients as part of the interprofessional inpatient addiction consult team. Ancillary experiences included completing online buprenorphine waiver training, visiting community sites (syringe service program, opioid treatment program, office-based opioid treatment program) and observing a mutual support group. Through June 2021 the clerkships were nearly fully subscribed with 53 students participating in one of the clinical rotations (23 in the 4-week experience and 30 in the 2-week experience). Students were planning to enter internal medicine (34%), psychiatry (16%), family medicine (16%), emergency medicine (16%) and other (18%). Students rated the overall clerkship experience with a mean score of 5.81 on a 6-point Likert scale. At the conclusion of the clerkship learners reported significant improvements in their confidence with key skills such as screening for opioid use disorder (p<0.01) and prescribing buprenorphine (p<0.01) compared to before the rotation. Qualitative feedback from students was overwhelmingly positive – for example, one student stated, “The best thing about this clerkship is the opportunity to work with a non-hierarchical team of social workers, nurses and [doctors] who care for patients very worthy of nonjudgmental medical care...while gaining practical clinical information regarding the pharmacologic treatment of substance use disorders.”
Conclusions: Inpatient addiction consult services provide robust learning opportunities for medical students. Future efforts should involve expanding these clinical learning experiences and performing more robust evaluations including long-term learner attitudes and subsequent involvement in providing addiction care.

Initiation of Buprenorphine for Acutely Injured Trauma Patients Using a Rapid Cross Taper Protocol

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Background: Patients with opioid use disorder (OUD) and admitted to the hospital acute traumatic injuries present a challenging clinical scenario for both pain and addiction treatment, with poor control of pain or opioid cravings that often results in discharges against medical advice prior to completion of hospital-based treatments.

Objective: We developed a clinical protocol allowing patients admitted to the trauma service to receive adequate doses of full agonist opioid analgesia while simultaneously cross-tapering buprenorphine with the goal of achieving a therapeutic dose (16mg) of sublingual buprenorphine prior to hospital discharge.

Methods: This is a quality improvement project from aiming to initiate sublingual buprenorphine using for trauma patients using a hospital approved protocol. The Trauma Cross Taper Protocol was developed with a multidisciplinary team of addiction medicine experts, hospitalists, pharmacists, and trauma surgeons; however, the protocol was implemented by the trauma service. Addiction specialists were available for chart review, but did not provide in-person consultative support. The protocol provides dosing recommendations for full agonist opioids sufficient to control pain and cravings among patients with opioid use disorder, while simultaneously initiating a cross-taper buprenorphine initiation. Buprenorphine initiation starts with a 20mcg transdermal patch on day 1, and introducing sublingual buprenorphine over the course of 3 subsequent days. We evaluated this project examining rates of achieving therapeutic doses of sublingual doses of buprenorphine and follow up in addiction treatment after discharge; and examine adverse outcomes including precipitated opioid withdrawal and patient-initiated discharges.

Results: There were 20 patients admitted to the trauma service from 4/1/2021 to 4/1/2022 who underwent the Trauma Cross Taper protocol. Of the 20 patients, 14 had surgery while admitted to the hospital, 14 were using fentanyl or heroin prior to admission, and 9 had co-occurring methamphetamine use disorder. There were 6 patients who completed the cross-taper prior to hospital discharge, 15 were discharged with prescriptions for sublingual buprenorphine, and 9 attended follow up within 14 days of hospital discharge.

Conclusions: A cross-taper protocol for patients admitted to the trauma service is feasible, and had low rates of complications. More formal collaboration with an inpatient addiction treatment teams may identify more eligible patients and facilitate improved outcomes.

The Cost-Effectiveness of Long-Term Post-Treatment Peer Recovery Support Services in the Texas Medicaid Population

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Background: During the COVID-19 pandemic, substance use and overdose deaths worsened while the infrastructure to address substance use disorder (SUD) suffered financial challenges. The expansion of peer recovery support services (PRSS) precedes the COVID-19 pandemic, but is especially promising in a landscape of increased need and reduced capacity. While PRSS is promising, no economic evaluations of PRSS have yet entered the literature.

Objective: The objectives of this study were to: Implement a cost-effectiveness analysis of long-term, post-treatment PRSS compared to specialty SUD treatment alone from the health system perspective, including one-way sensitivity analyses, for the Texas Medicaid population and to simulate the long-term economic impacts to the health system of post-treatment PRSS compared to specialty SUD treatment alone over 30 years.

Methods: Health states for the decision tree were identified as sustained post-treatment recovery (“recovery”), recurrence of problematic substance use (“recurrence”), and death. Cost parameters for the cost-effectiveness analysis
were drawn primarily from the Medicaid billing guidelines from the Texas Health and Human Services Commission in 2020, and combined into a weighted average for inpatient and outpatient treatment episodes based on case mix for SUD treatment episodes, and based on typical use for PRSS. Utility and health outcome parameter estimation and stage transition probabilities were drawn from the peer-reviewed literature and evaluation reports. Long-term outcomes and cost-effectiveness over a 30 year time horizon were modeled using a Markov Model with cycles representing one year post-SUD treatment.

**Results:** The base case cost-effectiveness analysis found an incremental cost-effectiveness ratio (ICER) of $10,518.59 per QALY added compared to treatment without PRSS, with PRSS adding 2.96 QALYs per individual compared to treatment as usual. Recovery utility and the utility of active SUD were the first and third most sensitive variables, respectively, with the cost of PRSS being the second most sensitive. Both the underlying mortality probability and the additional mortality probability during a relapse were also relatively sensitive in the model compared to other variables.

**Conclusions:** Long-term post-SUD treatment PRSS is a cost-effective alternative to specialty SUD treatment alone for the Texas Medicaid population. Future economic evaluations of PRSS would benefit from improved parameter estimation.

**Exploring the Perspectives of Peer Recovery Support Professionals: Needs for Training, Support, and Professional Development**

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**Background:** Peer Recovery Specialists (PRS) are professionals with lived experience with substance use and recovery. PRSSs are increasingly becoming vital members of clinical substance use treatment teams, yet there is limited guidance on best practices for incorporating peer recovery support professionals into health care settings and promoting their career development.

**Objective:** Our aim was to explore perspectives on training, support, and professional development among a group of experienced PRSs from diverse clinical settings.

**Methods:** We conducted semi-structured interviews with 15 Philadelphia-area PRSs who attended a virtual support group for recovery professionals between September 2021-February 2022. Our interview guide incorporated existing literature and input from experienced PRSs and focused on barriers and facilitators to PRS work as well as identifying unmet needs. Interviews were conducted virtually, recorded, transcribed, and coded by two independent coders using a constant comparative approach. We used content analysis to identify key themes.

**Results:** Participants were majority female (57%), white (100%), and ranged in age from 26-64. The majority had 4 or more years of work experience (86%). Participants worked in either community-based programs (54%), outpatient specialty substance use disorder treatment (31%) or primary care (23%). Though participants worked in different settings, several key themes emerged. First, participants experienced consistent burnout, specifically with case management tasks and maintaining work-life boundaries. Participants also struggled with lack of clear role definition and were not always equipped to handle the variety of responsibilities they were given. This was due, in part, to limited training in skills such as documentation and computer proficiency, as well as unrealistic expectations of PRSs’ to address complex psychosocial challenges of patients. Other themes pointed towards future avenues to promote effective PRS work. Participants valued oversight from peer supervisors with similar work experiences and desired external supports for local resources for patients and/or to debrief about certain experiences.

**Conclusions:** As we incorporate PRSs into healthcare settings, we need to consider training and support to alleviate burnout and enhance success and professional development. Formalizing models for PRS training, supervision, and access to resources may be future opportunities to promote effective PRS work within health care systems.

**Housing and Miscellaneous Substances**

Xylazine among Maryland Opioid Overdose Decedents, 2020
Background: Xylazine is a non-opioid, veterinary tranquilizer that is not classified as a controlled substance. It enhances the sedative effects of opioids and is increasingly present in fatal opioid overdoses. Xylazine may increase risk for overdose when used with opioids, and it is also associated with skin and soft tissue infections at injection sites.

Objective: Because it represents an emerging public health threat, we identify factors associated with the presence of xylazine among opioid overdose decedents.

Methods: We used 2020 data from Maryland's State Unintentional Drug Overdose Reporting System (SUDORS) to describe the percentage of opioid overdose decedents who screened positive for xylazine by demographic factors, death circumstances, and drugs designated as a cause of death (COD). SUDORS includes data all overdose deaths in the state, with information on death circumstances drawn from medical examiner reports, death certificates, and law enforcement records.

Results: Among the 2,511 decedents, 17% were xylazine positive. The proportion who were xylazine positive was significantly higher among: White versus Black decedents (18.7%, vs. 15.9%); decedents in Baltimore City (19.3%, vs. 16.1% for all other counties combined); and 25-55 year-olds (19%, vs. 16.5% and 11.4% for decedents aged <25 and >55, respectively). Xylazine positive (vs. negative) decedents were significantly more likely to have injected drugs (29.6% vs. 21.9%) and were significantly less likely to have alcohol as a COD (8.9% vs. 18.8%).

Conclusions: A sizable proportion of opioid overdose decedents tested positive for xylazine, and percentages vary by race, location, age, and drug use circumstances. The respiratory depressant effects of xylazine cannot be reversed with naloxone, posing challenges to harm reduction organizations’ approaches to overdose prevention. The Drug Enforcement Agency should consider scheduling xylazine as a controlled substance. Improved surveillance of xylazine is needed, including studies of its presence in the drug market and among people who are treated for overdose in the emergency department. Public health and medical professionals should: consider whether to conduct routine toxicology screens for xylazine, standardize coding for xylazine overdose and xylazine-related skin infections, and establish criteria for designating xylazine as a cause of death.

A National Study of Correlates of Homelessness and Retention among Outpatient Medication for Opioid Use Disorder-Seeking Individuals in the United States

Background: Overdose, predominantly from opioids, is a leading cause of death among people experiencing homelessness. Homelessness is common among people with opioid use disorder (OUD) and may be a risk factor for poorer retention in evidence-based treatment, medication for opioid use disorder (MOUD). MOUD is effective at reducing overdose-related and all-cause mortality. However, few studies have systematically evaluated the demographic, social, clinical, and treatment-related correlates of homelessness among people enrolled in MOUD or sought to examine directly whether homelessness impacts treatment retention.

Objective: We sought to investigate patient characteristics (i.e., demographic, social, clinical, and treatment-related factors) and retention in outpatient MOUD nationwide in the United States based on housing status.

Methods: Using data from the 2016-2018 Treatment Episode Dataset Discharges (TEDS-D), patient characteristics were compared between episodes where the individual reported homelessness at treatment enrollment and episodes where the individual reported being independently housed using pairwise tests adjusted for multiple testing. To examine the relationship between homelessness and retention while accounting for covariates, a logistic regression model was fit. Exploratory analysis to investigate other covariates that might be significantly associated with retention was performed with a penalized logistic regression model.
Results: The sample contained 196,366 eligible treatment episodes, and homelessness was reported in 17,158 episodes (8.7%). In pairwise analysis, participants reporting homelessness at treatment enrollment were significantly different from those not reporting homelessness on most demographic, social, clinical, and treatment-related characteristics. Homelessness was significantly and negatively associated with treatment completion and this relationship persisted after accounting for covariates (coefficient = -0.0853, p<0.001, 95% CI = [-0.114, -0.056], OR = 0.918). Homelessness was significantly and negatively associated with remaining in treatment for greater than 180 days (coefficient = -0.3435 (p<0.001, 95% CI = [-0.371, -0.316], OR = 0.709).

Conclusions: Patients reporting homelessness at treatment entry in outpatient MOUD in the United States may represent a clinically distinct population from those reporting having independent housing. Homelessness independently predicts poorer retention in MOUD. Interventions are needed to address reduced retention in this evidence-based treatment for OUD among those experiencing homelessness.

Leveraging Community to Improve Addiction Recovery Support for Permanent & Supportive Housing Residents

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Background: People experiencing homelessness have high rates of substance use and overdose.1-3 Substance use remains a problem for people transitioning into permanent supportive housing.4-5 Community First! Village (CF!V) is a non-abstinence based permanent housing community in Austin, Texas. In response to a rise in self-identified alcohol and drug use in the community, stakeholders and residents of CF!V formed the Wellness Advisory Board (WAB) to collect data and create community-led initiatives to promote a culture of wellness and recovery. Initiatives to-date have included hosting a wellness resource fair and conducting wellness surveys.

Objective: To report the baseline substance use rates & recovery capital of a population of formerly homeless individuals currently housed in a permanent housing community, identified through a community-based participatory research (CBPR) project.

Methods: Utilizing CBPR methodology, the WAB developed a wellness survey to evaluate:

- Substance use rates using the Alcohol, Smoking, and Substance Involvement Screening Test (ASSIST), &
- Recovery capital using the Brief Assessment of Recovery Capital (BARC-10).

Surveys will be administered every 3-6 months to the same sample of residents to evaluate the effectiveness of WAB-led interventions in promoting recovery over time.

Results: Respondents (N=168) were 68% male, 69% white with an average age of 58 years. 88% and 20% of respondents met criteria for “at-risk” and “high-risk” substance use respectively based on ASSIST scores. 74% of respondents had a BARC-10 score exceeding 47, the threshold score that demonstrates predictive validity with sustained remission from substances. The majority of respondents (n=110) indicated decreased use of any substance after moving to CF!V. Twenty-one responses reported increased use of substances since moving in, with over half (n=11) attributed to stimulant use.

Conclusions: A majority of CF!V residents met at-risk criteria for substance use despite levels of recovery capital that suggest a high potential for sustained recovery. Substance use decreased after getting housing for the majority of respondents, however some residents report increased substance use predominantly driven by increased stimulant use. Future efforts of the WAB will be focused on addressing the impact of stimulant use among social networks within residents of CF!V.


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**Background:** Xylazine is an A2-agonist that has only been approved for use in veterinary medicine as a sedative-hypnotic. Xylazine is increasingly prevalent in the illicit fentanyl supply, however little is known about how xylazine affects People Who Use Drugs (PWUD). Due to the sensitivity of self reported substance use, the anonymity of the Reddit social media forum provides a hub for the open discussion of substance use experiences.

**Objective:** Our objectives were to curate information about xylazine through social media from PWUDs with personal experiences with it. Specifically, we wanted to answer the following questions: 1) what are the demographics of Reddit users exposed to Xylazine 2). is xylazine a desired additive and 3) what effects of xylazine are PWUDs experiencing.

**Methods:** Natural Language Processing (NLP) was used to retrieve mentions of “xylazine” from posts by Reddit subscribers who also posted on opioid-related subreddits. Posts were qualitatively evaluated for xylazine-related themes. An anonymous survey was also developed to gather demographic information, use patterns of other drugs, and experiences with xylazine. This survey was posted on drug-related subreddits from March 2022 to April 2022 to recruit people on Reddit to participate via a survey link.

**Results:** A total of 76 posts mentioning xylazine were extracted via NLP from 765,616 posts by 16,131 subscribers (January 2018 to August 2021). Many of the posts described xylazine as an unwanted adulterant present in opioids. Posts described negative symptoms such as prolonged sedation. A total of 25 participants completed the anonymous survey. Of participants that disclosed their location, 11/16 (68%) participants reported they were in the Northeast United States. The most common pattern of xylazine use was mixed with other drugs and via intranasal administration (60%). Of participants who reported withdrawing from another drug while using xylazine, 12/18 (66%) reported that it made their withdrawal worse.

**Conclusions:** Among people on reddit, xylazine appears to be an unwanted adulterant. PWUD may be experiencing more negative side effects such as prolonged sedation and xylazine may compound their opioid withdrawal. This appeared to be more common problem in the Northeast and among people who self report opioid use.

"A Special K-ase: Reducing Harm in Recreational Ketamine Use and Managing Ketamine Use Disorder"

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**Background:** Ketamine is a dissociative anesthetic with amnestic, analgesic, hallucinogenic and stimulant properties (1). In the US, recreational ketamine use is rare, but prevalence is increasing (2). To effectively care for people who use ketamine, providers must have awareness of recreational ketamine use, and knowledge of opportunities for harm reduction and management of ketamine use disorder.

**Learning Objectives:**

1) Recognize ketamine as a rare, but increasingly common, recreational substance.

2) Describe risks associated with chronic ketamine use and opportunities for harm reduction.

3) Describe an approach to management of ketamine use disorder.

**Case Presentation:** A 32 year-old woman with chronic abdominal pain, anxiety, depression, PTSD and ketamine use disorder presented to clinic for assistance with ketamine cessation. She started using ketamine casually at raves, but her use escalated following a traumatic event. At presentation, she had been using daily for 9 months, up to 8 grams per day intranasally. Use was primarily driven by desire to dissociate from psychological distress. She found ketamine helpful in managing chronic abdominal pain, but noted that heavy use sometimes triggered intense suprapubic and epigastric pain. When she tried to stop using ketamine, she experienced severe cravings, insomnia, palpitations and exacerbation of her mood and PTSD symptoms, leading to return to use. With therapy and medication targeting sleep and mood, she was able to significantly reduce ketamine use.
Discussion: While best known as a club drug, ketamine is also sometimes sought to self-manage pain and psychological distress, as demonstrated in this case. With chronic use, tolerance develops quickly, but physical dependence is rare. Withdrawal is not life-threatening and is managed symptomatically. Common symptoms include intense drug cravings, anxiety, depression and insomnia. Management of ketamine use disorder involves maximizing psychosocial supports, pharmacotherapy targeting mental or physical symptoms that trigger use and management of associated harms. Uropathy, gastrointestinal toxicity, neurotoxicity, cognitive impairment and worsening depression are harms associated with chronic use that providers must be aware of. Harm reduction counseling should focus on risks of chronic use, situational safety to reduce risk of injury while intoxicated, minimizing co-ingestion with depressants, route of use, and sexual health (1).

References:


Complications in the Era of Fentanyl: A Case of Precipitated Opioid Withdrawal Treated with Ketamine in a Hospitalized Patient

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Background: The transition of heroin to primarily fentanyl in the drug supply has created challenges to initiating buprenorphine in all care settings.1 This case report describes precipitated opioid withdrawal (POW) in a hospitalized patient.

Learning Objectives:

1. Recognize the challenges of starting buprenorphine in the era of fentanyl
2. Identify ketamine as a promising treatment strategy for POW in the hospitalized patient

Case Presentation: A 38-year-old male with a history of severe opioid use disorder and major depression presented to the psychiatric emergency department with suicidality and opioid withdrawal 24-hours after last fentanyl use. In the first 24-hours of admission he received two doses of sublingual buprenorphine-naloxone (BNX) 8-2mg resulting in Clinical Opiate Withdrawal Scale (COWS) score increasing from 13 to greater than 36. The Addiction Medicine consult service was consulted, diagnosed him with POW, and started the patient on off-label ketamine infusion (0.3mg/kg over 15 minutes, followed by 0.3mg/kg over an hour) plus additional BNX 8-2mg. The patient's POW symptoms improved, however 12-hours after the ketamine infusion his COWS score remained at 18. He was transferred to the ICU for a second ketamine infusion plus additional BNX. His opioid withdrawal symptoms completely resolved within 8-hours of the second infusion, and he was stabilized and discharged on BNX 24-6mg daily.

Discussion: Fentanyl and norfentanyl can take on average 1-2 weeks to clear in some individuals, likely due to its lipophilicity and sequestration in adipocytes with regular use.2 Due to buprenorphine’s high binding affinity and partial agonism at the μ-opioid receptor, it has an increased potential for causing POW in people who use fentanyl.3 More strategies are needed to treat POW.4 Ketamine is a promising novel treatment due to its potentiation of μ-opioid receptor-mediated signaling.5 Case studies have described its use for POW in ED settings, but this is the first case to describe POW in the inpatient hospital setting.6 More research is needed to establish the effectiveness of this POW treatment and reduce the profound psychological and physiological distress that can occur. Hospital based care teams should compassionately respond with rapid initiation of medication and support until improvement.
Medicaid Policy and Hepatitis C Treatment among Rural People Who Use Drugs

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Background: Despite availability of effective therapy for chronic hepatitis C virus (HCV) infection, restrictive criteria for their prior authorization by state Medicaid programs impacts the cascade to cure for people who use drugs (PWU D) in rural settings.

Objective: To assess potential independent associations between Medicaid restrictions and HCV treatment among rural PWUD.

Methods: We compiled state-specific Medicaid treatment policies across 8 U.S. rural sites and merged these with participant survey data completed by the Rural Opioid Initiative. We hypothesized that local restrictions regarding prescriber type, sobriety, and fibrosis score were associated with HCV treatment initiation, completion, and cure. We conducted a cross-sectional, ecological analysis of state-level treatment restrictions and self-reported HCV treatment outcomes. We conducted bivariate analyses to characterize population differences between PWUD who initiated HCV treatment (yes/no) and developed multivariable logistic regression models to assess independent associations between state-level restrictions (any vs. none) and treatment.

Results: 944 participants were eligible for inclusion in primary analyses, 111 (12%) of whom reported taking or having completed HCV treatment. Participants who reported initiating/completing HCV treatment were older (median age [IQR]: 42 [34-53] vs. 35 [29-42], p=0.001), more likely to receive disability checks (32% vs. 20%, p=0.002), and less likely to be insured by Medicaid (57% vs. 71%, p=0.005). A higher proportion of PWUD in states without restrictions reported treatment initiation/ completion (none: 17% vs. any: 11%, p=0.08). 42% of PWUD in states with no restrictions reported HCV cure/clearance compared to 30% of PWUD in states with restrictions (p=0.01). In multivariable models, living in states with any restrictions was associated with approximately 40% lower odds of having initiated/completed HCV treatment compared to PWUD in states with no restrictions (OR=0.61, 95% CI: 0.35-1.06, p=0.08). Sensitivity analyses showed a similar association with HCV cure/clearance (OR=0.60, 95% CI: 0.40-0.91, p=0.02).

Conclusions: We identified significant associations between Medicaid policy restrictions and HCV treatment initiation, completion and cure/clearance, which has substantial implications for HCV medical and public health outcomes in hard-to-reach rural communities of PWUD. The remaining Medicaid restrictions should be removed, as we approach a decade of availability of direct acting antivirals and HCV elimination is greatly needed.

Experiences and Perceptions of Acquiring Injection Equipment, Injection Risk Behaviors, and HCV among People Who Inject Drugs in Rural New England

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Background: Rural people who inject drugs (PWID) have been disproportionately affected by the ongoing hepatitis C virus (HCV) epidemic.

Objective: To better understand the HCV risk environment in a rural setting, we explored PWIDs’ experiences and perceptions of acquiring injection supplies, injection risk behaviors, and HCV in rural northern New England.

Methods: Using thematic analysis, we analyzed semi-structured interviews with 21 adults with a history of injection drug use. Interviews were previously conducted for a mixed-methods cross-sectional study in rural New Hampshire, Vermont, and Massachusetts between April 2018 and August 2019. Three researchers independently coded each transcript and met regularly to reach consensus on the final themes.
**Results:** Of the 21 participants, 11 were female (52%), 14 out of 15 with data on race/ethnicity identified as Non-Hispanic White (93%), and ages ranged from 23 to 55 years. Seventeen (81%) reported currently injecting drugs, and the remaining 4 (19%) reported last injecting drugs within the past year. Twelve participants (57%) were HCV seropositive. Five salient themes were identified: (1) There was limited and varied access to sterile syringe sources; (2) local syringe scarcity contributed to the use of informal syringe sources (e.g., secondary syringe exchange, syringe sellers who purchased syringes from out-of-state pharmacies, using discarded syringes); (3) syringe scarcity contributed to syringe sharing; (4) decisions about syringe sharing were intrinsically linked to HCV status and perceptions of HCV risk, the latter of which was heavily influenced by feelings of trust and intimacy between potential sharing partners; and (5) confusion and misconceptions about HCV; several PWID had difficulty learning their HCV status, received inadequate HCV education, and had misconceptions regarding HCV transmission and treatment.

**Conclusions:** Limited access to sterile syringe sources in rural northern New England drove PWID to use informal syringe sources and contributed to widespread syringe sharing. However, syringe sharing behavior was also positively and negatively influenced by PWIDs’ HCV status, perceptions of HCV risk, feelings of trust and intimacy, and possibly misconceptions about HCV. HCV prevention efforts targeting rural PWID need to expand syringe access and increase awareness that HCV is a serious but preventable risk.

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**The Association of Spatial Proximity to Syringe Services Programs with HCV Seroprevalence and Injection Risk Behaviors among People Who Inject Drugs in Rural New England**

**Eric Romo, Medical Student, PhD;** Thomas J. Stopka, PhD, MHS; Bill M. Jesdale, PhD; Bo Wang, PhD; Kathleen Mazor, EdD; Peter D. Friedmann, MD, MPH - University of Massachusetts Chan Medical School

**Background:** It remains unknown whether living in proximity to a syringe services program (SSP) reduces HCV infection among rural people who inject drugs (PWID).

**Objective:** To evaluate the association of spatial proximity to the nearest SSP with HCV seroprevalence and past 30-day injection risk behaviors.

**Methods:** Data are from a cross-sectional study of adults who use drugs recruited from rural counties in New Hampshire, Vermont, and Massachusetts between 2018 and 2019. Using a geographic information system, we calculated the road network distance between each participant’s address and the nearest SSP, categorized as ≤ 1 mile, 1 to 3 miles, 3 to 10 miles, and > 10 miles. Staff performed HCV antibody tests and an audio computer-assisted self-interview assessed past 30-day injection risk behaviors. Mixed effects modified Poisson models were used to estimate prevalence ratios (aPR) and 95% confidence intervals (95% CI). We also performed a stratified analysis by means of transportation.

**Results:** Among 331 PWID, 25% lived within 1 mile of the nearest SSP, 17% lived between 1 and 3 miles of an SSP, 12% lived between 3 and 10 miles of an SSP, and 46% lived greater than 10 miles from an SSP. In adjusted models, compared to PWID who lived within 1 mile of an SSP, those who lived 3 to 10 miles from an SSP had a higher prevalence of HCV seropositivity (aPR:1.25, 95% CI: 1.06-1.46), borrowing used injection equipment other than syringes (aPR:1.23, 95% CI:1.04-1.46) and backloading (aPR:1.48, 95% CI:1.17-1.88). Similar results were observed for PWID living greater than 10 miles from an SSP: aPR[HCV]:1.19, 95% CI:1.01-1.40; aPR[borrow other equipment]:1.45, 95% CI:1.29-1.63; and aPR[backloading]:1.59, 95% CI:1.13-2.24. Associations between distance to SSP and each outcome (except borrowing other used injection equipment) were stronger in magnitude among those who traveled by other means versus those who traveled by automobile.

**Conclusions:** Among PWID in rural New England, living farther from an SSP was associated with a higher prevalence of HCV seropositivity and injection risk behaviors, reinforcing the need to increase spatial access to SSPs in rural areas. Stratified analyses suggest that PWIDs’ means of transportation may modify this relationship.

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**Peer Recovery Coaching for Comprehensive HIV, Hepatitis C, and Opioid Use Disorder Management: The CHORUS Pilot Study**
Background: The opioid overdose epidemic is driving a surge in HIV and hepatitis C virus (HCV) infections among persons who use drugs. Medications are available to prevent HIV, treat opioid use disorder and cure HCV, but they remain underutilized.

Objective: We aimed to develop and implement CHORUS, a 6-month theory-based peer recovery coach (PRC) intervention to promote uptake and retention on medications for opioid use disorder (MOUD) and HIV pre-exposure prophylaxis (PrEP), and initiation and completion of HCV treatment.

Methods: The CHORUS intervention consists of a peer-delivered 20-minute motivational interview at baseline, followed by weekly interactions by phone, text or videoconferencing. At baseline and follow-up contacts, CHORUS supports change in high-risk behaviors, identifies challenges to medication initiation and retention, and links participants to community resources to address social determinants of health such as housing and employment. All participants receive a study smartphone. The primary outcomes were acceptability and feasibility of CHORUS. We also evaluated preliminary efficacy with bivariable analysis.

Results: From December 2020- July 2021, we screened 33 HIV-negative individuals who used opioids and enrolled 31 (94%) at a low-barrier substance use disorder (SUD) bridge clinic. Participants’ mean age (standard deviation [SD]) was 39 (9) years, 68% were male, and 55% were white. In the past 6 months, 42% of participants had injected drugs, and 75% of sexually active participants reported condomless sex. Satisfaction with the intervention was high, with 95% of those who completed the 6-month satisfaction survey indicating they were “satisfied” or “very satisfied”, 95% agreeing or strongly agreeing that the intervention was helpful, and 100% indicating they would recommend CHORUS to other individuals with SUD. At 6-months post enrollment, 45% of participants were taking MOUD, 43% of participants with PrEP indication were on this medication, and 22% of patients with HCV were engaged with or had completed treatment.

Conclusions: Pilot findings on CHORUS found it to be feasible and acceptable. Preliminary findings also show encouraging results related to retention on MOUD and PrEP. Additional data are needed to determine the intervention’s effects on HCV treatment. Future studies should focus on evaluating CHORUS’ efficacy in a larger study.

Hepatitis C Virus Cascade of Care among Pregnant Patients with Opioid Use Disorder in Maine, 2015-2020

Alane O'Connor, DNP¹, Kinna Thakarar, DO¹, Caroline B. Zimmerman, MPP²; Katherine Ahrens, PhD - (1)Maine Medical Center, (2)MaineHealth

Background: Maine’s perinatal opioid use disorder (OUD) rate continues to be one of the highest in the nation and increased from 0.7 per 1000 live births in 1999 to 34.9 in 2018. Hepatitis C (HCV) infection is correlated with OUD and injection drug use and is as high as 50% in some populations of pregnant women with OUD. Prior research suggests that a risk-based approach to screening and diagnosis of HCV infection is inadequate, placing pregnant patients and their partners at continued risk, as well as prenatally exposed infants. HCV testing is now a universal recommendation during pregnancy.

Objective: The objective of this study was to assess baseline characteristics of pregnant patients who were screened and treated for HCV, as well as identify opportunities for process improvement along the cascade of care in the largest healthcare system in Maine.

Methods: A retrospective cohort analysis of all live births at eight delivery hospitals in Maine between October 1, 2015 and February 1, 2020 to patients 18 years or older with a diagnosis of OUD.

Results: Only 64% (582 of 916) of pregnant patients received HCV antibody screening. Those more likely to be screened were women using tobacco (p = 0.011), those receiving opioid agonist therapy at delivery (p<0.0001), and those having a delivery during years 2018 through 2020 (p = 0.0078). Of the 136 patients with active HCV infection,
only 32% (n=43) received a referral for treatment during the baseline assessment period, and only 21% (n=28) were treated.

**Conclusions:** The low referral and treatment rates signify the need for quality improvement interventions to improve coordination of care between multiple disciplines and practice settings to increase access to HCV treatment. We will discuss a variety of strategies implemented in our health system including an integrated care model and a novel approach to treating HCV postpartum in an ambulatory OB/GYN clinic.

**Timing of Hepatitis C Treatment Initiation and Retention in Office-Based Opioid Treatment with Buprenorphine**

*Mary Geist, Medical Student*; Andrea Radick MS, Judith Tsui, MD MPH, Kendra Blalock MS, Addy Adwell RN, Elsa Tamru RN, Nancy C. Connolly MD, Jocelyn R. James MD - University of Washington

**Background:** Timely cure of hepatitis C virus (HCV) among people who use drugs (PWUD) is critical to combat the HCV epidemic. Office-based opioid treatment (OBOT) provides a unique window opportunity for treating HCV among PWUD which may help them stay engaged in care.

**Objective:** We aimed to characterize the frequency and timing of HCV treatment among persons in OBOT and to assess associations between HCV treatment and OBOT retention.

**Methods:** We conducted a retrospective cohort study based on electronic health records of patients with active HCV who were enrolled in an OBOT program between December 2015 and March 2021. We characterized HCV treatment status as receipt of any direct-acting antiviral therapy and categorized patients as having received no treatment, early treatment (<100 days since OBOT initiation) or late treatment (≥100 days). We evaluated associations of treatment with OBOT retention, both engagement >3 months and cumulative days in treatment, using Poisson and negative binomial regression, respectively. Models were adjusted for HIV status.

**Results:** Of 191 HCV-infected OBOT patients, fifty-eight (30%) initiated HCV treatment during the study period; 18/58 (31%) patients received early treatment and 40/58 (69%) received late treatment. Using no HCV treatment as the reference group, the IRRs for OBOT retention >3 months were 1.88 (95% CI: 1.40-2.52; p<0.001), 2.04 (95% CI: 1.39-3.00; p<0.001), and 1.81 (1.32-2.50; p<0.001) for any HCV treatment, early HCV treatment, and late HCV treatment, respectively. Negative binomial regression models of cumulative days in OBOT according to HCV treatment status also used no HCV treatment as the reference group. The adjusted IRRs were 1.83 (95% CI: 1.33-2.52; p<0.001), 1.95 (95% CI: 1.28-2.97; p=0.002) and 1.77 (95%: 1.25-2.53; p=0.002) for any HCV treatment, early HCV treatment, and late HCV treatment.

**Conclusions:** In this study of OBOT patients with HCV infection, HCV treatment was associated with better retention in OBOT; early and late HCV treatment were both associated with better retention in OBOT compared to no HCV treatment. Prompt identification and treatment of HCV among OBOT populations may better engage patients in addiction care.

**Infectious Disease #2**

**Health Care Professional Perspectives on Discharging Hospitalized Patients with Injection Drug Use-Associated Infections**

*Nichole Moore, BA, MD Candidate*; Michael Kohut, PhD; Henry Stoddard, MPH; Deb Burris; Frank Chessa, PhD; Monica K. Sikka, MD; Daniel A. Solomon, MD; Colleen M. Kershaw, MD; Ellen Eaton, MD; Rebecca Hutchinson, MD, MPH; Kathleen M. Fairfield, MD, DrPH, MPH; Thomas J. Stopka, PhD, MHS; Peter Friedmann, MD, MPH; Kinna Thakarar, DO, MPH - Tufts University School of Medicine

**Background:** Patients with injection drug-use (IDU) associated infections often face long-term hospitalization, which may be challenging. However, despite growing evidence showing efficacy of outpatient options, patients are not often given a chance to explore alternatives to hospitalization. Harm reduction approaches could encourage health care
professionals (HCPs) to engage in shared decision-making and offer outpatient options more often under certain circumstances.

**Objective:** To inform implementation of harm reduction-based approaches to care, this qualitative study seeks to understand HCP perspectives on discharge decision making in patients with IDU-associated infections.

**Methods:** We recruited HCPs (n=19) from a tertiary care center in Portland, Maine, including those responsible for discharge decision-making (“Lead HCPs”) and others involved in the specialized care of PWID (“Support HCPs). Semi-structured interviews elicited lead HCP values, preferences, and concerns about outpatient antimicrobial treatment options, while support HCPs provided information about the contexts of decision-making. Following thematic analysis, guided by the iterative categorization approach, we focused analytical attention around elements of the Harm Reduction Implementation Framework: awareness of structural determinants, inclusion of experiential voices, and organizational culture around harm reduction.

**Results:** HCPs were open to considering outpatient treatment options for patients with IDU-associated infections, yet several factors contributed to reluctance to offer them. First, HCPs were aware of structural determinants but imagined the hospital as protective against them, fueling concerns about discharging patients into the community. Second, capacity to include experiential voices was hampered by beliefs among some HCPs that patients using substances would not make “good” decisions if presented with non-standard treatments. Third, specific knowledge about various treatment options and availability of community resources for these patients was present within the hospital organization but not reliably shared by Lead HCPs.

**Conclusions:** HCPs are aware of barriers to outpatient care and, with appropriate interventions to address their concerns, are open to considering outpatient care for people with IDU-associated infections. This study presents insights and contextual information that can inform harm reduction interventions aimed at improving care of people with IDU-associated infections.

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**Long-Acting Intramuscular Cabotegravir/Rilpivirine for HIV Treatment among People who Use Drugs:**

**Experiences from a Low-Barrier Street Medicine Pilot Program**

Nicky J. Mehtani, MD, MPH; Sue Jung, RN; Ayesha Appa, MD; Matt Hickey, MD; Barry Zevin, MD; Monica Gandhi, MD MPH - San Francisco Department of Public Health, University of California, San Francisco

**Background:** Effective HIV treatment remains challenging for many people experiencing homelessness (PEH) with substance use disorders (SUDs) or severe mental illness due to difficulties with daily oral antiretroviral adherence. HIV treatment with once-monthly long-acting, intramuscular cabotegravir/rilpivirine (LA CAB/RPV) may provide meaningful benefit in this population, but its use has not been studied in trials or real-world settings serving PEH.

**Objective:** To assess the feasibility of LA CAB/RPV for HIV treatment among PEH.

**Methods:** Between November 2021-April 2022, interested patients with HIV at a low-barrier clinic serving PEH in San Francisco were evaluated for LA CAB/RPV eligibility. A protocol was developed through adaptation of guidelines created by a partnering academic HIV clinic (the Ward 86 Positive Health Program). A direct-to-inject approach was utilized without requirements for CAB/RPV oral lead-in or baseline virologic suppression. Additional measures to support the needs of PEH included injection reminders, facilitation of ‘drop-in’ injections 6-days-per-week, documentation of multiple emergency contacts per patient, and the mobilization of street-based outreach for missed injections. After LA CAB/RPV initiation, HIV RNA viral loads were monitored routinely, adverse events documented, and subjective treatment experiences elicited.

**Results:** Five patients were initiated on LA CAB/RPV with baseline parameters and outcomes summarized in Table 1. Four patients achieved or maintained HIV virologic suppression (to < 200 copies/ml) on long-acting therapy (with viral load data pending for the fifth). One patient has been overdue for an injection due to an inability to be located.

<table>
<thead>
<tr>
<th>Patient</th>
<th>Co-Morbidities</th>
<th>Baseline HIV Labs</th>
<th>Outcomes</th>
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<tr>
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<tr>
<td>Opioid Use Disorder</td>
<td>Stimulant Use Disorder</td>
<td>Schizophrenia</td>
<td>CD4 (cells/mm³)</td>
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<td>A</td>
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<td>X</td>
<td>51</td>
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<td>B</td>
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<td>X</td>
<td>804</td>
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<td>E</td>
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<td>X</td>
<td>22</td>
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</table>

**Conclusions:** LA CAB/RPV for HIV treatment among people with SUDs was feasible in the context of a low-barrier clinic serving PEH. However, significant challenges remain with regard to tracking and outreaching patients in the event of overdue injections.

**Factors Associated with COVID-19 Vaccination Status among People Who Use Opioids in New York City**

**Izza Zaidi, BA, MPH; Ashly Jordan, PhD, MPH; Leonardo Domínguez-Gomez, MPH; Alexandra Harocopos, PhD, MSc - New York City Department of Health and Mental Hygiene**

**Background:** The overlapping epidemics of opioid-involved overdose and COVID-19 have resulted in a significant burden to people who use opioids (PWUO). Increased homelessness and financial instability, exposure to congregate settings, and reduced healthcare access leave PWUO at greater risk of severe COVID-19-related illness. COVID-19 vaccines provide an opportunity for PWUO to reduce adverse COVID-19-related outcomes; however, there are limited data on factors associated with COVID-19 vaccination uptake among PWUO.

**Objective:** To address this gap, we explored factors associated with COVID-19 vaccination status among PWUO.

**Methods:** Between April-November 2021, 312 PWUO in New York City (NYC) were recruited via street-intercept (n=163), emergency departments (EDs) (n=92), opioid treatment programs (OTPs) (n=55), and a hepatitis C clinic (n=2). Factors associated with COVID-19 vaccination status were explored; descriptive and bivariate analyses were conducted.

**Results:** Participants were 34.3% female, 51.3% Hispanic, with a mean age of 46.8 years (standard deviation: 11.1). Median monthly income was $881 (interquartile range: $408-$1,683), 59.3% were unstably housed, and 63.8% reported a mental health diagnosis (lifetime). A total of 84.3% reported some form of financial instability in the prior 90 days. Overall, 45.2% had completed an initial COVID-19 vaccine series (defined as receipt of a single-dose vaccine or receipt of both doses of a two-dose vaccine), 8.0% were partially vaccinated, and 46.5% had received no COVID-19 vaccine doses. Participants reporting unstable housing or financial instability were less likely to have received any COVID-19 vaccine dose or, if they did receive a first dose of a two-dose series, were less likely to have completed the series (p-values <0.01). Older participants and those reporting prior 12-month HIV or HCV testing or reporting OTP engagement were more likely to have completed an initial COVID-19 vaccine series (p-values <0.01).

**Conclusions:** Less than half of PWUO reported completing an initial COVID-19 vaccine series. Findings suggest that structural factors (e.g., housing) and financial stability may be associated with COVID-19 vaccination uptake among PWUO. The association between vaccine receipt and engagement with HIV or HCV testing or with OTPs suggests healthcare engagement may facilitate COVID-19 vaccination uptake among PWUO.
Improving Opioid Use Disorder Care for Hospitalized Patients with Endocarditis

Rachel E French, PhD, RN; Peggy Compton, PhD, RN, FAAN; Justin Clapp, PhD, MPH; Alison M. Buttenheim, PhD, MBA; Allison Schachter, BS; David Mandell, ScD - University of Pennsylvania

Background: Driven by increased opioid use and the increasingly unpredictable illicit drug supply, rates of hospitalization for infective endocarditis, an infection associated with injection drug use, are increasing. In the United States, the 15,000 patients hospitalized annually for opioid use disorder-associated infective endocarditis (OUD-IE), have distinctly poor outcomes, with one in 10 dying in the hospital and one in 20 leaving against medical advice.

Objective: We examined facilitators and barriers to implementing evidence-based opioid use disorder (OUD) care for patients with OUD-IE.

Methods: We conducted 26 one-hour semi-structured interviews with health care staff who care for patients with OUD-IE at the Hospital of the University of Pennsylvania. We used abductive analysis, an approach to generate theory from qualitative observations grounded in pragmatism, to assess facilitators and barriers to implementing evidence-based OUD care for these patients.

Results: Most health care staff provide some evidence-based OUD care to patients with OUD-IE, such as initiating medication for OUD during hospitalization and coordinating post-discharge OUD care. Given that patients with OUD-IE are typically hospitalized for over 30 days to receive intravenous antibiotics, health care staff view hospitalization as a treatable moment for addressing OUD. Other facilitators include inter-disciplinary “huddles” to discuss the needs of OUD-IE patients and “champions” for patients with OUD-IE on the care team. Barriers to providing OUD care include significant challenges related to discharge planning, pain and withdrawal management, and lack of clinician education.

Conclusions: Respondents report that hospitalization represents a treatable moment for addressing OUD among patients with OUD-IE. While staff provide some OUD care to patients with OUD-IE, notable barriers prevent adequate care delivery during and following hospitalization which likely impacts long-term patient outcomes. The “huddle” model should be expanded to include all patients with substance use disorders. Discharge facilities, such as rehabilitation centers, should be incentivized to accept patients who are prescribed medication for OUD and require intravenous antibiotics. Hospitals should consider implementing “champion” training programs to develop advocates for patients with OUD and clinicians should ensure they are adequately managing pain and withdrawal among patients with OUD-IE to alleviate the need for illicit drug use.

“Get in and get out, get on with life”: Patient and Provider Perspectives of Mobile Medication Units for Opioid Use Disorder Treatment

Leslie W. Suen, MD, MAS; Stacy Castellanos, MA, Brad Shapiro, MD, FASAM, Scott Steiger, MD, FACP, FASAM, Barrot Lambdin, PhD, Kelly R. Knight, PhD - University of California, San Francisco at Zuckerberg San Francisco General Hospital

Background: Escalating overdose deaths coinciding with the COVID-19 pandemic in the United States have prompted government agencies to reconsider opioid use disorder (OUD) treatment regulations. In June 2021, the Drug Enforcement Administration announced new regulations, allowing all opioid treatment programs (OTPs) to add mobile medication units (MMU) to dispense OUD medication treatment outside of clinic walls, ending a 13-year moratorium. Evaluating patient and provider perspectives on the benefits and challenges of MMUs can inform implementation and future policy.

Objective: To qualitatively evaluate patient and provider perspectives on the benefits and challenges of delivering methadone treatment through MMUs during COVID-19.

Methods: We recruited providers and patients receiving OUD medication treatment from an OTP in San Francisco, CA. The OTP had one operating MMU before March 2020 and significantly expanded their MMU usage in response to COVID-19, so that most patients received methadone dosing through one of two available MMUs. We interviewed 10
providers and 20 patients from August to November 2020. We transcribed, coded, and analyzed all interviews using modified grounded theory methodologies.

**Results:** Patients overall preferred receiving their OUD medications through the MMU compared to clinics. They felt less stigmatized at the MMU by receiving services in a less medicalized setting, being able to “get in and out”. MMUs also offered patients more protection against COVID-19 exposure. Providers noted difficulties with maintaining relationships with patients at the MMU in the early months of COVID-19, especially using telehealth counseling techniques. Both providers and patients voiced challenges with privacy, inclement weather, and urine drug screens.

**Conclusions:** Eased restrictions on MMU represent a new pathway for expanding OUD treatment access. In our qualitative study, patients overwhelmingly preferred dosing at the MMU. Providers faced challenges with implementation in the first few months of COVID-19. OTPs should consider implementing MMUs to expand treatment uptake and to increase patient-centered care.

**MOUD #1**

A Retrospective Cohort Study Comparing In-Person, Video, and Phone-Based Intake for Opioid Use Disorder and Loss to Treatment Follow-Up

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**Background:** During the COVID-19-related public health emergency, regulatory changes allowed for telemedicine-based buprenorphine initiation and reimbursement guarantees for telemedicine appointments. Telemedicine-based services were rapidly deployed to maintain and expand opioid use disorder (OUD) treatment availability.

**Objective:** To evaluate how modality of OUD treatment (in-person, video, phone) affected loss to buprenorphine treatment.

**Methods:** This is a retrospective cohort analysis of electronic health record data of adults diagnosed with OUD and at least one buprenorphine prescription seen at a single academic medical center of 13 primary care and addiction specialty outpatient clinics in Portland, Oregon. We categorized patients into three initial visit modality groups between November 2019-May 2021: in-person, video, or phone. Patients were stratified into four intake visit ordinal groups correlating with pandemic-related time periods 1) “Pre” November 2019-February 2020, 2) “Early” April-July 2020, 3) “Mid” Aug-Dec 2020 4) “Late” Jan-May 2021. We defined loss-to-treatment as no buprenorphine prescription for 30 days or prescriptions stopping entirely within the follow-up period. Cox proportional hazards regressions assessed likelihood of treatment retention; adjustments included age, gender, race/ethnicity, methamphetamine use co-diagnosis, intake period, and insurance type.

**Results:** A total of 368 unique patients had intake visits during the study period; 84.8% were White, 49.7% were women; 57.3% had Medicaid insurance. At 6-months, 71% of patients initially seen by phone, 55% in-person, and 50% via video were lost to buprenorphine treatment. Patients with phone intake compared to in-person were more likely to be lost [aHR 1.39 (1.01, 1.92)]; no difference for video [aHR 0.65 (0.39, 1.09)]; no difference in patients over 50 [aHR 0.72 (0.45, 1.14)]. Men were more likely to be lost to treatment compared to women [aHR 1.35 (1.02, 1.79)]. Patients entering treatment later in the pandemic were increasingly likely to be lost [aHR for each successive period = 1.15 (1.02, 1.31)].

**Conclusions:** Buprenorphine loss-to-treatment, despite theoretically increased access via telemedicine, remained high. While phone may increase initial access, patients unable to do video or in-person intake visits may have unique characteristics reducing ability to stay in treatment.
Psychosis Associated with Rapid Methadone Taper

Lore Lisa Garten, MD, PhD - Acacia Network

**Background:** Opiate withdrawal can be associated with significant morbidity and mortality. The symptoms should be controllable in clinical or other monitored settings, but the protocols used for tapering may not be appropriate for all patients, some of whom may experience typical and/or atypical manifestations of withdrawal.

**Learning Objectives:**

- Description of an unusual presentation of opiate withdrawal.
- Discussion of matching protocol to patient.

**Case Presentation:** JS is a 33 year old man with a history of depression, anxiety and polysubstance abuse since his early 20’s. He was admitted to MAT (medication assisted treatment) and started methadone in December, 2021. Despite titration, he did not attain a therapeutic dose and continued to use heroin/fentanyl daily. His methadone dose was 155mg when he was sentenced to 364 days in a county jail which prohibits medication for opiate use disorder. A moderately accelerated taper (-10mg every 3 days), was initiated.

After a month, he acutely became psychotic eg auditory hallucinations and paranoid delusions, and was admitted to a MICA (mental illness chemical abuse) unit. He refused medications but, after 1 week, accepted olanzapine, then methadone. His mental status improved somewhat, although he did not return to baseline. Once he was stabilized, a methadone taper was restarted in preparation for incarceration.

**Discussion:** The correlation between mental illness and substance abuse is known but the effect of opioids on psychosis is less well documented. Lozano-Lopez et al (2021) reviewed the published evidence of new-onset psychosis and hypomania during opioid withdrawal and noted a temporal association, followed, In most cases, by improvement after reinstatement of the opioid. Early studies described antipsychotic properties of methadone and it has been suggested for treatment of schizophrenia, as monotherapy or adjuvant to neuroleptics (Brizer et al, 1985; Pacini and Maremmanni, 2005; Sobih et al, 2007). Withdrawal psychosis, while uncommon, occurs in patients taking high methadone doses and/or who have underlying psychiatric disorders. Accelerated tapers further increase the likelihood of developing psychotic or manic symptoms. The patient JS, with his history of anxiety and high methadone dose, might have avoided weeks of illness had his taper been more gradual.

Rapid Low-Dose Buprenorphine Induction for Hospitalized Patients with Opioid Use Disorder

Amelia Goff, FNP-C; Eleasa Sokolski, MD; Emily Skogrand, PharmD; Honora Englander, MD - Oregon Health & Science University

**Background:** Many hospitalized patients with opioid use disorder (OUD) cannot tolerate traditional buprenorphine induction due to acute pain, anxiety, or fear of precipitated withdrawal. Low-dose inductions allow for full-agonist opioid continuation while minimizing precipitated withdrawal risk. However, most low-dose induction protocols require 7-10 days which may not be feasible in hospitalized patients with shorter stays. Small case reports describe rapid low-dose induction in 72-96 hours; however, to our knowledge, this approach has not been broadly studied.

**Objective:** We describe experience using a rapid low-dose induction protocol.

**Methods:** We performed a retrospective study of hospitalized patients with OUD seen by an addiction medicine consult service at a single academic medical center who started buprenorphine via rapid low-dose induction (table) between November 2021 and April 2022. Patients were considered to have completed induction after receiving 8mg of buprenorphine or a prespecified lower dose.

<table>
<thead>
<tr>
<th>Buprenorphine/naloxone Schedule</th>
<th>Total Daily Dose</th>
<th>Full-agonist Opioid</th>
</tr>
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<tbody>
<tr>
<td></td>
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</table>

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<table>
<thead>
<tr>
<th>Day 1</th>
<th>Buprenorphine 20mcg/hr patch</th>
<th>~0.48mg</th>
<th>Continue as needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 2</td>
<td>1mg TID</td>
<td>3mg</td>
<td>Continue as needed</td>
</tr>
<tr>
<td>Day 3</td>
<td>1mg q3hr (8am–11pm)</td>
<td>6mg</td>
<td>Continue as needed</td>
</tr>
<tr>
<td>Day 4</td>
<td>1mg at 6am, 8mg at 9am</td>
<td>9mg +</td>
<td>Continue as needed</td>
</tr>
</tbody>
</table>

**Results:** Twenty patients underwent rapid low-dose induction during the study period. Nineteen patients were receiving short-acting full-agonist opioids for acute pain at induction start and one patient had started methadone for acute opioid withdrawal < 24 hours before induction. Reasons for pursuing rapid induction included anticipated discharge in ≤ 4 days (75%), patient desire to transition to extended-release buprenorphine before discharge (5%), and other (20%). Two patients reported Fentanyl use within 48 hours of starting induction. Seventeen patients (85%) completed induction before discharge. Two patients discharged before completion and one patient transitioned to traditional induction for uncontrolled opioid withdrawal symptoms due to receiving lower doses of full-agonist opioids. Average time to completion was 72.3 hours (range 55.9–90.4 hours). No patients experienced precipitated withdrawal.

**Conclusions:** Rapid low-dose induction of buprenorphine was feasible, effective, and well-tolerated in hospitalized patients with OUD. This approach may be optimal for patients with unpredictable or short hospital stays, who fear or cannot tolerate withdrawal, and with acute pain.

**References:**

**Utilization of Medication for Opioid Use Disorder Treatment During Hospitalization at Six New York City Public Hospitals with an Addiction Consultation Service**

**Carla King, MPH; Medha Mazumdar, MS; Noa Appleton, MPH; Jasmine Fernando, MPharm; Johanna Dolle, MPA; Caroline Cooke, MPH; Roopa Kalyanaraman Marcello, MPH; Charles T. Barron, MD; Jennifer McNeely, MD, MS - NYU Grossman School of Medicine, NYC Health + Hospitals**

**Background:** There is a heavy burden of opioid use disorder (OUD) among hospital patients. Medication for OUD treatment (MOUD) is an essential component of medical and addictions care for hospitalized patients, and can help prevent poor outcomes in the hospital (withdrawal, unsanctioned opioid use, premature discharges), and increase engagement in MOUD post-discharge. Beginning in 2018, six NYC public hospitals implemented the Consultation for Addiction Care and Treatment in Hospital (CATCH) program to improve care for hospital patients with substance use disorders. CATCH is a multidisciplinary addiction consultation service that provides evaluation and treatment for patients who use substances, and prioritizes the initiation or continuation of MOUD for hospital patients with OUD.

**Objective:** The purpose of this study is to describe the population of hospital patients with opioid-related diagnoses who received MOUD as part of an inpatient admission at CATCH hospitals, and identify potential areas for improvement in MOUD utilization.

**Methods:** Inpatient admissions with an active opioid-related problem list diagnosis during the first year of CATCH at each hospital were extracted from NYC Health + Hospitals electronic health records (n=3532). Admissions with length of stay less than one day (n=187) or to areas not served by CATCH (e.g. inpatient psychiatry, detox) were excluded.
Admissions with at least one inpatient order of buprenorphine, methadone or naltrexone were classified as having received MOUD.

**Results:** Overall, 3301 hospital patients met the case definition. Hospital patients were primarily male (76.6%), 50.3 years old, and identified as Black (29.7%), White (21.8%) and “Other” races (47.7%). A majority (96.3%) had diagnoses of opioid use disorder/dependence. Across all hospitals, MOUD was ordered in 860 (74.7%) admissions with a CATCH consult, compared to 929 (43.2%) admissions without a CATCH consult. MOUD orders varied across hospitals, ranging from 32.7% to 70.6% (p<0.001) of admissions.

**Conclusions:** While addiction consultation services may increase MOUD uptake among patients admitted with opioid-related diagnoses, MOUD treatment may still vary across hospitals. Provider-level, systems-level, and patient-level barriers to providing MOUD in the hospital need to be explored and addressed.

**Adapting a Virtual Urgent Care Model to Provide Low-Threshold Buprenorphine Transitional Care: Feasibility and Early Outcomes**

**Margaret Lowenstein, MD, MSHP; Nicole O’Donnell, BA, CRS; Kathryn Gallagher, MPH; Jasmine Barnes, MPH; Gilly Gehri, BA; Jon Pomeroy, DO; Shoshana Aronowitz, PhD, MSHP, FNP-BC; Krisda Chaiyachati, MD, MSHP; Emily Cubbage, BA Rachel French, PhD, RN; Jeffrey Hom, MD, MPH; Susan McGinley, CRNP, MSN; Brittany Salerno, BA; Jeanmarie Perrone, MD - University of Pennsylvania**

**Background:** Pandemic-era regulatory changes now allow for telehealth initiation of buprenorphine treatment for opioid use disorder (OUD), creating opportunities for virtual engagement to lower barriers to care. Our team established the CareConnect Warmline, a telehealth bridge clinic, by incorporating OUD treatment into an existing virtual urgent care model within a large academic health system. We trained urgent care clinicians to prescribe buprenorphine and incorporated substance use navigators (SUNs) to triage and support patients and coordinate rapid handoffs to longitudinal care. Clinician encounters were billed for insured patients, and grant support funded SUN time and care for uninsured patients.

**Objective:** Our aim was to describe feasibility and early outcomes from the telehealth bridge clinic model.

**Methods:** We conducted a retrospective chart review of all patients seen since the program inception in November 2021. We reviewed patient demographic and clinical characteristics, treatment outcomes, and follow-up using the state prescription drug monitoring program database.

**Results:** CareConnect evaluated 54 patients in the first 6 months (November 2021-April 2022). Mean patient age was 38, 64% were male, 61% were White and 30% were Black. 85% of patients had Medicaid, 4% had commercial insurance, and 13% were uninsured. 15% of patients were unstably housed, and 7% were released from jail within the last 30 days. 85% of patients had previous buprenorphine treatment experience; 26% needed to start or restart buprenorphine while 74% were recently in treatment and required a bridge prescription for continuity. All patients interested in buprenorphine were triaged by the SUNs to a clinician telehealth visit. Mean clinician encounter time was 23 minutes. All encounters resulted in prescription, with an average duration of 7.6 days. 93% of initial prescriptions were filled, 74% of patients had a follow-up appointment scheduled, and 53% of patients had an active buprenorphine prescription at 30 days.

**Conclusions:** Incorporating OUD treatment into a virtual urgent care practice with SUN support was a feasible way to facilitate buprenorphine initiation and continuity. Telehealth buprenorphine treatment can help overcome many barriers to care, and models that leverage generalist clinicians may be a scalable strategy to increase adoption of telehealth-based buprenorphine treatment.

“*If you're strung out and female, they will take advantage of you*”: A Qualitative Study Exploring the Impact of Gender on Drug Use and Addiction Service Experiences among Women in Boston and San Francisco
Miriam Harris, MD; Ariel Maschke, MSW; Jordana Laks MD; Sarah M Bagley, MD, MSc; Alexander Y Walley, MD, MSc; Emily E Hurstak, MD; John Farley, BA; Sarah G. Keller, BFA; Christine M. Gunn, PhD - Boston University School of Medicine

Background: Drug use and addiction differ by gender, yet few services are designed to be gender specific.

Objective: This study explored how identifying as a woman impacted drug use and addiction treatment experiences.

Methods: Participants were recruited for a qualitative interview study using community outreach, respondent-driven sampling, and social media recruitment methods in Boston and San Francisco from January-November 2020. Self-identified women, age >18 years, with illicit opioid use in the past 14 days were eligible for inclusion. Deductive codes based on the literature on intersectionality and inductive codes generated from transcript review were developed and analyzed using grounded content analysis.

Results: Thirty-six participants were enrolled. The mean age was 46 years; 58% were white, 86% were non-Hispanic, and 42% were unstably housed. In addition to illicit opioid use, 75% and 56% reported past 30-day non-prescribed benzodiazepine and meth/amphetamine use respectively. Participants noted gendered power imbalances while using drugs that normalized the sexualization and violence against women. “I've been raped multiple times, beat up, shamed, and guilted.” Experiences of coerced sex work “tear you apart, your self-esteem, and even your self-worth”, which perpetuated a “vicious cycle” of substance use. In seeking addiction treatment and social services, women felt marginalized, “she's a woman, she’s not a top priority,” and retraumatized by sexual assault experiences in health and addiction recovery settings. “The people that I've had the most problems with are not other individuals who use drugs, it's largely been medical professionals.” Women sought women’s only services that addressed violence prevention, especially for women doing sex work.

Conclusions: Women reported a cycle of trauma and drug use that was exacerbated by further sexualization and assault when accessing addiction services. In addition to increasing women’s only services that integrate trauma-informed models of care, the addiction treatment community must address its own problematic practices which contribute to the marginalization and re-traumatization of women.

M O U D # 2

National Trends in Availability of Medications for Opioid Use Disorder and Tailored Services among Opioid Treatment Programs

Vanessa Baaklini, MSW; Frances McGaffey, MPP; Sheri Doyle, MPH - The Pew Charitable Trusts

Background: Opioid treatment programs (OTPs) are the only settings that can legally offer all Food and Drug Administration-approved medications for opioid use disorder (OUD): methadone, buprenorphine, and naltrexone. To provide patients with comprehensive, equitable, and high-quality care, these facilities should offer mental health services for people with co-occurring disorders and culturally sensitive care that meets the needs of diverse populations. They should also accept Medicaid, the largest payer for substance use treatment in the country.

Objective: To understand the extent to which crucial OTP services are offered nationally and assess variation in their availability across states.

Methods: We used a national dataset—the 2020 National Survey on Substance Abuse Treatment Services—retrieved from the Substance Abuse and Mental Health Services Administration. The data was analyzed using descriptive statistics and visualized using maps.

Results: Of the 1,747 OTPs surveyed, only 39% offered injectable naltrexone. Eighty percent offered buprenorphine. More than half (54%) of OTPs across the country did not offer mental health services, with 28 states offering these services at less than 50% of their OTPs. More than one-third (36%) of OTPs did not offer services in languages other than English, with 19 states providing this service at less than 50% of their OTPs. About 43% of OTPs nationwide did not offer tailored programming for pregnant or postpartum people and most OTPs did not offer such programming for...
veteran (76%), adolescent (95%), and lesbian, gay, bisexual, transgender, and queer populations (76%). While nationwide, 83% of OTPs accepted Medicaid, the national figure obscures variation across states. The portion of OTPs that accepted Medicaid ranged from 100% in 15 states to 0% in 2 states. For all services examined, the analysis showed similar variation throughout the United States.

Conclusions: The findings indicate that many OTPs do not offer comprehensive care for diverse populations. Additionally, there are disparities in OTP service availability from state to state. Given the service gaps found both statewide and nationally and that some populations are disproportionately impacted by the opioid crisis, policymakers should take action to ensure that OTPs provide patient-centered care that meets the varying needs of people with OUD in their states.

Despite Opioid Crisis, Prior Authorization for Opioid Use Disorder Treatment Remains Widespread in Medicaid Managed Care

Amanda J. Abraham, PhD; Christina M. Andrews, PhD; Samantha J. Harris, PhD; Melissa A. Westlake; Colleen M. Grogan, PhD - University of Georgia

Background: Medicaid is a key policy lever to improve opioid use disorder treatment, as the program covers approximately 40% of Americans with opioid use disorder. While roughly 70% of Medicaid beneficiaries are enrolled in comprehensive Medicaid managed care organization (MCO) plans, virtually nothing is known about prior authorization for medications for opioid use disorder (MOUD) in these plans. This is an important blind spot in the literature given that prior authorization is a major barrier to MOUD access.

Objective: To describe differences in benefits and prior authorization policies for MOUD in Medicaid MCO plans and Medicaid fee-for-service (FFS) programs.

Methods: We conducted a content analysis of all 266 Medicaid MCO plans in 2018 to identify benefits and prior authorization policies for buprenorphine, methadone, and injectable naltrexone. For each medication, we calculated the percentage of MCO plans and Medicaid FFS programs that (1) covered the medication without prior authorization; (2) covered the medication with prior authorization; and (3) did not cover the medication. Using CMS enrollment data, we also calculated the percentage of MCO, FFS, and all (MCO and FFS) beneficiaries in each of these three categories.

Results: A lower percentage of MCO plans included benefits for methadone (69.5%) and injectable naltrexone (71.2%) compared to FFS (82.1% and 94.9%, respectively). However, a higher percentage of FFS programs than MCOs required prior authorization for buprenorphine (64.1% FFS vs. 42.3% MCO) and injectable naltrexone (46.2% FFS vs. 29.9% MCO). Similarly, a higher percentage of FFS beneficiaries faced prior authorization requirements for buprenorphine (60.5% FFS vs. 41.7% MCO) and injectable naltrexone (64.2% FFS vs. 41.5% MCO). Overall, about half of all MCO and FFS enrolled beneficiaries were subject to prior authorization.

Conclusions: To our knowledge this is the first national study to examine MOUD benefit design in MCO plans and directly compare MCO benefit design to Medicaid FFS. Findings suggest that Medicaid beneficiaries’ access to MOUD may be heavily influenced by the state they live in and the particular Medicaid plan in which they are enrolled. Left unaddressed, prior authorization policies are likely to remain a critical barrier to MOUD access in the nation’s Medicaid program.

Prior Authorization for Buprenorphine: The Role of Profit Status and Partisanship in Medicaid Managed Care

Amanda J. Abraham, PhD; Melissa A. Westlake, MSW; Sadia Jehan, MS; Amanda J. Abraham, PhD; Colleen M. Grogan, PhD; Samantha J. Harris, PhD - University of Georgia

Background: In 2020, approximately 75,000 Americans died from an opioid-related overdose. Decades of evidence show that medications such as buprenorphine reduce the risk of relapse, overdose, and death, but only 25% of Americans with opioid use disorder receive it. As the nation’s largest payer of treatment services, Medicaid play a significant role in facilitating buprenorphine treatment, but widespread use of prior authorization (PA) is widely recognized as a barrier to access.
**Objective:** To examine political and economic factors associated with buprenorphine PA policies in Medicaid managed care.

**Methods:** Data on PA for buprenorphine was collected for 266 Medicaid managed care organization (MCO) plans in 38 states and DC in 2018 via content analysis of publicly available documentation, including member handbooks, provider manuals, and drug formularies. We compared PA rates by profit status (for-profit versus not-for-profit) and state political partisanship. A logistic regression model with state-level random effects was fitted to identify the relationship of profit status and party control to an MCO’s use of PA. Plan-level covariates included plan size and accreditation status; state-level covariates included geographic region, mortality rate, Medicaid expansion, and number of state plans.

**Results:** Just under 50% of Medicaid MCO plans required PA for buprenorphine, ranging from 17.4% in the West to 74.4% in the South. Results of random effects logistic regression modelling indicate that profit status and majority Democratic affiliation were the only variables significant related to PA requirements ($\beta=1.14$, CI: 0.42-1.87, $p<0.01$ and $\beta=-4.88$, CI: -8.78-0.97, $p=0.01$, respectively).

**Conclusions:** We found evidence of dramatic variation in use of PA for buprenorphine among Medicaid MCO plans in the United States. Plans located in majority Democratic states were far less likely to impose PA requirements, and those plans were more likely to be located in the Northwest and West regions of the country. PA was more common in MCO plans operated by a for-profit entity, regardless of location or state political context. Given that PA for buprenorphine has been widely recognized as a barrier to accessing buprenorphine, there is a need for state Medicaid programs to consider more stringent regulation of the use of PA for buprenorphine.

**The Effect of Medicaid Prior Authorization Policies on Buprenorphine Prescriptions**

**Paul J Christine, MD, PhD; Marc Larochelle, MD, MPH; Lewei Lin, MD, MS; Jonathon McBride BS, MS; Renuka Tipirneni MD, MSc - Boston Medical Center**

**Background:** State Medicaid programs employ prior authorization (PA) policies to ensure safe delivery of care while containing costs and minimizing resource misuse. Buprenorphine is a life-saving medication used to treat opioid use disorder (OUD) that is commonly targeted by PA policies. Advocates cite buprenorphine PAs as unnecessary and stigmatizing barriers that discourage evidence-based care. Given efforts to increase the availability of buprenorphine treatment in response to surging opioid overdose deaths, it is critical to understand whether PA policies affect buprenorphine prescribing.

**Objective:** To examine if repeal of Medicaid PAs for buprenorphine is associated with changes in buprenorphine prescriptions over time.

**Methods:** We employ a state-level serial cross-sectional study using quarterly data from 2015-2019. Our exposure of interest is state Medicaid PAs for buprenorphine. Our outcome is the number of buprenorphine prescriptions per 100,000 Medicaid enrollees aged 12 and older. To estimate the causal effect of removing buprenorphine PAs on buprenorphine prescriptions, we utilize a difference-in-differences model. Specifically, we estimate a linear regression model at the state-quarter level that includes an indicator for buprenorphine PA status, state and quarter fixed effects, Medicaid expansion status, prevalence of substance use disorder, opioid overdose rate per 100,000 adults, number of x-waivered buprenorphine providers, Medicaid managed care enrollment, and percent poverty. We use clustered standard errors to allow for within-state correlation in error terms. Additional analyses evaluated whether the effect of PA removal varied by a state’s baseline level of buprenorphine prescribing.

**Results:** In 2015, 49 state Medicaid programs required PAs for buprenorphine. By 2019, 26 states repealed buprenorphine PAs. Compared to states with Medicaid programs that continued to require PAs for buprenorphine, states that repealed PA requirements showed no difference in buprenorphine prescriptions over time (estimated effect = -6.6 buprenorphine prescriptions per 1000 Medicaid enrollees, 95% CI -19.8 to 6.7). PA removal remained unassociated with buprenorphine prescriptions across tertiles of state baseline buprenorphine prescribing.
Conclusions: The reduction of Medicaid PAs for buprenorphine did not result in an appreciable change in buprenorphine prescriptions. Removal of PAs, while justified, may not produce desired increases in buprenorphine treatment, pointing to the need for additional strategies to continue expanding access to care.

Decreased Attrition in a Methadone Treatment Program in Central Pennsylvania After COVID-19 Relaxation of Regulations Allowed a More Flexible Approach to Take-Home Doses.

Sarah Kawasaki, MD; Rachel Zimmerman, MSc; Aleksandra Zgierska, MD PhD - Penn State Health

Background: The COVID 19 pandemic relaxed regulations enabling the expansion of take-home doses of methadone at opioid treatment programs (OTPs) nationally. Treatment retention, a proxy for survival, has been a challenge in the treatment for opioid use disorder (OUD). Pennsylvania, a state with stricter regulations than the federal guidelines, saw a dramatic increase in the number of possible take home doses permitted during that time.

Objective: Our goals were to evaluate if pandemic-initiated relaxation in take-home methadone dose regulations were associated with changes in attrition (primary objective) and positivity rates of urine drug screens for illicit substances among adults treated with methadone for OUD.

Methods: We abstracted data from the OTP’s electronic health record for 12 months before (March 2019-February 2020; “pre-pandemic”) and 12 months after (March 2020-February 2021; “pandemic”) the regulatory changes on the number of patients treated with methadone, number of those allowed to have take-home doses, number of take-home methadone doses dispensed, and urine drug screen samples testing positive for amphetamines, cocaine, benzodiazepines or illicit opioids across the OTP for each month of the pre-pandemic and the pandemic assessment periods.

Results: Pre-pandemic, a total of 229 patients were treated with methadone maintenance, compared to 278 patients in the pandemic period; they received a total of 11,047 and 28,563 daily take-home doses of methadone, representing an average of 48.2 and 102.7 take-home doses per patient during each period, respectively. All cause treatment attrition decreased from 27% in the pre-pandemic to 15.5% in the pandemic period. Urine drug screen results showed a reduced rate of samples testing positive for cocaine during pandemic compared to pre-pandemic (26.4% vs 18.9%, p<0.05), respectively and similar rates of those testing positive for benzodiazepines, amphetamines and illicit opioids during these two periods.

Conclusions: The relaxation of regulations guiding take-home methadone doses was associated with reduced treatment attrition and favorable changes in urine drug screen test results in one OTP. As the number of overdose deaths continue to climb, optimizing retention in treatment by making the pandemic changes to take-home doses permanent, could reduce attrition, and in turn, save lives.

Connections to Longitudinal Care from the Overdose Surge Bus: A Mobile, Low Barrier OUD Treatment and Harm Reduction Project in Philadelphia

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Background: Philadelphia has the highest overdose death rate of any large US city, and overdoses are rising disproportionately in zip codes with high proportions of Black and Brown individuals. Prevention Point Philadelphia, in collaboration with faculty from University of Pennsylvania, introduced its mobile overdose response unit to address overdoses in underserved locations. The unit is deployed to areas with spikes in overdose and provides treatment and harm reduction interventions, including naloxone and fentanyl test strip distribution and community education.

Objective: To facilitate access to low-barrier medications for OUD (MOUDs), overdose prevention services, and connection to longitudinal care in locations with the highest overdose rates.

Methods: Patients presenting to the mobile unit are assessed by the overdose prevention specialist, case manager and physician, and receive same-day buprenorphine initiation, followed by weekly visits. After 6-8 weeks, patients are referred to community treatment. For the evaluation, we reviewed clinical records and state prescription monitoring
program data. Evaluation metrics include patient: 1. characteristics 2. clinical care on the mobile unit 3. referral and completion of the first community visit 4. engagement in community care at 4 weeks.

Results: From 9/2020-5/2022, the program initiated buprenorphine in 247 patients at 6 sites. A majority of patients identified as male (65%) with a mean age 43. Most were publicly insured (75%) or uninsured (9%). Patients were 58% Black, 29% White, and 15% Hispanic. 35% reported prior non-fatal overdose. 30% were homeless or unstably housed. 41% of patients referred made at least one community visit and 30% of these patients remained in care at 30 days. 51% of the patients who were referred were sent to University based practices staffed by physicians who also worked on the mobile unit.

Conclusions: Targeted community outreach can provide an access point to individuals in high risk locations and in the Black and Brown community. Despite high levels of engagement with our program, only a minority of patients were retained in care 4 weeks after referral. An area of future study is understanding the patient and location factors that are barriers and facilitators of engagement in care.

Naloxone, Overdose, and Community Engagement

Intervention to Improve Naloxone Dispensing, Non-Prescription Syringe Provision and Buprenorphine Access in Community Pharmacy Settings: A Multi-State Randomized Trial

Traci C Green, PhD1, Joseph W Silcox, MA2, Derek Bolivar, BS3, Jeffrey Paul Bratberg, PharmD4; Mary Gray, PhD - (1)Brandeis University, Brown University, (2)The Heller School for Social Management and Policy, (3)Brandeis University, (4)University of Rhode Island

Background: Community pharmacies improve opioid safety and public health by dispensing naloxone and non-prescription syringes (NPS) for safe injection. RESPOND TO PREVENT (R2P) is a multi-component intervention to address barriers to implementing these harm reduction resources by aiming to change pharmacist’s attitudes, improve pharmacist’s knowledge, implement sustainable store-level practices, and improve workflow and pharmacist-patient interactions. This analysis assessed the preliminary impact of R2P on access to naloxone and NPS in community pharmacies in the four study states: Massachusetts, New Hampshire, Oregon and Washington.

Objective: Evaluate the effectiveness of R2P to increase pharmacy based naloxone distribution rates, naloxone-related patient engagement, and pharmacists’ attitudes, knowledge, perceived behavioral control and self-efficacy toward naloxone and pharmacy syringe sales, and pharmacists’ attitudes, knowledge, perceived behavioral control and self-efficacy toward dispensing buprenorphine for opioid use disorder.

Methods: In a stepped-wedge trial conducted 2019 to 2021, we implemented R2P in 176 community pharmacies and consented 253 pharmacists and technicians. Participating staff were provided online educational training and pharmacies received on-site academic detailing and patient-facing materials to facilitate naloxone distribution and NPS provision. Participants completed surveys over 12 months; all sites were audited within 4 weeks of detailing using in-person ‘secret shopping’ techniques as an indicator of intervention effect. Bivariate analyses report secret shopping results by state.

Results: 183 pharmacists and 23 technicians completed baseline: 70% had dispensed or assisted to dispense naloxone; 42% of pharmacies did not sell or limited NPS sales. 71% of participants completed 1-3 training modules; all sites were detailed and secret shopped. Post-intervention, 83% of the secret shopped pharmacies had naloxone accessible; 76% had syringes accessible. New Hampshire and Washington pharmacies demonstrated lower access to both materials.

Conclusions: The R2P intervention trained and engaged a range of pharmacy staff and resulted in high rates of naloxone and NPS access in intervention-receiving pharmacies.

Initial Lessons Learned: Exploring Key Factors Contributing to Implementation of Vending Machines with Naloxone

Juliana G Barnard, MA; Allison Kempe, MD; Megan Morris, PhD; Nicole Wagner, PhD - University of Colorado Anschutz Medical Campus
Background: The growing number of opioid overdose deaths emphasizes the need to ensure access to naloxone, an opioid antagonist medication. Current naloxone distribution programs miss many individuals at risk of opioid overdose. Vending machine needle exchange programs used in Europe have reported increasing reach to populations missed by current distribution strategies. However, a limited number of similar programs exist in the U.S.

Objective: The goal of this study was to understand factors contributing to implementation of public health vending machine (PHVM) programs in the U.S.

Methods: We conducted semi-structured interviews with organizations receiving funding for PHVMs. Organizations were identified using a contact list established from Trac B exchange, the first organization implementing PHVMs in the U.S. We transcribed and coded interviews followed by analysis using team-based content analysis methodology. Themes were developed using an inductive-deductive, iterative approach and refined through consensus.

Results: In October and November 2021, we conducted interviews with program directors of 9 organizations representing harm reduction, social service, and public health agencies. Two were currently active PHVM programs, 5 finalizing details for implementation and 2 had stopped efforts. In the pre-implementation phase, we identified engaged staff as essential for successful implementation. In the implementation phase: prior experience, stakeholder support, and pilot testing were factors facilitating or slowing down the implementation process. Sites with prior experience implementing harm reduction programs used their experience to inform strategies for PHVM implementation. Stakeholder support was essential for successful implementation and often required increased staff commitment for coordination, particularly when decision makers included elected officials. For many sites, overcoming stakeholder opposition required adaptations to the program inventory (removing syringes), contacting multiple potential sites for vending machine placement, and pilot testing. Pilot testing was used as a strategy to move PHVM programs forward with plans for expansion into desired locations and inventory.

Conclusions: A foundation in engaged staff and stakeholder support were key to successful implementation of PHVM. Pilot testing could present an opportunity to for community programs to mitigate stakeholder pushback of harm reduction programs and lay the foundation for future program expansion.

A Targeted Web-Based Intervention to Provide Overdose Prevention Education and Increase Naloxone Uptake among Patients Prescribed Opioids: A Randomized Pragmatic Trial of the Naloxone Navigator

Jason M Glanz, PhD; Komal J. Narwaney, PhD, Shane R. Mueller, PhD, Nicole Wagner, PhD, Courtney Kraus, MSPH, Ingrid A. Binswanger, MD - Kaiser Permanente Colorado

Background: Naloxone uptake in primary care is poor. Based on formative qualitative work, we developed the Naloxone Navigator, a targeted, web-based intervention to increase naloxone uptake among patients prescribed chronic opioid therapy. We conducted a randomized controlled trial to evaluate the impact of Naloxone Navigator on opioid risk behavior, overdose education, and naloxone uptake.

Objective: To determine whether the Naloxone Navigator intervention affected patient risk behavior, improved naloxone uptake, and enhanced patient knowledge about opioid overdose prevention and naloxone.

Methods: This trial was conducted at Kaiser Permanente Colorado, in the context of naloxone standing orders in all health system pharmacies. Patients prescribed chronic opioid therapy were recruited and provided informed consent online. Enrolled participants were randomized to receive the web-based video or usual care, completed surveys at baseline, 4 months, and 8 months, and followed using automated data for 12 months. Opioid risk behavior was measured using the Opioid-Related Behaviors in Treatment scale (ORBIT) and knowledge about prescription opioid overdose recognition and naloxone use was measured using the Prescription Opioid Overdose Knowledge Scale (Rx-OOKS).

Generalized linear mixed-effects models for repeated measures were used to assess the change in risk behavior and knowledge between the study arms over time. Naloxone uptake was analyzed using a log-binomial model with study arm as the exposure variable.
Results: We enrolled and randomized 1,004 participants. The mean age was 60.2 years (SD=12.5), 63.8% were female, 4.6% were African American, and 11.4% were Hispanic. Opioid risk behavior did not differ by trial group (P=0.93; 8-month vs. baseline risk ratio [ARR] 1.12; 95% CI 0.96, 1.30). Compared with usual care, naloxone dispensings were not significantly higher in the intervention arm (ARR 1.13; 95% CI 0.77, 1.66). However, participant knowledge was significantly increased in the intervention arm compared to usual care (baseline mean difference 7.97; 95% CI 7.41, 8.54; 8-month mean difference 1.50; 95% CI 0.95, 2.05).

Conclusions: While the intervention did not affect naloxone uptake, it significantly increased overdose knowledge, suggesting that standing orders and knowledge may be necessary but not sufficient to improve naloxone uptake among patients prescribed opioids.


Adam Viera, MPH; Ryan Alexander, DO, MPH; Robert Heimer, PhD; Lauretta Grau, PhD - Collaborative to Advance Health Services

Background: Fatal opioid overdose (FOD) is a leading cause of mortality in the United States and non-fatal overdoses (NFODs) are a widely recognized predisposing factor. In an attempt to reduce FODs, some jurisdictions are considering policies to be implemented in the immediate aftermath of a NFOD including mandatory transport to an emergency department, directed follow-up by opioid treatment service providers, and even protective custody for NFOD victims. These policies are justified on the assumption that one is at high short-term risk of a FOD following a NFOD.

Objective: The objective of this study was to examine whether or not individuals are at greater risk of a FOD in the immediate time period following a NFOD (within 30 days).

Methods: In order to test this hypothesis we used statewide surveillance data in CT to identify all 13,848 people who experienced a NFOD and were reported by EMS between January 1, 2014 and December 31, 2018 and linked those individuals to decedents among all 3,980 FODs reported to CT Office of the Chief Medical Examiner. We calculated the proportion of individuals who experienced a FOD after a NFOD within 24 hours, one week, and four weeks to determine whether FODs occurred at high rates shortly after the NFOD.

Results: Preliminary findings show that a minority (N=585, 14.6%) of statewide FODs reported by the CT medical examiner had any preceding documented NFOD in the EMS reporting database. Among those 585 individuals, 46 (7.9%) experienced a FOD within 24 hours, 133 people (22.7%) experienced the FOD within a week, and 184 (31.5%) had the FOD within 30 days. However, these events comprise 0.3%, 1.0%, and 1.3% of all individuals who experienced a NFOD responded to by an EMT in the five-year observation period.

Conclusions: These findings reveal that, while FODs are frequently preceded by an NFOD, a recent NFOD rarely predicts a fatal one. Thus, the need for immediate action is exaggerated and policies that reduce the liberty and autonomy of individuals experiencing a NFOD are unwarranted.

Concordance Between Opioid and Benzodiazepine Receipt and Post-Mortem Toxicology in Opioid-Involved Overdose Deaths: A Statewide Analysis

Benjamin A. Howell, MD, MPH, MHS; Anne C Black, PhD; Lauretta E Grau, PhD; Hsiu-Ju Lin, PhD; Robert Heimer, PhD; Kathwyn Hawk, MD, MHS; Gail D’Onofrio, MD, MS; David A Fiellin, MD; William C Becker, MD - Yale University School of Medicine

Background: Medically supplied opioids and benzodiazepines (BZD) are a major driver of opioid-involved overdose deaths, yet there is limited research linking decedents’ receipt of controlled substances and presence of controlled substances at time-of-death via post-mortem toxicology (PMT).

Objective: To identify recent receipt of medically supplied opioids or BZDs and concordance between receipt and PMT in opioid-involved overdose deaths.
**Methods:** We linked data from the Office of the Chief Medical Examiner, Prescription Monitoring and Reporting System, and Department of Mental Health and Addiction Services for all opioid-involved overdose deaths occurring in Connecticut between June 1, 2016, and December 31, 2017. Exposure was defined as a filling an opioid or BZD prescription or methadone receipt from an opioid treatment program within 90 days prior to death. Opioids were categorized as medications for opioid use disorder (MOUD) or non-MOUD. Our outcome was concordance between the medication receipt and metabolites found on PMT. We also analyzed subgroups of individuals with a fentanyl/heroin-involved or prescription opioid-involved overdose death.

**Results:** We included 1,413 opioid-involved overdose deaths. Our primary findings are presented in the table below. The majority of decedents were male (74%) and non-Hispanic White (80%); average age was 42 (SD +/- 12) years. Decedents with concordance were older (p<.001), more likely to be female (p<.001), and more likely to be non-Hispanic White (p<.001).

**Conclusions:** Our results suggest medically supplied opioids and BZDs contributed to a minority of opioid-involved deaths in Connecticut during the study period. Efforts to reduce opioid and BZD prescribing might reduce risk for some, but not most opioid-involved overdose deaths. Access to population-level linked databases can provide insight into the specific risk and protective factors involved in opioid-related deaths.

<table>
<thead>
<tr>
<th>All opioid-involved deaths (N=1,413)</th>
<th>Fentanyl or heroin-involved deaths (N=1,187)</th>
<th>Prescription opioid-involved deaths (N=604)</th>
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<tr>
<td>Receipt, N (%)</td>
<td>Concordance, N (%)</td>
<td>Receipt, N (%)</td>
</tr>
<tr>
<td>Opioids (all)</td>
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<td></td>
</tr>
<tr>
<td>504 (36%)</td>
<td>242 (17%)</td>
<td>319 (53%)</td>
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<tr>
<td>Non-MOUD</td>
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<td>232 (38%)</td>
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<td>347 (25%)</td>
<td>154 (11%)</td>
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<tr>
<td>MOUD</td>
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<tr>
<td>196 (14%)</td>
<td>93 (7%)</td>
<td>118 (20%)</td>
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<tr>
<td>BZDs</td>
<td></td>
<td>93 (15%)</td>
</tr>
<tr>
<td>380 (27%)</td>
<td>293 (21%)</td>
<td>231 (38%)</td>
</tr>
</tbody>
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**Community Advisory Board (CAB) Member Perspectives from Early Engagement in the HEALing Communities Study**

**Caroline L. Stotz, BA; Julie Bosak, DrPhC, CNM, MSN; Karsten Lunze, MD, MPH, DrPH; Samantha W. Lang; Galya Walt, BA; Linda Sprague-Martinez, PhD; Tracy Battaglia, MD, MPH; Deborah Chassler, MSW; Greer Hamilton, MSW, PhDc; Craig McClay; Faizah Gillen, BA; Sandra Rodriguez, MPH; Erin Kim, MS; Sydney Bell, BA; Bethany Medley, MSW - Boston Medical Center**

**Background:** The HEALing Communities Study (HCS) is a multi-site, community-engaged study that uses a community coalition model to implement evidence-based interventions to reduce opioid-related overdose deaths. HCS includes 67 communities in four states: Kentucky, Ohio, New York, and Massachusetts. A core component of HCS is the use of Community Advisory Boards (CABs) composed of diverse stakeholders in each state.

**Objective:** To examine perspectives of CAB members regarding their involvement with the HCS CAB within the context of a large multi-site research study.

**Methods:** Survey and qualitative interview data were collected from CAB members in Massachusetts and New York after seven months of CAB existence (i.e. formative period). Foci of data collection were reasons for engagement, perceptions of CAB purpose and functioning, experience with HCS, and trust in the research partnership. Survey data were analyzed descriptively; qualitative data were coded using the PRISM/RE-AIM framework.

**Results:** Thirty-five individuals participated. 100% indicated that they were committed to the work of the CAB, 59% felt pride in CAB accomplishments, 79% believed they were able to influence CAB decisions, 85% thought the CAB was effective in achieving its goals, and 69% were satisfied with diversity of CAB members. Only 42% of respondents were satisfied with communication between the CAB and the broader community and 49% were satisfied with communication between the CAB and HCS coalitions.
Qualitative interview analysis produced six major themes:

- High level of commitment to the study aims motivated CAB participation
- Low self-efficacy with full participation in CAB meetings
- Barriers to participation were mitigated by innovative and skilled facilitation
- Dissatisfaction that CAB had less influence on study decisions than anticipated
- COVID-19 dramatically impacted development of CAB member relationships
- Views on substance use disorder evolved over the course of engagement

**Conclusions**: Findings indicate the importance of the relationship between CABs and research teams and the desire of CAB members for active engagement. Future studies should consider how to clearly define roles from the beginning of CAB formation. Meaningful engagement with diverse CAB representatives can be encouraged through attentive facilitation, including individual communication with CAB members between meetings.

**Engaging Community Stakeholders in Curricular Development: A Patient-Centered Approach to Teaching Harm Reduction to Medical Students**

*Jordan Ferreira, Medical Student; Elsa Lindgren, MD; Callan Fockele, MD; Jamie Shandro MD, MPH; Joshua Jauregui, MD - University of Washington School of Medicine*

**Background**: The impact of opioid use disorder (OUD) in the United States continues to rise, yet this topic has limited coverage in most medical school curricula.

**Objective**: The study partnered with academic and community harm reductionists to design a curricular case of opioid withdrawal to teach fourth-year medical students about harm reduction and substance use disorder during their emergency medicine clerkship.

**Methods**: Academic and community harm reductionists iteratively designed a curricular case in partnership with the educational team. Community-engaged pedagogy informed this process to promote social action and power-sharing through education. The authors drafted a case in which a 34-year-old man with OUD presents to the emergency department with nausea and vomiting. Students are subsequently prompted to diagnose opioid withdrawal, treat with buprenorphine, offer HIV and hepatitis C testing, and provide safer use materials. Feedback on the case was solicited from clinical providers including an addiction medicine physician, a National Institute on Drug Abuse-funded physician, a fourth-year medical student, and a compensated community focus group of five individuals with lived experience of substance use.

**Results**: Clinical providers suggested using more approachable language (e.g., “buprenorphine start” rather than “induction”) and incorporating additional resources (e.g., handouts on buprenorphine self-starts and fentanyl test strips). Community members identified opportunities to practice trauma-informed care. The case was subsequently revised to prompt medical students to identify and address the use of stigmatizing language, empowering students to act as change agents in a clinical environment. The updated case additionally prompts students to ask the patient where the team should look for intravenous access and discuss using an ultrasound if needed. Finally, the case was adjusted to encourage students to both assess objective withdrawal scores and to inquire if the patient feels he is ready to start buprenorphine.

**Conclusions**: This process supports the feasibility and importance of incorporating the voices of people with lived experiences into medical school curricular development and created an informed curricular innovation for medical students to learn more about OUD and harm reduction. The educational intervention was seamlessly integrated into the existing curriculum and could easily be expanded to other sites.

**Parents and Families**

**Family Members’ Understanding of and Attitudes About Medication for Addiction Treatment: A Qualitative Analysis**
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**Background:** Education provided to family members of people with substance use disorder (SUD) can impact the treatment modalities that patients pursue. Medication for addiction treatment (MAT) is lifesaving and more effective than abstinence-based methods. Little is known about how family members acquire information about MAT or their attitudes about treating SUD with medication.

**Objective:** To describe family members’ understanding of and beliefs regarding MAT.

**Methods:** Semi-structured interviews were conducted with 15 family members referred by patients receiving outpatient SUD treatment at a large safety-net hospital. “Family” was defined inclusively (i.e., nuclear, extended, or chosen). Participants were asked about their knowledge of and feelings about MAT. Grounded theory guided the continuous refinement of the coding framework and thematic analysis.

**Results:** Participants' relationships to their loved ones with SUD (not mutually exclusive) included children (n=5), siblings (n=5), partners or ex-partners (n=4), nephew (n=1), cousin (n=1), sponsor (n=1), and parent (n=1). Participants expressed a range of attitudes about and understanding of MAT. Participants tended to lack basic information (e.g., what MAT is, how it works, the difference between dependence and addiction) yet expressed strong opinions about its use. Many also expressed fear or skepticism of medication generally. Participants typically did not receive or seek out information about addiction treatment from the healthcare system. Instead, they relied on knowledge gathered from peers, mutual support groups, and past experiences – leaving them susceptible to misinformation. When asked to rate their agreement with “medication-based treatment (such as buprenorphine/Suboxone or methadone) is just trading one drug for another,” responses represented a range of viewpoints. Despite these varied responses, two themes emerged: generally, family members (i) were ambivalent toward MAT (e.g., “I see that [MAT] is working...but I wish she wasn’t on it.”) and (ii) believed the goal should be to stop taking MAT.

**Conclusions:** Family members of people with SUD lack basic knowledge about MAT, which may impact their loved one’s decision to start and continue these medications. Addiction treatment providers are well-positioned to provide education about MAT to both patients and their primary social supports. Failing to educate family members about MAT could unintentionally jeopardize the success of patients’ treatment.

Parenting with Opioid Use Disorder: Parents’ Perceptions of the Effects of Opioid Addiction and Recovery on Their Children

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**Background:** Despite a significant focus on overdose deaths in research and the media, the impact of parental opioid use disorders (OUD) on children has received little attention. An estimated 623,000 parents with OUD live with children. OUD co-occurs with mental health challenges, placing strain on the parent-child relationship, and often family disruption. Affected children can suffer disorganized attachment and increased risks for poor developmental and behavioral outcomes. The primary factors promoting resilience are secure attachment with one caregiver, relationships with supportive adults, and parental recovery. Parents are the most influential people in a child’s life, yet little research has examined OUD-affected parents’ perspective.

**Objective:** To better understand how parents on medication for OUD (MOUD) describe the effects of opioid addiction and recovery on their parenting and children.

**Methods:** Adult parents in an outpatient OUD treatment program that includes MOUD, counseling, peer coaching, and family support services were interviewed. Thematic content analysis was employed to identify themes on how OUD and recovery affected their parenting and children.
**Results:** All parents \((N = 16, 3 \text{ M})\) expressed a desire to be a good parent, yet because of their OUD most reported their children were exposed to multiple adverse childhood experiences and severe strain in the parent-child relationship. Unless they were with supportive families, parents reported concerns for their children (meeting basic needs, abandonment, mental health issues, fear of losing custody). Some \((N = 4)\) lost custody which was a major cause of ongoing distress. Being mandated to treatment was the most common bridge to treatment. Most participants reported multiple attempts at recovery and MOUD contributed to achieving stable recovery. Beyond supportive family (if available), peer coaches, 12-step programs, and counselors were the most common sources of recovery support. Recovery resulted in “being present for their child” and a significantly improved quality of life. The parent-child relationship improved but the process was gradual. Most parents expressed ongoing concerns for their children’s mental health and risk for becoming addicted to substances.

**Conclusions:** Findings suggest successful treatment for parents with OUD should include MOUD, recovery support, and interventions to promote reunification and restoration of parent-child relationships.

"I was working with the experience and knowledge I had at the time:" Perceived Barriers to Treatment of Parents with Opioid Use Disorder

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**Background:** Approximately 8 million children in the U.S. live with at least one parent with a substance use disorder, the majority of children under age five. While child welfare involvement due to fetal alcohol spectrum disorder have remained static, involvement due to neonatal abstinence syndrome has increased dramatically since 2014. Research on treatment barriers has identified treatment access as systematic barrier, including geographical and financial barriers. Parents, especially those who identify as non-white and LGBTQ, with substance use disorder, face additional barriers to treatment, and have not been adequately represented in research.

**Objective:** Explore perceived facilitators and barriers to treatment for opioid use disorder among parents.

**Methods:** Parents \((n = 16)\) with opioid use disorder (OUD) participating in an outpatient treatment program that includes medication for opioid use disorder, individual and group counseling, social work and family support services were interviewed regarding the impact on their children during OUD treatment and recovery. Semi-structured interviews were used to inquire about addiction progression, impact of addiction and recovery on parenting and children, concerns for children, and recovery facilitators and barriers. Thematic analysis was used to identify themes and subthemes.

**Results:** The majority of respondents reported they were concerned their children would have substance abuse and mental health problems, as they recalled generational substance abuse in their own families. Parents also reported children were both a motivation for seeking treatment and maintaining recovery and a barrier to engaging in treatment and recovery activities. Our research also revealed stigma to be a major barrier to treatment seeking among parents, with ethnic minorities and LGBTQ parents experiencing more stigma than white, heterosexual parents.

**Conclusions:** Despite efforts to combat it, the opioid epidemic is set to remain the predominate public health challenge of the next decade. Increases in parental OUD result in adverse childhood experience and increased risk of opioid use disorder carrying over to future generations. Punitive drug policies often cause more harm to families and perpetuate the stigma of addiction. Our study supports the critical need for interventions that are tailored for the specific needs of families affected by OUD and that are culturally appropriate for the needs of minority parents seeking treatment for OUD.

The Detrimental Impact of Mandated Child Protective Services Reporting at Delivery Following In-Utero Exposure to Medications to Treat Opioid Use Disorder

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**Background:** In some states, including Massachusetts, substance-exposed newborns, including infants who were exposed to prescribed medications to treat opioid use disorder (MOUD) in utero, require an automatic filing of abuse and neglect to child protective services (CPS).

**Objective:** The aim of this article is to explore the effects of mandated reporting policies for substance-exposed newborns on families impacted by substance use disorder, and particularly on pregnant and postpartum people receiving MOUD, in the perinatal period.

**Methods:** We conducted a thematic analysis of 26 individual semi-structured interviews with postpartum people with opioid use disorder (OUD) who were recruited for a qualitative study assessing MOUD use in pregnancy and the postpartum period. We used constant comparative methods to explore the impact of the mandated reporting policy in Massachusetts on experiences with the healthcare system and treatment decisions. Transcripts were double coded with an overall kappa coefficient of 0.88.

**Results:** Three themes unique to CPS reporting policies and involvement emerged from our analysis. First, mothers who received MOUD during pregnancy identify mandated reporting for prenatally prescribed medication utilization as unjust and stigmatizing. Second, both the stress caused by an impending CPS filing at delivery and the realities of CPS surveillance and involvement after filing were perceived as harmful to family health and wellbeing. Finally, pregnant and postpartum individuals with OUD feel pressure to make medical decisions in a complex environment in which medical recommendations and the requirements of CPS agencies often compete.

**Conclusions:** Findings highlight the importance of separating treatment decisions made by pregnant and postpartum people with OUD from mandated CPS reporting at time of delivery. The primary focus for families affected by OUD must shift from surveillance to access to supportive services and resources.

**Adolescent Addiction Medicine Tele-Consult Services within School-Based Health Centers**

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**Background:** School based health centers (SBHCs) provide comprehensive primary care in school settings to reduce barriers to medical care and education. SBHCs allow students to access confidential health care independently during school hours; making them an ideal setting to address substance use.

**Objective:** To describe a novel telemedicine-based adolescent addiction medicine consult service for middle and high school students within SBHCs.

**Methods:** In 2021 the Yale Program in Addiction Medicine, Fair Haven Community Health Care (FHCHC; a federally qualified health center), and Yale Department of Pediatrics partnered to create an integrated substance use screening, treatment, and prevention service for SBHCs. FHCHC provides medical and behavioral healthcare to over 18,000 pediatric patients across 14 sites, including 6 middle and high school based SBHCs. The consult service was designed to provide up to 6 telemedicine sessions of voluntary and confidential care to adolescents at risk for substance use disorders (SUDs). Adolescents could be referred by the school (e.g., for those at risk for suspension due to substance use including vaping), by SBHC providers (e.g., positive screen for substance use), or by self-referral. The goal of the service was to provide accurate diagnoses, deliver brief interventions, and link adolescents with SUDs to comprehensive treatment. Staffing included a pediatrician board-certified in addiction medicine or a family-medicine-trained addiction medicine fellow.

**Results:** Starting in March 2021, Adolescent Addiction Medicine Tele-consult Services were available during one half day/week when school was in session. Students completed the 20–40-minute telemedicine visits in a private room within the SBHCs. Between March 2021 and February 2022, 35 adolescents received services (Mean age=15.9, age range 13-19; 66% female (n=23)). Services included: diagnosis of SUDs, psychoeducation, referral to and coordination with mental health and substance use treatment services, nicotine use disorder treatment with medications, harm reduction and return to use prevention counseling. Diagnoses included: Nicotine use disorder (vaping; n=15 patients), cannabis use disorder (n=12), nicotine use (n=9), cannabis use (n=8), alcohol use (n=7) and prescription opioid misuse (n=2).
Conclusions: Addiction medicine tele-consult services within SBHCs are feasible to implement and can deliver timely and low-barrier treatment and prevention services to adolescents.

Young Pregnant Women’s Perspectives on Decisions to Disclose Marijuana Use to Their Obstetric Providers

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Background: While prenatal marijuana use has increased over the last two decades, particularly among young women, evidence indicates that marijuana use during pregnancy is associated with adverse outcomes. Research has found that many pregnant women do not disclose marijuana use, and clinicians feel unconfident about how to respond to disclosure.

Objective: The objective of this study is to develop a greater understanding of young pregnant women’s perspectives and considerations in disclosing marijuana use to their obstetric providers.

Methods: We conducted audio recorded semi-structured qualitative interviews assessing young women’s considerations in their decision to disclose marijuana use to their obstetric providers during pregnancy. Participants were recruited for the qualitative interviews after enrolling in the YoungMoms Study, a mixed-methods cohort study consisting of pregnant women ages 13-21. Interview transcripts were coded by two independent coders using NVivo software and reviewed to identify central themes.

Results: Of the 13 completed interviews, the mean age of participants is 20 (range: 17-21) and 38% used marijuana during the prenatal period. Most (77%) of participants identified as Black, 15% identified as biracial, and 8% as white. The main themes that emerged were fear of judgement from obstetric providers and child protective services’ involvement. Participants also viewed provider apathy as a deterrent to disclosure. Some participants believe obstetric providers are a valuable source of information about a safe pregnancy and felt that rapport and trust were important for disclosure, while others described disclosing because they believed their obstetric providers would inevitably discover their marijuana use. When asked to give advice to providers concerning disclosure conversations, participants emphasized that providers should show interest in patient wellbeing, value patients’ stories, set expectations, and be nonjudgmental after disclosure.

Conclusions: When discussing marijuana use, providers should practice patient centered care and focus counseling on health effects rather than imposing judgement or reinforcing fears of child protective services’ involvement.

Post-Overdose

What About Nights, Weekends, and Wait Times? Adding an On-Demand Mobile Telemedicine Component to a Community-Based, Post-Overdose Peer Support Outreach Program

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Background: Post-overdose peer outreach programs increase treatment engagement and access to medications for opioid use disorder (MOUD), though barriers to timely and equitable access to MOUD remain. Pandemic-related changes in buprenorphine regulations introduced the option of incorporating mobile telehealth into existing outreach programs to provide faster access to MOUD. Such a component could help reduce barriers to MOUD and racial disparities in treatment engagement in high-need areas like St. Louis, Missouri.

Objective: Examine how rapid access to MOUD via telemedicine, within a community-based peer outreach post-overdose program, impacts engagement and retention in OUD treatment.

Methods: Service data spans 12/1/2020-12/31/2021. Peers facilitated telemedicine appointments in churches, public parking lots, hospital common areas, and other neighborhood settings, obtaining 2-3 day “bridge prescriptions” of MOUD for participants. Participants were analyzed in three groups: rapid access program (N=43), treatment as usual
Revised**: Overall TAU; N=3,576) and matched controls from the TAU group (Matched TAU; N=43; using full optimal matching on propensity scores and stratified by enrollment status). Conditional logistic regression assessed group differences in treatment enrollment at 30 days and 3 months.

**Results**: Of rapid access enrollees, 62.79% were White and 30.23% were Black, compared to 47.65% White and 47.46% Black in Overall TAU (ns). Rapid access participants were nonsignificantly more likely to be enrolled in treatment at 30 days compared to Matched TAU (OR=1.75, 95% CI: 0.75-4.17) and nonsignificantly more likely to be enrolled at 3 months (OR=2.48, 95% CI: 0.91-7.31). Rapid access enrollees were significantly more likely to use medication at 30 days (OR=2.38, 95% CI: 1.00-5.82) and 3 months compared to Matched TAU participants (OR=3.29, 95% CI: 1.11-11.22).

**Conclusions**: Preliminary findings show promise for adding mobile telemedicine components to peer support post-overdose outreach programs, particularly for long-term engagement outcomes. As enrollment is ongoing, we will be better able to detect significant impacts on MOUD maintenance and treatment retention by Fall of 2022. Additionally, more work is needed to increase engagement with Black overdose survivors.

**SHIELD Training Increases First Responders Intention to Refer Overdose Survivors to Substance Use Services**

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**Background**: First responders (law enforcement officers [LEO] and Emergency Medical Services [EMS]) can play a vital prevention role, connecting overdose survivors to treatment and recovery services.

**Objective**: To examine the effect of training on first responders’ intention to refer overdose survivors to treatment, syringe service, naloxone distribution, social supports, and care-coordination.

**Methods**: First responders in Missouri were trained using the SHIELD (Safety and Health Integration in the Enforcement of Laws on Drugs) model. Trainees’ intent to refer (ITR) overdose survivors to prevention and supportive services was assessed pre- and post-training (1-5 scale). Trainees were also asked if they ever witnessed an overdose fatality. Mean ITR scores for pre- and post-training were compared using paired t-tests, and the effects of agency type and prior exposure to overdose deaths were examined using repeated-measures ANOVA.

**Results**: Between July 2020-September 2021, 212 responders (122 LEOs, 90 EMS) completed pre- and post-training surveys. SHIELD training was associated with first responders’ intention to refer, increasing overall ITR to any type of support service (p<.01) from 2.07 (±0.76) to 3.82 (±0.90), with ITR to syringe programs demonstrating the greatest change (1.48 to 3.60). The starkest increase in ITR was regarding syringe programs for LEOs (1.59 to 3.65) and care coordination for EMS (1.64 to 4.01). EMS exhibited greater increases than LEO for ITR to naloxone distribution (p=.02) and care coordination programs (p=.01). Having witnessed a fatal overdose event was not associated with ITR overall or by service type.

**Conclusions**: Training bundling occupational safety with harm reduction content is immediately effective at increasing first responders’ intention to connect overdose survivors to community substance use services. When provided with the rationale and instruction to execute referrals, first responders are amenable, and their positive response highlights the opportunity for growth in increasing referral partnerships and collaborations. Further research is necessary to assess whether ITR translates to referral behavior in the field.

**Characteristics of Post-Overdose Outreach Programs and Municipal-Level Overdose in Massachusetts**

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Background: Post-overdose outreach programs, often comprised of public health and public safety personnel, have proliferated in response to opioid overdose. Emerging evidence suggests the implementation of these programs are associated with reductions in municipal-level overdose rates, but the role of specific program characteristics in associated opioid overdose reductions has not been studied.

Objective: To examine the relationship between post-overdose outreach program characteristics and municipal-level fatal overdose and opioid-related emergency responses.

Methods: Among a sample of 58 Massachusetts municipalities with post-overdose outreach programs between Quarter 1, 2013 and Quarter 2, 2019, we examined the associations between 5 post-overdose outreach program characteristic sets (outreach contact rate, naloxone distribution, coercive practices, harm reduction activities, and social service provision or referral) and rates of fatal opioid overdose using segmented regression models adjusted with municipal-level covariates. We also examined the relationship between these characteristics and opioid-related emergency response rates. For both outcomes, each characteristic set was modeled: a) individually, b) with the other characteristics, and c) with other characteristics and municipal-level fixed-effects.

Results: There were no significant associations between outreach contact rate, naloxone distribution, coercive practices, or harm reduction activities with fatal overdoses per municipal population. Municipalities with programs providing or referring to more social services experienced 21% fewer fatal overdoses compared to programs with fewer social services (adjusting for municipal and program characteristics with fixed effects: Beta=-0.24, p=0.01). Opioid-related emergency responses were 14% lower in municipalities with programs with fewer initial outreach visits compared to programs conducting more visits (adjusting for municipal and program characteristics with fixed effects: Beta=-0.15, p=0.01). Associations between naloxone distribution, coercive practices, harm reduction practices or social services and opioid-related emergency responses were not significant or not consistently significant across modeling strategies.

Conclusions: Municipalities with post-overdose outreach programs which provided or referred to more social services (which included housing, transportation, food, or employment services) had lower municipal fatal opioid overdose rates. Municipalities with programs that outreached to a smaller number of overdose survivors had lower opioid-related emergency responses. The role of social services as a part or separate from post overdose outreach, and post-overdose outreach contacts and overdose emergency responses warrant further study.

Suicide-Related Care among Patients Who Have Experienced an Opioid-Involved Overdose

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Background: Risks for opioid-related overdoses and suicide overlap considerably. Experiencing an opioid-related overdose puts individuals at risk for future overdoses and suicide attempts.

Objective: Identify opportunities within health systems to prevent opioid-related suicides.

Methods: We conducted semi-structured interviews in three health systems in California, Michigan and Oregon with individuals who experienced a past-year opioid-related overdose. We identified individuals 18-70 years old prescribed opioids or being treated for opioid use disorders (OUD). We stratified potential participants by overdose intentionality and oversampled those with ICD-10 evidence indicating intentional overdose; others were randomly selected. Transcribed interviews were coded and thematically analyzed. A community advisory board contributed to the interview guide design, outreach approach, and analysis. Advisors included individuals with lived experience of opioid use, OUD, opioid-related overdose and/or suicide attempt and U.S. national advocacy groups engaged in similar work.

Results: Among 61 participants, most were female (57%), White (63%) and non-Hispanic (75%). Fifty-six percent were prescribed opioids, 46% had an opioid use disorder, and 41% experienced an intentional opioid-related overdose. Findings include: 1) Providers do not typically discuss suicide-related risks when prescribing opioids or treating OUD. 2) Patients engaged in specialty mental health care report little discussion with clinicians on the role of opioids in
depression or suicidal ideation. 3) 35% of patients with an intentional opioid-related overdose and >80% with an accidental overdose reported no mental health-related care in the emergency department. 4) Follow-up care for patients who experienced an accidental opioid-related overdose rarely included suicide risk screening despite suicidal ideation being reported by >20% of that group. 5) Neither primary care nor addiction medicine providers routinely reached out proactively to patients who experienced an opioid-related overdose.

Conclusions: Health systems could enhance suicide prevention by 1) increasing messaging about potential lethality of opioids and their connection with depression and suicide; and 2) increasing depression and suicide screening among those receiving opioids or being treated for OUD at all points of care. Health systems should consider implementing mechanisms to alert primary care and addiction medicine providers when patients under their care experience opioid-related overdoses to increase follow-up and optimize suicide prevention.

Missed Opportunities Following Overdose among People Who Use Substances in Boston, MA

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Background: In Boston, there are rising opioid overdoses among Black and Latinx individuals and racial disparities in treatment. Yet little is known about the experiences of Black and Latinx overdose survivors immediately following overdose.

Objective: To understand the experiences of Boston residents during and immediately after an opioid overdose.

Methods: The Boston Overdose Linkage to Treatment Study (BOLTS) is a qualitative study which elicits perspectives about drug use, overdose, and treatment. Between September 2020-September 2021, we interviewed 59 Boston residents, aged ≥18 who survived an overdose in the previous 3 months, were fluent in English or Spanish, and identified as White, Black, and/or Hispanic/Latinx. Participants completed a demographic survey and a 60-minute semi-structured interview. Researchers analyzed data using a collaborative Framework Analysis approach.

Results: Seventy percent of participants were Black or Latinx and 76% were experiencing homelessness. Participants attributed their overdoses to using more or stronger drug than usual, supply issues, lowered tolerance after periods of sobriety, and poor care transitions (e.g., homelessness following jail, detoxification, or residential programs). Twenty-seven percent received no professional care following an overdose; most simply went about their days. Sixty-eight percent had an encounter with a professional (e.g., administered naloxone or other acute care). Only 2 of these participants successfully linked to treatment directly following the overdose. Participants reported needing more time to come to the right frame of mind to think about treatment, more proactive offers of treatment, more support to connect to services, and more available treatment programs. Several participants, most of whom were Black or Latinx, reported no discussion of treatment at all directly following the overdose, and also described feeling stigmatized by medical professionals. Some also described guilt, shame, and embarrassment immediately following revival from overdose (“I looked around, I was abandoned...I felt betrayed, I felt ashamed, I felt stupid, I felt worthless”).

Conclusions: The post-overdose period is an opportunity to engage survivors in treatment, but system gaps and negative experiences, especially for people experiencing homelessness or who are Black and Latinx, contribute to overdose risk. By incorporating opioid overdose survivor experiences, post-overdose programs can be more person-centered and responsive to the needs of marginalized people.

Process and Outcome Evaluation of Recovery Opioid Overdose Team Plus (ROOT+): A Post-Overdose Community Outreach Program Utilizing Peer Recovery Coaches: A Mixed Methods Study

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Background: Post-overdose (OD) interventions to connect survivors to recovery and treatment support services have rapidly grown throughout United States. Recent literature supports the use of peer recovery coaches (PRC) in engaging
with OD survivors, providing non-clinical recovery supports, and assisting survivors to access social and treatment services.

**Objective:** To examine the process and outcome evaluation of a community post-overdose program, Recovery Opioid Overdose Team Plus (ROOT+) using PRCs.

**Methods:** ROOT+ is composed of PRCs and case management specialists. ROOT+ conducts outreach in hospitals and communities after being activated by a 24/7 crisis number. Once ROOT+ is activated, the PRC attempts to engage within 72 hours and continues to follow up with the survivor for 90 days. The RE-AIM (Reach, Effectiveness, Adoption, Implementation, Maintenance) framework was used to guide the descriptive process and outcome evaluation that included quantitative data and qualitative stakeholder interviews (N=17) to identify barriers and facilitators to implementation from December 2020-2021.

**Results:** ROOT+ received 239 unique overdose referrals and engaged with 48.1% (n=115) of the clients. 71% (n=159/225) of clients were male and predominantly White (46.7%;n=105) with a median age of 36.5 (range 19-72). Of the engaged clients, 12.2% (n=14) received traditional treatment, 10.4% (n=12) remain engaged, and 7% (n=8) were in recovery within 90 days. The majority stopped engaging (60.9%;n=70), had deceased (7%;n=8), or were incarcerated (2.6%;n=3). From the 3 month follow up of clients who were engaged, 41.2% (14/34) continued to remain engaged (n=2), were in recovery (n=11), and in treatment (n=1). Implementation challenges included delays in activation of ROOT+ due to lack of knowledge of ROOT+ services. Stigma is a continued issue among law enforcement and ED staff impacting patient care. Outreach was impacted by 1) incorrect/missing contact information from referrals, 2) confidentiality, 3) inconsistent housing, 4) lack of phone access, and 5) resistance to engagement. Finally, COVID-19 has limited access to the ED and reduced the number of available treatment beds.

**Conclusions:** ROOT+ is successful in initially engaging with survivors post-overdose and connecting them to recovery supports and treatment. Improving methods to continue engagement with the survivors could facilitate additional linkages to care.

Primary Care, Prescribing, and Pharmacies

**Provider Incentives to Prescribe Buprenorphine for Opioid Use Disorder in Primary Care: A Preference Analysis**

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**Background:** Primary care providers (PCPs) are considered a strategic workforce to increase access to office-based buprenorphine treatment for opioid use disorder (B-MOUD). While barriers to B-MOUD prescribing have been documented among PCPs (e.g., training, institutional support, time), there is limited information regarding incentives that may be effective in overcoming these barriers.

**Objective:** To determine the extent to which PCPs in a regional healthcare system prefer certain incentives over others when considering prescribing B-MOUD.

**Methods:** For this quality improvement project, we used best-worst scaling (BWS) to compare seven potential incentives for B-MOUD prescribing: 1) monetary compensation, 2) paid vacation, 3) protected time, 4) professional development, 5) reduced workload, 6) service recognition, and 7) clinical resources. All PCPs (physicians and advance practice providers [APPs]) at the VA Salt Lake City Health Care System were invited to complete an online BWS survey for the seven incentives, including a separate preference elicitation for incentive levels (e.g., monetary amounts) and types (e.g., specific clinical resources) using threshold technique. Responses were analyzed using descriptive statistics and conditional logistic regression with ratio scale transformation (i.e., sum of coefficients=100).

**Results:** Of 73 PCPs, 53 (73%) responded, including 25 (48.1%) APPs, 19 (36.5%) from community-based clinics, and 8 (15.3%) with history of prescribing B-MOUD. Among all PCPs, reduced workload was the most preferred incentive (Preference ratio score=26.8). Protected time (18.7) and clinical resources (16.8) were generally more preferred, while...
professional development (10.5), paid vacation (10.3), and service recognition (1.5) were less preferred. Preference for monetary compensation varied between physicians (12.6) and APPs (17.5) and between those located at a medical center (11.4) versus community clinic (22.3). If annual monetary compensation were $5,000 and increased to $12,000, likelihood of prescribing B-MOUD would increase from 40% to 64% among APPs but from 33% to 56% among physicians. The most frequently reported clinical resource likely to increase B-MOUD prescribing was on-demand consult access to an addiction specialist (64.8%).

**Conclusions:** Workload reductions, protected time, and clinical resources were reported by PCPs as most likely to increase B-MOUD in primary care. The influence of monetary incentives varied by clinical setting and provider type.

**Barriers and Facilitators to Assessing and Treating Trauma in Primary Care: Perspectives from Prescribers of Medications for Opioid Use Disorder.**

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Medication for Opioid Use Disorder (MOUD) is recognized as a best practice for treating individuals with opioid use disorder (OUD). Primary care-based MOUD management can reduce barriers to OUD treatment access and is shown to improve outcomes among individuals with OUD. There is substantial evidence indicating that individuals with OUD experience disproportionately high rates of trauma and violence, highlighting the importance of addressing trauma and mental health in concurrence with substance use treatment. However, best practices and clear standards for trauma-informed treatment in a primary care setting remain poorly established.

**Methods:** This study engaged a qualitative approach to explore primary care providers’ perceptions of barriers and facilitators to assessing and treating trauma among patients to whom they prescribed MOUD. Twenty in-depth interviews were conducted with MOUD prescribers working in the Baltimore metropolitan area in 2021. Participants included a mix of primary care physicians and nurse practitioners who worked within diverse venues, including hospitals, community-based outpatient clinics, and low-threshold MOUD programs. Interview questions assessed providers’ experiences with identifying and treating trauma among MOUD patients, including challenges and best practices in the delivery of trauma-informed primary care.

**Results:** Providers reported extensive histories of trauma experienced by their MOUD patients. Several barriers to addressing trauma were reported, including a lack of standardized protocols/procedures for identifying trauma, insufficient training and time to adequately assess and treat patients’ trauma, and the limited availability of external mental health providers and services to which providers could refer patients in need of additional treatment. Best practices included building strong, mutually respectful patient-provider relationships, providing individualized, person-centered care, and establishing connections to coordinated, multidisciplinary treatment networks.

**Conclusions:** MOUD treatment within primary care is an important way to increase OUD treatment access, but clearer standards are needed for treatment of trauma within this patient population. These findings demonstrate important opportunities to improve standards and systems such that primary care providers are better equipped to assess and treat the complex histories of trauma experienced by individuals with OUD.

**Anti-Stigma and Harm Reduction Training for Primary Care Staff: A Crucial Step in Addressing the Overdose Crisis**

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**Background:** In response to the marked increase in overdose deaths in San Francisco (SF), the SF Health Network (SFHN) launched a pilot for primary care clinics to distribute naloxone and safer consumption supplies to people who use drugs (PWUD). Substance use stigma among healthcare providers is associated with decreased engagement with PWUD. Stigma also corresponds to negative health outcomes, including an increased risk of overdose.
Objective: The authors of this abstract developed an anti-stigma and harm reduction curriculum for SFHN clinics to increase acceptance of, and participation in, the SFHN pilot. The objectives are:

1. Identify sources of substance use stigma
2. Describe the impacts of stigma
3. Discuss strategies to address stigma and implement harm reduction

Methods: The curriculum was jointly developed by University of California SF medical students, SFHN providers, and community partners at the SF AIDS Foundation (SFAF). The curriculum consisted of 1) a clinic-wide training that introduced principles of stigma and harm reduction, drawn from materials developed by the National Harm Reduction Coalition and illustrated via video testimonials by SFAF staff who have lived experience of substance use; 2) a self-guided online training about overdose prevention and safer consumption supplies. Participants completed pre- and post-training surveys that measured substance use stigma and familiarity with harm reduction principles through quantitative and qualitative metrics. Stigma was measured using the validated Drug Use Stigmatization Scale and analyzed on a scale of -7 (less stigma) to 7 (more stigma).

Results: 168 participants from 11 SFHN clinics completed the pre-survey and 100 completed the post-survey. We found a significant decrease in median stigma scores from -4 to -6.5. Baseline stigma scores were highest among non-clinical staff. Qualitative feedback recommended greater diversity of testimonials as well as more discussion about applying principles in the workplace.

Conclusions: The success of this training is attributed to its accessibility, interactive model, and powerful testimonials from people with lived experience of substance use. We are developing follow-up, role-specific trainings both with case-based discussion as well as with incorporated testimonials from SFHN patients from diverse racial backgrounds. We will assess longer term effects of this training on stigma and implementation of harm reduction practices.

'Red Flags' and 'Red Tape': Telehealth and Pharmacy-Level Barriers to Buprenorphine in the United States

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Background: Structural vulnerabilities for people who use drugs (PWUD) were exacerbated by the COVID-19 pandemic. In this context, federal lawmakers in the United States (U.S.) invoked an exemption to the 2008 Ryan Haight Act requiring in-person evaluation to prescribe buprenorphine for treatment of opioid use disorder (OUD), which allowed for the initiation and maintenance of buprenorphine via telehealth. Despite the potential for telehealth to address some of the geographic disparities in OUD treatment access, recent research has suggested that significant barriers to buprenorphine also exist at the pharmacy-level.

Objective: The purpose of this study was to qualitatively assess how efforts to increase access to buprenorphine via telehealth are implemented by prescribers and pharmacists and experienced by patients.

Methods: Participant observation and semi-structured interviews focused on telehealth for OUD treatment and buprenorphine prescribing and dispensing were conducted with patients (n=19), prescribers and clinic staff (n=24), and pharmacists (n=10) in Pennsylvania and California between May 2020 - May 2021.

Results: While participants stated that telehealth for OUD treatment was a welcome option, pharmacy-level barriers to buprenorphine persisted. Geographical distance from patient to provider or pharmacist continued to serve as “red flags” for pharmacists, leading to pharmacy-level “red tape:” gatekeeping measures including geographic restrictions, telephone prescription “confirmations,” prescription cancellations and refusals. Patients’ unmet expectations of buprenorphine access in some cases led to unanticipated risks including a return to injection drug use.

Conclusions: Challenges to increasing buprenorphine access persist in the U.S. even in settings where telehealth is implemented, and telehealth may inadvertently produce new barriers for some patients. Despite national support for policies aimed at increasing access to treatment for substance use disorders rather than punishment, policy shifts from
punishment to treatment have not permeated evenly across all geographic areas and populations. Perceived threats of Drug Enforcement Administration (DEA) enforcement, and self-defensive institutional practices in pharmacies, reinforce ideologies of drug law enforcement, leading to poor patient outcomes including lack of buprenorphine access.

Using Secret Shopping to Verify Naloxone and Nonprescription Syringe Access in Community Pharmacies

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Background: Community pharmacies improve opioid safety and public health by dispensing naloxone to reduce overdoses and selling non-prescription syringes (NPS), but barriers to obtaining these lifesaving materials such as stigma and stocking persist. One way to verify community access and hold pharmacies accountable is to conduct fidelity checking (secret shopping).

Objective: Develop and test a process for fidelity checking community pharmacies and identify behavioral and psychological barriers to pharmacy-based harm reduction.

Methods: Based on prior fidelity checking efforts, we developed a standardized protocol for fidelity checking naloxone availability and adapted it to include NPS checking. We trained study personnel to conduct fidelity checks to verify placement of educational materials, buy NPS, and determine naloxone access using a standardized script. The script was adapted for pharmacy drive-thru visits and further amended for remote checks via phone due to COVID-19. Fidelity checkers documented key verbal and non-verbal elements of interactions. The process was then applied in a four-state community pharmacy setting and pharmacies received individualized feedback for quality improvement.

Results: Among 176 pharmacies checked, 141 walk-in, 58 drive-thru, and 40 phone-based initial fidelity checks were performed. Among in-person checks, 94% of stores stocked naloxone and it was accessible in 83% of them, while 76% sold syringes. 65% of checks resulted in combined successful syringe and naloxone encounters, ranging from 39-90% in the states. Phone-based check performance lagged both drive-thru and walk-in checks.

Conclusions: Fidelity checking is a powerful, objective, real-time tool for assessing the experiences of people seeking pharmacy-based harm reduction materials. Syringe access is limited by structural, legal, and behavioral barriers. Further interventions are needed to simultaneously address pharmacy-based syringe and naloxone access.

Unsolicited Reporting Notifications and Providers’ Prescribing Behaviors: An Evaluation of Maryland’s Prescription Drug Monitoring Program (PDMP)

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Background: Maryland’s Prescription Drug Monitoring Program (PDMP) is designed to support healthcare providers in safe prescribing of controlled substances, and issues “unsolicited reporting notifications” (URNs) when there are indicators of concern. Three types of URNs include: [1] dangerous drug combinations (DDC), sent when a provider prescribes an opioid, a benzodiazepine, and a muscle relaxant to a patient on the same day, [2] overdose fatality (ODF), sent to providers upon the opioid-related overdose death of a patient who had active opioid or benzodiazepine prescriptions, and [3] multiple provider episodes (MPE), issued to providers with patients who have active prescriptions with other providers or received medications from multiple pharmacies.

Objective: Among providers who had been issued a URN, we investigated 4 behaviors, including average daily prescriptions for opioids and benzodiazepines, and proportion of overlapping prescriptions for opioids and benzodiazepines (O&B) and for opioids, benzodiazepines, and muscle relaxants (OB&M). We compared changes before vs. after issuance of a URN among the experimental group (i.e., providers who received the URNs) and the comparison group (providers whose URNs were returned undeliverable).
Methods: The dataset included prescriptions written from Jan 2017-June 2021 (n=11,359,314), and URNs issued from Jan 2018-April 2021. We compared behaviors of providers in the experimental (n=2,741) versus control group (n=114). Regression analysis was used to estimate differences in changes in prescribing for all four outcomes, and models were adjusted for potential confounders.

Results: Compared to providers who never received their URN, those who did had statistically significant reductions in two prescribing behaviors: average number of daily benzodiazepine prescriptions (p=0.039) and proportion of overlapping O&B prescriptions (p<0.001). Receipt of a DDC URN was associated with statistically significant reductions in overlapping O&B and OB&M prescriptions, and daily benzodiazepine prescriptions. There were significantly greater reductions in daily opioid prescriptions and overlapping OB&M prescriptions among providers who received ODF URNs, and significantly greater reductions in daily benzodiazepine prescriptions among providers who received MPE URNs.

Conclusions: The receipt of a URN was associated with changes in prescribing behaviors, suggesting that they may improve clinical decision-making. URNs sent in response to dangerous drug combinations appear to have the broadest impact across multiple prescribing behaviors.

Race and Racial Disparities

A Scoping Review of Race Concordance Between Patients and Clinicians in Substance Use Disorder Treatment for Black Patients

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Background: Substance use disorder (SUD) treatment for Black patients is impeded by structural, systemic, and interpersonal racism. It is unclear whether treatment by Black clinicians improves the experience and outcomes for Black patients in SUD treatment.

Objective: To summarize the literature on how race concordance between patients and clinicians affects the experience and outcomes for Black patients in SUD treatment.

Methods: In October 2021 we conducted a Preferred Reporting Items for Systematic Reviews and Meta-Analyses - guided search in PubMed and PsychInfo for research on the effect of race concordance in SUD treatment and treatment outcomes for Black patients. Three reviewers read each title and abstract; one reviewer completed full-text review and data extraction. Discrepancies were discussed until consensus was reached. To meet inclusion criteria articles addressed: 1) Black individuals; 2) treatment outcomes; and 3) race concordance between patient and clinician in SUD treatment. We included peer-reviewed articles and scholarly commentaries and excluded book chapters and dissertations.

Results: We identified 329 non-duplicate articles. After initial title and abstract review, 141 articles received full-text review, and 18 articles met inclusion criteria. The articles were published between 1971-2021, though 13 were published before 2002. We identified one randomized clinical trial examining the effects of race concordance, but it only included six Black patient-clinician dyads. At the one-year follow-up, the three retained Black patients in race-concordant dyads reported less IV drug use and decreased usage of shared needles. Of the remaining 14 non-randomized studies, two reported significant associations with race concordance, one with polysubstance abstinence and a second with less time in jail at nine-months post-treatment. The rest did not find association between race concordance and treatment outcomes, including retention, duration, or substance use. One study reported that patients in race-discordant dyads had fewer medical and legal problems at nine-months post-treatment.

Conclusions: Findings on the relationship between race concordance and substance use treatment outcomes were mixed; most studies did not document an association. Future research should examine this issue using mixed-methodologies and randomized controlled designs, particularly considering most studies were conducted over 20 years ago.
Background: Inequities in fatal opioid overdose by race and ethnicity exist at state and municipal levels in Massachusetts. Previous studies displayed relationships between disparities in current health outcomes and redlining—the grading of neighborhoods based on race, class, and immigration status of residents in the 1930s. Redlining is an example of structural racism manifested by government-sanctioned disinvestment, which maintained geographic segregation and may have led to neighborhood conditions that increased overdose risk. To our knowledge, no study has examined the association between Home Owner’s Loan Corporation (HOLC) redlining grades and current prevalence of fatal opioid overdose.

Objective: We sought to determine whether current prevalence of fatal opioid overdose among residents differed by HOLC grade in Massachusetts.

Methods: We generated descriptive statistics and conducted a two-sample t-test to determine differences between the mean number of opioid overdose deaths by HOLC grade (“declining” or “hazardous” versus “best” or “still desirable”) in Massachusetts. Our analyses utilized individual-level decedent data from 2016 to 2019 linked to georeferenced HOLC maps.

Results: 1,923 opioid overdose deaths occurred among residents of HOLC graded neighborhoods in Massachusetts between 2016 and 2019. 54.5% of neighborhoods were graded “declining” or “hazardous,” and 1,172 (89.5%) opioid overdose deaths occurred among residents of those neighborhoods. When stratified by race/ethnicity, 87.6% of non-Hispanic White deaths versus 93.8% of non-Hispanic Black, Hispanic, and other race/ethnicity deaths occurred in “declining” or “hazardous” neighborhoods (p<0.001). We determined the mean number of opioid overdose deaths was significantly lower among neighborhoods graded “best” or “still desirable” (1.39 deaths) versus neighborhoods graded “declining” or “hazardous” (9.90 deaths) (difference in means=-8.51; 95% CI: -10.68, -6.34).

Conclusions: Our study confirms that differences exist in the current prevalence of fatal opioid overdose by HOLC grade in Massachusetts. Further investigation of associations between redlining and neighborhood-level overdose is warranted to better understand the impact of structural racism and intentional long-term disinvestment. Multivariable modeling methods could support implementation of interventions that address and redress the impact of redlining, including neighborhood-level approaches to fatal overdose prevention, resources for housing, and changes in drug policy.

Data-Driven Program Design: Utilizing an EHR Dashboard to Design and Refine SUD-Focused Services

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Background: Boston Medical Center (BMC) is the largest safety-net hospital in the Northeast US, and primarily serves Black, Indigenous, and People of Color (BIPOC), and publicly-insured patients. Analysis of BMC patients who have substance use disorders (SUDs) revealed that few engage with BMC outpatient SUD-treatment programs following emergency department (ED) visits. Furthermore, fewer Black patients with SUDs engaged in outpatient treatment programs than White patients.

Objective: To evaluate and improve quality in BMC’s SUD programs we needed a tool to provide actionable data insights.

Methods: Using data from the hospital-wide electronic health record (EHR), EPIC, we developed a dashboard to track key SUD treatment metrics, including patient/encounter volumes and treatment engagement rates in individual programs and across BMC.
**Results:** Two examples of dashboard impact: (1) BMC launched a program to serve as a “front-door” to SUD treatment (strategically staffed primarily by BIPOC and multi-lingual recovery coaches, to increase BIPOC patients’ level of comfort and engagement in SUD treatment), as well as new services focused on treating patients with non-opioid SUDs (which affect Black patients at BMC at higher rates than White patients; in Q4 2019, 2,585 (82.9%) Black patients with SUD had a non-opioid SUD visit, compared to 1,307 (47.1%) White patients with SUD). Early dashboard data show an increase in Black patients’ engagement with outpatient SUD treatment programs: In Q1 2022, 409 (25.1%) Black patients with SUD engaged in an outpatient SUD treatment program, compared to 1,119 (50%) White patients, a >50% change in the percentage of Black patients with SUDs engaged in an outpatient SUD program from Q4 2019 (244 Black patients, 16.6%). (2) Dashboard data on BMC’s adolescent SUD treatment program, which is based in the Pediatrics department, showed that 131 (61%) patients were >18 years old, and 146 (68%) had co-occurring mental health diagnoses. This prompted a plan to transition these patients to care based in the Department of Psychiatry in order to address their co-occurring mental health needs.

**Conclusions:** A SUD-treatment dashboard is driving program implementation and design decisions. Data trends over time will allow adjustment of program offerings to meet patient needs.

**Examining Increasing Opioid Overdose Deaths among Black Individuals in St. Louis, Missouri: A Spatial Clustering Analysis**

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**Background:** Increases in opioid overdose deaths (OOD) among Black individuals outpace those of White individuals two-to-one since 2015. In St. Louis, OOD increased 560% among Black residents from 2015-2021 relative to 200% among White residents. Identifying spatial variation in OOD among Black individuals is critical for mitigating increasing racial inequities.

**Objective:** This study examined OOD “hotspots” in the St. Louis region from 2011-2021 and whether hotspots varied as a function of race.

**Methods:** Data were derived from the Medical Examiner’s Offices of St. Louis City and County, including drug-involved deaths (n=6,356) from January 2011 to September 2021. Injury and primary residence addresses were geocoded. Included records were classified as accidental or undetermined, involved an opioid based on toxicology screening, and were residents and decedents of St. Louis City or County (n=3,755). Global Moran’s I test was used to determine significant clustering (i.e., hot- and cold-spots) by race and year.

**Results:** Black individuals (n=1,749; 46.6%) comprised a lower proportion of OOD from 2011-2018 and a higher proportion of OOD from 2019-2021 relative to non-Black individuals (n=2,066; 53.4%; 98.0% White). Analyses indicated significant OOD clustering in years 2014, 2015, and 2019-2021 (p<.05). In 2014, six census tracts were hotspots for Black OOD (i.e., high OOD among Black people; low OOD among non-Black people) whereas 31 were hotspots for non-Black OOD. By 2021, 30 census tracts were hotspots for Black OOD whereas 16 were hotspots for non-Black OOD. Hotspots for Black OOD were exclusively located in North St. Louis City and County.

**Conclusions:** Results indicate OOD hotspots in St. Louis are racially distinct. Racially-stratified clustering of OOD appears related to the history of systemic racism that has concentrated the Black population geographically north of the east-west “Delmar Divide.” This spatial divide has been associated with racial health disparities in heart disease and infant mortality; results suggest it is also increasingly an indicator of Black opioid-related mortality. Future research should use racially-stratified geographic analysis to identify structural and social characteristics associated with OOD to inform targeted intervention.

**Racial Disparities in Emergency Department Initiated Buprenorphine Across 5 Healthcare Systems**

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**Background:** Drug overdose deaths have disproportionately impacted Black and Hispanic populations during COVID-19, further exposing the racial and ethnic disparities inherent in the opioid epidemic. As an important point of access to care for marginalized populations, the emergency department (ED) continues to grow as a resource to engage patients with opioid use disorder (OUD) in medication treatments, including buprenorphine (BUP). While disparities in outpatient addiction treatment settings have been described, inequities regarding ED-initiated BUP remain poorly understood.

**Objective:** Explore racial and ethnic disparities for ED BUP administration as an indicator of treatment equity for patients with OUD.

**Methods:** This cross sectional analysis explores racial and ethnic differences in BUP administration using data from EMBED, a pragmatic, group-randomized trial evaluating the implementation of a clinical decision support system for initiating BUP in discharged patients with OUD across 21 EDs in five states. Race and ethnicity were categorized as Non-Hispanic White, Non-Hispanic Black, Hispanic, and Other. The primary outcome was receipt of BUP (ED administration or a discharge prescription). Univariate and multivariable hierarchical modeling with cluster effects for site and provider assessed associations with patient and healthcare system level variables.

**Results:** From November 2019 to May 2021, 5,047 participants met inclusion criteria with an OUD-associated diagnosis. Of the 3,154 White patients, 8.5% (268) received BUP compared with 6.4% (51/801) of Black patients, 8.4% (59/701) of Hispanic patients, and 12.3% (48/391) of patients identified as Other (162 unknown/other, 10 Asian, and 10 American Indian/Alaska Native). Compared to White patients, odds of BUP administration were lower for Black patients in unadjusted (OR 0.67, 95% CI 0.48-0.92) and multivariable models adjusted for age, insurance, gender, physician X-waiver status, and type of institution (OR 0.69, 95% CI 0.50-0.96). There was no significant difference between community and academic EDs in rates of BUP administration by race (interaction p=0.84).

**Conclusions:** Black patients with OUD were administered BUP at lower rates. As EDs continue to create and refine efforts to implement medication treatments for OUD, attention should be focused on identifying and addressing disparities to promote equitable patient care.

**Disparities in Buprenorphine Prescribing in Pregnant and Non-Pregnant Reproductive-Aged Women with Opioid Use Disorder**

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**Background:** The U.S. has experienced escalating rates of overdoses and adverse birth outcomes among women of childbearing age with opioid use disorder (OUD). The prevalence of buprenorphine use in reproductive-aged women with OUD is not well characterized in national data.

**Objective:** To determine the real-world initiation rates of buprenorphine among reproductive-aged women with OUD, while stratifying by insurance status and race/ethnicity.

**Methods:** In this retrospective cohort study, we analyzed data from reproductive-aged women, ages 16-45 years, in the IBM MarketScan databases (2006-2015) during the 6 months preceding start of OUD treatment. OUD and pregnancy status were identified based on inpatient or outpatient claims for established ICD-9/10 diagnosis codes. The main outcome was initiation of buprenorphine, determined using pharmacy claims. We used the Cox regression procedure to estimate the incidence of buprenorphine initiation, adjusting for insurance status, age, and co-occurring psychiatric and substance use disorders. Subgroup analyses were conducted while stratifying by race among Medicaid enrollees.

**Results:** Our sample included 158,085 reproductive-aged women with OUD (mean age 30.4 years, 39.5% Medicaid, 60.5% commercial insurance), of whom only 37,944(35.7%) were initiated on buprenorphine. 2,503(2.4%) had at least one pregnancy-related claim during the 30 days preceding OUD treatment initiation. Whereas 89.0% of pregnant women were Medicaid enrollees, 58.5% of non-pregnant individuals were covered by Medicaid. Whereas pregnant women were less likely to receive buprenorphine than their non-pregnant peers in univariate analyses (HR=0.81, 95% CI: 0.77-0.86).
this difference was non-significant after adjusting for Medicaid status. Notably, commercially-insured women of reproductive age were nearly two-fold (50.5%) more likely to be initiated on buprenorphine than Medicaid enrollees (25.5%, p<.0001), which remained significant in multivariate models (HR=0.42, 0.42-0.43). Even after limiting analyses to Medicaid enrollees, we observed a significantly lower rate of buprenorphine initiation among non-Hispanic Black women of childbearing age in comparison to White Medicaid enrollees (HR=0.82, 0.77-0.88).

Conclusions: Most reproductive-aged women with OUD in the U.S. do not receive buprenorphine. Large insurance-based disparities were observed such that Medicaid enrollees are half as likely to be initiated on buprenorphine as commercial insurance enrollees, with non-Hispanic Black and Hispanic patients having even lower rates of buprenorphine initiation.

Poster Session

Promoting Health Equity Through Integrative Care Teams- A Medication Treatment Curriculum

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Background: The COVID-19 pandemic exacerbated the opioid overdose crisis and pervasively impacted vulnerable and underserved populations. As fatal overdose levels surge, dire attention is needed to consider interprofessional learning strategies promoting access to care by preparing a workforce skilled in assessing social determinants of health and culturally relevant integrated care strategies in medication treatment settings.

Objective: The overall purpose of this mixed-methods curriculum evaluation was to determine improved readiness for interprofessional practice in integrated behavioral healthcare settings with increased knowledge on pharmacological interventions, suicide prevention, clinical screening, and complementary holistic care practices within a culturally congruent trauma informed lens.

Methods: Graduate social work, counseling, and psych mental health nursing students (n=21) completed knowledge, attitude, and practice surveys prior to participating in a 10-week blended learning interprofessional medication treatment course. Key curricular components included interprofessional ECHO telehealth consultation practice and team-based simulation engaging a pregnant Latina transitional-aged youth with opioid use disorder. Formal utilization-focused evaluation included triangulation of qualitative and quantitative data assessing student readiness. Quantitative confirmation was evidenced by knowledge change measured using the Drugs and Drug Users' Problems Perception (DDPPQ) and Cross-Cultural Counseling Inventory—Revised (CCCI_R). Qualitative focus groups were conducted at course's end.

Results: The mean score for DDPPQ improved 16.143 from pre to post (Mpre: 106.095, SD: 17.553; Mpost: 122.238, SD: 9.838; p=0.001). Scores on the CCCI_R increased from Mpre: 97.429 (SD 109.714) to Mpost: 109.714 (SD 8.911; p=0.001). Qualitative findings included the following six themes: overall positive experience, knowledge and skills to serve people with OUD, opportunities to work as an integrated team, greater emphasis on culturally appropriate care, desire for more direction in simulation and assignments, and challenges of COVID-19 and online learning.

Conclusions: Interprofessional medication treatment simulation training created opportunities for students to discuss complex comorbidities and the intersection of social determinants of health as an integrative care team versus in silos. Students also experienced challenges due to uncertainty and challenges of an online learning environment. Triangulation of qualitative and quantitative assessments confirmed students’ development in cultural competency, disposition toward patients with substance use disorders, and confidence in providing medication treatment services.

Implementation of a Medical Student Peer Education Initiative Aimed at Recognizing and Reducing Stigmatizing Language for Patients with Substance Use Disorders
Background: Stigma negatively impacts the healthcare experience of people with substance use disorders (SUD) and may prevent some from seeking and receiving addiction treatment. Learning to recognize stigmatizing language may improve patient care, but explicit training is often lacking in the medical school curriculum.

Objective: In this peer education initiative involving first- and second-year medical students, we sought to determine: 1) if medical student attitudes toward patients with SUDs were affected when stigmatizing language was used; 2) perceptions on the prevalence and impact of stigmatizing language in healthcare; 3) the perceived need for instruction on stigma in medical education; and 4) the feasibility of a brief educational intervention empowering medical students to address stigma in the clinical environment.

Methods: We created fictional clinical vignettes involving patients with SUDs, with half containing stigmatizing language and half containing non-stigmatizing language. Medical students were asked to rate their feelings towards each patient on a Likert scale ranging from 0 to 5. Participants were also asked about their perceptions of stigma in healthcare and medical education. We then created educational materials highlighting the impact of stigmatizing language on patients with SUDs and ways that medical students can address stigma in the clinical setting. We assessed the impact of the educational intervention.

Results: A total of 54 students participated. Students' attitudes were more positive towards vignettes featuring non-stigmatizing language (Mean: 4.36, SD: 0.87) vs. stigmatizing language (Mean: 4.05, SD: 1.00). 98% of students believed that stigmatizing language affects patient care. 44% were confident that they could recognize stigmatizing language in healthcare. 90% believed that education on stigmatizing language should be incorporated into the medical school curriculum. 15% felt that stigmatizing language is adequately taught in medical school. 86% felt that the peer education resources provided were an effective teaching tool.

Conclusions: We found that stigmatizing language negatively influenced medical student attitudes towards fictional patients with substance use disorders. Participants almost unanimously believed that stigmatizing language affects patient care, yet only 15% felt that the topic was adequately taught in medical school. A one page educational document paired with a short video was effective in educating students about this important topic.

High Engagement in Care in a Pediatric Medical Home for Children Impacted by Parental Substance Use

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Background: The opioid epidemic has heavily affected adults of childbearing age, leading to thousands of children impacted by parental substance use disorder (SUD). Few programs provide longitudinal support to these children.

Objective: We describe an innovative pediatric medical home model for substance-impacted children and their families, at an urban, safety-net hospital. Our objective is to report on rates of engagement in care and age-appropriate vaccine receipt for children enrolled in the Supporting Our Families through Addiction and Recovery (SOFAR) program.

Methods: We analyzed data from the electronic health record including date of birth, date of program enrollment, visits to the SOFAR program and date of receipt of each vaccine. We included any child up to and including age 18 years who was enrolled in SOFAR at the time of data extraction in May 2021, based on the current list of SOFAR patients in the electronic health record. We defined engagement in care as attending the minimum number of preventive health visits recommended by the American Academy of Pediatrics (AAP) periodicity schedule. Using the recommended age for each vaccine dose according to the CDC’s 2021 Recommended Child and Adolescent Immunization Schedule for ages 18 years and younger, we documented whether the child had received each vaccine within 30 days of the recommended date range.

Results: 130 patients met inclusion criteria; they were largely non-Hispanic White, almost entirely English-speaking, and nearly all had Medicaid. Patients were highly engaged in care, with 94.6% meeting recommendations of the AAP’s
periodicity schedule. Timely receipt of vaccinations was high across all 12 vaccine series evaluated, including the annual influenza vaccination. Even limiting the definition of timely receipt of vaccines to a 30-day period from the recommended age, patients were up-to-date for 95% or more for all vaccines.

**Conclusions:** In its first three years, a safety-net hospital-based pediatric medical home for children impacted by parental SUD achieved high levels of family engagement and vaccination uptake. Future work should explore how to engage children from more diverse backgrounds, and should examine whether the program model impacts other indicators of health and well-being for children with parental substance use.

**Hep C-Ya Never: Facilitators and Barriers to HCV Treatment among Inpatients Seen by an Addiction Care Team**

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**Background:** Hepatitis C (HCV) is prominent among individuals with substance use disorders (SUD). Of individuals with HCV, only 20% know they have it and 20% receive treatment. Hospitalization is an opportunity to initiate treatment. An inpatient addiction consult team in an urban, safety-net hospital implemented a quality improvement project to treat patients with SUD and HCV with an expected stable treatment location of greater than 2 weeks.

**Objective:**

- Describe feasibility of initiating HCV treatment among inpatients with SUD and HCV.
- Identify characteristics of inpatients with SUD and HCV wanting HCV treatment.
- Enumerate barriers to initiating HCV treatment among inpatients with SUD and HCV.

**Methods:** Retrospective chart review of 16 patients hospitalized between January 2021-February 2022 who desired HCV treatment. We defined treatment completion with a SVR or confirmed documentation 12 weeks post treatment completion.

**Results:** Of the 16 patients desiring treatment, 13 (81.3%) initiated medications. Among those who started treatment, 4 (30.8%) completed treatment, 3 (23.1%) are undergoing treatment, 5 (38.5%) have not completed follow-up, and 1 (7.7%) stopped treatment. The group desiring treatment was racially/ethnically diverse and did not differ based on treatment initiation status: 56.2% White, 31.2% Black, and 12.5% Latinx. Average hospitalization duration was longer in patients who initiated treatment compared to those that did not (21 vs. 6 days). Opioid and stimulant use disorders were prevalent among the overall group at 81.3% and 56.3%, respectively. Patients initiated treatment across varied settings: skilled nursing facilities (30.8%), hospital (23.1%), medical respite (15.4%), home (15.4%), and outpatient clinics (15.4%). Among the 3 patients who did not initiate treatment, barriers were self-discharge (33.3%), discharge before treatment initiation (33.3%), and unstable treatment location (33.3%).

**Conclusions:** Hospitalization is a feasible opportunity to initiate HCV treatment, especially in those with prolonged hospitalizations and those discharging to supportive settings. We can further mitigate barriers to initiating HCV treatment by reducing self-discharges and improving care transition options. This study is limited by its small size and high rates of patients who have not completed treatment and those in whom treatment outcome remains unknown. Further studies can expand this model beyond addiction consult teams.

**Evaluating Outcomes of a Primary-Care Based Transition Clinic for Patients Newly Initiating Buprenorphine for Opioid Use Disorder**

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**Background:** Medication-based treatment for opioid use disorder (MOUD) improves mortality and other health outcomes for individuals with opioid use disorder (OUD). However, less than half of people with OUD can access
treatment. Primary care has been identified as an important venue to expand access to MOUD, but patients often face substantial barriers transitioning care from specialty addiction programs to primary care-based treatment. The Supporting Patients through Advocacy, Research, and Clinical Care (SPARC) clinic seeks to improve these transitions through a nurse care manager-led collaborative model.

**Objective:**

- Compare attendance for new MOUD patient visits in SPARC clinic vs direct referral to primary care from Emergency Department-based low-barrier buprenorphine initiation program (ED Bridge)
- Compare retention in treatment at 30, 60, and 90 days for patients at SPARC clinic vs usual primary care-based OUD treatment

**Methods:** All referrals from the ED Bridge program to University of Utah primary care sites between 10/06/2021 and 02/07/2022 were identified from internal records. Individual patient charts were analyzed via Electronic Health Record for treatment retention and harm reduction access.

**Results:**

- 45 patients were referred to primary care from ED Bridge during the specified time period.
- 34 were referred to SPARC clinic and 11 were referred directly to primary care.
- 41% of SPARC referrals established care vs 27% referred directly to primary care.
- Of those who established care at SPARC, 85% were receiving MOUD and engaged in care at 90 days vs 67% in usual primary care.
- 79% of SPARC patients had completed OUD-related infectious screening vs 29% in usual primary care. 100% of patients in both groups received naloxone.

**Conclusions:** A primary-care based multidisciplinary transition clinic was effective at increasing successful care transitions and retaining patients in MOUD treatment compared to usual primary-care based MOUD. As primary care assumes a more central role in providing MOUD, transition clinics like SPARC may improve access and retention in care. Future analysis could explore barriers to initial establishment of care.

**Examining the Feasibility of Patient Self-Administration of the Two-Part Tobacco, Alcohol, Prescription Medication, and Other Substance (TAPS) Screener on Paper in Behavioral Health**

**Joanna H Kramer, BA; Lily Morgan; Denisa Ramseier; Amy Yule, MD - Boston Medical Center**

**Background:** The two-part Tobacco, Alcohol, Prescription Medication, and other Substance (TAPS) screener is validated to identify individuals at risk for a substance use disorder (SUD). When completed digitally, the TAPS Part 1 asks four questions about past year misuse of tobacco, alcohol, other drugs, and prescription medication. If past year use is endorsed, up to 27 follow up questions are asked about use in the past three months for the substance(s) endorsed in Part 1 (TAPS Part 2). On paper, all questions from the TAPS part 1 and 2 are displayed, and patients can answer questions they would not have received in the digital version. Research suggests completing the TAPS digitally is easy for patients, but less is known about paper administration.

**Objective:** As part of a quality assurance project focused on implementing screening questionnaires in behavioral health, we examined the feasibility of patient self-administration of the TAPS on paper.

**Methods:** TAPS was given on paper in English and Spanish to new intakes ages 18 and older at an urgent care behavioral health clinic within an urban safety net hospital. The paper version was adapted from the online version using research on survey design and presentation of questions on paper. To mimic the branching logic of the online version, and to keep patients from answering unnecessary questions, the paper TAPS included directions indicating what to answer next based on Part 1 responses. The TAPS completion rates and how accurate the questionnaire was completed were tracked.
Results: Of 353 consecutive new intakes, 313 completed the TAPS. Among those who completed the TAPS, 237 (75.7%) completed the TAPS incorrectly (i.e. leaving questions blank, answering irrelevant questions). These errors affected the final TAPS score for 19.8% (N=47) of these respondents.

Conclusions: When the TAPS was adapted to be administered on paper, many patients did not complete the questionnaire correctly, although for most patients this did not affect their overall TAPS score. Additional research is needed to adapt the TAPS for administration on paper for implementation in settings that do not have the capacity to administer the digital version.

Complicating and Contextualizing Substance Use in Social Work Education

Stephanie Elias Sarabia, PhD - Ramapo College of New Jersey

Background: Academic approaches to substance use courses are often focused on acquiring clinical, content knowledge that reflects our culture’s weight on a more simplistic, personal responsibility view of substance use. This contrasts a more complex and contextualized person in the environment framework with a structural lens which also encompasses a society’s responsibility to its citizens.

Objective: The objective of this study is to understand the impact of a redesigned substance use course with the intent of contextualizing substance use content knowledge by modeling a structured critical lens in a recovery ecosystem framework including such models as Metzl and Hansen’s (2014) Structural Competency approach. Students are taught to challenge the dominant narrative and oversimplified views of substance use fleshing out the complexity of risk factors and a recovery ecosystem. The study also aims to understand how this shift impacts their approach to working with people who use substances.

Methods: A qualitative survey was conducted of MSW students enrolled in multiple sections (both virtually and in-person) of a substance use course. Participants completed an anonymous survey via Qualtrics and their narrative responses were coded using NVIVO qualitative software to determine themes.

Results: Data analysis reveals that participants reported an understanding of the complexity of structural factors and society’s overemphasis on personal responsibility rather than society’s responsibility to its citizens. Participants stated that they thought more critically about substance use which helped them see structural injustice that was in plain sight that they failed to notice before. Participants reported that their learning altered their practice in two significant ways: a deeper commitment to a compassionate, nonjudgmental, person-centered stance and a contextualized, complex view of substance use that fostered a nuanced person in environment view that encouraged advocacy along with clinical interventions.

Conclusions: Findings underscore the importance of contextualizing substance use using a complex, person in environment framework to recalibrate the balance between personal responsibility and society’s responsibility to its citizens. Using this model, students demonstrated a commitment to integrated practice that embraced advocacy and macro practice alongside micro practice.

Improving Opioid Use Referrals Following Emergency Department Visits

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Background: The opioid crisis poses ongoing challenges for communities and medical professionals. One challenge is that emergency departments (EDs) are a frequent first point of contact for many individuals with opioid use disorder. However, EDs are not well suited to ensure ongoing care for this population. The standard of care highlights the importance of dedicated follow-up in a substance use disorder clinic. Importantly, having a standardized referral process in place has been shown to be critical for ED physicians to successfully refer patients. Our hospital has a large ED with an in-house additions clinic, however, no standard referral process currently exists.
Objective: To establish a referral protocol for patients presenting to the ED with opioid use disorders, in collaboration with ED physicians, providing them with an easy and reliable method to ensure these patients have appropriate follow-up.

Methods: The population targeted patients with opioid use disorder. The referral form/procedure was implemented in April 2021. We obtained data on ED visits at the Jewish General Hospital in Montreal, Quebec from October 2020 - October 2021, to have data from 6 months pre- and post-implementation of the referral process. We reviewed the charts of patients presenting to the ED with opioid use diagnoses pre- and post-implementation of the referral protocol to determine if they were referred to the Herzl Addiction Medicine Clinic following their ED visit. We then computed descriptive statistics on the number of visits pre and post-implementation along with the proportion of referrals and risk ratios to compare referrals made to the Addiction Medicine Clinic pre and post-implementation.

Results: Pre-implementation, 15% of patients were referred to the addiction clinic. Post-implementation, 25% of patients were referred to the clinic. Risk ratio calculations demonstrate that patients were 1.67 times more likely to be referred to the Addiction Medicine Clinic post-implementation.

Conclusions: The implementation of an emergency department referral protocol resulted in a substantial increase of referrals for patients with opioid use disorder to the Herzl Addiction Medicine Clinic. This initiative represents a low-cost intervention that meaningfully improves the quality of care for these patients by ensuring they have access to appropriate community follow-up.

Implementation of an Educational Curriculum on Care of Older Adults with Opioid Use Disorder in Long-Term Care

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Background: Increasingly, older adults (OAs) with opioid use disorder (OUD) are in treatment for substance use disorder.¹ Due to medical needs/functional impairments, they require post-hospital care in a skilled nursing facility (SNF). A prior needs assessment identified the topic of OAs with OUD as a knowledge gap and barrier to care.

Objective: An evidence-based educational curriculum was piloted to address this need. Learning objectives were: 1) defining addiction as a medical disease; 2) describing medications for OUD (MOUD); 3) incorporating non-stigmatizing language; and 4) recognizing overdoses.

Methods: Case-based learning was used with the example of a newly admitted OA with OUD, using a 5-question pretest-posttest design to assess knowledge. Paired student’s t-test was used to evaluate change in mean difference in scores.

Results: The curriculum was offered 12 times at 3 SNFs. 159 interprofessional staff from nursing, administration, activities, housekeeping, maintenance, kitchen, therapy, and social work attended. 82 paired pre- and post-tests were completed (51.57% completion rate). Mean (M) test scores significantly increased (pretest M = 3.2; SD = 1.09; posttest M = 4.18; SD = 1.1; P<.001). Confidence level for each learning objective, scored on a 1 to 5 scale (1 = least, 5 = most), showed improvement (defining addiction [pretest M = 3.18, median = 3, SD = 1.25; posttest M = 4.17, median = 4.5, SD = 1.06]; MOUD [pretest M = 2.74, median = 2.5, SD = 1.22; posttest M = 4.11, median = 4, SD = 1.07]; appropriate language [pretest M = 3.39, median = 3, SD = 1.25; posttest M = 4.28, median = 5, SD = 1.06]; and recognizing overdoses [pretest M = 3.18, median = 3, SD = 1.28; posttest M = 4.28, median = 5, SD = 1.08]).

Conclusions: This curriculum addressed the knowledge gap of SNF staff on OAs with OUD. Despite the diversity in roles and medical knowledge, participants demonstrated gains in knowledge and confidence. Future implementations will include evaluations of participant attitudes and analysis of scores between professions.

An Immersive Training Model for the Treatment of Substance Use Disorders: Evaluating Changes in Confidence among Social Work Students

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**Background:** Social work education fails to prepare the emerging workforce to address substance use disorders (SUD). Nationally, only 4.7% of programs have one or more required courses addressing substance use. Vulnerable populations are particularly distressed by a lack of behavioral health providers trained to address SUDs; lack of knowledge about substance use is a significant barrier to patients’ treatment access.

**Objective:** This training program, funded by the Health Resources and Services Administration (HRSA), aimed to increase the number of social workers with competencies in SUD prevention, treatment, and recovery services.

**Methods:** Advanced year MSW students completed a 14-week course on substance use and social work practice and completed additional training on harm reduction and stimulant use disorders. They engaged in a field placement for 24 hours weekly in a setting that offered prevention and/or treatment of SUDs. Eligible students completed the Substance Abuse Treatment Self-Efficacy Scale (SATSES) pre- and post-program. The SATSES is a 32-item, self-report measure assessing social workers’ confidence related to substance use knowledge and skills, and comprises five subscales: assessment/treatment planning, case management, individual counseling, group counseling, and ethics. Paired samples t-tests were conducted to determine changes in students’ confidence overall and across five subscales from pre- to post-program.

**Results:** The sample (N=47) identified primarily as White (n=36), non-Hispanic (n=40), and female (n=40), with a mean age of 29. The majority of students described their field placement as a community health center (n=9), a community mental health center (n=7), a hospital (n=6), or a specialty clinic (n=6). Results indicated statistically significant improvements in total SATSES scores from pre- (M=99.28, SD=15.25) to post-program (M=109.87, SD=14.53); t(46)=-5.45, p<.001, and across all five subscales.

**Conclusions:** It is impossible to isolate the key ingredients responsible for influencing change in students’ confidence; however, the results suggest that implementation of an immersive training model, including didactic training and experiential learning in the field, yields significant changes in SUD-related knowledge and skills. This has potential for increasing access to SUD care.

Opioid and Stimulant Misuse Prevention on a University Campus: Curriculum Infusion as a Prevention Strategy

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**Background:** Innovative prevention strategies are needed to reach college students in the prevention of substance misuse, such as opioid and stimulant misuse. Curriculum infusion is a prevention strategy that can reach large numbers of students and can involve faculty in campus efforts to prevent substance misuse.

**Objective:** Process evaluation results of a curriculum infusion strategy pilot-tested on a college campus will be reviewed. Specifically, utilization and implementation data will be presented.

**Methods:** A curriculum kit was developed as part of grant funding for the prevention of opioid and stimulant misuse on college campuses. The curriculum kit consisted of information on the science of addiction and information on opioids and stimulants. The selected content was expressly chosen to enable infusion into a variety of courses and allow for use in a variety of types of class assignments. The kit was packaged with promotional items appealing to students and was promoted to faculty teaching courses in a variety of disciplines (i.e., psychology, social work, nursing, biology, chemistry, criminal justice, and health sciences).

**Results:** Process data collected from this pilot-test indicated that the curriculum kit was utilized by seven faculty (eight courses) and thus was infused in course content for 166 students in courses from a variety of disciplines. The curriculum infusion strategy was well-received by faculty from a variety of disciplines and implementation data indicated the curriculum kit content was new for some courses and complemented existing content in other courses. Additionally,
implementation strategies reported by faculty included use of the materials in a variety of assignment formats. Overall, results indicated that curriculum infusion of substance misuse prevention content was readily utilized and implemented by faculty. Pilot data suggests that implementing a curriculum infusion strategy on a larger scale is feasible and would reach large numbers of college students.

Conclusions: Curriculum infusion is a feasible substance misuse prevention strategy that can involve faculty on college campuses. Implementation of this prevention strategy can complement other substance misuse prevention efforts taking place on campus.

Peers Helping Peers: An Evaluation of Missouri’s Specialty Peer Instruction Program

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Background: Peer support workers are essential to the substance use treatment and recovery system, though they often have limited clinical and professional development training. Many employer-based continuing education opportunities available to peers are tailored toward counselors and other licensed clinical professionals, not peers whose roles are dependent on them drawing from their personal recovery experiences while operating in the workplace.

Objective: Collaborate with peer support workers to design a series of trainings specific to the needs of the peer workforce and assess participants’ changes in knowledge after viewing each module.

Methods: After selecting topics from a needs assessment, five training modules were designed in collaboration with and presented by peer support workers. The modules provided information and strategies pertinent to peers working with clients experiencing substance use disorders: Medication for Addiction Treatment (MAT); Grief and Secondary Trauma; Professionalism; Suicidality, Domestic Violence, and Sex Trafficking; and Co-occurring Substance Use and Mental Health Disorders. Evaluation consisted of pre-/post-test knowledge questions and a pre-/post-MAT stigma assessment (on a scale from 1 to 6) for the MAT module, both analyzed using Wilcoxon signed rank tests, and qualitative feedback from the peer consultants, analyzed using thematic analysis.

Results: Peer participant (N=86) knowledge increased regarding MAT (5.33 to 6.21 of a possible 7; p<0.001); Grief and Secondary Trauma (7.87 to 8.52 of 9; p<0.001); Professionalism (7.39 to 8.07 of 9; p<0.001); Suicidality, Domestic Violence, and Sex Trafficking (7.63 to 7.98 of 9; p=0.005); and Co-occurring Substance Use and Mental Health Disorders (6.75 to 7.13 of 8; p=0.004). Stigma toward MAT decreased from 2.47 to 1.85 (n=52; p<0.001). Peer consultant feedback was largely positive, particularly regarding the impact the project collaboration had on them personally and the value they place on “peers helping peers.”

Conclusions: The results from the evaluation affirmed the importance of providing trainings designed by and for peers working with people with substance use disorders. Given the improved knowledge and decreased stigma reported by peer training participants, as well as the reported benefit experienced by the peers who co-developed the training, this training model demonstrates promise for broad adoption to benefit the peer workforce.

Outcomes of an Interprofessional Opioid Workforce Training Program for Graduate Students in Nursing and Social Work

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Background: The opioid epidemic remains a U.S. public health emergency, particularly in Southern states with large rural populations of medically underserved communities. Behavioral health professionals such as psychiatric nurse practitioners (NP) and master in social work (MSW) clinicians are needed to provide the expertise on prevention, treatment, and recovery services for individuals with opioid use disorders (OUD).
Objective: This evaluation assessed the impact of an innovative three-year HRSA-funded traineeship designed to prepare graduate-level nursing and social work students interprofessionally to assess and treat opioid use disorders (OUD) in Alabama.

Methods: The year-long traineeship included specialized coursework in addictions, interprofessional telemedicine and simulation training, and multi-semester field practica in substance use treatment. Baseline and post-training surveys assessed knowledge, attitudes, and skills related to OUD and interprofessional practice for the three student cohorts. Key program outcomes were analyzed using paired t-Tests and Wilcoxon Signed-Rank tests.

Results: The sample (n=54) was predominantly female (92.6%) and White (61.1%). Trainees ranged in age from 22.7 to 62.1 years (=32.4) and were enrolled in the MSW (55.6%), Psychiatric/Mental Health NP (38.9%), and Doctor of Nursing Practice (5.6%) programs. At baseline, trainees reported relatively little previous OUD training (29.6%), work/practicum (27.8%), or a continuing education training (14.8%). Results indicated significant increases from baseline to post-test on trainees’ knowledge (i.e., SUD [Z=-4.86, p<.001], interprofessional roles [Z=-4.77, p<.001]), attitudes (i.e., benefits of interprofessional approaches for client outcomes [Z=-4.04, p<.001] and SUD treatment [Z=-4.35, p<.001]), and perceived skills (i.e., OUD diagnosis [Z=-4.83, p<.001], OUD treatment [Z=-4.87, p<.001]; interprofessional collaboration to improve client engagement [Z=-4.69, p<.001] and assessment [Z=-4.76, p<.001]). Moreover, at graduation, trainees reported increased ability to interact with underserved populations (4.5 out of 5) and to collaborate interprofessionally (4.7), understanding of ethical issues in SUD treatment (4.7), as well as increased professional competence (4.7), clinical problem-solving skills (4.6), and health workforce skills (4.4).

Conclusions: Findings suggest interprofessional training helps to prepare graduate students collaboratively care for clients with OUD in medically underserved communities in the Deep South. While this study has limitations, including sample size and narrow geographic focus, it represents an important step toward identifying effective training mechanisms to improve OUD treatment.

Beyond the Curriculum: Equipping Medical Students to Respond to the Opioid Epidemic

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Background: Physicians regardless of specialty will encounter patients who have experienced addiction, making addiction medicine training vital. Unfortunately, medical schools devote little time to addiction-related training, with many students graduating without adequate knowledge or skills to treat patients with substance use disorders (SUD).

Objective: Michigan State University (MSU) created a pilot 4-week addiction medicine elective for PGY-1 students with the goal of increasing student’s knowledge, awareness and skills in assessing patients with SUD. The Addiction Medicine Student Interest Group (AMSIG) was created to implement additional foundational principles.

Methods: The 4-week elective was developed and made available to students online, including asynchronous modules, small and large group meetings, clinical cases, and expert and patient interviews. Utilizing these methods allowed for a broader reach and appealed to multiple learning styles. AMSIG held several events beginning with a de-stigmatization campaign where people-first language was emphasized. Other events included a patient panel, and naloxone and buprenorphine educational sessions.

Results: 36 PGY-1 students at MSU-CHM (MSU College of Human Medicine) completed a baseline attitudes survey in May 2021. An overwhelming majority of students “agreed” or “strongly agreed” that physicians who diagnose SUD early improve the chance of treatment success (89%), family involvement is a very important part of SUD treatment (97%), SUD is treatable (92%), alcohol use disorder is treatable (97%). The majority “disagreed” or “strongly disagreed” that once a patient is abstinent and off all medication for their SUD, no further contact with a physician is necessary (100%), a patient with SUD who has relapsed several times probably cannot be treated (100%), a patient with a SUD cannot be helped until they hit “rock bottom” (94%). The de-stigmatization campaign had 21 participants, the patient panel had 30 attendees, the naloxone training was overwhelmingly popular with 66 participants, and the buprenorphine session had 26 participants.
Conclusions: Early supplementation of the medical school curriculum with addiction medicine training can boost students’ confidence in their ability to assess patients with SUD. Moving forward, the goal is to share what MSU-CHM has learned from the elective and AMSIG. Our hope is that other medical schools will incorporate these principles into their curriculums.

Impact of Interprofessional Substance Use Disorder Education on Students’ Perceptions of Addiction and Ability to Respond to an Opioid Overdose

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Background: Foundations for Interprofessional Collaborative Practice (FICP) is a course for pharmacy, medicine, nursing, and social work students at The University of Texas at Austin designed to encourage collaboration and effective team-based care among health professionals. The first iterations of the FICP addiction module focused on screening and brief intervention strategies. In Spring 2022, the module was updated to incorporate harm reduction concepts and the perspectives of both clinicians and people with lived experience.

Objective: To assess health professions students' attitudes related to people with substance use disorder (SUD) and opioid overdose before and after participating in the updated FICP addiction module.

Methods: The updated FICP addiction module consisted of a 30-minute lecture on SUD basics, non-discriminatory terminology, and harm reduction concepts, a 30-minute opioid overdose prevention and response training, and a 40-minute open forum with an expert panel of clinicians and people with lived experience. Guided small group discussions and large group debriefs were interspersed throughout these activities. Students were asked to complete identical assessments before and after the module to evaluate change in attitudes related to people with SUD and opioid overdose. The assessment consisted of questions from the Opioid Experience, Behavior, and Attitude (Oeba) survey and the Opioid Overdose Attitude Scale (Ooas). Descriptive statistics, one-way ANOVA, and independent t-tests were used to analyze the data.

Results: Of 248 students enrolled in FICP, 224 (90.3%) completed the pre-assessment and 143 (57.7%) completed the post-assessment. Post-assessment mean scores were significantly higher than pre-assessment mean scores for both the Oeba (26.58 vs 24.78, p<.001) and the Ooas (95.69 vs 83.30, p<.001). Medical students scored significantly higher than pharmacy students (p=.013) on the Oeba pre-assessment, while nursing students scored significantly higher than medical students (p=.010) and social work students (p=.012) on the Ooas pre-assessment.

Conclusions: Participation in an interprofessional education course module focused on addiction which emphasized harm reduction concepts and reflected the perspectives of both clinicians and people with lived experience was associated with improved attitudes related to people with SUD and opioid overdose among health professions students.

Promoting a Patient-Centered Treatment Approach and Attitude Change among Providers Treating Substance Use Disorders

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Background: The Maryland Addiction Consultation Service (MACS) adopted the Project Extension for Community Healthcare Outcomes (ECHO) model to disseminate best practices in addiction medicine to community providers. Evaluations of the ECHO model demonstrate increased provider confidence in treating patients with substance use disorders (SUDs), but the extent to which providers implement lessons from ECHO clinics is unclear.

Objective: To evaluate the impact of MACS ECHO clinics on attendees’ practices in their treatment of patients with SUDs.

Methods: Semi-structured qualitative interviews were conducted with 19 attendees of two cohorts of MACS ECHO clinics for 1) opioid treatment program (OTP; n=10), and 2) primary care providers (n=9). Clinics consisted of a
participant-led case discussion, followed by a specialist-led didactic presentation. Each clinic presented didactic curricula on best practices for prescribing medications for SUDs, specific to each clinical setting. Interviews were conducted virtually, recorded, and transcribed. Transcriptions from each cohort were analyzed separately using thematic analysis.

**Results:** Thematic analysis revealed overlapping and distinct themes for primary care and OTP providers. Overlapping themes included increased provider confidence, incorporation of a low threshold approach and anti-stigmatizing language, reinforcement of existing aspects of clinical care, dissemination of knowledge gained from ECHO, and barriers to practice change. Themes revealed only for primary care prescribers included 1) attitude change in how they view their patients with SUDs, and 2) developed positive relationships with patients.

**Conclusions:** Providers from both OTPs and primary care settings reported incorporating a harm-reductionist, patient-centered treatment approach in their treatment of patients with SUDs. Given that primary care providers treat a variety of patients, their contact with patients with SUDs is likely more limited than OTP providers. The content of MACS ECHO clinics gave a new perspective of patients with SUDs for primary care providers, leading to increased positive attitudes. The results of this evaluation suggest that MACS ECHO clinics are an effective platform to disseminate evidence-based treatment approaches and decrease stigma associated with SUD treatment, which ultimately increase access to high quality patient care.

**Inpatient vs. Outpatient Initiation of Hepatitis C Treatment among Hospitalized Patients Who Inject Drugs: Lessons from a Quality Improvement Project**

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**Background:** Hepatitis C (HCV) diagnoses are rising, driven by infections in people who inject drugs (PWID). PWID are identified as a target population for treatment, but access to care is a barrier. At our institution, Addiction Medicine (AM) and Infectious Diseases (ID) routinely screen hospitalized PWID for HCV, but did not previously link patients to care.

**Objective:** Our novel quality improvement project assessed feasibility of starting HCV care processes for PWID inpatient. This included: (1) inpatient e-consults, (2) inpatient treatment initiation with direct acting antivirals (DAAs) when possible, and (3) post-discharge telehealth care.

**Methods:** The project was implemented at an academic hospital in the Southeast in 8/2021, with results through 4/2022. Patients seen by AM with detectable HCV RNA and interest in treatment were eligible. AM recommended ID e-consults for HCV, which began care coordination including inpatient treatment initiation if possible (based on length of stay) (Fig 1). The primary outcome was “likely cure,” defined as treatment completion or SVR-4, chosen due to concerns for loss to follow up (LTFU). Care cascades were constructed including: (1) completed e-consult; (2) linkage to care (telehealth visit for those not initiating inpatient); (3) treatment initiation; and (4) likely cure.

**Results:** Twenty patients had detectable HCV RNA and all were interested in treatment. Mean age was 33 years; 9/20 (45%) were female; and 17/20 (85%) were White. Of 20 patients (Fig 2), 16 (80%) were linked to care with 13 (81%, 65% overall) started on HCV treatment; 9/13 were started inpatient. 7 achieved likely cure and 6 were still on treatment (Fig 2). 66% of inpatient initiators (6/9) have achieved likely cure compared with 18% of others (2/11) (Figs 3-4). 6 patients were LTFU. None of those initiating DAAs inpatient were lost.

**Conclusions:** Inpatient initiation of HCV treatment for PWID was feasible for patients with prolonged hospitalizations and may be effective at facilitating HCV treatment and cure among a vulnerable population with substantial barriers to care. Future steps should address inpatient barriers to DAAs, and examine models of HCV telehealth.

**Destigmatizing Substance Use Disorder Curricula in Undergraduate Medical Education**

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**Background:** Substance use disorders (SUD) are one of the most heavily stigmatized chronic diseases and as a result continue to be undertreated. This stigma arises from historical and current systems of race-based oppression that have persecuted those who use drugs. We propose that addressing this stigma in medical education can have a positive impact in the care for those with SUD.

**Objective:** We envisioned a curricular intervention focused on addressing the systems of oppression that have contributed to the inequitable care of those with SUD. Our goal is to transform the SUD undergraduate medical curriculum at UCSF, to ultimately create a four-year curriculum with an anti-oppressive lens.

**Methods:** We first compiled an exhaustive list of competencies from several national addiction medicine educational and governing societies such as AMERSA, the UC SUD and Pain Consortium, and one community organization. The list was pared down from 114 to 41 competencies, based on redundancy and attention to anti-oppression, and were then situated within the 4-year learning trajectory. Using curriculum mapping and key informant feedback, this ideal set of competencies will be compared to what is currently taught to identify omissions and opportunities. We will then work with course directors, clerkship directors and community members to develop teaching materials to fulfill these competencies.

**Results:** This curricular transformation will be an iterative process guided by evaluation of the curriculum and learners. Revisions will be judged based on learner satisfaction and percent of included competencies. Attitudes, knowledge and skills of learners will be assessed using both quantitative and qualitative tools with attention to stigma, bias and person-first language.

**Conclusions:** This curriculum aims to teach UCSF undergraduate medical students the history of SUD stigmatization and how to care for patients with SUD through the lens of anti-oppression. By addressing stigma directly, this curriculum can create physicians who more effectively care for those with SUD, while dismantling the systems of oppression that created the stigma.

**Training Generalist Physician Educators to Teach Addiction Medicine: Virtual versus In-Person Outcomes**

**Daniel P. Alford, MD, MPH; Agata Bereznicka, MPH; Ve Truong, BS; Angela Jackson, MD; Jeanette M. Tetrault, MD; Alexander Y. Walley, MD, Msc; Ilana Hardesty, MA; Na Wang, MA; Jeffrey H. Samet, MA, MA, MPH - Boston Medical Center, Boston University School of Medicine**

**Background:** To improve addiction medicine education, a national 4-day Chief Resident Immersion Training (CRIT) program in addiction medicine, first convened in 2002, has been shown to increase chief resident (CR) physicians’ addiction medicine teaching. For its first 18 years, the annual CRIT program was exclusively an in-person training, however due to the COVID-19 pandemic, the 2021 CRIT program was held virtually.

**Objective:** To compare CRIT participants’ levels of post-program achievement in addiction medicine teaching between those who attended in-person versus virtually.

**Methods:** The virtual CRIT program content mirrored previous in-person programs including core lectures (addiction medicine, teaching methods); small group skills practice in screening, brief intervention and motivational interviewing; meetings with guests in recovery; attendance at Alcoholics Anonymous (AA) meetings; and development of a personalized substance use teaching project (SUTP) with one-on-one mentoring with CRIT faculty. We analyzed CR self-reported addiction medicine teaching outcomes via 6-month post-CRIT surveys and three bimonthly teaching logs (i.e., topics taught). Additionally, participants of the virtual training were asked about their sense of connectedness to CRIT faculty and other participants.

**Results:** CRs from 49 residency programs in 27 states attended CRIT during 2018 and 2019 - in-person (n=39) and 2021 - virtually (n=37). The in-person and virtual participants were similar demographically. At 6-months and via teaching logs, both groups reported similarly high increases in addiction medicine teaching compared to baseline with no significant differences between groups. Over 6 months, in-person participants on average taught 6.6 addiction medicine topics; virtual participants on average taught 6.4 topics. At 6-month follow-up, CRs who had attended the program virtually had completed more of their SUTP as compared to those who attended the program in-person; however, the
difference was not statistically significant. Among CRs who attended the program virtually, connectedness to faculty and connectedness to other participants were rated at 3.34 and 3.09, respectively (0 [strongly disagree] – 4 [strongly agree]).

**Conclusions:** The transition to a virtual CRIT Program was not demonstrably less effective in advancing addiction medicine teaching post-program as depicted in the evaluation self-report.

**Early Implementation of Contingency Management in Publicly-Funded Substance Use Treatment Programs in Missouri: Process and Lessons Learned**

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**Background:** Stimulant-involved overdose deaths have been increasing nationally, and one intervention with demonstrated effectiveness for stimulant use disorders is Contingency Management (CM). In 2021, federal funders allowed resources to be allocated for CM for the first time, with a $75 annual payment limit for incentives. Through a competitive grant process, Missouri State Opioid Response (SOR) 2.0 grant administrators awarded grants for CM programs at six publicly-funded agencies.

**Objective:** Design and launch six pilot CM programs in state-contracted substance use disorder treatment agencies through the SOR 2.0 grant, adhering to federal payment limits.

**Methods:** Empirical evidence and community feedback informed CM program requirements, including only using attendance/engagement as the reinforced behavior (not abstinence) and limiting the program to clients’ initial six weeks of treatment. Grant administrators publicized CM pilot opportunities, reviewed applications using a rubric, and selected six agencies for funding. Structured live and written technical assistance was provided throughout program development and early implementation. Research staff gathered qualitative feedback from treatment administrators and frontline clinical staff about barriers and facilitators of the pilot programming. Review of state claims data assessed the early reach of the CM programs through the first six months of implementation.

**Results:** Qualitative feedback revealed four common themes among providers: 1) Surprise program development took so long; 2) Desire for more staff and community education about CM; 3) Perceived benefit of using non-abstinence behavioral metrics; and 4) Hesitation enforcing reset contingencies for non-adherence. A total of 19 clients enrolled in CM across four programs in the first six months. The mean incentive awarded per client was $62. Program enrollment and corresponding updated analyses are ongoing.

**Conclusions:** Lessons learned include the need to plan for an extended and proactive CM development and trial period to support enough time to hire staff, address changes to electronic health record systems and program policies, solidify billing processes, and increase awareness about the CM program to local referral sources and community members. The impact of the federally-imposed $75 payment limit, which is lower in magnitude than what empirical literature suggests is effective, remains unknown and warrants future study.

**An Interprofessional Case-Based Discussion on Opioid Use Disorder: An Intervention for Health Professional Students to Increase Knowledge, Address Stigma, and Build Provider Confidence and Collaboration**

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**Background:** Limited access to trained providers willing to prescribe medications for opioid use disorder (MOUD) remains a systemic barrier to care for patients with opioid use disorder (OUD). Training a diverse workforce, including physicians (MDs), nurse practitioners (NPs), and physician assistants (PAs), to care for these patients has potential to close the MOUD treatment gap by increasing access to such providers. Educational approaches focused on increasing provider comfort with this population benefit from addressing stigma and confidence gaps among trainees early in their professional careers.
Objective: We aimed to develop and evaluate the acceptability and effectiveness of a 3.5-hour hybrid workshop for MD, PA, and NP students, focusing on interprofessional and team-based care.

Methods: Third-year MD, first-year PA, and final-year NP students at a large university completed a hybrid OUD workshop involving 2 hours of recorded lectures and a 1.5-hour small-group virtual case discussion covering evidence-based treatments, treatment-related stigma and access issues, and team-based management approaches. Surveys administered before and immediately after the workshop assessed student confidence, interest, and attitudes related to treating OUD. Descriptive analyses and t-tests evaluating significance were conducted.

Results: Two hundred seventy-five students attended the workshop, with 224 (81.4%) completing the pre-survey (127/170 MD, 61/67 NP, and 36/38 PA students) and 242 (88%) completing the post-survey (147 MD, 55 NP, and 38 PA students). Among the 196 students (71.3%) who completed both surveys, comfort diagnosing increased from a score of 3.07/5 to 3.98/5 ($P<.001$) and treating OUD increased from 2.68/5 to 3.56/5 ($P<.001$), with favorability of MOUD over abstinence-based treatment increasing from 3.86/5 to 4.44/5 ($P<.001$). Acceptability was high, with 93.2% of respondents indicating they would recommend the training to a colleague and 86.9% satisfied or very satisfied with the training. 77.2% indicated their role in an interprofessional team caring for an OUD patient was now clearer.

Conclusions: Our results highlight the acceptability and effectiveness of an interprofessional approach to health professional OUD education. Building trainee confidence, collaboration, and positive attitudes regarding MOUD through a short-format educational initiative is possible and has the potential to be expanded to students from other disciplines (i.e. social work, pharmacy).

Implementing Alcohol Screening and Brief Intervention (ASBI) in Reproductive Healthcare Using Adaptive Design and Quality Improvement Methods

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Background: Adaptive strategies for enhancing the fit and feasibility of evidence-based interventions within dynamic healthcare environments are vital to implementation success. We formed an academic-health system ASBI implementation team to collaboratively plan, design, integrate, and evaluate system-level practice changes across 40 health clinics in a regional six-state affiliate of Planned Parenthood.

Objective: This presentation will describe how use of the Reach Effectiveness Adoption Implementation Maintenance (RE-AIM) framework and a CDC alcohol SBI implementation guide provided structure for identifying areas for improvement, adapting and fully integrating ASBI in the face of predicted and unforeseen challenges.

Methods: Practical metrics included: 1) objective screening and brief intervention rates obtained monthly from electronic health record (EHR) data; and 2) post-implementation semi-structured group interviews with health center teams involved in ASBI delivery. Data were reviewed and discussed iteratively by the team to identify problems, make further adaptations, provide targeted coaching, and address threats to sustainability.

Results: Multi-level adaptations in intervention content, EHR, and training methods were implemented to support delivery and improve ASBI fit with the health system’s mission, workflow, healthcare team needs, and populations served. Screening rates that exceeded the quality goal of 80% eligible adults screened and 70% of patients drinking above recommended limits receiving a brief intervention were achieved across most settings. Improvements were observed in a few settings that were below goal after receiving feedback and coaching. Despite the rapid and unforeseen operational and staffing challenges during COVID-19, most settings continued to conduct ASBI at or above goal.

Conclusions: Adaptive implementation designs that include continuous monitoring and use of data along with quality performance goals, are vital to the ongoing success and sustainment of ASBI within healthcare.

Transformative Addiction Education in Undergraduate Medical Education

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**Background:** Medical students at Michigan State University College of Human Medicine (MSU-CHM) advocated for education about addiction medicine, signaling an unmet need in the curriculum. Curricular hours devoted to addiction medicine training is a small fraction compared to the time devoted to other chronic diseases (1).

**Objective:** To increase addiction education in a large midwestern medical school.

**Methods:** We assembled an advisory committee of leadership, medical students, and staff to create a 4-week addiction medicine elective for Year 1 medical students. Online asynchronous modules were tailored to meet the needs of medical students, including USMLE material. Topics included basic science, general principles of addiction medicine, individual substances, and health disparities. Large group activities brought in nationally recognized addiction physicians to highlight emerging trends in addiction. Small groups included case-based learning, facilitated by expert faculty. Finally, physician and patient panels highlighted the diverse workforce and humanized patients. Students completed the Substance Abuse Attitudes Survey (SAAS) pre-post, 3-month and 6-month attitudes survey.

**Results:** We enrolled 36 students in the pilot elective, with more on a waiting list. When asked if lifelong abstinence is a necessary goal in the treatment of substance use disorder; pre (n=36): 3% strongly agree, 22% disagree; 31%, neutral, 36% agree, 8% strongly agree; 6-month (n=14), 23% strongly disagree, 46%* disagree, 6% neutral, 23% agree, 0%* strongly agree. Once a patient is abstinent and off all medication for their substance use disorder no further contact with a physician is necessary; pre (n=36): 78% strongly disagree, 22% disagree; 6-month (n=14), 79% strongly disagree, 7% disagree, 14%* agree. Substance use disorder is a treatable disease; pre (n=36): 65% agree, 33% strongly agree; 6-month (n=14), 21%* agree, 79%* strongly agree. *P<0.01 when compared to the pre-test.

**Conclusions:** Students recognize the need for addiction education, and when given the opportunity, will take electives in addiction medicine. Results of elective courses can offer insight and valuable feedback toward integrating addiction into required curricula. When students have early exposure to topics in addiction, they have improved attitudes toward persons with addiction that are sustained for at least six months beyond the course.


**Nurse-Led Intervention to Increase Hepatitis C Screening, Testing and Treatment in an Open Access Opioid Treatment Program**

**Benjamin J Mahoney, APRN; Jeanette M. Tetrault, MD; Ivy M. Alexander, PhD, APRN; Joy Elwell, PhD, APRN; Lynn Madden, PhD; Declan Barry, PhD; Julia Shi, MD - University of Connecticut, APT Foundation**

**Background:** Approximately 4.7 million people in the United States live with the Hepatitis C virus (HCV), a condition resulting annually in ~20,000 deaths each year and $6 to $10 billion in healthcare costs. The opioid crisis fueled dramatic increases in HCV infection. Opioid treatment programs (OTPs) provide a unique opportunity to screen and treat HCV, however, only 63% of certified OTPs offer screening as of 2017. Nurse-led interventions can lead to improved rates of HCV screening and treatment.

**Objective:** The objective of this nurse-led program innovation was to achieve 100% HCV screening and subsequent testing for all new patients admitted to a single OTP, leading to an increase in HCV treatment initiation.

**Methods:** An onsite advanced practice registered nurse (APRN) tracked all new patients admitted to a large, open access OTP in New Haven, Connecticut. The APRN attempted to contact patients who missed opt out screening and those with positive HCV antibody tests by phone or through communication within the OTP’s electronic health record system to coordinate testing and initiate treatment. The APRN worked with other OTP staff to manage patients’ logistical issues and provided patient & staff HCV education. Data was collected prospectively over a 6-month quality improvement (QI) period (October 2021-March 2022) and compared to a 3-month baseline (July-September 2021).

**Results:** Unpaired t tests were utilized to evaluate project data. Of the 575 patients who entered the OTP during the QI period 90.1% were screened for HCV antibody, a 19% increase from baseline (p=0.0024). The screening rate for HCV
Viral load increased from 13.3% (n=8; 60 total) at baseline to 25.5% (n=36; 141 total) in the intervention period (p=0.1868). The number of patients starting treatment increased from 5 at baseline to 16 during the study period (p=0.5461).

**Conclusions:** Increased rates of both HCV screening and treatment resulting from APRN-led QI initiative at a single OTP suggests the value of systematically examining this approach in other OTPs. A limitation of the study was a lack of reflex testing for HCV viral load from HCV antibody tests, which would have greatly increased the rate of HCV viral load testing.

**Identification of Multiple Risk Factors to Prevent Alcohol-Exposed Pregnanacies: Gaps in the Traditional Alcohol Screening and Brief Intervention (SBI) Model**

**Janice Vendetti, MPH; Bonnie McRee, PhD, MPH; Jessica Johnson, BSW; Lauren Rosato, IMBA - University of Connecticut, School of Medicine**

**Background:** Continued focus on singular behavioral risk factors is a substantial area for improvement in health care quality. Fetal alcohol spectrum disorders (FASDs) continue to be a public health concern, and is caused by two behaviors: consuming alcohol while using less effective pregnancy prevention. Addressing both alcohol and contraceptive behaviors among individuals capable of becoming pregnant can help prevent unplanned alcohol-exposed pregnancies (AEPs). In the context of traditional alcohol screening and brief intervention (SBI) models, cutoff scores on standardized alcohol screening tests identify only individuals with moderate- or high-risk alcohol use as eligible to receive a brief intervention (BI).

**Objective:** Within the context of an alcohol SBI model, our objective was to examine gaps in the detection of those at risk of AEP and describe opportunities to improve systems-level identification and provider intervention aimed at AEP prevention.

**Methods:** We examined administrative data from a large women’s healthcare system to identify the prevalence of individuals reporting any alcohol use on the Alcohol Use Disorders Identification Test (USAUDIT) and using a pregnancy prevention method less than 88% effective. Administrative data for women ages 18-49 presenting for preventive care between 6/1/2020 and 2/28/2022 were analyzed.

**Results:** Of the 7584 screened, 4821 (63.6%) reported some alcohol use, but screened at a lower-risk level and thus were not flagged to receive an alcohol-focused BI. As expected, most (4100, 85%) did not receive a BI; however, 1187 (29%) of those were using a method of pregnancy prevention that was less than 88% effective and at-risk of an AEP.

**Conclusions:** FASD prevention involves addressing not only alcohol use, but also identifying and addressing concurrent behaviors that contribute to AEP risk. Our finding underscores the insufficiency of a traditional alcohol SBI model utilizing a standardized screening test that focuses on alcohol risk alone. There is a need for systems modifications to assess multiple behaviors simultaneously and alert providers when a combination of behaviors increases a specific health risk. Tailored alcohol BIs that include the risks and benefits of various pregnancy prevention methods to reduce AEPs provide an opportunity to enhance the reach of standard alcohol SBI services.

**Training Primary Care Teams About Preventing Fetal Alcohol Spectrum Disorders: Assessing Virtual and In-Person Outcomes**

**Daniel P. Alford, MD, MPH; Jacqueline S German, MPH; Amy Harlowe, MPhil; Candice Bangham, MPH; Alexandra Heinz, LICSW, MPH; Jacey Greece, DSc, MPH - Boston Medical Center, Boston University School of Medicine**

**Background:** Prenatal alcohol exposure (PAE), which can lead to fetal alcohol spectrum disorders (FASDs), is one of the most common preventable causes of lifelong intellectual and developmental disabilities in the U.S. Healthcare teams can play a critical role in preventing FASDs; however, they are unprepared to do so. Training teams through a variety of modalities is essential given pandemic-imposed constraints.
Objective: To assess in-person and virtual training on participants’ self-reported communication skills regarding FASD prevention, and to examine engagement in virtual learning.

Methods: A CDC-funded program provided FASD prevention education to healthcare teams in a safety net health system for an urban, underserved patient population. From March 2019 to March 2020, trainings were in-person. Due to COVID-19, trainings between March 2020 and June 2021 were held virtually. We assessed self-rated counseling and communication skills about the risks of PAE and FASDs using a pre/post-test design stratified by delivery mode. Questions used a 6-point Likert scale. In the virtual group, we assessed the acceptability of virtual training.

Results: Of the 206 multi-professional participants, 134 matched for both the pre- and post-surveys (N=76 in-person; N=56 virtual), including physicians (44%), nurse practitioners (22%), nurses (13%), behavioral health clinicians (8%) and other (13%). Both groups had statistically significant (<0.0001) positive changes in mean score on self-rated ability of communicating information on FASDs [in-person 1.17 (SD=1.06), virtual 0.96 (SD = 1.04)] and counseling patients about risks of PAE [in-person 0.82 (SD=1.12), virtual 0.80 (SD=0.98)]. In virtual trainings, 66% reported preferring virtual over in-person training, 86% agreed to being as engaged in virtual training as in person and 88% agreed that they acquired the same skills but 34% reported distractions, limiting the ability to fully participate in virtual training.

Conclusions: Virtual trainings performed similarly to in-person trainings in terms of self-reported communication skills gained. Two-thirds of participants prefer virtual trainings even though a third felt that distractions limited participation. More data is needed to examine virtual education.

A Simulation-Based Exercise in Disclosing Adverse Events

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Background: The Accreditation Council for Graduate Medical Education (ACGME) has established requirements for Psychiatry trainees to be educated in the disclosure of adverse events to patients. However, survey data from other studies shows that residents are often unsure of how to handle these situations or lack confidence in the skills required for effective and protected disclosure. Simulation-based training is often used to teach clinical skills, especially for uncommon or high-intensity situations that may not be common occurrences during residency training.

Objective:

1) Identify whether simulation experience can be successfully used to educate trainees in appropriate disclosure of adverse events.

2) Determine whether simulation has improvements over lecture education in the confidence, knowledge, and skills retained after education.

Methods: Addiction Medicine and Addiction Psychiatry fellows were assigned to two groups, one of which would watch a lecture about the correct disclosure of adverse events, while the other watched the same lecture and then immediately practiced those skills in disclosing an adverse event to a standardized patient. Each group participated in a pre-test and demographic questions before the educational activity, and a post-test and confidence survey after completion of the activity.

Results: After a smaller 2021 pilot, in February 2022, 9 Addiction Psychiatry and 3 Addiction Medicine Fellows completed the course in entirety, with 7 in the simulation group and 6 in the “control” group. Of the total 13, only 5 reported some training in disclosing adverse events prior to this course. Overall, post-surveys showed high satisfaction and confidence ratings. Both groups showed improvement in pre/post test scores regarding confidence in disclosing adverse events and offering apologies to patients. There was no statistical difference between the two groups in post-test scores of lecture-based materials.

Conclusions: Simulation-based education may be an effective modality for teaching trainees how to confidently and appropriately disclose adverse events to their patients. Preliminary findings suggest that simulation, in addition to
lecture, may aid in confidence to the learner practicing the skills. Further iterations of study of this training with additional learners may clarify additional benefits of simulation learning.

Utilizing Mixed Reality Simulation in Substance Use Training

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Background: Utilizing simulation in health professions training has been connected to multiple training benefits. Yet, information on the potential benefits of infusing mixed reality simulation as part of interprofessional, systemic training for behavioral health trainees is lacking. The Opioid Interprofessional Training Initiative (ITI) was developed as a training program to provide graduate-level trainees with an innovative training experience in working with youth and families impacted by opioid use disorder (OUD) by including a series of mixed reality simulations as part of the training requirement. However, it is not yet known if this simulation modality positively contributes to student learning. Because of this, the simulation component of ITI required evaluation.

Objective: The aim for using simulation was to provide trainees with low-risk experiential practice for engaging youth impacted by OUD and their family. This presentation summarizes findings from evaluating trainee’s reported experiences with the simulation to determine if this curricular element provides added value for trainees and to evaluate for quality improvement opportunities.

Methods: To date, n=40 graduate-level behavioral health students across two disciplines completed the ITI curriculum, which included didactic training and mixed reality simulation. Regarding simulation, trainees completed three separate mixed reality simulations, engaging the same parent-adolescent dyad across time. Simulations were designed to follow an assessment and treatment trajectory. Students completed a debriefing meeting after each simulation completion, led by a facilitator using a semi-structured interview format. The qualitative data from the debriefing meetings were analyzed for this evaluation, using Braun and Clarke’s (2006) thematic analysis approach to guide analysis.

Results: Results indicated overall positive experience with simulation. Thematic analysis indicated the following themes: Appreciating interprofessional team presence during simulation, recognizing contextual elements post-client engagement, increased readiness and confidence regarding SUD treatment, considering clinical lessons learned from the simulation experience, and examination of the process of implementing simulation.

Conclusions: Findings indicated that mixed reality simulation may be a beneficial component of the training, and that simulation serves as a good bridge between classroom learning and clinical placement. Additional considerations are needed for modifying simulation to address lessons learned and for determining a standardization and sustainability plan moving forward.

Expanding Addiction Medicine Training for Internal Medicine Residents in Bronx, New York

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Background: Integrating experiential training in the care of substance use disorders (SUDs) is a new graduate medical education (GME) program requirement. Montefiore Medical Center is a large academic health system that graduates nearly 50 internal medicine (IM) resident physicians per year. Montefiore is also located in Bronx, New York, which has been affected by longstanding disparities in SUD care. IM resident education in SUDs has centered around lectures, workshops, and electives; experiential training in SUDs has not been formalized.

Objective: We developed a required addiction medicine rotation for IM residents to address a critical need in medical education and public health.

Methods: We embedded a two-week addiction medicine rotation for all third-year IM residents. During the inpatient week, residents rotate on the Addiction Consult Service and evaluate diverse SUD cases with an attending and fellow.
During the outpatient week, residents rotate at an opioid treatment program, an intensive outpatient program, and a “Bridge Clinic,” which provides SUD care in the primary care setting. Residents also complete the 8-hour buprenorphine waiver training and self-study reading modules. All residents attend weekly Addiction Medicine Rounds, where they participate in case conferences and journal clubs.

**Results:** Between July 2021 and April 2022, 38 residents participated in the rotation and 24 (63%) completed formal evaluations. All residents rated the overall rotation to be valuable for their education, with 52% in strong agreement based on a 4-point scale from strongly disagree to strongly agree. All residents agreed that the rotation increased their knowledge and skills in diagnosing and managing medications for SUDs. Residents rated their inpatient training as highly valuable but varied in ratings of outpatient training components.

**Conclusions:** The required addiction medicine rotation was rated highly in its first year of implementation. Leveraging different SUD programs in the health system was important to facilitate experiential training in diverse settings. Allowing resident physicians to train through precepted practice on the addiction consult service was better received than shadowing at outpatient SUD programs. Integrating robust training in SUD care in GME is feasible, and future iterations of the rotation should ensure all experiential training components integrate precepted practice.

**Rapid Investigation and Response to Increased Overdoses in San Francisco Shelter-In-Place Housing and Hotels During the COVID-19 Pandemic**

**Caroline Cao Zha; Alexander Bazazi, MD, PhD; Phillip Coffin, MD, MIA, FACP, FIDSA; Hali Hammer, MD; Rob Hoffman; Eileen Loughran; Jamie Moore, RN, MSN; Ellen Stein, MPH; Barry Zevin, MD; Hillary Kunins, MD, MPH - City and County of San Francisco Department of Public Health**

**Background:** Nonfatal and fatal drug overdoses have increased in San Francisco in recent years, particularly among people experiencing homelessness. In November 2021, the Department of Public Health (SFDPH) was alerted to a possible increase in overdoses in the alternative housing site and Shelter-In-Place hotel (SIP) system, established during the COVID-19 pandemic to house people experiencing homelessness. Because traditional overdose surveillance systems relying on medical examiner reporting are often time-lagged, SFDPH developed new strategies to rapidly investigate and respond to this outbreak.

**Objective:** To develop a framework for a coordinated, multi-program response to a reported increase in overdoses, including implementing rapid surveillance and targeted interventions.

**Methods:** Building upon a database of Critical Incident Reports (CIRs) submitted by SIP staff after notable resident incidents (including suspected overdoses), SFDPH established a daily overdose-specific report to conduct rapid surveillance. Staff developed a chart abstraction instrument to review medical records of individuals identified through CIRs for potential risk factors, which were further clarified through interviews with SIP residents who use drugs.

**Results:** Systematic CIR review identified 18 fatal and 15 nonfatal suspected overdoses reported during an 8-week period (10/1/21–11/30/21), compared to 12 total incidents in the prior 4 weeks. Shared risk factors among individuals who experienced suspected fatal overdoses included no recent history of medication for opioid use disorder (MOUD), a recent non-fatal overdose, and use of both opioids and stimulants. Staff developed and advocated for interventions based on these findings, including new SIP policies establishing a “buddy system” for substance use. Continued routine CIR monitoring from December 2021 through April 2022 indicated that suspected overdose counts returned to and have remained at rates comparable to those immediately prior to October 2021.

**Conclusions:** No recent history of MOUD, opioid and stimulant co-use, and/or a recent nonfatal overdose were identified as potential risk factors for fatal overdose. Interventions targeting these areas, including promotion of safer use practices (e.g., not using alone), increased MOUD access, and immediate engagement after nonfatal overdoses, may be effective preventative measures for this population. This investigation also supports CIR review and chart abstraction as effective mechanisms to track overdose trends and develop/evaluate interventions in near real-time.

**Impact of a Primary-Care Based Collaborative Care Model on Alcohol Use Disorder Treatment**
Background: Less than 8% of adults with alcohol use disorder (AUD) will receive medication-assisted treatment (MAT) within the first year of diagnosis. The ReACH Program (Reducing Alcohol: Committing to Health) is an innovative program that aims to increase treatment of AUD at Grady Memorial Hospital, a safety-net, teaching hospital in Atlanta, GA. This multidisciplinary, collaborative care program involves substance counseling, MAT, and partnerships with community peer recovery counseling/groups.

Objective: Here we present an analysis of AUD-associated outcomes among patients in the ReACH Program.

Methods: In the pilot phase, members of the REACH team performed phone outreach in 4-week intervals. In the second phase, patients were contacted by a care manager who assessed their severity of AUD, readiness for change, psychiatric co-morbidities, desire for MAT, and interest in peer counseling. The treatment plan, including recommendations for MAT, was developed by Medicine and Psychiatry physicians and communicated to the PCP. The care manager communicated with patients in two-week intervals to assess change and provide ongoing support. Mixed model regression analyses, using time as a scale, were used to analyze the following tests of change in both cohorts: heavy drinking days (HDD), days abstinent from alcohol use, ER visits/admissions due to alcohol use, and change in days with tremors or other alcohol withdrawal symptoms.

Results: Pilot data from 15 patients enrolled prior to the involvement of the care manager is included as well as 24 patients after the care manager was hired For every call, there was a 20% increase in days abstinent (RR 1.19, p<0.001), 18% reduction in HDD (RR 0.82, p=0.04), 27% reduction in days with cravings (RR 0.728, p=0.024). There was not a significant change in days with withdrawal symptoms (RR 0.973, p=0.859), rate of ER visits/hospitalizations (OR 1.2, p=0.296), or ER visits/hospitalizations due to alcohol (OR 2.59, p=0.109).

Conclusions: These preliminary results suggest that a collaborative care model is an effective approach in treating AUD in a safety-net primary care setting. A care manager was paramount to increasing patient engagement. Limitations of the analysis include the small sample size of enrolled patients, lack of participant retention, and variation in follow-up periods.

MOUD for Persons who are Hospitalized while Experiencing Incarceration in Kentucky – A Case Example

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Background: Hospitalized persons with opioid use disorder (OUD) who are experiencing incarceration face barriers to accessing medications for opioid use disorder (MOUD). The legal system often treats substance use disorder differently than other medical problems. There are civil rights protections under the Americans with Disabilities Act (ADA) that are important to understand when advocating on behalf of hospitalized persons with OUD experiencing incarceration.

Learning Objectives:

- Highlight barriers to MOUD for hospitalized persons experiencing incarceration.
- Describe patient advocacy approaches using the ADA

Case Presentation: JJ is a 40-year-old incarcerated person with severe OUD, hospitalized due to an injection-related chest wall abscess, requesting buprenorphine. Jail guards initially try to prohibit administration of sublingual buprenorphine and distribution of materials for addiction follow-up appointments. The county jail doctor is X-waivered but refuses to prescribe sublingual buprenorphine. JJ receives subcutaneous XR-buprenorphine before discharge. The jail refuses transport to addiction follow-up appointments. JJ’s infection is appropriately treated with surgical intervention, IV antibiotics and transport for surgery appointments.

Discussion: MOUD is the standard of care for patients with OUD and decreases all-cause mortality and criminal behavior. Of the 1.8 million currently incarcerated Americans, at least 15% have OUD. Sinkman et al. highlight
withholding MOUD as a potential ADA violation. Jails have no authority to dictate medical care when incarcerated persons are hospitalized. The hospitalist advocated for the patient by educating guards, calling the jail physician, alerting the hospital lawyer, and providing XR-Buprenorphine at the patient’s request to provide treatment for as long as possible. The next step is alerting the Assistant US attorney as done in Massachusetts and Louisiana to report possible civil rights violations. Several states offer all FDA-approved forms of MOUD in carceral settings, but Kentucky jails only offer XR-Naltrexone injections. Both untreated OUD and injection-related infections have high morbidity and mortality, yet the patient only received adequate treatment for the infection. Mortality after release from incarceration in the first two weeks is 12.7%, with drug overdose being a leading cause. Offering MOUD universally to incarcerated persons with OUD is crucial in addressing the drug overdose crisis.

Challenges and Opportunities in Linkage to Opioid Treatment Programs from the Hospital Setting

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Background: Methadone is a first-line medication for opioid use disorder (OUD) but remains underutilized and difficult to access in the US. Federal regulations require outpatients to obtain methadone from certified opioid treatment programs (OTPs). Methadone may be initiated in the hospital, but patients face ongoing challenges with starting and continuing treatment at OTPs on discharge. Barriers include stigma, complexity in care coordination, and outdated regulations that hinder linkage to OTPs.

Learning Objectives:

1. Describe challenges in enrolling hospitalized patient in OTPs.
2. Define systemic factors that contribute to these challenges.
3. Identify one strategy to improve methadone access for hospitalized patients.

Case Presentation: A 59-year-old man without significant past medical or surgical history was hospitalized for acute on chronic back pain. Pain prevented him from sitting or standing and persisted after a trial of conservative management. He endorsed daily heroin and non-prescribed methadone use but had never enrolled in an OTP. After discussion with the addiction consult service, the patient opted to start methadone to treat opioid withdrawal, OUD, and pain. He was medically cleared for discharge on hospital day 5 but faced multiple challenges with care coordination, including (1) OTP enrollment from the hospital, (2) identification of a skilled nursing facility (SNF) that would accept a patient taking methadone, and (3) establishment of a disability access plan given his immobility. The medical director of an affiliated OTP obtained clearance to complete the mandated in-person OTP intake at the hospital, and the patient was successfully discharged to a facility 17 days after he was medically cleared.

Discussion: Methadone treatment was clinically indicated for this patient but restricted access to the medication negatively impacted his care. Challenges in OTP enrollment and SNF placement significantly prolonged his hospital stay. Acceptance to post-acute care settings remains challenging for people with OUD despite federal disability antidiscrimination laws. Strategies to improve access to treatment for patients with OUD who require hospitalization could include (1) methadone initiation via telehealth, (2) dispensing methadone directly at SNFs, and (3) alternate models of methadone dispensation for patients who cannot physically travel to and participate in clinic daily.

24 Hour Transition from Methadone to Buprenorphine/Naloxone Maintenance Using a Microinduction Protocol in a Medically Monitored Detox Setting

Lori DiLorenzo, FASAM, MD - Spectrum Health Systems, Inc, University of Massachusetts School of Medicine

Background: Patients transition from methadone to buprenorphine naloxone for various reasons. This process is often constrained by time and availability of adjunct medications for comfort and transition.
Learning Objectives: Demonstrate the successful transition from methadone to buprenorphine/naloxone within 24 hours using a buprenorphine/naloxone ONLY microinduction protocol in a medically monitored detox, and discuss how this translates to an OTP setting.

Case Presentation: A 29 year old male who was using fentanyl 4-5 grams IV daily for six months prior to admission to inpatient detox began a methadone detox and mid protocol decided to transition to buprenorphine/naloxone. Patient was successfully transitioned to buprenorphine/naloxone within 24 hours of his last methadone dose using a microinduction protocol and left detox on a stable dose with follow up.

Discussion: Many patients enter detox with the intention of leaving on long term buprenorphine/naloxone maintenance, but because protocols require prerequisite withdrawal, they often choose a methadone withdrawal protocol which can be started sooner and leave without MOUD. Others come to detox to transition from methadone to buprenorphine/naloxone because they are unable to withstand the withdrawal requirements to begin the medication outpatient. Starting MOUD in detox increases treatment retention in short and long term residential treatment, and decreases relapse rates when patient leave after detox. Many effective microinduction protocols such as the Bernese Method take days, or use medications for overlap that are not readily available in detox or OTP settings. This case illustrates the effectiveness of a treatment protocol similar to the Zuckerberg San Francisco General Hospital protocol and discussion will involve transitioning patients from methadone maintenance, fentanyl only, and applications for the OTP setting.

References:


Three's a Crowd! Subcutaneous Long-Acting Buprenorphine Contains Three Components, One of Which Caused a Cutaneous Allergic Reaction

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Background: Allergic reactions can be unpredictable and variable, from inconvenient to life-threatening. Buprenorphine, an opioid receptor partial agonist, is available as a transdermal patch to treat pain and as sublingual medication to treat opioid use disorder. There are several documented localized allergic reactions to the transdermal buprenorphine, either to the medication or patch itself. Subcutaneous extended-release monthly buprenorphine (XR-BUP) is a relatively new form of opioid use disorder treatment, and there is a sparsity of documented adverse effects. The injection combines three components: 1. buprenorphine; 2. biodegradable 50:50 poly(DL-lactide-co-glycolide) polymer; and 3. N-methyl-2-pyrrolidone (NMP) solvent, a known cutaneous allergen. We present a case of a localized cutaneous allergic reaction to XR-BUP, most likely caused by NMP.

Learning Objectives:

1. Consider XR-BUP as a treatment option for opioid use disorder
2. Create an awareness of the components of XR-BUP
3. Describe the allergenic potential of XR-BUP
Case Presentation: A 52-year-old gentleman presented with a repeated localized cutaneous allergic reaction after injection of XR-BUP. The patient has a history of heroin and cathinone use disorders, hepatitis C, H. pylori, knee pain, and lower leg varicosities secondary to iliac fossa IVDA. He received sublingual buprenorphine/naloxone for three years, followed by six uneventful XR-BUP injections. Hours after the seventh and tenth injections, he developed localized burning, swelling and erythema around the injection site without associated fever, dyspnea, or generalized rash. The allergic reaction developed after the patient reported "vigorous scrubbing" the area, and resolved completely each time within days. The patient has transitioned back to sublingual buprenorphine/naloxone due to concern for developing a more severe reaction.

Discussion: XR-BUP is composed of medication, polymer, and solvent. The medication, buprenorphine, is unlikely to be the causative allergen as the patient previously (and currently) takes sublingual buprenorphine/naloxone without adverse reaction. The polymer is biodegradable and has been documented in the literature to be well tolerated. However, the solvent has been described as a severe cutaneous allergen. Therefore, leakage after injection may cause a localized allergic reaction. It is important for providers to become aware of this possible adverse effect.

Challenges And Successes of Treating Adolescents with Opioid Use Disorder in a Pediatric Primary Care Clinic

Kristen O'Connor, CARN; Nadia Al-Lami RN MSN CPNP; Raelene Walker, MD FAAP - Santa Cruz Community Health

Background: A 14-year-old presents to primary care clinic to establish care after hospitalization for accidental fentanyl overdose. Their discharge is complicated by needing to transition their medical home to access the only pediatric clinic in county offering medications for opioid use disorder for adolescents.

At the initial visit, the patient reports a history of multiple overdoses, reports struggling with adherence to buprenorphine, and continued opioid cravings. An overdose safety plan reviewed with the patient and family included providing them naloxone kits, fentanyl test strips, and education handout sheets.

Due to patient’s significant overdose history and adherence challenges with sublingual buprenorphine, patient started long-acting injectable buprenorphine with weekly provider visits and urine toxicology screening. Parent and provider offering separate incentives for appointment completion, expected urine results, and successful medication administration. Subsequent visits, patient increasingly engaged with care and was able to remain abstinent.

Learning Objectives:

1. To discuss the evidence for offering medication for opioid use disorder and overdose prevention in pediatric primary care.
2. To describe a model of implementing developmentally appropriate interventions for engagement in care including contingency management and involving families in treatment and goal planning.

Case Presentation: Buprenorphine is FDA approved for >16 years, and its use is endorsed by the major professional societies. Fentanyl overdose deaths among adolescents have significantly increased in recent years while access to youth treatment remains low. There is limited data about access to overdose prevention among youth. There is a need to develop and test innovative models of care that are developmentally appropriate and are inclusive of the family. Contingency management (CM) is a behavioral management approach that rewards positive behaviors. In this case, CM was individualized with patient-identified rewards (Japanese candy and gift cards). The rewards were given by the provider and parent for appointment and treatment adherence and found to be effective.

Discussion: Future research is needed to evaluate the treatment of OUD in pediatric primary care. around buprenorphine treatment for adolescents including long-acting injectable buprenorphine as an alternative for daily buprenorphine administration to ensure adherence.

Chasing the Elusive Bupe Start: Exploring the Possibilities and Limitations of Patient-Centered, Innovative Approaches to Buprenorphine Initiation in the Hospital Setting
**Background:** Buprenorphine is a highly effective treatment for opioid use disorder, but some patients have difficulty transitioning to it from unregulated opioids.

**Learning Objectives:**

1. Compose a low-dose buprenorphine initiation plan that can be accelerated or slowed down, with use of adjunctive medications, across inpatient-outpatient settings.
2. Explore benefits of patient-centered, harm reduction approaches, and identify systems/policies that could expand treatment options for high-risk patients who use intravenous opioids.

**Case Presentation:** A 45 yo man with severe opioid and cocaine use disorders and cardiomyopathy (EF 16%) was seen by the Addiction Medicine Consult Service (AMCS) multiple times over three years. Though methadone had been helpful in the past, limits on take-home privileges prompted him to stop attending treatment. The AMCS made seven attempts to initiate buprenorphine per patient’s preference, including three “standard” initiations which resulted in precipitated withdrawal and premature discharge, one completed low-dose initiation with recurrence of IV opioid use after discharge, and one low-dose initiation started in the hospital and completed at home after a premature discharge. The patient continued buprenorphine with an outpatient addiction medicine physician for several weeks. However, course was complicated by new LV thrombus, ongoing cocaine use, and worsening dyspnea. During an ED visit he endorsed interruption in buprenorphine treatment, and AMCS helped facilitate a high-dose (re) initiation. However, he did not pick up his prescription and presented less than a week later with cardiogenic/septic shock, candidemia, and progressive ischemia of bilateral feet. The AMCS provided social and pain management support until his death.

**Discussion:** Initiating buprenorphine in patients with significant IV fentanyl use, history of precipitated withdrawal, and/or premature hospital departures can be challenging. Clinicians may need to utilize and re-attempt a combination of techniques including short-acting opioids for pain/withdrawal, low and high dose initiation approaches, and adjuncts for anxiety. In other countries/settings, similar high-risk patients have accessed community and hospital-based overdose prevention centers or injectable opioid agonist treatment. For patients with severe substance use disorder and life-threatening illness, the AMCS can serve as a continuous support for direct conversations about patient goals and treatment options, and can be a vital resource even at the end of life.

**Rapid Methadone Titration in a Hospital Inpatient Setting: A Case Report**

**Edmond Hakimi, DO; Aamani Chava, MD - Brigham and Women's Hospital**

**Background:** Methadone is a long-acting opioid agonist that is a mainstay for treatment of opioid use disorder (OUD) since 1972. One of the commonly used strategies is “start low, go slow”, with the goal of managing withdrawal symptoms and reducing cravings but avoiding risk of oversedation\(^1\). These guidelines were generally meant for outpatient settings; here we describe a case of a hospitalized patient for whom a more rapid dose titration was recommended.

**Learning Objectives:**
To learn about methadone titration for inpatient settings

**Case Presentation:**
The patient is a 40-year-old female with history of OUD on methadone maintenance. She sustained a mechanical fall due to sudden loss of consciousness after her daily methadone 150mg at her outpatient treatment program. She presented to ED 48 hours after last dose of methadone with acute opioid withdrawal symptoms and was given methadone 30mg. On hospital day 1, 72 hours since methadone dose, due to prolonged QTc 606ms, methadone was held and she received hydromorphone 10mgPOQ4prnpain. On hospital day 2, 96 hours since methadone dose, cardiology was consulted for corrected QTc of 500 due to Uwave secondary to hypokalemia that was misread by an auto read EKG. Methadone was restarted at 75mg (50% of home dose) with hydromorphone 10mgPOQ4prn. On hospital day 3, methadone was increased to 110mg (75% of home dose) and increased daily 10mg until home dose of 150mg was reached on hospital
day 7. She was discharged on methadone 150mg daily, contacted post discharge and dosed daily at OTP with appropriate drug screens with no issues.

**Discussion:** Per current ASAM recommendations for inpatients, methadone is increased by 5-10mg every 3-5 days to minimize risk of oversedation. Since the patient in this case had been adherent to daily dosing at their OTP and we monitor for risks such as oversedation and cardiac changes, a more aggressive titration was warranted. With appropriate titration inpatient, we can ensure continuity of care as most programs allow direct admission from the hospital and continued monitoring and stabilization. Further research on rapid methadone dose titration in the inpatient setting is needed to ensure safe and effective use of methadone for OUD.

**Using a Capabilities Approach to Reimagine Substance Use Programming**

**Christopher Rusk, LSW¹; Stephanie Elias Sarabia, PhD²** - (1)Bergen New Bridge Medical Center, (2)Ramapo College of New Jersey

**Background:** The Capabilities Approach, a social justice and human rights-focused political theory adapted by Martha Nussbaum identifies ten areas of human functioning that require a minimum threshold of access for life to be considered worthy of human dignity (Nussbaum, 2011). These ten central capabilities offer an alternative lens to conceptualize and manage substance use that is broad, holistic, and person-centered. The approach is scalable and identifies treatment needs at the micro-level and informs policy decisions at the macro level during ongoing program development.

**Learning Objectives:** After engaging in this session, participants will have an understanding of what the Capabilities Approach is, how to use it to inform drug use programming through discussion of an application example, and evaluate its benefits and limitations in drug use programming.

**Case Presentation:** The case discussed is a hospital-based, Medication-Assisted Treatment (MAT) program that was developed in line with a capabilities approach. The MAT program uses the ten central capabilities to help people explore which domains of their life are operating below a threshold of healthy functioning and identifies recovery needs. Contrasting more narrowly focused or fragmented systems of care, the MAT program offered a robust recovery ecosystem of services including immediate and ongoing access to psychiatric, primary care, and individualized therapy. The program's integrated peer recovery center provides access to additional social support, prosocial recreation, and linkage to support services, e.g., legal, housing, and employment. Clients consistently report that the integrated nature of the program has helped them find sustainable recovery, even if their previous attempts at recovery in traditional programs were unsuccessful.

**Discussion:** A Capabilities lens guides us to view people who use drugs in the context of what all people need to have the option of a life worth living. An approach to care that uses capabilities to buttress research-informed approaches to clinical care not only improves the quality of the person’s experience but also builds a stronger recovery ecosystem that sustains recovery. It also honors and aligns with a human rights approach to substance use which embraces multiple pathways to a self-defined recovery.

**What's the Fuss About Phenibut: Case Report**

**Gigi J Simmons, MD** - University of California San Francisco

**Background:** Phenibut is a GABA-B agonist used as an anxiolysis and nootropic agent used treat anxiety, alcohol withdrawal, and other psychiatric disorders. Phenibut was banned from sale as a “dietary supplement” in the US in 2019, but available on-line for purchase. Limited availability on-line results in withdrawal symptoms that range in severity including delirium, seizures, and rhabdomyolysis.

**Learning Objectives:** Learn the presentation of Phenibut intoxication and withdrawal, examine the pharmacokinetics of Phenibut, and explore the evidence on managing Phenibut withdrawal.

**Case Presentation:** 29-year-old male with history of substance use disorder (opiate use disorder on buprenorphine, benzodiazepine and ketamine use) and depression/anxiety presents with complaints of feeling shaky, twitching, auditory
hallucinations and electric sensations. States that he’s taking a new medication called phenibut that he bought over the counter. Taking about 4g daily for the last 4 weeks. For the last 2 nights he’s been feeling “twitchy” and having “brain zaps”. Last use a few hours before presentation. Patient placed on symptom triggered CIWA resulting in high dose lorazepam use with minimal relief of symptoms. Transitioned to baclofen, a GABA-B agonist similar in structure to phenibut that alleviated symptoms. Patient was discharged on high-dose baclofen taper, gabapentin and buspirone. Post discharge, patient returned to low dose phenibut use, increased baclofen and gabapentin to manage continuing withdrawal symptoms. Re-admitted 4 weeks later complaining of agitation, anxiety, and tremors. Specialist recommended low-dose baclofen taper over 6 weeks, decrease of gabapentin, and discontinue buspirone. Patient responded well to new taper. He did not return to phenibut use. Eventually, he was able to wean off daily baclofen although he continued to experience waning withdrawal symptoms from phenibut.

**Discussion:** Treating phenibut withdrawal symptoms with baclofen at varying doses and tapers appear to be an effective treatment option due to having a similar structure to phenibut. The increase in case reports detailing phenibut withdrawal demonstrates that it’s use is expanding, and more research is needed to provide guidance on managing the symptoms.

**Acute Eosinophilic Pneumonia in Patient Receiving Injectable Naltrexone**

**Gabriela Milagro Steiner, MD Candidate, MSc; Alexander Logan, MD - University of California, San Francisco**

**Background:** Randomized controlled trails demonstrate that naltrexone reduces drinking in patients with alcohol use disorder (AUD). Injectable naltrexone (IM-NTX) may, however, be associated with acute eosinophilic pneumonia (AEP) and consequent respiratory failure. Though it is important to address underlying causes of AEP, the risks associated with discontinuation of an effective treatment for AUD complicates treatment decisions. This case illustrates the nuances of treating AEP in a patient receiving IM-NTX

**Learning Objectives:**

1. Recognize AEP as possible adverse effect of IM-NTX
2. Discuss role and limitations of using case reports for clinical decision-making
3. Highlight role of the addiction medicine consultant in weighing risks of substance use disorder treatment options

**Case Presentation:** DS is a 48-year-old male with asthma, AUD in recovery treated with IM-NTX who presented to our hospital with acute dyspnea that progressed to hypoxemic respiratory failure requiring ICU admission. Chest CT revealed diffuse ground-glass opacities. He had new peripheral eosinophilia. Infectious workup was negative. He improved with steroids and was presumptively diagnosed with AEP. Given possible association between IM-NTX and AEP, his team consulted addiction medicine.

**Discussion:** There are 5 reported cases of AEP in patients taking IM-NTX, and medication package insert reports 2 suspected cases of AEP in trial data. However, these case reports do not establish causality. AEP is frequently idiopathic and DS’ history includes long-term anabolic steroid use, which is reported in 2 cases of AEP. IM-NTX was previously an ideal medication for DS; IM-NTX extinguished his cravings and he valued its long-acting nature. We elicited protective factors including family support, openness to alternative medications, active engagement in processing trauma, and previous success taking daily PO meds. Therefore, we hypothesized that discontinuing IM-NTX would increase DS’s risk of return to drinking, but this risk would likely be low. There are no reported cases of AEP in context of PO-NTX and we found one case of a patient successfully transitioned from IM- to PO-NTX following AEP. Given the ambiguity of the clinical picture and evidence, our recommendations were to engage in shared decision-making, transition to PO-NTX as second line if IM-NTX was interrupted, and involve the outpatient prescriber in discussion.

**References**


Addressing Maladaptive Behaviors in Patients with OUD in the Hospital Setting

Sheria Yolanda Francis, LCSW; Payel Jhoom Roy, MD, MSc - UPMC Presbyterian Shadyside

Background: Unaddressed trauma and its consequent emotional dysregulation lead to a significant portion of this population to display behavioral challenges in the hospital environment, such as resumption of illicit substance use while hospitalized, poor pain tolerance, and lack of trust in health care providers. These behaviors create moral distress among staff and health care providers, as all members of the care team strive to set compassionate boundaries for patients while ensuring patient autonomy.

Learning Objectives:

- Identify 3 successful interventions to advocate for hospitalized patients with OUD

Case Presentation: Patient RM is a 63yo M with severe OUD who presented to the hospital for abdominal pain secondary to unresectable duodenal adenocarcinoma. Patient was initially only offered buprenorphine but declined and continued to use illicit opioids. He had frequent negative encounters with his care providers: he often declined testing, asked providers to leave his room, raised his voice, and used expletives. He eventually overdosed in the setting of poor pain control and was charged with possession by hospital police. He agreed to methadone treatment after hospitalization and had plans for admission to medical respite in 3 days. Plan was declined by hospital administration due to no further inpatient indication, recent overdose, and challenging behavior; he was discharged to the street.

Discussion: We propose a few patient-centered interventions. The Addiction team advocated for the patient to ensure his charges were dropped (intervention #1) and that he had open communication with providers. This open communication allowed him to initiate methadone rather than buprenorphine per his preference (intervention #2). While this patient would have benefitted from remaining in-hospital until discharge to a stable environment could be achieved, our team ensured medical respite admission after discharge (intervention #3). Finally, while medication treatment and engagement strategies have been incorporated into inpatient addiction management, psychosocial intervention is lacking. As such, brief cognitive behavioral therapy in the inpatient setting should be studied.

Baclofen Treatment of a Healthcare Worker with Phenibut Withdrawal

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Background: Phenibut, an unregulated supplement with increasing use in Western countries, is prescribed in some Eastern European countries for the treatment of depression, anxiety, insomnia, and PTSD. There is concern for the potential development of physiologic dependence and problematic use.

Learning Objectives:

1. Recognize emerging concerns around phenibut.
2. Describe a treatment strategy utilizing baclofen for phenibut withdrawal.
3. Emphasize the unique aspects of treating a clinician using substances.
Case Presentation: A 41-year-old man with a history of opioid and stimulant use disorders, depression, anxiety, and ADHD, was admitted after a fall from height with multiple traumatic injuries. Shortly after admission he endorsed using an online-purchased supplement called phenibut and had symptoms of heart-pounding, nausea, severe anxiety, and headache with concern for withdrawal. He was started on baclofen 20mg three times daily, clonidine 0.1mg four times daily, gabapentin 900mg twice daily, and quetiapine 25mg at bedtime. Employed in healthcare, the patient was initially reluctant to share details of his use given concern regarding mandatory reporting of his substance use. Through daily visits and frequent affirmations of his challenges, as well as his successes, he became more engaged with care. He was offered the opportunity to self-report his use to a clinician monitoring program and subsequently became less anxious and demonstrated positive change-talk regarding seeking formal treatment. He was discharged on an outpatient baclofen taper.

Discussion: This case report demonstrates inpatient treatment of a 41-year-old healthcare worker withdrawing from phenibut, a GABA-B, GABA-A and dopamine receptor agonist. Baclofen, a selective GABA-B agonist, has been described as effective in several case reports. The use of motivational interviewing and a collaborative, autonomy-supporting approach resulted in improved rapport and helped resolve the patient’s ambivalence regarding treatment.

“It just depends on their stability”: A Qualitative Examination of Factors Influencing Providers’ Contraceptive Counseling Approaches for Patients with Substance Use Disorders

Elizabeth Charron, PhD; Rwina Balto, MSN; Jennifer Brooks, BS - University of Utah

Background: Women with substance use disorders (SUDs) have unique and often complex reproductive health needs. It is important to understand whether and to what extent patient characteristics and circumstances influence providers’ contraceptive counseling approaches.

Objective: This qualitative study examined how patient factors influence providers’ contraceptive counseling for persons with SUDs. Specifically, we explored factors that contribute to providers modifying their contraceptive counseling approaches and described how providers alter their counseling recommendations and communication strategies in the presence of such factors.

Methods: In 2019, we purposively recruited a national sample of contraceptive providers (N = 24) and conducted semi-structured phone interviews to inquire about their contraceptive counseling practices for women with SUDs. Interviews were audio-recorded, transcribed verbatim, and analyzed using thematic analysis with inductive codes.

Results: Participants included 10 medical doctors, 8 nurse practitioners, and 6 certified nurse-midwives. We found that providers modify their contraceptive counseling provision when patients are actively using substances or have unstable living conditions, such as intimate partner violence or homelessness. With patients experiencing these instabilities, providers reported postponing contraceptive discussions until patients are stabilized in treatment, recommending long-active reversible contraceptive (LARC) methods, and varying communication styles according to their own perceptions of patients’ needs. Providers perceived that individuals in long-term recovery have increased stability and fewer barriers to contraceptive access and adherence, and therefore reported increased willingness to provide greater autonomy during contraceptive decision-making and shift the counseling focus to short-acting contraceptive methods.

Conclusions: This study highlights that patient “stability” contributes to how providers approach their contraceptive counseling and make methods recommendations for patients with SUDs. More research is needed to understand strategies that individuals with SUDs use to overcome barriers to contraceptive access and adherence in the context of active substance use and social instability.

Assessing the Readability of Online Patient Education Materials for Naloxone

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Background: Naloxone is a critical tool for combating the opioid epidemic, which claimed 68,630 lives in 2020 and reached record levels during the COVID-19 pandemic. Due to the scale and urgency of the problem, many have
advocated that the public serve as first responders to opioid overdose and that naloxone become as commonplace as other life-saving procedures like cardiopulmonary resuscitation (CPR). Yet, while each US state passed legislation to expand access to naloxone, preventable deaths still occur daily. One of the obstacles to broader naloxone uptake may be the lack of readability of online patient education materials. Eighty percent of Americans use the Internet to access health information, and an estimated 209,000 Americans search for “naloxone” or “Narcan” each month. Therefore, it is important that online resources for naloxone are accessible to a wide audience.

Objective: This study assesses whether online patient education materials for naloxone meet national readability guidelines. It further compares the readability of naloxone to that of CPR, a widespread life-saving procedure.

Methods: We searched Google using three terms: "naloxone," "Narcan,” and “CPR.” The top 15 websites for each term were retrieved, processed, and inputted into a readability calculator to generate six validated reading scale scores. Statistical analysis was performed to compare the readability of naloxone/Narcan online information to the national standards and that of CPR.

Results: The average readability of naloxone/Narcan websites was grade 11.2 ± 2.3, and none of the websites met the recommended sixth-grade reading level for patient education materials. In comparison, the average readability of CPR websites was 7.8 ± 1.5 with 4/15 websites having readability at or below the sixth-grade level. Of the naloxone/Narcan websites, only 17% (4/24) had a readability at or below the eighth-grade level, the average reading level of US adults. In comparison, 80% (12/15) of the CPR websites had a readability at or below the eighth-grade level. Naloxone/Narcan websites were significantly harder to read than CPR websites (p <0.0001 - 0.01).

Conclusions: Naloxone online information exceeds the recommended reading level and that of CPR. Online information about naloxone should be simplified to broaden educational access to this life-saving medication.

Safety of Rapid Inpatient Methadone Initiation Protocol: A Retrospective Cohort Study

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Background: Current methadone titration guidelines recommend low initial doses (15-40 mg) and slow increases (10-20 mg every 3 to 7 days) to prevent dose stacking and oversedation until a target therapeutic dose between 60-120 mg. These guidelines were created primarily for outpatient settings in the pre-fentanyl era. Methadone initiations are becoming more common in hospitals, but there are no titration guidelines specific to this treatment setting which is capable of increased monitoring for side effects.

Objective: Our objective was to assess the safety of rapid inpatient methadone initiation with regards to mortality, overdoses, and serious adverse outcomes both in-hospital and post-discharge.

Methods: This is a retrospective, observational, cohort study conducted at an urban, academic medical center in the United States. We queried our electronic medical record for adults with opioid use disorder admitted between July 1, 2018 - November 30, 2021 who were rapidly initiated on methadone with 30 mg as the initial dose. Patients were divided into a more aggressive initiation cohort (net increase in methadone dose ≥ 30 mg between days 1-5) and a less aggressive initiation cohort (net increase in methadone dose 20-29 mg between days 1-5). Thirty-day post-discharge opioid overdose and mortality data were extracted from the CRISP database.

Results: Thirty-nine patients were included. Twenty-five received the more aggressive methadone initiation and fourteen received the less aggressive methadone initiation. There were no in-hospital or 30-day post-discharge overdoses or deaths in either cohort. There was 1 patient-directed discharge in each cohort. Sedation was documented for 2 patients in the more aggressive initiation cohort and 2 patients in the less aggressive initiation cohort. However, there were no methadone dose holds. There was 1 patient with QTc prolongation (> 500 ms) in the less aggressive cohort at a methadone dose of 50 mg.

Conclusions: We found that hospitalized patients initiating methadone at 30 mg and increasing by 10 mg daily until 60 mg experienced few serious adverse outcomes. Faster methadone titrations allow patients to reach therapeutic doses
earlier, subsequently reducing the risk of relapse and overdose. Regulatory guidelines should be updated to reflect the capabilities of inpatient settings to safely initiate and rapidly titrate methadone.

Disparities in Maternal-Infant Drug Testing, Social Work Assessment and Custody Decisions at Five Hospitals

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Background: Toxicology testing at delivery has profound implications for mother-infant dyads: a positive toxicology test for non-prescribed substances qualifies as child abuse in twenty-three states. While research has demonstrated racial/ethnic disparities in testing rates, less is known about disparities in the indications for testing and subsequent child welfare involvement.

Objective: To evaluate for disparities in peripartum toxicology testing among mother-infant dyads across a hospital network and subsequent child welfare involvement.

Methods: Retrospective chart review of 59,425 deliveries at five hospitals in Massachusetts between 2016-2020. We evaluated the extent to which maternal characteristics (age, race/ethnicity, insurance payor, language, substance use disorder diagnosis) were associated with toxicology testing, the indication for testing, social work and child welfare evaluations, and parental custody at discharge using disproportionality risk ratios and hierarchical logistical modeling.

Results: Toxicology testing was performed on 19,595 (3.3%) dyads. Younger individuals and individuals of color were more likely to be tested for cannabis use or maternal/infant clinical indications compared to white non-Hispanic individuals. In adjusted models among individuals without a substance use disorder, age <25 (aOR 2.81 [2.43-3.26], race/ethnicity (non-Hispanic Black (aOR 1.80 [1.52-2.13]), Hispanic (aOR 1.23 [1.05-1.45]), mixed race/other (aOR 1.40 [1.04, 1.87]) and no race/ethnicity documented (aOR 1.92 [1.32-2.79]), and public insurance (Medicaid (aOR 2.61 [2.27-3.00]) Medicare (aOR 13.76 [9.99-18.91])) all had increased odds of toxicology testing when compared to older, white non-Hispanic, and privately insured individuals. The rate of disproportionality in testing was greater than 1.0 for individuals younger than 25 years old (3.8), Hispanic (1.6), non-Hispanic Black (1.8), individuals of other race (1.2), unavailable race (1.8), and individuals with public insurance (Medicaid 2.6; Medicare 10.6), signifying that these groups made up a greater proportion of those who were tested than they did in the overall sample population. Among dyads tested, the odds of receiving a social work assessment or having child welfare involvement was not significantly associated with race/ethnicity, language, or income.

Conclusions: Peripartum toxicology testing is disproportionately performed on non-white, younger, and poorer individuals and their infants, with cannabis use and clinical indications prompting testing more often for patients of color than white non-Hispanic individuals.

Examining the Primary Care Experience of People with Opioid Use Disorder

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Background: Despite ongoing expansion of Opioid Use Disorder (OUD) treatment services, 2021 was the deadliest year on record in an opioid epidemic that has claimed hundreds of thousands of lives. While the reasons for this are multifactorial, a persistent deficit in treatment access remains a crucial factor. Primary care holds great promise to expand OUD treatment access due to its geographic reach and care models adapted to chronic disease management. Thus, creating innovative care delivery models within primary care that both support clinicians and deliver low-barrier, evidence-based care to patients is of paramount importance.

Objective: To assess the care experiences of patients with OUD who are receiving medication-based OUD treatment within the context of primary care.
Methods: 21 patients receiving treatment for OUD at a single primary care site were identified via electronic health record and recruited from July 1-August 31, 2021. 14 patients completed a ~30 minute semi-structured telephone interview with trained qualitative researchers examining perspectives on receiving OUD treatment in primary care. Interviews were transcribed and a rapid qualitative analysis was performed.

Results: Overall five key themes were identified

* Health Improvement (many believed that going to their PCP for addiction treatment made taking care of other health conditions easier)
* Team-Based Care (The team was easy to contact and allowed for telehealth when patients were unable to attend appointments physically.)
* Comparing Primary Care to Specialty Addiction Treatment (seeing the same provider helped build a sense of trust and privacy and removed the need to repeat their medical history constantly)
* Reflections on Current Treatment Modalities (Accessing buprenorphine was easy and viewed as a normal part of healthcare.)
* Discrimination and Stigma (participants felt like they were visiting the doctor for addiction the same way they would for any other medical problem.)

Conclusions: Patients reported many advantages to receiving OUD treatment within the context of primary care. In particular, the flexibility and added support of team-based care along with the convenience of receiving addiction treatment alongside regular medical care were highly valued. These findings can be used to develop patient-centered initiatives aimed at expanding OUD treatment within primary care.

Privacy and Information Sharing in Massachusetts's Post Overdose Outreach Programs

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Background: Rates of drug overdose have continued to climb. Post-overdose public health-public safety outreach programs, which often identify overdose survivors through police data and seek to link them with services, have emerged in many communities in response to overdose.

Objective: To understand how post-overdose outreach programs in Massachusetts manage information and privacy of overdose survivors.

Methods: This mixed methods study analyzed survey data and semi-structured interviews. Descriptive statistics were collected from surveys completed by outreach programs. Qualitative interview data collected from police officers, harm reductionists, chaplain staff, and peer support specialists who participate in outreach activities were thematically analyzed, using deductive and inductive methods.

Results: Of 138 programs that completed the survey, 89.9% reported having privacy protocols in place, and 27.5% reported sharing data with other organizations as part of their regular protocol. In open-ended survey responses, participants primarily answered questions about information and privacy management by reporting on their program’s data security measures; few discussed privacy concerns related to outreach activities. Interviews (N=38) revealed wide variation in information sharing practices – often influenced by the presence or absence of supportive infrastructure. Some described databases designed for the protection of post-overdose outreach data, which facilitated information sharing among staff. Others described discretionary information sharing with other agencies, including hospitals, parole, and state agencies. During outreach, actions taken for privacy considerations included attempting to make initial contact over the phone, limiting or concealing leave behind materials when no one was home, and limiting the number of contact attempts. Some asserted that privacy protections limit the team’s ability to connect with overdose survivors; others considered protecting survivors’ privacy to be a core program value even when it prevented an outreach opportunity.

Conclusions: While post-overdose public health-public safety outreach teams reported protocols for protecting survivors’ privacy, interviews with staff revealed substantial variation in on-the-ground practices, which, at times, offered limited privacy protection. Outreach team members regularly rely on their discretion instead of procedure.
Inconsistent or ineffective responses to privacy concerns may reduce trust in or the efficacy of outreach efforts. Clear, established standards for the protection of privacy may help reduce these impacts.

**Prevalence of Patient-Directed Discharge and Oral Antibiotic Prescription among A Population Using IV Drugs with Patient-Directed Discharge**

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**Background:** Patient-directed discharges (PDD) are increasing in inpatient settings and are associated with readmission or increased mortality, especially among people who inject drugs (PWID). A retrospective cohort study among PWID hospitalized with invasive *S. aureus* infection found 3.8 times higher odds of hospital readmission following PDD compared to standard discharge. PDDs are associated with a 50% increase in overall health costs. A Washington University retrospective cohort study found a reduction in 90-day all-cause readmission in patients with PDD who were prescribed oral antibiotics at time of discharge compared to no oral antibiotics.

**Objective:** Applying the above study to a different academic medical center, our objective is to evaluate the prevalence of PDD and oral antibiotic prescription at discharge and 30-day readmission rate by month among PWID diagnosed with endocarditis and/or osteomyelitis.

**Methods:** This retrospective cohort study includes patients with infective endocarditis or osteomyelitis at a tertiary academic hospital from June 2019-May 2020. Having an addiction medicine consult served as a surrogate measure for likely injection-related infection (IRI). We evaluated one-month prevalence of outcome variables including PDD, discharged with oral antibiotics, and readmission within 30-days reported as monthly percent averages.

**Results:** Among patients with an addiction medicine consult with an IRI diagnosis, the proportion of PDD increased during the study period with 22.1% of discharges being patient-directed in April 2020. The monthly proportion of patients leaving by PDD who received a prescription for oral antibiotics ranged from 0% to 33.3%. There were five one-month periods with no participants with PDD prescribed oral antibiotics at discharge. Thirty-day readmission ranged from 12.5% to 66.7% and was highest in February 2020, following a month where no PDD were accompanied by oral antibiotics.

**Conclusions:** Our findings show that 30-day readmission rates were highest during months when no oral antibiotics were prescribed at time of discharge among PWID with PDD. We recommend considering discharging every patient admitted with an IRI and pursuing a PDD with oral antibiotics when an appropriate regimen can be identified to decrease readmission risk.

**Jail Releases During the COVID-19 Pandemic Unlikely to Explain Increases In Community Opioid Overdoses in Massachusetts**

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**Background:** Release from incarceration is a high-risk period for opioid overdose, and the pandemic accelerated overdoses in many communities. Concern about COVID-19 spread in jails led to compassionate releases; it is unknown whether releases of persons with opioid use disorder (OUD) contributed to increases in community overdose rates.

**Objective:** Examine whether jail release of persons with OUD during the pandemic explains reported increase in community overdose rates.

**Methods:** Observational data were analyzed to compare overdose rates within three months of release among jailed persons with OUD released before (9/1/2019-3/9/2020) and during the pandemic (3/10/2020-8/10/2020) from seven jails in Massachusetts provided medications for OUD (MOUD) after 9/1/2019. Data on opioid-related overdoses treated by ambulance come from the Massachusetts Ambulance Trip Record Information System. ICD-10 codes in the Registry of
Vital Records and Statistics Death Certificate file indicate fatal overdose. Other participant information was extracted from jail administrative data. Logistic regression models examined COVID-19 release as a predictor of overdose, controlling for MOUD received, county of release, race/ethnicity, sex, age, and overdose prior to the index jail stay.

**Results:** Fewer persons with OUD were released during the pandemic (1,522) than pre-pandemic (2,950), and fewer experienced a non-fatal overdose during the pandemic (3.5%) than pre-pandemic (4.2%). In the pandemic period, 20 persons released with OUD (1.3%) experienced a non-fatal overdose within three months, versus 14 (0.5%) pre-pandemic.

In multivariate logistic models, pandemic release did not impact non-fatal overdose rates (adjusted odds ratio [aOR] 0.84; 95% CI 0.60 to 1.18), though in-jail methadone treatment was protective (aOR 0.34; 95% CI 0.18 to 0.67). Pandemic releases had a higher risk of fatal overdose (aOR 3.06; 95% CI, 1.49 to 6.26); MOUD had no detectable effect on overdose mortality.

**Conclusions:** Persons with OUD released from jail during the pandemic did not experience significantly different rates of non-fatal overdose compared to those released pre-pandemic. Overdose mortality among the study population was three-fold higher during the pandemic, compared to pre-pandemic, but the number of deaths was small. Findings suggest that jail releases during the pandemic were unlikely to explain much, if any, of the observed increase in community overdoses in Massachusetts.

**Cluster Analysis to Identify Typologies of Pregnant Persons with Opioid Use Disorder**

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**Background:** Opioid use disorder (OUD) among pregnant persons increases risk of adverse pregnancy and birth outcomes including: preterm delivery, low birth weight, HIV/HCV infection, neonatal opioid withdrawal syndrome, overdose, and death. OUD is a highly heterogeneous condition with respect to severity, progression, and the range of comorbidities that occur alongside the disorder. The identification and characterization of subgroups of pregnant persons with OUD may support individualized treatment strategies.

**Objective:** We applied cluster analysis to identify distinct subgroups of pregnant persons presenting with OUD and examined substance use patterns between these subgroups.

**Methods:** We examined data from 104 pregnant persons ≤32 weeks of gestation diagnosed with OUD who were recruited from April 2019 to February 2022 at academic medical centers participating in the Optimizing Pregnancy and Treatment Interventions for MOMS 2.0 study. Cluster analysis using the Partitioning Around Medoids method was performed using demographic, pregnancy-related, mental health, overdose, and pain variables from baseline. We compared baseline patterns of drug use, hazardous drinking, and substance use treatment between subgroups using bivariate statistical tests.

**Results:** We identified two patient subgroups: a ‘high comorbid’ cluster (n=68; 65.4%) and a ‘low comorbid’ cluster (n=36; 34.6%). The high comorbid cluster had fewer members who were married (19% vs 33%), unemployed (38% vs 58%), and incarcerated (3% vs 8%) compared to the low comorbid cluster. The high comorbid cluster also included more members with: a history of overdose (72% vs 50%); anxiety (85% vs 25%); ≥moderate pain (76% vs 22%); ≥moderate depression (75% vs 36%); ≥moderate drug use severity (94% vs 78%); and, more days of cannabis (mean: 6.2 vs 2.3 days), stimulant (mean: 4.5 vs 1.3 days), and injection heroin (mean: 1.3 vs 0 days) use in the past 30 days (P < 0.05 for all comparisons). Clusters were similar with respect to substance use treatment receipt in the past 28 days.

**Conclusions:** The larger population of pregnant persons with OUD is characterized by significant heterogeneity across social factors and substance use experiences. These data suggest the need for individualized treatment strategies to address disparate social and substance use issues.
Similarity of Engagement Across Age Groups of Patients Treated with a Prescription Digital Therapeutic for Opioid Use Disorder

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Background: Prescription digital therapeutics (PDTs) are software-based treatments evaluated for safety and effectiveness by the U.S. Food and Drug Administration.

Objective: To evaluate age-related distributions and associations between product engagement and age, among patients using PDTs for treating OUD along with buprenorphine therapy.

Methods: De-identified data from patients completing at least 1 lesson in a 12-week course of PDT treatment between 1/1/19 and 11/30/21 were obtained from a database of PDT user data. The PDT delivers an OUD-specific form of cognitive-behavioral therapy. Descriptive statistics were used to evaluate levels of engagement across the 12-week treatment period as a function of age. Linear and logistic regression was used to evaluate relationships between outcomes and age. Evaluated were: days with any activity in the PDT, lessons completed, and retention in the PDT defined as any activity in weeks 9-12 of treatment.

Results: Meeting evaluation criteria were 5,956 patients, 15% (905) were 18-29 years, 47% (2768) were 30-39, 25% (1503) were 40-49, and 13% (780) were ≥ 50 years. 50% of the sample was female, 34% male, and 16% had unidentified sex. Median active days in the age categories (out of 84 possible days) were: 19, 21, 23, and 20 respectively; median lessons completed (out of 62 possible) were 22, 27, 29, and 26.5 respectively. Percent retained was 68%, 74%, 75%, and 72%. No associations were observed between these outcomes and age (R² <0.4% for active days and lessons completed; odds ratio/year for retention was 1.01 (95% CI 1.00-1.01).

Conclusions: Similar levels of product use (i.e., engagement) and PDT retention were seen across a wide range of ages in a large sample of adult patients who received a PDT for behavioral treatment of OUD. This PDT appears to have broad acceptability and potential utility to improve outcomes across age groups.

An Electronic Chart Intervention to Improve Safety for Patients on Chronic Opioid Therapy, a 12-Month Longitudinal Study

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Background: The United States faces a public health crisis related to opioid medication misuse, overuse, addictive use (opioid use disorder), and overdose.

Objective: The purpose of the project is to enhance safe opioid prescribing by increasing the number of patients with opioid-overdose education and safety monitoring by electronic chart intervention.

Methods: A partial crossover design was used. Eligible patients were identified with history of long-term high dose opioid therapy (greater than 90 days in the past 180 days and doses greater than 50 morphine equivalent daily dose, MEDD). Data were extracted from electronic medical records. The data screening time is 180 days backtracked from June 2020. Twenty providers signed consent online. Eligible patients under the care of these providers were randomized to two groups. For the intervention, taper and safety recommendations were communicated to providers via an electronic message. The delayed onset group was provided the intervention six months after the intervention group. The statistical analyses include comparisons between MEDD, the number of patients who receive a new naloxone prescription, the number of new orders for urine toxicology screening, and new documentation of signed opioid agreement and prescription drug monitoring program check and safety discussion at baseline, and follow up at 1, 3, 6 and 12 months.

Results: Data of 36 patients were included in the analysis. Mean (standard deviation) age of was 56.11 (11.13) years and 41.67% (15/36) were male. There was no significant difference in age (delayed onset group: 55.87 (11.23) years; intervention group: 56.38 (11.36) years, p = 0.89), gender (X² = 0.39, p = 0.54) or MEDD (delayed onset group: 131.52 (94.65) MEDD; intervention group: 196.88 (145.77) MEDD, p = 0.13) between the two groups at the baseline. At 12-
months follow up, MEDD of the delayed onset group and the intervention group was 97.34 (90.62) and 126.36 (106.35), respectively. Longitudinally, there was significant difference in the primary outcome, MEDD of the combined 36 patients (repeated measures ANOVA $F$ (1.501, 52.537) = 3.643, $p = 0.045$).

**Conclusions:** Electronic chart interventions may provide an efficient and effective strategy to improve safety for patients on chronic opioid treatment.

**Assessing Male and Female Differences in Adverse Respiratory Symptoms with Cannabis Vaping with ENDS**

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**Background:** The vaping of cannabis with electronic nicotine delivery systems (ENDS) has increased among adolescents in the U.S. and has been found in cross-sectional studies to be associated with adverse respiratory symptoms in adolescents.

**Objective:** We examined male and female differences in the longitudinal associations between five respiratory symptoms among adolescents who initiated use of cannabis with ENDS.

**Methods:** We used data from Waves 4 and 5 (N=8046) from the 12- to 16-year-old sample of the Population Assessment of Tobacco and Health Study (retention=88.4%). Multiple logistic regression assessed whether initiation of cannabis with ENDS was associated with past-year respiratory symptoms for U.S. adolescent males and females.

**Results:** At Wave 4, lifetime cannabis with ENDS was 4.9%. At Wave 5, 13.5% of males and 14.5% of females reported past-year initiation to cannabis with ENDS. We stratified analyses for males and females and models were adjusted for “wheezing or whistling” in the chest at Wave 4 and a diagnosis of asthma. For males, two symptoms reached statistical significance. The odds of "wheezing or whistling" in the chest were roughly fifty percent higher (aOR=1.57;95% CI 1.05-2.35) among males who initiated cannabis with ENDS between Waves 4 and 5 compared to males who did not. Fully adjusted models found the odds at Wave 5 of indicating “had speech limited to only one or two words between breaths due to wheezing” were two and a half time higher (aOR=2.63;95% CI 1.27-5.43) among males who had initiated cannabis with ENDS compared to males who did not. For females there was no association between initiation of cannabis with ENDS and respiratory symptoms. Both the use of cigarettes and e-cigarettes during this period were substantial confounding factors that mediated this longitudinal association.

**Conclusions:** This study provides preliminary longitudinal evidence that adolescent males who engage in cannabis vaping with ENDS may experience more severe respiratory consequences when compared to their female peers. While the initiation of cannabis use with ENDS was substantially associated with higher odds of respiratory symptoms, other types of nicotine use (i.e., cigarette and e-cigarette use) may be exacerbating these respiratory symptoms.

**The Effect XR-Buprenorphine Utilization on Treatment Retention in Patients with OUD Who Use Methamphetamines in Rural Alaska**

**Sarah Spencer; Annette Hubbard, Alaskan Behavioral Health Aid, Chemical Dependency Councilor - Ninilchik Community Clinic**

**Background:** Methamphetamine overdoses tripled in Alaska between 2015-2019, and the escalating use of methamphetamine by patients with OUD increases overdose risk. Buprenorphine therapy reduces mortality; but patients with OUD who use methamphetamines have lower retention in treatment in OBOT programs. Few studies examine the effect of buprenorphine formulation utilization on retention. Our rural, tribal Alaskan clinic cares for underserved remote villages and Alaska native populations. The incidence of co-morbid amphetamine use disorder in our OBOT patients increased from 25% in the 2016-2018 to 77% in 2021. Frequent travel to clinics and pharmacies can be a barrier to access for patients in rural areas.
Objective: We added extended-release monthly buprenorphine (XRBUP) to our program in May of 2018, and performed a retrospective analysis to see if retention of patients who use methamphetamine was affected by formulation of buprenorphine utilized.

Methods: We reviewed EMR records for all patients enrolled in our OBOT program during the periods of May 2018-July 2021, to identify patients with methamphetamine use (n=56). Patients were included if they reported that they used methamphetamines on admission and had at least one positive drug test for methamphetamines during their treatment duration. PDMP records were reviewed to determine the total number of weeks that each patient filled a prescription for buprenorphine, and the length of treatment was compared between the groups. Patients were included in XRBUP group (n=39) if they had at least one XRBUP injection. Treatment retention for the 2 years prior to offering XRBUP was examined to verify that SLBUP prescribing practices did not change significantly after adding XRBUP.

Results: Weeks of buprenorphine therapy was significantly increased in XRBUP group vs SLBUP group (31 vs 19 weeks, P<0.05). SLBUP retention in treatment did not change after XRBUP was added in 2018.

Conclusions: The utilization of XRBUP by patients with OUD who use methamphetamine was associated with significant increased duration of buprenorphine treatment in our rural Alaska tribal OBOT. We hypothesize that low threshold access to XRBUP is particularly helpful to reduce transportation barriers to treatment access in rural areas. This study is limited by its small population size.

Low Dose Initiation of Buprenorphine in Hospitalized Patients Using Buccal Buprenorphine: A Case Series

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Background: Low dose buprenorphine initiation strategies can eliminate prerequisite opioid withdrawal during buprenorphine induction, though little is known about the optimal strategy or formulation for transition.

Objective: To describe the experience using a low dose buprenorphine initiation strategy with buccal buprenorphine.

Methods: This is a case series of hospitalized patients with either opioid use disorder (OUD) or chronic pain who underwent low dose buprenorphine initiation with buccal buprenorphine to sublingual buprenorphine. Patient data was obtained via medical chart review and results are descriptively reported.

Results: Forty-five patients underwent low dose buprenorphine initiation from January 2020 – July 2021. Twenty-two (49%) patients had OUD only, 5 (11%) patients had chronic pain only, and 18 (40%) patients had both OUD and chronic pain. Thirty-six (80%) of patients had non-prescribed opioid use prior to admission. The most common rationale for a low dose buprenorphine initiation was concomitant acute pain in 34 (76%) patients related to surgery or acute infectious illness. Twenty-five (55%) patients transitioned from prescribed methadone, 16 (36%) transitioned from only prescribed short acting opioids, 1 (2%) transitioned from long acting opioids, and 3 (7%) transitioned from illicit fentanyl (taken immediately prior or during admission). The Yale addiction medicine consult service consulted on 44 (98%) cases and median length of stay was approximately 14 days. Thirty-six (80%) patients completed the transition to a stable sublingual buprenorphine dose with a median sublingual buprenorphine dose of 16 mg per day. Of patients with documented COWS scores 24 (53%), none experienced severe withdrawal, 15 patients (62.5%) experienced mild or moderate withdrawal, and 9 (37.5%) experienced no withdrawal (COWS score < 5) during the entire low dose transition process. Based on prescription fill data within the electronic health record, 22 (49%) patients received a prescription for buprenorphine at 4 weeks post discharge. Post discharge prescriptions ranged from 0 – 37 weeks, with a median fill time of 7 weeks.

Conclusions: Low dose buprenorphine initiation with buccal buprenorphine to sublingual buprenorphine in the hospital setting was well tolerated and can be safely and effectively utilized for patients whose clinical scenario precludes traditional buprenorphine induction.
Jail-Based Reentry Programming to Support Continued Treatment with Medications for Opioid Use Disorder: Qualitative Perspectives and Experiences among Jail Staff in Massachusetts

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Background: Individuals with opioid use disorder released to communities after incarceration experience an elevated risk for overdose and premature death. Massachusetts is the first state to mandate county jails to deliver all FDA approved medications for opioid use disorder (MOUD).

Objective: The present study considered perspectives around coordination of post-release care among jail staff engaged in MOUD programs focused on coordination of care to the community.

Methods: Focus groups and semi-structured interviews were conducted with 61 jail staff including clinical staff, corrections personnel, and senior administrators involved in implementation of MOUD programs. Interview guide development, and coding and analysis of qualitative data were guided by the Exploration, Preparation, Implementation, and Sustainment (EPIS) framework. Deductive and inductive approaches were used for coding and salient themes were organized using the Framework Method and EPIS.

Results: Salient themes in the inner context focused on the elements of reentry planning that influence coordination of post-release care including timing of initiation, staff knowledge about availability of MOUD in community settings, and internal collaborations. Findings on bridging contextual factors highlighted the importance of interagency communication to follow pre-scheduled release dates as well as use of bridge scripts, dosage letter and a list of community resources to minimize the gap in treatment during the transition. Use of navigators was an additional bridging factor that influenced MOUD initiation, engagement and retention in community settings. Outer context findings indicated partnerships with community MOUD providers and timely reinstatement of health insurance coverage as critical factors that influence coordination of post-release care.

Conclusions: We identified barriers and facilitators to coordination of MOUD post-release continuity of care. Findings suggest needs for supporting staff training and engagement in reentry planning as well as resources to enhance internal collaborations and bridging partnerships between in-jail MOUD programs and community MOUD providers. In addition, efforts targeted to reduce systemic barrier related to unanticipated timing of release and reinstatement of health insurance coverage were identified as needed to implement a seamless coordination of post-release care.

Feasibility of a Timeline Follow-Back Method to Assess Opioid Use, Non-Fatal Overdose, and Treatment

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Background: For the first time, annual opioid overdose deaths in the U.S. exceeded 79,000 from October 2020-October 2021. Surviving an opioid overdose is a strong risk factor for fatal overdose. However, there is no validated self-report measure of non-fatal opioid overdose. Validated timeline follow-back (TLFB) calendar-based questionnaires are used to assess health risk behaviors, including alcohol use, tobacco smoking, and sexual risk. A first step to validating a TLFB measure for opioid use is determining its feasibility.

Objective: To determine the feasibility of a new TLFB measure for opioid overdose among opioid overdose survivors using opioids, including fentanyl.

Methods: For the Repeated-dose Behavioral Intervention to Reduce Opioid Overdose Trial (REBOOT) randomized trial among opioid overdose survivors in San Francisco and Boston, most using fentanyl, we developed a TLFB questionnaire that assessed non-prescribed opioid use, opioid overdose, hospitalizations, inpatient addiction treatment, medications for opioid use disorder, incarcerations, and COVID-19 history for each day in the previous 120 days. Trained research assistants administered the REBOOT TLFB within a comprehensive hour-long assessment conducted every four months over the 16-month study duration. We tracked time to completion of the REBOOT TLFB using a
Results: Among 255 REBOOT TLFB assessments, completed by 153 participants, 69 assessments reported one or more overdoses and 186 reported no overdoses in the previous 120 days. The median time to complete all REBOOT TLFB assessments was 12 minutes (IQR: 7-21, range: 2-101). Among assessments with no overdoses, the median time to complete was 10 minutes (IQR: 5-17, range: 2-101). Among assessments with one or more overdoses, the median time to complete was 20 minutes (IQR: 13-27, range: 6-58).

Conclusions: Among opioid overdose survivors using opioids, commonly fentanyl, REBOOT TLFB was a feasible research method of assessing overdose occurrence and risk, with a similar time to completion as other TLFB standardized assessments of substance use. Further research is needed to confirm its reliability and external validity.

Home-Based Family Recovery Supports: Feasibility and Acceptability of Training Home-Visitors in “Mothering from the Inside Out”

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Background: The number of substance-exposed infants has risen sharply over the past decade, yet support for families affected by substance use disorder (SUD) remains a challenge particularly for postpartum women.

Objective: To assess the feasibility and acceptability of training Early Intervention (EI) child development providers in an evidence-based parenting program for mothers in recovery from SUD, called “Mothering from the Inside Out” (MIO).

Methods: MIO training involves 16 hours of classroom and 12 weeks of clinical training (MIO delivery and consultation). Two cohorts of EI providers began training in August 2019 (in-person) and August 2020 (virtually) in 4 participating programs (urban, suburban, and rural). Eligible providers worked at participating programs for ≥6 months, were English speaking, ≥18 years old, and held a relevant degree. Mothers of children in participating EI programs were eligible if English speaking, ≥18 years old, in recovery from SUD, with a child ≤2.5 years old. Enrollment/retention process measures and provider fidelity to the MIO model were the primary feasibility outcomes. Providers/parents completed qualitative semi-structured interviews to assess acceptability of MIO, and surveys or structured interviews respectively to assess changes in attitudes.

Results: Ten EI providers and 11 mothers participated in the MIO training; 4 EI providers completed the training (urban/suburban); 3 left their positions (urban/suburban/rural); 2 were unable to identify eligible mothers (rural), and 1 discontinued due to increased work demands (urban). Six mothers completed MIO treatment (8-12 sessions), and 5 completed 0-2 sessions. Average session duration was 44 minutes (range 16-101). Among providers that completed the training, attitudes towards mothers with SUD became more accepting (mean pre-post total score 107.5 to 112.3), and all achieved adequate fidelity to the MIO model (mean frequency 2.4, competence 2.7). Mothers’ reflective capacity for parenting improved (average pre-post total score 4 to 5). Mothers and providers identified challenges related to implementation as well as benefits in provider-parent and parent-child relationship quality.

Conclusions: This pilot study demonstrated initial feasibility and acceptability of MIO among EI providers. Despite encouraging preliminary findings, further adaptations may be needed to address implementation challenges, including recruitment and retention of providers and parents, particularly in rural communities.

Psychedelics Use among Young Men with Unhealthy Alcohol Use: Is There an Association with Future Drinking Outcomes?

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Background: Recent studies suggest associations between the use of psychedelic substances and a reduction in unhealthy alcohol use. However, few longitudinal studies have assessed this topic.

Objective: The purpose of the present study was to assess whether, in a population of Swiss males reporting unhealthy alcohol use at age 20, psychedelics use for the first time at age 21 was associated with subsequent unhealthy alcohol use and alcohol use disorder (AUD) at age 25.

Methods: Data were drawn from a cohort of 7556 young Swiss men. 1940 participants were eligible for analysis. Associations between psychedelics use at age 21 and presence of unhealthy alcohol use (defined as more than 21 standard drinks per week and/or more than 6 standard drinks on a single occasion more than once a month) and AUD (according to DSM-5, moderate or severe) at age 25 were assessed with logistic regression models adjusted for age, education level, linguistic region, tobacco, and other substance use.

Results: In a sample of 1940 Swiss men reporting unhealthy alcohol use at age 20, 304 (15.7%) met AUD criteria. 74 (3.8%) participants reported a first use of psychedelic drugs (magic mushrooms, psilocybin, peyote, mescaline, LSD, PCP/Angeldust, 2-CB, 2-Cl, Salvia divinorum, ketamin) at age 21. At age 25, 1141 (58.8%) participants reported unhealthy alcohol use, and 257 (13.2%) met AUD criteria. In adjusted analysis, those who reported a first use of psychedelics at age 21 were less likely to report unhealthy alcohol use at age 25 (OR = 0.54, 95% CI = 0.31–0.93) compared to those who never used psychedelics. Regarding the presence of an AUD at age 25, the association was of similar magnitude (OR = 0.51, 95% CI = 0.24–1.10) but did not reach conventional significance levels.

Conclusions: Psychedelics use at age 21 was significantly associated with a reduction in unhealthy alcohol use and non-significantly, but of similar magnitude, with AUD at age 25, supporting a hypothetical independent effect. Despite the adjustments, other variables may also contribute to this association.

Advancing Health Equity: Evidence That a Prescription Digital Therapeutic for Opioid Use Disorder Enables Healthcare Access Across Geographic Regions

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Background: Between 80% and 90% of people needing behavioral therapies for opioid use disorder (OUD) do not receive them. Among the reasons are geographical barriers to treatment. Prescription digital therapeutics (PDTs) are software-based treatments evaluated for safety and effectiveness and authorized by the Food and Drug Administration. Accessed remotely via mobile devices, PDTs may help overcome geographic barriers to care and reduce treatment disparities.

Objective: To evaluate associations between geographic regions in the United States and levels of engagement with a PDT for OUD using Rural-Urban Commuting Area (RUCA) classifications based on population density, urbanization, and daily commuting.

Methods: De-identified data from patients with OUD who completed at least 1 lesson in a 12-week course of treatment with a PDT was analyzed by the following RUCA categories: metropolitan, metro commuting (outside metropolitan), micropolitan (mid-sized cities), small town, and rural. Levels of engagement across RUCA categories were evaluated using: median days active in the PDT, median lessons completed, and percentage of patients retained during weeks 9-12 of treatment (defined as any activity in the app).

Results: In this sample of 5,263 patients, 2,904 were in metropolitan areas, 709 in metro commuting, 1,081 in micropolitan, 300 in small town, and 269 in rural RUCA categories. After normalizing for population density, rural subjects are overrepresented (Cohen’s h range 0.55-1.09). No meaningful differences were observed across metropolitan, metro commuting, micropolitan, small town, or rural RUCA categories in median active days (21, 23, 23, 23, and 22 respectively, Cohen’s d range 0-0.1) or median lessons completed (25, 28, 28, 27, and 27.5 respectively, Cohen’s d range 0.01-0.1). Percent of patients retained in weeks 9-12 of treatment (76%, 79%, 80%, 79%, and 79% respectively) demonstrated small effect sizes across most RUCA categories (Cohen’s h range 0.05-0.45) except for metropolitan vs the other 4 categories (Cohen’s h range 0.54-0.99), which represent medium effect sizes.
Conclusions: Patients with OUD across diverse population-based geographic regions engaged at similar levels and had similar levels of treatment retention. These results suggest PDTs may enable access to behavioral treatments for OUD across geographic areas, thus potentially improving health equity among this population.

HIV Pre-Exposure Prophylaxis (PrEP) Uptake Indicators among Women Who Use Drugs and Implications for Interventions

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Background: Pre-exposure prophylaxis (PrEP), an effective user-controlled HIV prevention medication, can be particularly beneficial for women who use drugs (WWUD) as they often lack social capital to negotiate safer sex practices. However, PrEP uptake among WWUD remains low, and the relationship between substance use and the precursors of PrEP uptake among WWUD is not well documented.

Objective: The purpose of this study is to understand the relationship between specific types and routes of drug use with HIV risk perception, PrEP awareness, and PrEP initiation intention among WWUD.

Methods: Baseline data were collected via computer-based survey from 240 women living in New York City and Philadelphia who participated in a study developing and testing a women-focused intervention for PrEP uptake. Participants were cisgender, HIV-negative women not currently taking PrEP but PrEP-eligible based on CDC guidelines. We focused this analysis on women’s HIV risk perception, PrEP awareness, PrEP initiation intention, and any use of the following drugs: angel/PCP, barbiturates, crack cocaine, powder cocaine, heroin, methamphetamines, opiates, and tranquilizers. A p-value ≤ 0.05 was considered statistically significant.

Results: Within the 3 months prior to study enrollment, 63.6% of participants reported any drug use; 43.1% reported polysubstance use; 19.6% had injected drugs; 74.4% reported getting high or drunk before sex; and 69.3% had been enrolled in drug treatment. Compared to women who did not use drugs, WWUD were less aware of PrEP (52.9% vs 34.9%, respectively), perceived themselves at higher risk of HIV infection (33.3% vs 45.4%), and had higher intention to start PrEP once aware (58.6% vs 63.2%). Opioid use and polysubstance use were both significantly associated with higher HIV risk perception, lower PrEP awareness, and higher PrEP initiation intention. Injection drug use was associated with lower PrEP awareness.

Conclusions: When compared to other PrEP-eligible women, women who reported opioid use and polysubstance use perceived themselves at higher risk for HIV infection and had higher intention to start PrEP. However, they and women who reported injecting drugs also reported lower awareness of PrEP. Increasing education about PrEP and the various modes of HIV exposure is essential to supporting PrEP uptake in this population.

Clinician Interaction with a Prescription Digital Therapeutic for OUD: Engagement and Outcomes

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Background: Prescription digital therapeutics (PDTs) are U.S. Food and Drug Administration-authorized software-based treatments delivering evidence-based interventions on mobile devices. The reSET-O® PDT for patients with opioid use disorder (OUD) is linked to a clinician-facing, web-accessed dashboard (Pear.MD™) for managing patient progress.

Objective: To assess clinician interactions with the dashboard and the association of such activity with patient engagement and the clinical outcomes of abstinence and treatment retention.

Methods: De-identified data were analyzed from patients who filled a prescription for reSET-O. Provider interaction with the dashboard was defined as opening the dashboard at least once (a “session”) and selecting a patient to view, submitting a urine drug screen (UDS) result, or logging patient appointment compliance. Descriptive statistics assessed patterns of clinician interactions and patient outcomes including engagement (e.g., days active within the PDT, lessons
completed), retention (time retained on the PDT), and abstinence (patient self-report and provider-entered UDS) in the last month of treatment.

**Results:** Among 10,066 patients who filled prescriptions, 63.0% were managed via the dashboard. Patient engagement was numerically higher for managed vs. nonmanaged patients including median days active in the PDT (23 vs 19; Cohen’s d = 0.28); median unique lessons completed (27 vs 22; Cohen’s d = 0.21); percent retained in last month of treatment (78.8% vs 71.6%; Cohen’s h=0.17); and percent abstinent in last month of treatment (70.4% vs 64.7%, missing data excluded; Cohen’s h=0.12). Patient engagement was positively associated with increasing frequency of provider management within the dashboard. Increased odds of retention in the last month of treatment were observed relative to nonmanagement by 1.1, 1.2, 2.0, and 2.8-fold for minimal; monthly; intensive; and weekly management, respectively. The percent of patients abstinent (missing weeks excluded) were 66.7% (h=0.04), 69.4% (h=0.10), 73.0% (h=0.18) and 73.8% (h=0.20) for minimal; monthly; intensive; and weekly management, respectively.

**Conclusions:** Use and frequency of interaction with a clinician-facing dashboard are positively associated with higher levels of patient engagement, treatment retention, and achievement of abstinence in the last month of treatment. These results suggest that interaction with the clinician-facing dashboard informs patient management and may improve outcomes and efficiency of care in patients with OUD.

**Remotely Provided Buprenorphine Treatment for OUD: BAM, HRQOL, and Participant Satisfaction with Telehealth**

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**Background:** The COVID 19 pandemic exacerbated limited access to medications for opioid use disorder (MOUD) and the relaxation of federal regulations provided opportunity to admit and treat OUD patients via telehealth.

**Objective:** As part of a preliminary analysis of a prospective cohort study, our objective was to evaluate remotely provided buprenorphine’s outcome on established measures – the Brief Addiction Monitor (BAM) and the CDC’s Health-Related Quality of Life (HRQOL). Additionally, we considered whether participants were satisfied with receiving buprenorphine MOUD via telehealth using a modified “Telehealth Usability Questionnaire” (TUQ).

**Methods:** Between September 27, 2021 and April 8, 2022, 107 individuals were enrolled in an online telehealth evaluation study. Participants within 45 days of starting buprenorphine MOUD were recruited through lists provided by local treatment providers. Participants completed informed consent and were compensated for participation. All study aspects were IRB approved. Baseline and Week 4 data were analyzed.

**Results:** Across the three BAM domains, statistically significant improvements were identified at Week 4 relative to Baseline for Domain 1: decrease in substance use (Standardized Mean Difference (SMD) 0.51, 95% CI 0.24, 0.70) and Domain 2: decrease in risk factors (SMD 0.46, 95% CI 0.19, 0.73), no significant differences were seen for Domain 3: Protective factors. For the HRQOL, statistically significant improvements at week 4 relative to baseline were seen for Domain 3: Protective factors. For the HRQOL, statistically significant improvements at week 4 relative to baseline were seen for a) decreased days when their “mental health was not good” ( p=0.003) and b) decreased days that poor physical or mental health kept them from usual activities (p=0.013). For five of the six TUQ domains (Usefulness, Ease of Use & Learnability, Interface Quality, Interaction Quality, and Satisfaction & Future Use) satisfaction with telehealth was >80% (greatly agree or agree combined) for both time periods.

**Conclusions:** These data support the findings that participants new to buprenorphine treatment via telehealth were satisfied with the experience and had reductions in substance use, risk factors, days of poor mental health, and days where poor mental or physical health limited usual activities.

**Referral to Telehealth Addiction Services Via Syringe Services Program: A Case Series**

**Bradley M Buchheit, MD, MSc; Alison Vasa, MD; Chris Hext, MD - Oregon Health & Science University**
Background: Despite increasing awareness of the opioid epidemic, overdose deaths continue to climb. In 2021 the CDC estimates over one-hundred-thousand people died due to drug overdose, a nearly thirty percent spike compared to 2020. Factors thought to be driving this increase, include: the COVID-19 pandemic and illicitly manufactured fentanyl. In an attempt to ensure access to medications for opioid use disorder (MOUD) during the COVID-19 pandemic, federal agencies eased restrictions which allowed prescribing MOUD by telephone-only and audio-video visits.

Objective: This case series describes patients referred to telehealth addiction services via a local syringe service program (SSP). This referral model was implemented in an attempt to improve access to the technology needed to complete telehealth visits, on-demand addiction services, and to capitalize on patient partnerships with trusted SSP staff.

Methods: Eligible participants were identified by clinic staff at intake, and confirmed via review of a REDCap database and an electronic medical record. Outcome data was collected by chart review within 2 weeks of referral to clinic. Outcomes included: completion of visit with provider, buprenorphine prescription sent to pharmacy and naloxone prescription sent to pharmacy. Study staff reviewed the Oregon Prescription Drug Monitoring Program (PDMP) to determine if prescriptions were filled.

Results: Twelve participants were referred from the local SSP. Of these, 8 (66%) completed telehealth visits on the same day as the referral, with 11 (92%) completing telehealth visits within two weeks. Of the eleven participants that completed a visit, 10 (91%) were prescribed buprenorphine, and 9 (90%) filled their prescriptions. Of the 9 participants reporting not having naloxone, 7 (78%) were prescribed it and 5 (71%) filled their prescriptions. Four participants utilized devices provided by the syringe exchange to complete their appointments.

Conclusions: Individuals from an SSP interested in starting buprenorphine that were referred to a telehealth addiction clinic completed visits, were prescribed buprenorphine and naloxone and picked up prescriptions within 72 hours in most cases. These results suggest that SSP-based referrals for telehealth buprenorphine is feasible, effective, and likely increase access to MOUD. Future research is needed to study patient/provider acceptability and long term engagement with MOUD in patients referred via SSP.

"I feel like they’re actually listening to me”: A Pilot Study of Hospital Discharge-Decision Making for Patients with Injection Drug Use-Associated Infections

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Background: Conversation guides have the potential to transform care for patients hospitalized with injection drug use (IDU)-associated infections.

Objective: This study’s objectives were to 1) pilot a structured conversation guide for hospital discharge decision making in patients with IDU-associated infections 2) investigate the guide’s feasibility and acceptability and 3) examine patient and provider experiences, patient outcomes, and lessons learned.

Methods: We developed a conversation guide and conducted semi-structured interviews with physicians and patients at a tertiary care center in Maine. We interviewed physicians after each piloted the guide with two patients. We interviewed patients less than one week after the conversation and again after 4-6 weeks. Two analysts indexed transcriptions and used the framework method to identify and organize relevant information. We conducted retrospective chart review to corroborate and contextualize qualitative data.

Results: Eight patients and four infectious disease physicians piloted the conversation guide. All patients (N=8) completed antimicrobial treatment and 88% were discharged on medication for opioid use disorder. All providers and most patients stated that the conversation guide was important for incorporating patient preferences and antimicrobial treatment options. Patients appreciated more autonomy and their voices being included in their care. Providers felt the guide facilitated their understanding of patient values. Values and preferences between patients and providers were
Participants identified the length of the guide, discussion of pain management, and addressing post-discharge needs such as housing as areas for improvement.

**Conclusions**: The use of a conversation guide to inform hospital discharge decision making for patients with IDU-associated infections incorporates patient preferences and values into treatment decisions. While we identified areas for improvement, overall patients and providers believed that this novel conversation guide helped to improve patient care and autonomy.

**Research with Pregnant and Postpartum Risky Drinkers: Comparing Recruitment Strategies**

**Sarah Dauber, PhD; Alexa Beacham, BA; Allison West, PhD; Johannes Thrul, PhD - Partnership to End Addiction**

**Background**: Recruiting pregnant and postpartum people into research on alcohol and substance use is challenging due to stigma and fears of child protective services involvement that lead new mothers to avoid disclosure of substance use to professionals. As a result, this important population is understudied and underserved.

**Objective**: (1) Describe the process of recruiting mothers who engage in postpartum risky drinking into an intensive longitudinal study via social media and a Central Intake system for perinatal women in one state. (2) Compare the success of different recruitment strategies. (3) Describe baseline characteristics of the final recruited study sample.

**Methods**: Participants were recruited via ads posted on Facebook and Reddit and outreach through a state Central Intake system for perinatal women. Social media ads were geographically targeted to the same state as the Central Intake system. Facebook and Reddit ads directed participants to the study website, where they could complete eligibility screening online. Central Intake providers introduced the study to clients and connected them to the study team who provided more information about the study and guided them through the online eligibility screen.

**Results**: Of the 502 completed eligibility screens, 40% were from Reddit posts, 33% from Facebook lead ads, 25% from Facebook click-to-website ads, and less than 1% from Central Intake. 31 people met eligibility criteria and enrolled in the study. The vast majority of enrolled participants came from Reddit posts (87%), followed by Facebook ads (9.7%) and one person from Central Intake. The sample was predominantly Black (65%) or Hispanic/Latina (25%) and on Medicaid (71%). The majority of the sample (87%) reported binge drinking more than once a month in the 12 months prior to pregnancy, 57% reported binge drinking more than once a month during pregnancy, and 45% reported binge drinking more than once a month postpartum. Participants reported high rates of lifetime substance use; 55% reported lifetime cannabis use and 13% lifetime cocaine use.

**Conclusions**: This study successfully enrolled a sample of new mothers who reported significant levels of risky drinking, a typically hard-to-reach population. Recruitment via Reddit proved to be the most efficient and effective strategy.

**Hitching Up Hope: A Clinical Case Presentation of a Mobile Medical Unit**

**Michelle Leon; Kelly Celata, LADC, MSc - Brockton Neighborhood Health Center**

**Background**: This case presentation is that of a 35-year-old female who uses fentanyl and cocaine and is without access to stable housing. This patient presented to the Brockton Neighborhood Health Center (BNHC) mobile addiction services unit, a mobile medical trailer that provides substance use and medical treatment on a walk-in basis.

**Objective**: Identify the advantages to low-barrier treatment services in promoting overall health of patients

**Methods**: This patient first presented for treatment of multiple abscesses in September of 2021. At this time, the Mobile Services LPN collected specimens for HIV testing, with this patient’s consent, the results of which were reactive. The team made multiple attempts to convey this diagnosis, but the patient became avoidant. In November, the team successfully imparted the diagnosis to this patient, who displayed hostility and denied confirmatory testing.
In March of 2022, this patient approached the mobile team and consented to confirmatory testing. She began medication for her HIV diagnosis. After five weeks of consistently taking medication, the LPN collected further specimens, which revealed an undetectable viral load. This patient is on track to have no risk of transmission if she continues to maintain an undetectable viral load for the next six to eight months.

**Results:** In addition to engaging in HIV testing and treatment, this patient has become more proactive and invested in her wellbeing. This patient reports adjusting her diet and consuming more water as a result of her diagnosis, and reports continuing to smoke crack but injecting fentanyl less frequently than prior to her diagnosis. This patient keeps a copy of a letter from the Mobile Services Nurse Practitioner which states that her viral load is undetectable in her purse at all times.

**Conclusions:** This case presentation demonstrates the efficacy of low-barrier substance use and medical care in diagnosing and treating infectious diseases. The non-judgmental approach and walk-in nature of the mobile unit allowed this patient to get tested for HIV, receive her results, and engage in treatment on her own timeline, which may have been delayed much longer without the availability of mobile services in the Brockton community.

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**Hospital to Outpatient Transitions of Care in Tobacco Treatment**

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**Background:** Over 3.2 million smokers in the U.S. alone are hospitalized annually, creating an opportunity for smoking cessation intervention when they are already in a period of enforced abstinence. Hospital-initiated interventions are effective when treatment continues for at least a month post-discharge. Many hospitalized patients return for outpatient follow-up visits, and these are an excellent opportunity for post-discharge tobacco treatment. However, the transition of care for tobacco treatment between hospitalization and outpatient care is understudied.

**Objective:** The purpose of our study was to describe post-discharge tobacco treatment follow-up for recently hospitalized smokers participating in a smoking cessation clinical trial.

**Methods:** These analyses included 400 participants who had an outpatient visit within six weeks post-discharge in one medical center. Chart reviews were conducted using the electronic medical record (EMR).

**Results:** There were 1286 visits during the 6-week follow-up period. Among all participants, 63.5% were identified as current smokers in the EMR, 51.75% had progress notes indicating that tobacco use was addressed at any visit, 5.5% had a tobacco-related billing code entered, 25.5% had smoking cessation medications prescribed and/or verified during a visit and 26.25% had tobacco included in the problem list.

**Conclusions:** Most participants in the study, even if recently quit, could benefit from extended smoking cessation treatments to promote and maintain abstinence. Although some providers discussed and documented tobacco use with patients, the majority of patients had no documentation for tobacco treatment. Resources that could facilitate the continuity of care, such as the problem list and the use of billing codes, are underutilized by health care providers. There is an enormous unrealized capacity for healthcare systems to have an effective impact on the delivery of evidence-based smoking cessation treatments. Potential strategies to ensure effective care transitions for tobacco treatment include EMR modifications that would provide reminders and support documentation.

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**Primary Care-Based Opioid Use Disorder Treatment for Adolescents and Young Adults: A Qualitative Study of Barriers, Facilitators and Care Recommendations**

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**Background:** Although adolescents and young adults (AYA) are affected by opioid use disorder (OUD) and have situational and developmental differences compared to adults, their care has historically been largely undifferentiated from adult care.

**Objective:** To understand barriers and facilitators regarding effective treatment for youth with OUD as perceived by youth, their caregivers, and clinicians.

**Methods:** We recruited a convenience sample of AYA with OUD from a primary care-based youth addiction treatment program in a Boston academic hospital, as well as caregivers of youth meeting inclusion criteria. We also recruited a purposive sample of clinicians in Massachusetts. Semi-structured interviews were performed by a trained research assistant between 2017 and 2021. Three independent coders performed thematic analysis of transcribed interviews. Analysis was performed on Nvivo (1.6.2) using inductive coding informed by the Consolidated Framework for Implementation Research (CFIR).

**Results:** The final sample included 15 youth aged 17-25, eight caregivers, and 13 clinicians with backgrounds in social work, nursing, pediatrics, internal medicine, and psychiatry. Facilitators, barriers, and additional care recommendations were organized into levels of the CFIR framework: individual (patient), inner setting (clinic), and outer setting (health system). Facilitators included: (individual) readiness, buy-in, and a feeling of accountability; (inner setting) support for not only AYA but also their caregivers, nonjudgmental communication across a multidisciplinary team, and contingency management strategies; and (outer setting) access facilitators (i.e., cost coverage, public transit) and positive influences/outlets (employment, alternate recreational activities and associated peer relationships). Barriers included: (individual) denial, isolation, and lack of readiness; (inner setting) provider discomfort with treating AYA, patient discomfort with the standard OUD treatment environment, and restrictions; and (outer setting) lack of access (i.e. lack of insurance coverage, feasible hours of treatment) and environmental triggers. Identified care recommendations surrounding some of these barriers included provider training, innovative treatment settings, increased flexibility of the program in terms of positive drug screens/program inclusion, expanded treatment hours, utilizing integrated technology, and incorporating life skills training into programs serving AYA.

**Conclusions:** This knowledge of factors contributing towards or against effective treatment for OUD for AYA should be incorporated into efforts to improve primary care-based treatment and meet the specific needs of AYA.

**Unsolicited Reporting Notifications from Maryland’s Prescription Drug Monitoring Program (PDMP): Characteristics of Providers**

**Background:** Maryland’s Prescription Drug Monitoring Program (PDMP) issues unsolicited reporting notifications (URNs) to prescribers when outlying prescribing is identified. Three types of URNs include [1] dangerous drug combinations (DDC), sent when a provider prescribes an opioid, a benzodiazepine, and a muscle relaxant to a patient on the same day, [2] overdose fatality (ODF), sent to providers upon the opioid overdose death of a patient who had active opioid or benzodiazepine prescriptions, and [3] multiple provider episodes (MPE), issued to providers with patients who have active prescriptions with other providers.

**Objective:** Describe providers who were issued URNs by Maryland’s PDMP, including number and types of URNs, number of years in practice (≤5, 5-10, >10), and provider type, i.e., physician, dentist, nurse practitioner (NP), physician assistant (PA).

**Methods:** We used PDMP data from Jan 2018-April 2021. Analyses included descriptive statistics and logistic regression to estimate the odds of receiving a URN.

**Results:** A total of 4,446 URNs were issued to 2,750 unique providers. Sixty percent of URNs were issued to physicians, 20.7% to NPs, 14.4% to PAs, and <4% to dentists. Compared to physicians. NPs (OR 1.87, 95% CI 1.69-2.08) and PAs (OR 1.42, 95% CI 1.26-1.59) were more likely to receive a URN. Among physicians and dentists, those with >10 years
Conclusions: Among Maryland prescribers who were issued a URN, the majority were physicians and two-thirds received just one URN. More URNs were issued to providers with at least a decade in practice, with NPs as a notable exception.

An Exploration of Barriers and Facilitators to Buprenorphine Access via Telehealth

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Background: Despite the unrelenting rise in opioid overdoses in the United States (US), many people with opioid use disorder (OUD) lack access to evidence-based treatment. Certain populations, including those living in rural areas and Black and Latino/a individuals, are disproportionately impacted by this lack of access. Telehealth may help address some geographic, transportation, and stigma related access barriers.

Objective: To explore the barriers and facilitators, including financial, geographic, and stigma-related factors, to accessing OUD treatment with buprenorphine via telehealth among individuals who are currently or have previously accessed treatment in this way, and to understand these individuals’ experiences with this care.

Methods: We used qualitative descriptive methodology to interview participants during December 2021 – April 2022. The design of the interview guide was based on the Patient-Centered Access to Health Care framework. We used thematic analysis to analyze data with NVIVO software.

Results: We interviewed 30 individuals from across the US who have accessed OUD care with buprenorphine via telehealth. Most participants were white, and the mean age was 38. All but one participant had insurance; 38% had Medicaid. Six participants stated that their insurance does not cover their care. Participants stated that increased privacy and convenience and decreased stigma were benefits of telehealth. Although some participants paid out of pocket, they calculated that not traveling for in-person care saved them money, and many would rather pay for telehealth care than attend in-person care covered by insurance due to previous negative experiences with in-person care. A minority of participants desired more connection with their telehealth provider and counseling to accompany their treatment.

Conclusions: Telehealth presents an opportunity to expand access to OUD care, and many individuals may prefer to access care remotely for a variety of reasons. Due to past negative experiences with OUD care and the rising cost of gas, paying out of pocket for telehealth care may be preferrable to in-person options covered by insurance. Because this sample was overwhelmingly white, these findings may not reflect the experiences of patients of color. Questions remain about how to best tailor telehealth models to provide counseling and peer support to individuals who desire them.

Perceived and Structural Barriers to Buprenorphine Treatment Prescribing among X-Waivered Practitioners in Michigan and Beyond

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Background: Michigan experienced a 16.3% increase in overdose deaths in 2020 with most deaths involving opioids. Despite the effectiveness of buprenorphine treatment, a 2019 report revealed that a third of Michigan residents with opioid use disorder (OUD) had not received any treatment. The number of qualified practitioners with an X-waiver, an authorization to prescribe buprenorphine treatment in office-based settings, has dramatically increased over the past few years. These practitioners have the potential to address the unmet needs in their counties, but they are not prescribing at capacity.
Objective: To identify the barriers that prevent X-waivered practitioners from managing more patients on buprenorphine treatment and develop evidence-based policy recommendations to mitigate those barriers.

Methods: An electronic survey was emailed to all practitioners in the DEA’s database of X-waivered providers in Michigan. From July 13, 2021, to August 16, 2021, 687 X-waivered practitioners participated in the survey. Survey results were analyzed using descriptive, bivariate, and multivariate statistics to examine factors associated with buprenorphine prescribing practices and perceived barriers.

Results: Among the survey respondents, 81.4% had ever prescribed buprenorphine to treat OUD. Within the 30 days prior to completing the survey, only 3.3% of respondents were prescribing buprenorphine treatment near or at the X-waiver limit, 22.5% had not prescribed at all, and 74.2% were prescribing buprenorphine but well below the X-waiver limit. The perceived barriers to prescribing buprenorphine treatment most frequently identified by respondents were lack of access to counseling capacity (57.6%), lack of addiction medicine specialist or psychiatrist access (56.5%), time constraints on facility (47.9%), and insufficient institutional leadership (36.2%). Respondents who perceived counseling to be required as a condition of buprenorphine treatment had a significantly lower average number of patients receiving buprenorphine (M=16.9) than respondents who did not (M=26.6), t(494)= -2.6, p=0.01.

Conclusions: Nearly all respondents were either prescribing buprenorphine substantially below their patient limit or not prescribing at all. Targeted policies and strategic initiatives are needed to address practitioner perceptions and structural barriers to bridge the gap between the need and access to buprenorphine treatment in Michigan and beyond.

Association of Urine Norfentanyl and Urine Fentanyl Concentrations with Emergency Department Presentation for Opioid Withdrawal

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Background: Prolonged elimination of fentanyl in patients with chronic use may complicate standard induction of buprenorphine to treat opioid withdrawal. Fentanyl and norfentanyl, an inactive metabolite, concentrations can be quantified in urine drug tests (UDT).

Objective: To describe the association between urine fentanyl and norfentanyl concentrations and severity of withdrawal, as determined by the Clinical Opioid Withdrawal Scale (COWS), among patients presenting to the ED. We hypothesized that lower relative concentration of fentanyl to norfentanyl (due to recent nonuse) was associated with more severe opioid withdrawal, while higher relative concentration of fentanyl to norfentanyl (due to recent use) was associated with less severe opioid withdrawal.

Methods: We conducted a retrospective cross-sectional study of patients presenting to the ED. The study included patients with encounters for opioid-related illness, as determined by ICD-10 diagnosis codes. For inclusion, patients needed to have detectable concentrations of fentanyl in ED-collected UDT as well as documented COWS score. Low urine norfentanyl concentration was defined as <1000ng/mL and high was defined as ≥1000ng/mL. Low urine fentanyl was defined as <40ng/mL, medium as 40-400ng/mL, and high as >400ng/mL. We used multivariable linear regression with an interaction term for fentanyl and norfentanyl urine concentrations to evaluate their association with COWS, adjusting for patient-level characteristics.

Results: Of 8114 patients with opioid-related ED visits with a UDT collected, 1398 (17.2%) had detectable urine norfentanyl and fentanyl concentrations and documented COWS scores. Compared to a reference group of patients with a low norfentanyl/low fentanyl concentration, a high norfentanyl/low fentanyl concentration was associated with mean increase in COWS by 1.92 (CI 0.63 to 3.20, p<.005), whereas a high norfentanyl/high fentanyl concentration was associated with a mean decrease in COWS by 1.3 (CI -2.02 to -0.62, p<.001).

Conclusions: High norfentanyl and low fentanyl concentrations were associated with higher COWS scores in ED patients with opioid-related presentations compared to low norfentanyl/low fentanyl and high norfentanyl/high fentanyl
concentrations. With further study, quantitative UDT may be used to assist in determining the severity of opioid withdrawal and potential readiness to initiate treatment with buprenorphine among fentanyl users.

**Young Pregnant Women’s Concerns About Prenatal Marijuana Use and Child Welfare Involvement**

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**Background:** Prenatal marijuana use is increasing, especially in younger women. This is concerning due to short-term (e.g., restricted fetal growth) and long-term effects on development. Many pregnant women do not disclose marijuana use to healthcare providers, and when it is discussed, providers are more likely to mention the legal ramifications of use at delivery rather than health risks for mother and child.

**Objective:** This study aims to give voice to a marginalized group of young pregnant women to better understand their concerns around prenatal marijuana use and their prenatal care.

**Methods:** Pregnant women enrolled in YoungMoms, a mixed-methods prenatal cohort study of pregnant women ages 13-22, were recruited for in-depth, audio-recorded qualitative interviews about prenatal marijuana and tobacco use. Content analysis of transcripts was conducted and coding regarding the child welfare system were reviewed to identify common themes in the interviews.

**Results:** To date, 13 interviews have been completed: M age = 20 years (range = 17-21), 77% Black, 8% white, 15% Biracial; 38% prenatal marijuana use. A common theme centers on fears of child welfare system involvement during pregnancy, with many participants expressing a belief that it was an inevitable consequence of disclosure/discovery of prenatal marijuana use. Participants differed on their beliefs that child welfare involvement was justified for prenatal marijuana use, voiced concerns about losing custody of their children, and described how these concerns affected their discussions with obstetric providers.

**Conclusions:** These findings highlight that for younger women seeking prenatal care, fear of child welfare system involvement is intertwined with their perception of healthcare and has implications for patient-provider communication. Given the increase in prenatal marijuana use among younger women, more research exploring how such perceptions might affect perinatal health behavior and neonatal outcomes is needed. Research examining healthcare provider perspectives regarding mandated reporting and prenatal marijuana use may provide further clarity and improve clinical training.

**Community-Based Service Providers Illuminate Drivers of Opioid Overdose among Black People Who Use Drugs in St. Louis**

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**Background:** In St. Louis, Missouri, opioid overdose deaths among Black people have increased 560% since 2015, more than double the increase among White people (200%). Community health workers, peers, and grassroots efforts can offer unique insights into drivers of overdose inequities.

**Objective:** This study aimed to reveal drivers of disproportionate increases in overdose deaths, gaps within existing systems of care, and potential strategies for mitigating overdose and improving well-being among Black people who use drugs (PWUD).

**Methods:** Researchers conducted focus groups with providers serving Black communities in St. Louis: one with street outreach workers at a local non-profit (n=7) and one with community health workers (n=7). Using grounded theory, transcripts were coded line-by-line using an inductive, iterative process to identify a central phenomenon and associated themes.
Results: A central phenomenon arose from the focus groups concerning the need for safety, security, stability, and survival (4-S). Themes indicated that the causal condition of systemic racism has manifested in financial and physical disinvestment in Black communities, which perpetuates resource deserts and over-criminalization. Healthcare and social program factors like geographic distance from Black neighborhoods, prohibitive intake criteria and cost, and low capacity affect Black PWUD inequitably due to racial and drug user stigma. These social and healthcare determinants lead to a lack of 4-S, driving individuals to cope through illicit drug use and selling, making them and those in their networks vulnerable to adverse childhood experiences, violence exposure, criminal legal system involvement, and overdose. This cycle is exacerbated by the context of illicitly-manufactured fentanyl poisoning the drug supply and COVID-19. To address unmet needs for 4-S among Black PWUD, community strategies include street outreach and peer services that build trust and hope through the provision of culturally-congruent interventions and promote harm reduction in communities underserved by health and social systems.

Conclusions: Insights from street outreach and community health workers suggest prioritizing interventions that promote 4-S to reduce fatal opioid overdose among Black PWUD. Promising interventions include low-barrier housing, increased access to harm reduction services, peer-led and relationship-based community interventions, and policy changes that decriminalize and destigmatize drug use, paraphernalia, and safe use tools.

Adapting Contingency Management to Support Hospitalized Patients with Stimulant Use Disorder

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Background: Deaths and hospitalizations related to substance use are rising exponentially, and hospitals struggle to support patients with stimulant use disorder. Contingency management (CM), which utilizes a reward-based system, is well studied in the outpatient setting. Little is known about feasibility and acceptability of CM in hospital settings, which introduces unique opportunities and challenges.

Objective: Elicit CM expert, hospital stakeholder, and patient perspectives to inform adaptation of CM for hospitalized patients with stimulant use disorder.

Methods: We conducted semi-structured qualitative interviews with 8 CM experts (researchers, clinicians), 5 stakeholders (inpatient nurses, peer support specialists, social workers), and 8 hospitalized patients at a quaternary referral hospital in Oregon with an addiction medicine consult service. Interviews elicited input about hospital CM adaptations (e.g. incentivized behaviors); delivery mode (e.g. mobile app-based vs. in-person CM); anticipated challenges and opportunities; and approaches to staff and patient engagement. We audio-recorded interviews, took detailed field notes, transcribed patient interviews, and performed a reflexive thematic analysis.

Results: All informants felt CM had potential to improve patient experience and health outcomes by supporting patient engagement in hospital care, behavioral issues (e.g. disagreements with staff), and in-hospital substance use. CM experts recommended focusing on incentivizing stimulant abstinence which could result in changes in other substance use; the importance of accurate, timely, and escalating rewards; and maximizing improvement of patient-staff therapeutic relationships with an in-person facilitator, especially if delivered through a mobile app. Experts felt incentivizing physical health behaviors (e.g. antibiotics) may be challenging due to different medication schedules and difficulty of verifying behaviors (e.g. wound care, physical therapy) in real time. Experts, stakeholders, and patients encouraged individualized target behaviors to support patients’ diverse goals. Patients expressed concerns about urine drug testing (UDT) given negative past experiences. Experts and stakeholders emphasized the importance of staff education and training to support CM implementation. Patients especially liked the idea of CM supporting discharge transition to the community.

Conclusions: Hospital-based CM is novel and has potential to improve care. Adaptations addressing challenges of incentivizing physical health behaviors/UDT concerns and opportunities for improving patient-staff relationships/discharge transition are likely to improve intervention feasibility, acceptability, and outcomes.

A Qualitative Analysis of Barriers and Facilitators to Implementation of the Consult for Addiction Treatment and Care in Hospitals (CATCH) Program in New York City Safety Net Hospitals
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**Background:** In response to the heavy burden of untreated substance use disorders in hospital patients, many health systems are implementing addiction consult services that are staffed with specialists who diagnose opioid use disorder, start treatment in the hospital, and link patients to post-discharge treatment. In 2018, the New York City public hospital system began rolling out the Consult for Addiction Treatment and Care in Hospitals (CATCH) program in 6 hospitals. CATCH teams are comprised of an addiction-trained medical provider, social worker or addiction counselor, and peer counselor; each hospital has 2-3 teams.

**Objective:** To identify barriers and facilitators to CATCH implementation from the perspective of CATCH team staff.

**Methods:** Qualitative interviews were conducted at all 6 hospitals as part of a pragmatic trial studying the effectiveness and implementation of CATCH. Guided by the Consolidated Framework for Implementation Research (CFIR) framework, interviews were conducted with 26 CATCH staff at the start of implementation, and with 33 staff 9-12 months post-implementation. A codebook was created a priori and further refined through additional coding of initial interviews. Codes were systematically analyzed using the CFIR.

**Results:** Barriers and facilitators spanned all five CFIR domains: intervention characteristics, inner setting, outer setting, process, and individual characteristics. Barriers identified were primarily related to the outer and inner settings, including patient needs and resources (e.g. insurance status, homelessness), competing demands on staff time, and provider lack of knowledge or stigma against treatment. Facilitators were mostly related to the characteristics of individuals on the CATCH team (peer-delivered care, team knowledge) and processes (team communication, CATCH training).

**Conclusions:** Addiction consult services have great potential for improving care for hospital patients with substance use disorders, but as new programs in busy hospital settings they face barriers to implementation that could impact their effectiveness. Barriers may be particularly impactful for programs operating in safety-net hospitals, given limited resources within the health system and the multiple and complex needs of their patients. Understanding the strengths of these programs and barriers to their implementation is critical to utilizing addiction consult services effectively to improve the treatment of hospital patients with substance use disorders.

"Living as Opposed to Surviving": Navigating a Sustained Recovery from Opioid Addiction

**Daly Trimble, Medical Student:** Karen Hacker, MD, MPH; Simone Taubenberger, PhD; Noelle Spencer, MPH; Judy Chang, MD, MPH; S. Fabre BS; B. Jagessar, BS; R. Roberto, BA; P. Gill, BS; E. Hulsey, BS; A. Arnold, BS - Magee-Womens Research Institute

**Background:** Individuals experiencing opioid use disorder (OUD) often describe recovery as a journey filled with unexpected developments. Some recovery models list tasks which are usually accomplished to reach stability. However, these models lack contextual details about what people and institutions are involved with each new step. Research suggests that paths to recovery vary greatly despite common milestones.

**Objective:** Collect OUD recovery narratives in Allegheny County, Pennsylvania. Identify trends in strategies, people, and resources used to manage addiction to understand the types of assistance found at different recovery stages.

**Methods:** This analysis is part of a larger study investigating stakeholder perspectives on the opioid crisis in eight Pennsylvania communities disproportionately impacted by opioid overdose deaths. This analysis focuses on 27 interviews (conducted between 7/03/2018 and 5/03/2019) with individuals who disclosed OUD histories. Participants were recruited through preestablished contacts and expanded through referral sampling. Semi-structured interviews were recorded and transcribed. The University of Pittsburgh Institutional Review Board approved the study on June 26, 2018 and waived written consent (Protocol # MOD18030265-01 / PRO18030265). Preliminary codes were developed using the interview guide, with additional codes added iteratively. Themes were triangulated with feedback from routine team meetings.
Results: Visualizing narratives using storyboards revealed common milestones which aligned with preexisting recovery models. Regular access to quality medical and psychological care provided the “how” out of addiction, and social support was always “why” it was worth the effort. Narrative trends indicate three distinct paths to recovery. “Kinship Paths” centered on loved ones who became caregivers, researched and financed programs, and motivated participants. “Carceral paths” initiated recovery with a law enforcement encounter and succeeded when participants were sentenced or directed to drug rehabilitation. “Community paths” had preexisting systems of behavioral health, addiction medicine, and other networks that holistically supported participants. Most participants spent some time on all three paths. The community paths appeared to be the most successful, with kinship paths limited by personal resources and carceral paths inherently punitive. Community paths helped participants reach recovery milestones independent of private wealth or incarceration.

Conclusions: Comprehensive community programs offer an efficient path to recovery and merit preferential investment over prisons and privatized institutions.

Characterizing the Target Population for a Hospital Addiction Consult Service in New York City Public Hospitals: A Descriptive Analysis of Patients with Opioid Diagnoses in the Six ‘Consult for Addiction Treatment and Care in Hospitals (CATCH)’ Hospitals

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Background: In 2018, the New York City Health+Hospitals system began rolling out an addiction consult service (Consult for Addiction Treatment and Care in Hospitals (CATCH)) in 6 of its hospitals. We are conducting an ongoing pragmatic trial evaluating the effectiveness of CATCH for post-discharge opioid use disorder (OUD) treatment and related health outcomes.

Objective: This analysis sought to describe the population of patients with OUD or opioid overdose in the participating hospitals, including their medical/psychiatric comorbidities, to better understand the needs of the population that may be served by CATCH.

Methods: We used Medicaid claims data to analyze the characteristics of patients admitted to one of the 6 participating hospitals. CATCH had a phased rollout, and cases were drawn from each hospital for 12 months pre- and post-initiation of CATCH (24 months/hospital, data captured from 9/2017-2/2021). Individuals included in the analysis were adults (18+) with a hospitalization captured in Medicaid claims having an ICD-10 admission and/or discharge diagnosis of OUD or opioid poisoning. Admissions for <1 day were excluded, as were admissions for detox or primary psychiatric diagnoses. Demographic characteristics were drawn from the first eligible hospitalization during the study period.

Results: A total of 2157 individual patients met the criteria for inclusion. Patients had a mean age of 48.9 (SD=13.7) and were 73.5% male. 36.0% were White, 32.5% Black, 9.1% Other race, and 22.4% had unknown/missing race. A majority (67.7%) had 3 or more chronic medical conditions, and 62.4% had a serious mental illness. The mean length of hospitalization was 10.2 days (SD=17.7); median was 5 days. The primary discharge diagnosis was opioid poisoning for 9.4% and OUD for 6.5% of cases; for others the opioid-related diagnosis was secondary.

Conclusions: Patients admitted to these NYC public hospitals with OUD and opioid overdose had multiple medical and psychiatric conditions, and were most frequently hospitalized for primary diagnoses other than OUD. Addiction consult services like CATCH can effectively address opioid and other substance use disorders, but the patients they see in the hospital may have multiple needs that addictions care alone cannot address.

Digitally Assisted Recovery Coach to Facilitate Linkage to Outpatient Treatment Following Inpatient Alcohol Withdrawal Treatment: A Proof-of-Concept Study

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**Title:** Digitally assisted recovery coach to facilitate linkage to outpatient treatment following inpatient alcohol withdrawal treatment: A proof-of-concept study

**Background:** Inpatient alcohol withdrawal management (i.e., detoxification) is often an entry point for recovery, but most patients do not successfully link to ongoing treatment. Peer recovery coaches increasingly are playing a role in supporting individuals in recovery, but no prior research has evaluated if they can facilitate linkage to care following discharge.

**Objective:** We aimed to 1) evaluate the feasibility of using an existing care coordination platform and smartphone app (“Lifeguard”) to facilitate recovery coach support for patients undergoing detoxification, 2) evaluate predictors of successful linkage, and 3) whether the app can collect data on alcohol withdrawal using the Short Alcohol Withdrawal Scale (SAWS).

**Methods:** We conducted a proof-of-concept trial at a detoxification unit in Boston. After consenting, participants were contacted by the coach through the app, received daily prompts to complete the SAWS while hospitalized as well as an adapted version of the Brief Addiction Monitor (BAM) after discharge. The BAM inquired about alcohol use, risky (e.g., craving) and protective (e.g., 12-step attendance) factors. The coach sent motivational texts daily, reminders about appointments, and checked-in if BAM responses were concerning. Participants could contact the coach if needed. Follow-up continued for 30 days.

**Results:** The 10 participants that enrolled were all men, averaged 50.5 years old, mostly white (60%), non-Hispanic (90%), and single (80%). Overall, 80% engaged with the coach prior to discharge, and 60% engaged after discharge on average 5.3 days (SD 7.3, range 0-20). Additionally, 50% responded to BAM prompts on average 4.6 days (SD 6.9, range 0-21). Half (50%) linked successfully with treatment post-discharge. Participants who engaged with the coach post-discharge, compared to those who did not, were significantly more likely to link with treatment (83.0% vs 0%, p=0.01). SAWS scores were significantly correlated with nurse obtained CIWA scores (r=0.55, p=0.039).

**Conclusions:** The proof-of-concept study results suggest that a digitally assisted recovery coach may be feasible in facilitating linkage to care following discharge, as well as the collection of clinically relevant data to monitor patients.

**Social Media Recruitment of Survivors Who Have Lost Someone to Suicide after Prescription Opioid Change: Initial Outcomes and Insights**

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**Background:** Some databases show a statistical association between prescription opioid reduction and suicide, but these events are not well understood. Detailed study of individual suicides using survey or interview of bereaved survivors guided by psychological autopsy could inform suicide prevention efforts, but recruitment faces formidable challenges. These include restrictions on existing death registries, stigma attached to both suicides and opioid receipt, and potential distrust of healthcare researchers.

**Objective:**

1. To evaluate feasibility of using social media to recruit survivors who have lost someone to suicide after prescription opioid change

2. To describe the challenges of social media recruitment related to suicide

**Methods:** We created a 49-item online/telephone survey focused on suicides after prescription opioid dose change. Recruitment Phase 1 (11/2020-3/2022) included investigator postings on Facebook, Reddit, and Twitter, asking “Have you lost someone with pain to suicide?” Phase 2, starting 4/1/2022, enlisted professional help (<$5000) to create “in-stream” YouTube ads, and a single-region buy on Craigslist. We describe (a) Phase 1 data and (b) strengths and challenges to social media recruitment under both Phases.
Results: Under Phase 1, 71 persons passed the initial screener with 56 reporting gender (22 female, 34 male) and race (47 white, 5 Native American, 4 other) of the decedent. Among these 56, 44 were “confident” death was intentional, and 41 affirmed opioid reduction before death. However, only 18 respondents were immediate family. Many others were friends. Phase 1 recruitment challenges included (a) declared distrust of research, as opposed to advocacy; (b) investigators’ limited media “reach”; (c) ethical concerns about outreach to survivors. Some survivors worried research data could be used in adverse proceedings. Phase 2 accrued 7 entrants in 4 weeks. Phase 2 challenges included social media restrictions on the word “suicide.” A challenge for both Phases was devising language to avoid unproven causal assertions.

Conclusions: Public recruitment of survivors who have lost someone to suicide after prescription opioid change requires overcoming challenges that include perceptions of stigma, reach to the population, and distrust of healthcare researchers following health system trauma. Expanding such recruitment will depend on partnerships with organizations and the pain community, coupled with continuing ethical review.

Substance Use Screening Rates and Screening Results among Adult Primary Care Patients with Mental Health Conditions and Substance Use-Related Medical Conditions

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Background: Patients with mental health conditions (MHCs) and substance-related medical conditions (SRMCs) are at elevated risk for poor health outcomes related to alcohol and drug use.

Objective: We analyzed substance use screening for patients with these conditions in 6 U.S. primary care clinics that participated in a screening implementation study. Clinics initiated universal screening for adult patients in 2017-2018.

Methods: Data were extracted from electronic health records for one year pre- and post-screening implementation, and adults having visits in both years were included. ICD-10 diagnosis codes from the Problem List prior to screening implementation identified MHCs and SRMCs. Screening rates and screen-positive rates were compared for patients with and without MHCs and SRMCs using multivariate logistic regression models adjusted for key demographic characteristics.

Results: Of the 39,148 patients meeting inclusion criteria, 29% had MHCs and 58% had SRMCs. Screening for alcohol/drugs was completed by 47% of patients with MHCs and 57% of patients with SRMCs. Patients with MHCs had lower screening rates for alcohol (AOR=0.43, 95% CI:0.41-0.45) and drugs (AOR=0.43, 95% CI:0.41-0.45) in comparison to patients without MHCs. Similarly, patients with SRMCs had lower screening rates for alcohol (AOR=0.41, 95% CI=0.38-0.43) and drugs (AOR=0.41, 95% CI=0.39-0.43). Patients with MHCs were more likely to screen positive for alcohol (AOR=1.48, 95% CI=1.37-1.60) and drugs (AOR=1.55, 95% CI=1.32-1.83), while patients with SRMCs were more likely to screen positive for alcohol (AOR=1.39, 95% CI=1.29-1.50) but not drugs (AOR=1.08, 95% CI=0.93-1.27).

Conclusions: With a universal screening approach, patients with MHCs and SRMCs were less likely to be screened, and more likely to screen positive for alcohol use, in comparison to patients without these conditions. While there may be unique barriers to screening patients with mental health and substance-related medical conditions, clinics should consider prioritizing them for screening given the substantial burden of unhealthy substance use.

Cannabidiol Effect on Cue-Induced Craving for Individuals with Opioid Use Disorder Treated with Buprenorphine: A Small, Proof-of-Concept, Open-Label Study

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Background: Opioid use disorder (OUD) remains a major public health concern. Despite the use of medications for OUD such as buprenorphine, the current gold-standard treatment, relapse in the context of increased craving remains common. Cannabidiol (CBD) has been shown to reduce cue-induced craving in individuals with OUD, but among those who were not receiving any buprenorphine treatment. This small, proof-of-concept, open-label study sought to evaluate the effect of CBD on cue-induced craving among individuals with OUD who were being actively treated with buprenorphine.

Objective: We aimed to determine the impact of CBD on cue-induced cravings among individuals with OUD on buprenorphine or methadone treatment.

Methods: Participants (n=5) received CBD (Epidiolex®) 600mg once daily for 3 consecutive days in an open-label fashion. Primary outcome was cue-induced craving measured on a visual analog scale of 0 to 10, calculated as the difference in craving in response to drug-related vs. neutral cues. The cue-reactivity paradigm was performed at baseline before CBD administration, and was repeated after 3 days of CBD. Secondary outcomes included scores on depression, anxiety, pain, opioid withdrawal, and side effects.

Results: All participants were actively taking buprenorphine for an average of 37.8 months (range 1 to 120 months). Cue-induced craving was significantly lower after CBD dosing compared to baseline (0.4 vs 3.2, paired t-test p=0.0046). No significant changes in scores for depression, anxiety, pain, or opioid withdrawal were noted. CBD was well-tolerated, although one participant experienced moderate sedation; otherwise, no other adverse effects were reported.

Conclusions: Given the high risk for bias in a small, uncontrolled, open label study such as this, results must be interpreted with caution. A larger, adequately powered trial with a suitable control group is needed to confirm the finding that CBD may help to reduce cue-induced craving among individuals with OUD currently on buprenorphine treatment. Research should further evaluate whether adjunctive use of CBD can improve clinical outcomes for individuals with OUD maintained on buprenorphine.

Experiences and Characteristics that Influence Medical Students’ Desire to Work with Patients With Substance Use Disorder

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Background: Substance use disorders (SUD) and drug overdoses remain a major cause of morbidity and mortality. It is vital that medical professionals are ready and willing to serve persons who use drugs (PWUD) and provide support in an evidence-based, non-stigmatizing way. Barriers for SUD treatment and harm reduction include lack of provider education, pervasive stigma, and inadequate access to care.

Objective: This study examines attitudes of medical students towards PWUD and serving patients with SUDs in their future careers.

Methods: Incoming medical students (N=229) completed a survey about their knowledge and experiences related to SUDs, opioid overdose, and harm reduction. Students indicated agreement using a 6-point Likert scale with 7 different statements related to their desires and interests working with patients with SUDs. Independent t-tests and correlations were used to compare how agreement with these statements related to various types of exposure to and knowledge about PWUD.

Results: Contrary to hypothesis, previous exposure to substance use personally (knowing someone with a SUD or had overdosed) or professionally (seeing a patient with SUD or had overdosed) did not impact desire to work with patients with SUDs (ps>0.05). Nonetheless, scores on the Medical Conditions Regard Scale for SUDs (MCRS)—which relate to attitudes toward patients with SUDs—positively correlated with agreement with all 7 statements regarding desire/interest working with patients with SUDs (ps<0.001). Identifying as female (vs. male) was associated with higher interest in receiving education on SUDs (5.40±0.83 vs. 5.09±0.98; t=2.60; p=.01) and stronger desire to treat (5.31±0.87 vs. 5.00±0.88; t=2.70; p=.007) and advocate for PWUD in their career (5.12±0.92 vs. 4.85±1.07; t=2.60; p=.04).
Conclusions: SUD is a complex diagnosis and medical professionals have wide-ranging attitudes towards these patients. Medical students begin interacting with patients during preclinical years and must be prepared to support PWUDs. It is important to understand what factors impact students’ interest and willingness to work with these patients as medical schools develop effective curricula and clinical experiences that integrate SUD training into undergraduate medical education.

Factors Associated with Response to a Phone-Administered Alcohol and Substance Use Survey During the COVID-19 Pandemic among Women in the MACS/WIHS Combined Cohort Study: Who are We Missing?

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Background: Early in the COVID-19 pandemic, many clinical studies pivoted to remote research visits, which have a higher non-response rate compared to in-person assessments. Survey non-response can bias estimates of alcohol and substance use prevalence.

Objective: Identify factors associated with responding to an alcohol and substance use phone survey administered during the COVID-19 pandemic to women enrolled in the MACS/WIHS Combined Cohort Study, a multicenter U.S. prospective cohort of adults living with and without HIV.

Methods: We assessed associations of pre-pandemic (April-September 2019) sociodemographic factors, HIV status, housing status, depressive symptoms, alcohol use, and substance use measures with response to an early-pandemic (August-September 2020) phone survey using multivariable logistic regression. Response probability weights generated from the regression model were applied to the sample and prevalence estimates of risky drinking (>7 drinks/week or >3 drinks/day) and substance use (opioids, stimulants, sedatives) in the COVID-19 pandemic were compared to the unweighted sample.

Results: Of 1,834 participants with pre-pandemic data, 62% of women were Black/African American, 46% had an annual income <$12K, 71% were living with HIV and the mean age was 52.4 (SD 9.3) years. The phone survey response rate was 77.5%. In the adjusted model, the odds of responding were lower at research sites in the Western (aOR 0.35;95%CI:0.21-0.57) and Southern US (aOR 0.29;95%CI:0.19-0.44, ref=Midwest), in women of Hispanic ethnicity (aOR 0.47;95%CI:0.33-0.66, ref=Black/African American), and in those who reported substance use (aOR 0.62;95%CI:0.40-0.95). By contrast, the odds were higher for women of white race (aOR 1.63;95%CI:1.02-2.70, ref=Black/African American) and those with stable housing (aOR 1.71;95%CI:1.22-2.39). Unweighted versus weighted prevalence estimates were 11.1% vs. 11.6% for risky drinking and 6.1% vs. 6.9% for substance use.

Conclusions: Among a sample of socioeconomically disadvantaged women, women of Hispanic ethnicity, and those who were unstably housed and reported substance use at baseline had lower odds of responding to an alcohol and substance use phone survey conducted early in the COVID-19 pandemic. As remote survey methods become more common, investigators should ensure that data remain representative of the target population.

Adapting a Primary Care Collaborative Care Intervention Trial in Response to the COVID-19 Pandemic: Remote Recruitment and Assessments in the Subthreshold Opioid Use Disorder Prevention (STOP) Trial

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Background: The Subthreshold Opioid Use Disorder Prevention (STOP) Trial is a 5-site randomized controlled trial of a primary care intervention for risky opioid use. The study tests the effectiveness of a collaborative care intervention
consisting of brief advice delivered by the primary care provider (PCP), telephone health coaching (2-6 sessions), and an in-clinic nurse care manager (12 months).

**Objective:** Recruitment began in early 2021, and pandemic-related changes at the study sites (telehealth visits, restrictions on research staff in clinic) required adaptation of the original plans for in-person recruitment, enrollment, assessments, and PCP interventions.

**Methods:** This cluster-randomized trial enrolls PCPs and their adult patients (18+) who have opioid misuse but not moderate-severe opioid use disorder. Key adaptations to study procedures were: 1) remote patient recruitment, using a combination of messages sent through the electronic health record (EHR), mailed letters, email, and text messages inviting patients to take an on-line prescreening assessment; 2) delivery of PCP brief advice during telehealth visits or phone calls within 10 business days of enrollment; and 3) fully remote computerized study procedures for screening and assessments.

**Results:** The study is ongoing, and results are reported for the first 12 months. A total of 101,233 invitations to prescreen were sent to patients identified in the EHR, and 20,148 completed the prescreener, representing a 20% response rate. Of those completing prescreening, 2.3% prescreened eligible, of which 36% were eligible for the study, and 83% enrolled. PCPs frequently delivered brief advice with phone calls that were not part of a medical visit. Completion rates for on-line monthly assessments ranged from 94-99%.

**Conclusions:** Recruitment for this primary care study has been challenged by relying on remote methods, primarily due to low response to invitations to prescreen. For enrolled patients, participation in remote assessments has been high, demonstrating good acceptability of this approach.

**Self-Efficacy, Life Circumstances, and Treatment Retention among a Predominately Latinx Population Entering Behavioral Health Treatment**

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**Background:** Self-efficacy refers to the belief in one’s capacity to execute behaviors needed to achieve a particular outcome. Prior research has shown higher self-efficacy is associated with achievement in education and substance use treatment.

**Objective:** This study examined self-efficacy among a sample of individuals entering behavioral health treatment, the majority of whom were experiencing housing instability, unemployment, and economic hardship.

**Methods:** Baseline interviews were conducted on a sample of 321 primarily Latinx individuals entering behavioral health treatment between 2019-2022. Baseline interviews included questions about demographics, substance use, mental health history, and social connections. Self-efficacy was measured by the General Self Efficacy Scale (GSE) which is a 10 question, 4-point Likert scale with scores ranging from 10-40 where a higher score indicates more self-efficacy. Scores were dichotomized into low and high self-efficacy using the median score 34 as the cutoff point. We used Chi Square tests to examine factors associated with higher vs. lower self-efficacy score. Age and years of education were grouped into categories, and diagnosis type was measured as substance use disorder only, mental health diagnosis only, and dual diagnosis (both substance use disorder and mental health diagnosis). The next step of this study is to explore differences in outcomes in treatment retention, substance use, employment, and social support by GSE group at 6 month follow up.

**Results:** The mean self-efficacy score was 32.7 (5.9) and the median was 34. Male gender, Latinx ethnicity, quality of life, social support, and a sense of belonging were significantly and positively associated with high GSE group. Age group, years of education, employment status, diagnosis category, Latinx sub ethnicity, homelessness, and trauma history were not significantly associated with GSE group.
Conclusions: Despite difficult life circumstances, this sample of housing insecure primarily Latinx individuals entering behavioral health treatment reported higher self-efficacy than the global mean of 29, as reported in the literature. Male gender, Latinx ethnicity, perception of good quality of life, social support, and sense of belonging were associated with high self-efficacy scores. The relationship between self-efficacy and treatment retention and outcomes merits further study.

Approaches and Economic Impact of Personalized Interventions for SUD: A Systematic Literature Review.

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Background: Precision Medicine (PM), and related concepts such as personalized medicine, stratified medicine, individualized care, patient-centered care, and adaptive interventions represent customized approaches to treat and prevent disease. Substance use disorder (SUD), long acknowledged as a chronic and often relapsing disease, can impact people in different ways including their physical and mental health service needs, quality of life, life expectancy, and interpersonal relationships. The etiology and outcomes of SUD suggest a need for personalized treatment and recovery management approaches, and yet the evidence base regarding the key characteristics of precision or personalized medicine in addressing SUD is limited.

Objective: This review describes the “state of science” of personalized interventions for treating individuals with SUD, including different treatment approaches, and economic analyses of individualized treatments.

Methods: The search was conducted using PubMed/MEDLINE, Embase, Cochrane Library, and Web of Science databases through May of 2022, for English-language articles that include interventions within the SUD continuum of care framework. The results were integrated into Covidence®, a web-based tool for screening of titles, abstracts, and full texts. Data were extracted and presented according to the 2020 Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) standards. For economic studies, the quality was assessed using the 2022 Consolidated Health Economic Evaluation Reporting Standards (CHEERS) checklist.

Results: Fifteen studies met the inclusion criteria. Studies featured a range of behavioral interventions including combinations of pharmacotherapy and psychosocial interventions. Our results report studies addressing precision or personalized medicine in treating SUD to 1) identify the progress and challenges of individualized approaches in treating SUD; and 2) assess evidence demonstrating the economic value of precision/personalized medicine in treating SUD.

Conclusions: In this review we summarized and critically discussed the progress and challenges of personalized interventions to prevent/treat individuals with SUD and assessed evidence demonstrating the economic value of these interventions. This review can be considered a valuable source for health care systems to facilitate and better serve individuals with SUD, thus, reducing disparities and costs to society.

Long-Term Outcomes in SBIRT Patients Engaged in Alabama Health Centers from 2017~2021

Michael A Lawson, PhD; Bingqing Lu, PhD; Shanna McIntosh, MS; Audra Morrison, MSW - University of Alabama

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 outcome improvements among 700 SBIRT patients who screened-in for substance use treatment services.

Methods: Data were drawn from a survey collected from a sample of 700 SBIRT patients at program exit and 6 months after. Patient outcomes were measured along several indices including substance use recidivism, abstinence, social connectivity, as well as housing and employment status. Data were analyzed using descriptive statistics as well as t-tests and chi-squared analyses.
Results: The SBIRT program was successful in helping to significantly increase substance use abstinence rates in program patients. Specifically, about 15% of patients reported that they stopped using drugs or alcohol at program exit. However, that percentage increased to 51.1% at 6-month follow-up. Importantly, the data indicate that reductions in patient substance use correlates with other important economic outcomes. For instance, at program exit, less than 20% of patients who screened in were either employed or attending school. However, six months after SBIRT, nearly 40% of patients were employed or attending school. Last, the program appeared successful in creating psychological conditions and behaviors that expanded patients’ social networks and connectedness. At program exit, more than 50% of SBIRT patients felt socially disconnected. Perhaps because of reductions in substance use and increases in employment and education, 85% of patients felt socially connected 6 months after their engagement with SBIRT.

Conclusions: Although more research is needed on the intervention mechanisms associated with these outcomes, the results indicate that the SBIRT model, when implemented by trained social workers, can help patients negotiate the causes and consequences of risky substance use behaviors. Together, these results contribute to mounting evidence of the potential of behavioral health models for addressing the root causes of patients’ behavioral and psycho-social difficulties.

Deployment of Targeted Outreach Interventions Utilizing a Novel Overdose Predictive Model in West Virginia

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Background: In 2020 overdoses (OD) in WV increased by 40% and 60% were concentrated in 8 counties. The ACTION COUNTY program was developed with a primary goal of reducing overdose deaths.

Objective: Change response to ODs from reactive to proactive guided by the question: “Where is the next overdose coming from?”

Methods: We determined drug trafficking trends show an influx of illicit drugs into Berkeley County, WV from three counties in Maryland, including Baltimore County, Washington County, Frederick County. We created a geospatial map of all ODs in Berkeley from November 2020 to November 2021, which reflected concentration in seven areas. We next obtained overdose spike data (4 or more ODs in 1 day) from Johns Hopkins School of Public Health for Baltimore, Frederick and Washington Counties in Maryland for November 2020 through November 2021. There was a statistical relationship. Using this data we developed a predictive model that gave a timeframe between OD spikes in Maryland and Berkeley County. This novel model is utilized by outreach teams in targeted areas in response to an OD spike alert coming from Maryland. Specific interventions utilized by the team include: linkage to Naloxone, Medication for Opioid Use Disorder (MOUD), Harm Reduction, Peer Recovery Support Specialists, and Digital Resources.

Data-analyses: The statistical validity of this relationship between counties in Maryland and Berkeley County, WV was determined using the Coefficient of Determination. The Coefficient of Determination (R²) for the Predictive Overdose Model was 0.772 for Berkeley and Baltimore, 0.719 for Berkeley and Frederick, and 08.39 for Berkeley and Washington. Our model predicted the mean time of an overdose spike to Berkeley County in hours by county: Baltimore (38.16), Frederick, (37.64), Washington, (28.32).

Results:

Cumulative Effort - January - March 2022 below.

March Spike Alerts- 8.

March Outreach Deployment -12

Naloxone - 984 doses

Links to care: MAT- 31, Detox/Inpatient- 24

Naloxone Trained - 14 Law Enforcement
**Conclusions:** We believe this type of novel model paves the way for broader adaptations nationwide.

**Prescription Benzodiazepine Use, Misuse and Substance Use Disorder Symptoms During Middle Adulthood in the US**

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**Background:** Although prescription benzodiazepines are some of the most commonly used and misused medications in the US, relatively little is known about the patterns of prescription benzodiazepine use and misuse through middle adulthood.

**Objective:** We assessed patterns of prescription benzodiazepine use and misuse from adolescence to age 35 and subsequent associations between these patterns and prescription medication misuse and substance use disorder (SUD) symptoms from ages 35-50.

**Methods:** We used panel data from 11 cohorts of nationally representative US high school seniors (N=26,575) followed longitudinally from age 18 (1976-1986) until age 50 (2008-2018) in the Monitoring the Future Panel study. We created four mutually exclusive subgroups based on lifetime prescription benzodiazepine use and misuse by age 35: population controls who reported no use or misuse (70.9%); only medical use (11.1%); only misuse (10.4%); and both medical use and misuse (7.5%). We compared these four subgroups for three outcomes between ages 35-50: (1) prescription benzodiazepine misuse, (2) prescription opioid misuse, and (3) SUD symptoms.

**Results:** Among those reporting only lifetime medical use by age 35, approximately 12.1% reported prescription benzodiazepine misuse from ages 35-50 while an estimated 39.3% had SUD symptoms from ages 35-50. Multivariable logistic regression analyses indicated those who reported only medical use of prescription benzodiazepines at age 35 had higher odds of prescription benzodiazepine misuse (AOR = 2.17, 95% CI = 1.72-2.75) and prescription opioid misuse (AOR = 1.40, 95% CI = 1.05-1.86) between ages 35-50 when compared to population controls. Respondents who had any lifetime prescription benzodiazepine misuse by age 35 had at least two times higher odds of prescription benzodiazepine misuse, prescription opioid misuse, and multiple (2+) SUD symptoms from ages 35-50 when compared to population controls.

**Conclusions:** This is the first prospective study to assess prescription benzodiazepine use and misuse in a national probability-based sample followed through middle adulthood. The findings indicate prescription benzodiazepine use by age 35 may be a signal for substance-related problems during middle adulthood. Health care providers should monitor and screen for prescription benzodiazepine misuse during middle adulthood among those prescribed benzodiazepines given the morbidity associated with misuse of these medications.

**Does Screening Mode Matter? Comparing Results of Computer Self-Administered versus Clinician-Administered Screening of Youth Substance Use in a Large Pediatric Primary Care Database**

Maddie O'Connell, MPH; Barbara Howard, MD; Raymond Sturner, MD; Julia A. Plumb, BS; Cynthia Tran MS; Lydia A. Shrier, MD, MPH; Sion Kim Harris, PhD - Boston Children's Hospital

**Background:** Early detection and intervention through universal youth screening can help decrease risk of problematic substance use; however, appropriate clinical response relies on detection.

**Objective:** To determine whether youth substance use (SU) rates differed by screening mode (computer self-administered [SA] vs. clinician-administered [CA]) in a large pediatric primary care database.

**Methods:** We analyzed SU screening responses collected between 2018-2021 from 12- to 20-year-olds seen at 226 U.S. pediatric practices utilizing the CHADIS online clinical process support system. The CRAFFT screen assessed past-12-month alcohol, cannabis, and other SU (“anything else to get high”). We compared SU rates by screening mode (SA vs.
CA) using logistic regression modeling with GEE (to account for data clustering within practices and patients) to compute adjusted odds ratios and 95% confidence intervals (AOR, 95%CI), controlling for patient age (years), sex, U.S. region, and data year. We stratified analyses by age group (12-13; 14-15; 16-17; 18-20 years). We used the Benjamini-Hochberg procedure to correct for multiple comparisons.

**Results:** Youth (N=68,394) were 51.6% females; 25.0% age 12-13, 29.6% 14-15, 28.6% 16-17, 16.9% 18-20 years; 50.1% from South, 33.0% Northeast, 8.3% Midwest, 8.6% West. Screening mode was 68.6% SA and 31.4% CA (practice-level M±SD for percent CA was 25.3±41.3%). Compared to CA, SA screening was associated with significantly higher adjusted odds of reporting any SU (AOR, 95%CI by age group: 12-13 1.73, 1.31-2.28; 14-15 1.22, 1.07-1.39; 16-17 1.39, 1.27-1.51; 18-20 1.54, 1.42-1.68). Both alcohol and cannabis demonstrated the same pattern, except for cannabis use among 14- to 15-year-olds (no significant difference). Report of other SU did not differ by screening mode in any age group, but prevalence was low (0.2%-2.1% across age groups). All differences remained significant after correction for multiple comparisons.

**Conclusions:** Self-administered screening was associated with higher youth SU prevalence than CA, even after controlling for age, sex, region, and year. Youth SU disclosure may be lower in clinician-administered interviews due to factors such as social desirability bias, parental presence, or confidentiality concerns. Pediatric primary care practices may wish to consider self-administered SU screening to facilitate youth SU detection and appropriate clinical intervention.

**Mapping Prescription Drug Monitoring Program Data to Self-Report Measures of Risky Opioid Use in Community Pharmacy Settings**

Elizabeth Charron, PhD; Jennifer H. Brooks; Keegan Peterson, MPH; Olusegun George Akinwolere, MSW; T. John Winhusen, PhD; Gerald Cochran, PhD, MSW - University of Utah

**Background:** Community pharmacists and providers are well-positioned to identify risky opioid use using Prescription Drug Monitoring Program (PDMP) databases. However, this is a need to make PDMP data more interpretable and actionable to support real-time decision-making in a way that addresses risky opioid use among patients.

**Objective:** Linking PDMP data from two states with patient reported clinical measures of substance use, we calculated the probability of individuals reporting moderate/high-risk opioid use related to number of opioid prescribers and dispensing pharmacies.

**Methods:** This study included 1,428 pharmacy patients aged ≥18 years filling opioid prescriptions. Moderate/high-risk prescription opioid use was assessed in the past three months using the Alcohol, Smoking, and Substance Involvement Screening Test. PDMP metrics included number of distinct pharmacies and prescribers visited to obtain opioids in the past 180 days. We calculated probability of moderate/high-risk opioid use for each additional pharmacy and prescriber visited using multivariate logistic regression.

**Results:** Approximately 46% of participants reported having moderate/high-risk opioid use. Participants visiting one pharmacy had a 47.3% (95% CI, 44.1-50.4) probability of moderate/high-risk opioid use. For each additional pharmacy visited, the probability of risky opioid use increased between 11.2%-5.0%. Participants who visited six pharmacies had a 90.0% (95% CI, 81.1-98.0) probability reporting moderate/high-risk opioid use. The probability of risky opioid use increased between 8.1%-4.6% for each additional prescriber visited. There was a 40.1% increase in probability of moderate/high-risk opioid use between one prescriber (44.8% [95% CI, 41.6-48.0]) and seven prescribers (84.9% [95% CI, 75.5-94.4]) within 180 days.

**Conclusions:** Self-report clinical measures for risky opioid use may be charted to standard PDMP metrics and translated to specific practical recommendations. Specifically, pharmacists and providers should be aware that each additional pharmacy or prescriber a patient visits to obtain opioids may correspond to an approximately 5%-10% increase in the probability that they are engaged in risky opioid use. These findings can support pharmacists and providers to identify patient risk when dispensing opioids to provide real-time intervention at the point of dispensation. However, results here should be replicated before incorporating information into the PDMP about specific risk level increases.
“Sign Me Up” – A Qualitative Study of Video Observation Therapy (VOT) for Patients Receiving Expedited Methadone Take-Homes During the COVID-19 Pandemic

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Background: Federal and state regulations require frequent direct observation of methadone ingestion at an Opioid Treatment Program (OTP), particularly early in treatment, a requirement that creates barriers to patient access. Video observed therapy (VOT) could address public health and safety concerns related to providing take-home medications while simultaneously reducing barriers to access and improving treatment retention.

Objective: We explored the feasibility and acceptability of VOT in an OTP setting.

Methods: We conducted a qualitative evaluation of a clinical pilot program of VOT via smartphone that was rapidly implemented between April and August 2020 during the COVID-19 pandemic within a multisite OTP agency. In the program, selected patients submitted video recordings of themselves ingesting methadone take-home doses, which were asynchronously reviewed by their counselor. We recruited participating patients and counselors for semi-structured, one-on-one interviews that explored their VOT experiences after program completion. Interviews were audio recorded and transcribed. Transcripts were analyzed using thematic analysis to identify key factors influencing patient and provider experiences and identify recommendations for continued VOT use.

Results: We interviewed 12 of the 60 patients who participated in the clinical pilot and 3 of the 5 counselors. Overall, patients were enthusiastic about VOT, noting multiple benefits over traditional treatment experiences such as avoiding the frequent travel to the clinic. Some noted how this allowed them to better meet recovery goals by avoiding a potentially triggering environment. Most appreciated increased time to devote to other life priorities, including maintaining consistent employment. Participants described how VOT increased their autonomy, allowed them to keep treatment private, and normalized treatment to align with other medications that do not require in-person dosing. Participants did not describe major usability issues or privacy concerns with submitting videos. Some participants reported feeling disconnected from counselors while others felt more connected. Counselors felt some discomfort in their new role confirming medication ingestion but saw VOT as a useful tool for select patients.

Conclusions: VOT may be a feasible and acceptable tool to achieve equipoise between lowering barriers to treatment with methadone and protecting the health and safety of patients and their communities.

Plans, Attempts, and Methods Used to Quit Vaping in the US and UK

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Background: Because the long-term health effects of e-cigarettes are unknown, most health experts suggest that e-cigarette users quit at some point. Many e-cigarette users are interested in stopping, but little data exists on factors related to e-cigarette cessation.

Objective: To describe intentions to quit, quit attempts, and methods used to quit and explore country differences regarding e-cigarette cessation behaviors.

Methods: We used the online crowdsourcing platform, Prolific, to survey current e-cigarette users in the US and UK. Measures were drawn from existing international surveys.

Results: The study included 1064 current vapers (535 UK; 529 US). The mean age was 34.7 years old; most were male (51%), white (85%), had a bachelor’s degree or above (55%), and were employed (75%). Most were also ever (80.5%) or current smokers (55.5%) and reported using e-cigarettes daily (60.9%). Respondents showed moderate interest in quitting e-cigarettes (5.3 on average). Most (61.1%) reported they wanted to quit, and 22.5% had tried to quit e-cigarettes. Among those who had made a past quit attempt, 24.7% tried to quit once, 54% tried 2 or 3 times, and 21.3%
>4 or more times. Regarding methods to quit, 3.9% tried to quit using nicotine replacement therapy (NRT), 0.7% used Bupropion, and 0.5% used Varenicline. A few (2.8%) reported using cigarettes to quit vaping. Very few (less than 1% each), used either hookah, snus pouches, traditional cigars, pipe tobacco, filtered cigars, smokeless tobacco, dissolvable tobacco, or cigarillos to quit. We also present differences in quit strategies by country and qualitative analyses of responses to questions regarding reasons for quitting and what governments should do to help adults quit e-cigarettes.

**Conclusions:** In this online sample, current e-cigarette users were moderately interested in quitting vaping and nearly 1 in 4 respondents had already tried to quit. Among those who had attempted to quit, few used methods shown to be effective for smoking cessation. A small percentage reported using cigarettes to quit. Helping long-term vapers in quitting attempts may soon become a priority. Future studies should address the extent to which approved methods to stop smoking cigarettes are equally effective in helping vapers quit e-cigarettes.

**Provision of Tobacco Treatment and Smoke-Free Policies in Behavioral Health Facilities in the Midwest**

**Nathalia Munck Machado, PhD; Rick Cagan; Won Choi, PhD; Babalola Faseru, PhD; Kimber Richter, PhD - University of Kansas Medical Center**

**Background:** Many smokers with mental health (MH) and substance use disorders (SUD) want to stop smoking and can quit, but few facilities provide treatment.

**Objective:** To describe tobacco treatment services and policies in behavioral health facilities in Midwestern states not yet adopting Medicaid expansion.

**Methods:** We used 2014-2020 data from two SAMHSA national surveys of MH and SUD facilities (N-MHSS & N-SSATS), which are administered annually to around 13,390 US facilities. We shared comparative data and interviewed administrators and advocates from states to determine policies associated with higher service provision.

**Results:** On average, across all 7 years, the percentage of MH facilities that screened for tobacco use was 39% in Kansas, 57% in Nebraska, 64% in Missouri, and 79% in Oklahoma. The US national average was 51%. The 7-year average rate of counseling provision was 27%, 36%, 52%, 60%, and 39% in KS, NE, MO, OK, and the US, respectively. Nicotine replacement therapy (NRT) was offered by 20%, 22%, 40%, 41%, and 25% of facilities in KS, NE, MO, OK, and the US. Non-nicotine medication provision rates averaged 21%, 22%, 35%, 41%, and 24% in KS, NE, MO, OK, and the US. Rates of tobacco service provision in SUD facilities mirrored cross-state differences found in mental health facilities but were in general lower across all services. The 7-year average rate of MH facilities with smoke free campuses was 47%, 44%, 58%, 81% and 50% in KS, NE, MO, OK, and the US. In SUD facilities, rates were 23%, 35%, 29%, 73%, and 35% in KS, NE, MO, OK, and the US. State leaders associated several policies with high performance: a) requiring programs contracting with the state to have screening, counseling, and smoke free campuses (OK); b) state-based collection of service provision data (incl. tobacco services) (OK); c) providing facilities free NRT for clients (OK); d) setting benchmarks for service provision (OK); e) liberal Medicaid coverage of cessation medications (MO).

**Conclusions:** Screening, counseling, and smoke free campuses in Oklahoma nearly doubled that of other states. Regardless of state/policy, SUD programs lagged behind MH programs. State policies can have a large impact on services.

**Association between Arthritis and E-Cigarette Use by Traditional Cigarette Smoking Status**

**Soryan Kumar, BS - Warren Alpert Medical School of Brown University**

**Background:** E-cigarette use in the United States has increased rapidly over the past decade. Despite the establishment of traditional cigarette smoking as a risk factor for arthritis, the relationship between arthritis and e-cigarette use remains largely uncharacterized.

**Objective:** This study aims to determine whether there is a significant association between e-cigarette use and arthritis diagnosis among individuals in the United States.
**Methods:** A total of 1,159,314 participants are pooled across the 2016-2018 Behavioral Risk Factor Surveillance System cross-sectional cohorts. The survey defines arthritis broadly, including rheumatoid arthritis, osteoarthritis, gout, lupus, and fibromyalgia. E-cigarette use is provided categorically by daily, occasional, former, and never use. Multivariable logistic regression is used to assess the odds of arthritis diagnosis associated with e-cigarette use while controlling for demographic and behavioral characteristics, including age, sex, race, income, marital status, education, employment, income, BMI, exercise, mental health, binge drinking, smokeless tobacco use, and cigarette use. Furthermore, subgroup analyses are conducted by stratifying the cohort by traditional cigarette smoking status.

**Results:** Individuals who use e-cigarettes daily have 44% increased odds of receiving an arthritis diagnosis (95% CI: 1.41, 1.47) compared to those who don't use e-cigarettes, whereas individuals who occasionally use e-cigarettes have 47% increased odds (95% CI: 1.45, 1.49), and individuals who formerly use e-cigarettes have 25% increased odds (95% CI: 1.24, 1.25). Results of the subgroup analyses are provided in the table below detailing the association between e-cigarette use and arthritis among those who never, formerly, and currently use cigarettes.

**Conclusions:** E-cigarette use is significantly associated with arthritis with more frequent use associated with increased odds of receiving an arthritis diagnosis. Furthermore, risk of arthritis appears to be highest amongst those who currently use cigarettes, which suggests a possible synergistic relationship between cigarette and e-cigarette use.

<table>
<thead>
<tr>
<th>E-Cigarette Use</th>
<th>Never Cigarette Use</th>
<th>Former Cigarette Use</th>
<th>Current Cigarette Use</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Odds Ratio (95% CI)</td>
<td>Odds Ratio (95% CI)</td>
<td>Odds Ratio (95% CI)</td>
</tr>
<tr>
<td>Never</td>
<td>Ref</td>
<td>Ref</td>
<td>Ref</td>
</tr>
<tr>
<td>Former</td>
<td>1.16 (1.14, 1.18)</td>
<td>1.15 (1.14, 1.16)</td>
<td>1.27 (1.26, 1.29)</td>
</tr>
<tr>
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<td>1.24 (1.20, 1.27)</td>
<td>1.44 (1.42, 1.47)</td>
</tr>
<tr>
<td>Daily</td>
<td>1.41 (1.30, 1.52)</td>
<td>1.31 (1.28, 1.35)</td>
<td>1.49 (1.45, 1.54)</td>
</tr>
</tbody>
</table>

**ADHD Symptoms and Cannabis Use in Emerging Adults: An Event-Level Analysis Using Ecological Momentary Assessment**

**Background:** Emerging adults (ages 18-25) have higher rates of cannabis use and cannabis consequences relative to other age groups and there is a need to understand factors that impact cannabis outcomes among emerging adults to better inform intervention. Attention deficit hyperactivity disorder (ADHD) has been identified as an important correlate of increased cannabis use and consequences among emerging adults (Bidwell et al., 2014; Mochrie et al., 2020). Although our previous work has explored motives for cannabis use among emerging adults with ADHD, further research is needed to understand the specific relationship between ADHD symptoms and cannabis outcomes using real-time data collection methods (i.e., ecological momentary assessment; EMA).

**Objective:** Using EMA, we examined: 1) whether momentary difficulties with attention and other symptoms of ADHD were associated with increased cannabis use and consequences among emerging adults; and 2) these effects were exacerbated among those with symptoms of ADHD.

**Methods:** Emerging adults who engaged in regular cannabis use (at least twice in the past two weeks) completed a baseline survey assessing cannabis use and ADHD symptoms. Subsequently, participants completed a brief survey three times/day for 14 days, including measures of attention difficulties, and cannabis use and consequences. We used hierarchical linear modeling to test within-person associations between ADHD symptoms and cannabis outcomes. Meeting the cut-off for ADHD was included as a moderator of the within-person effects.

**Results:** Overall, 31.6% of the sample met the cut-off for ADHD and participants reported an average of 10 cannabis events ($SD = 8.77$) and 2.98 ($SD = 1.99$) consequences per event. ADHD symptoms moderated the relationship between...
momentary distractibility and the likelihood of cannabis use. Those who met the cut-off for ADHD had increased cannabis use when distractibility was higher. In addition, when participants experienced greater than average problems with attention, they experienced a greater number of cannabis consequences. ADHD symptoms did not moderate this relationship.

**Conclusions:** These findings suggest that ADHD symptoms are important antecedents and consequences of cannabis use and highlight the need for further research to better understand these relationships and support individuals with symptoms of ADHD to reduce potential harms associated with frequent cannabis use.

**Perceptions of an Integrated Care Approach to Healthcare Delivery in a Non-Congregate Shelter: A Qualitative Study of Persons with Lived Experience**

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**Background:** Homelessness has well-documented negative impacts on health and is associated with high levels of chronic and acute disease burden, mortality, and hospital service utilization. However, integrated care of physical and mental health needs in a non-congregate shelter setting can improve outcomes. In response to crowding within congregate shelters during the COVID-19 pandemic, Baltimore partnered with a city hotel to open an integrated care, non-congregate shelter known as the Haven.

**Objective:** To describe residents’ perceptions of care in the integrated care, non-congregate shelter setting.

**Methods:** A purposive sample of 20 patients living at the Haven during February-March 2022 completed semi-structured, qualitative interviews about their experiences. Data on medical co-morbidities and substance use history were collected through structured interviews and record review. Data was analyzed using the thematic analysis methods described by Braun and Clarke.

**Results:** Six women and 14 men, who ranged in age from 23 to 71 (M=50), were interviewed. On average, participants resided at the Haven for under a year (M=311 days; range: 74-536 days). Only one participant was actively in treatment for an ongoing substance use problem, although all reported a history of substance use. The most frequently reported substance used was tobacco (n=16, 80%), followed by marijuana (n=12, 60%) and alcohol (n=10, 50%). Positive experiences at the Haven were interwoven with contrasting stories of prior conflict or abuse in relationships or living situations, as well as concern over current and future unmet needs. Three themes were identified: 1) Coming to the Haven 2) Pathways to support and 3) Barriers to support. Participants characterized the integrated care, non-congregate model as having multiple advantages over traditional shelter systems.

**Conclusions:** Participants in this study described acute physical and mental health needs which were largely met by the innovative integrated shelter care model. This service delivery approach arose out of a need to respond to COVID-19 but could represent a viable model of care that could be expanded and replicated in non-pandemic times to address limitations of traditional congregate shelters.

**Social Vulnerability in Hospitalized Patients Seen by an Addiction Consult Service**

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**Background:** Individuals with substance use disorders (SUD) are some of the most socially vulnerable, yet few studies report social determinants of health in this population. The multidisciplinary approach of addiction medicine consult services (ACS) provides an opportunity to address the social needs of patients with SUD.

**Objective:** To assess the social vulnerability of hospitalized people with SUDs seen by an ACS with particular attention to the impact of racial identity.
Methods: This is a study of hospitalized patients who were seen by an ACS in a diverse urban hospital from October 2018 to July 2021. Individuals were surveyed via in-person interview during their hospitalization with validated social vulnerability questions. Descriptive statistics were performed and differences across racial groups were compared.

Results: In total, 3019 hospitalized individuals with SUD were seen by the ACS during this 2.5-year period. A minimum of 71% of individuals answered the survey questions. A majority reported social stress as a major impact in their life (51.2%). There was a high proportion of individuals with housing instability or homelessness (27.9%), food insecurity (40.2%), and transportation barriers to medical care and general life needs (29.9%). A significant portion also had symptoms of depression (37.5%) and post-traumatic stress disorder (11.6%). When looking at differences across racial groups, there were significant differences with more Black individuals and individuals from Asian, American Indian, and other racial backgrounds more frequently reporting food insecurity, transportation barriers, and low health literacy than individuals who identify as white.

Conclusions: These findings highlight the exacerbated social vulnerability of individuals with SUDs, recognize that complex systemic factors can contribute to the overall health, wellbeing, and realization of basic human rights for this population and emphasize the importance of providing person-centered multidisciplinary addiction care that is attentive to social determinants of health and mental health needs.

Timely Receipt of Addiction Treatment Following an Opioid Overdose in Connecticut, April 2016 to December 2017

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Background: Survivors of opioid overdoses are at high risk for subsequent overdose and death. Timely access to addiction treatment, especially medications for opioid use disorder (MOUD), can lower the risk of subsequent overdose.

Objective: To describe how often individuals engage in different modalities of addiction treatment following an opioid overdose using a linked statewide database.

Methods: We linked state-wide individual-level data from the Connecticut’s Department of Public Health, Prescription Monitoring and Reporting System, and Department of Mental Health and Addictions. We performed a retrospective cohort analysis of individuals who were admitted to a Connecticut hospital or emergency department for a non-fatal opioid-related overdose between April 2016 and December 2017. Timely receipt of addiction treatment was defined as an addiction treatment episode or documented prescription fill for buprenorphine within 30 days following non-fatal overdose. Timely receipt of addiction treatment was further classified into two categories: non-medication-based (i.e., admission for detoxification or inpatient treatment) or MOUD (i.e., methadone or buprenorphine). We statistically tested demographic differences (age, sex, and race) between individuals who did or did not receive timely MOUD.

Results: In the 4,228 individuals who were admitted to a Connecticut hospital or emergency room for a non-fatal overdose included in our cohort, mean age was 40.7 (SD+/−14.5), 1378 (32.6%) were female and 345 (8.2%) had no gender reported; 3154 (74.6%) were non-Hispanic White. In this group, 1014 (24.0%) received any addiction treatment within 30 days following their overdose. A total of 422 (10.0%) received non-medication-based treatment and 717 received MOUD (16.8%). Of these 323 (7.6%) received methadone and 394 (9.3%) received buprenorphine. Only 116 (2.7%) individuals received both non-medication-based treatment and MOUD. Recipients of MOUD were more likely to be younger (mean age 39.2 vs. 40.9 years, p=<0.02) and male (69.8% vs. 63.4%, p=<0.01). No differences were observed by race and ethnicity.

Conclusions: Following a non-fatal overdose, less than one quarter of individuals received timely addiction treatment and only 16.8% received MOUD. Given the high risk of subsequent overdose, interventions are urgently needed to increase the number of individuals linked to addiction treatment, and especially MOUD, following a non-fatal overdose.

Neurodevelopmental Outcomes of Infants 0-2 Years of Age Exposed to Methadone or Buprenorphine to Treat Opioid Use Disorder, A Review.
**Background:** The prevalence of opioid use disorder (OUD) during pregnancy has been estimated to have more than quadrupled in the past 20 years. This has resulted in a nearly fivefold increase in neonatal abstinence syndrome (NAS). Opioid use during pregnancy can lead to poor maternal and fetal outcomes, therefore, there is a great need for effective treatments for women experiencing OUD during pregnancy.

**Objective:** Our goal was to generate a PICO (patient, intervention, comparison, outcomes) question related to opioid use and effective treatments utilized during pregnancy to determine the impact of neurodevelopment of infants exposed in utero. In this study, the patient(s) are the pregnant women endorsing OUD/SUD and their infant child, the intervention was that which was prescribed for the OUD/SUD, the comparison was no intervention, and the outcomes were those related to the neurodevelopment of the infant.

**Methods:** A literature review of PubMed database from January 2011 through June 2022 was completed using the search terms buprenorphine, methadone, substance use disorder, opioid use disorder, “pregnан*'”, postpartum, infant, and outcome. Manual exclusion removed studies of nonhuman subjects, publications not in English, and those without full-text availability.

**Results:** Our review found that medication-assisted treatment (MAT) among women who endorsed opioid and/or substance use during pregnancy included methadone, buprenorphine, and naltrexone. Maternal outcomes included the length of hospitalization and the presence of preterm labor. Neonatal outcomes included short-term postnatal measures such as birth weight, head circumference, NAS severity, length of hospital stay, and duration of NAS treatment. We found limited longitudinal studies measuring either maternal or infant neurodevelopment outcomes. Additionally, there were limited randomized controlled trials (RCTs) comparing different MATs to each other and most studies were comprised of a homogeneous white population.

**Conclusions:** Guided by our PICO question, this literature review highlights a gap in the literature related to the long-term impacts of in utero MAT exposure as well as a gap in RCTs comparing different MAT’s. Future studies should investigate the long-term neurodevelopmental impacts in children exposed to MAT in a RCT and draw upon a more diverse population.

**A Wound Care and Immunization Needs Assessment for Clients of a Mobile Syringe Services Program in Austin, Texas**

**Taylor R Britton, PharmD Candidate**, Michaela Rose Clague, PharmD Candidate, Lucas G. Hill, BCACP, Lindsey J Loera, PharmD, Claire M Zagorski, LP, MSc, Lindsey Sobarzo, PharmD Candidate; Angella Zhang, PharmD Candidate; Jessica Moore, PharmD Candidate; Shelly Tran, PharmD Candidate - (1)University of Texas-College of Pharmacy, (2)University of Texas at Austin College of Pharmacy, (3)The University of Texas at Austin, (4)The University of Texas at Austin College of Pharmacy

**Background:** Skin and soft tissue infections (SSTIs) are common among people who inject drugs (PWID). SSTIs place a costly burden on the healthcare system and hospitalization rates for SSTIs have doubled in the past 17 years. Syringe services programs (SSPs) provide access to sterile syringes, disposal of used syringes, and a range of other supportive services for PWID. Given their contact and credibility with PWID, SSPs could facilitate triage and treatment of injection-related wounds and access to immunizations against communicable diseases.

**Objective:** To assess wound care and immunization needs among clients accessing mobile SSP services in Austin, Texas.

**Methods:** Data was collected February 11-March 5, 2022 via a 21-item semi-structured interview. Participants were included if they reported engaging in injection drug use and experiencing a related wound in the past six months. Twenty-one participants completed the full survey and three additional participants completed only the immunization assessment. They each received a $20 grocery store gift card. Interview questions gathered information regarding frequency and severity of wounds, approaches to wound care, and vaccination status.
Results: Wound care survey participants identified as male (n=13) and female (n=8), were White (n=12), and unhoused (n=12). The primary drug of injection was heroin alone (n=14). Many reported avoiding seeking wound care from health professionals (16/21, 76%) due to stigmatization (14/21, 67%) and previous negative experiences (7/21, 33%). Self-treatment of wounds included use of over-the-counter supplies (10/21, 48%), over-the-counter medications (10/21, 48%), and antibiotics (9/21, 43%). Participants requested SSP services to expand to include antibiotic access, on-site provider, wound care supplies, extended SSP availability, and patient education. In the past five years, few participants reported receiving vaccination against hepatitis A or B (3/24, 13%) and tetanus (7/24, 29%). A substantial majority of participants (18/24, 75%) expressed interest in receiving vaccinations through the SSP.

Conclusions: PWID in Austin, Texas reported avoiding seeking care from health professionals for injection-related wounds and lacked important immunizations. Expanding the availability of wound care services and immunizations by providing them directly through the mobile SSP is desired by clients and could positively impact public health.

Impact of the COVID-19 Pandemic on Violence Exposure and Alcohol Use among Adults Living in the San Francisco Bay Area

Akua O. Gyamerah, MPH; Erin C. Wilson, DrPH, MPH; Janet Ikeda, M.Ed; Willi McFarland, MD, PhD; Glenn-Milo Santos, PhD, MPH - University at Buffalo

Background: The COVID-19 pandemic has exacerbated prevalence of alcohol use and violence; however, little is understood about the pandemic’s impact on the relationship between the two.

Objective: To examine the impact of the COVID-19 pandemic on violence, including gender-based violence (GBV), and alcohol use among adults living in the San Francisco Bay Area.

Methods: Data was collected from January 2021-April 2022 among alcohol-using adults (N=461). Eligibility criteria were: age≥18 years, drink alcohol, sexually active, and SFBA resident. Questions assessed prevalence of heavy alcohol use (4 or more drinks on one occasion ≥4 times a month) in past 3 months and violence/GBV (verbal, physical, sexual) experiences before and during the pandemic. Logistic regression examined associations between violence and alcohol use.

Results: Mean age was 41.5 years (SD=0.6); 9.0% identified as Asian/Pacific Islander, 10.3% Black, 17.5% mixed/other, 56.4% White; and 23.2% Latino/Hispanic; 52.0% identified as cis-man, 42.1% cis-woman, 2.8% transwoman/transman, and 3.1% queer/non-binary. About 73.7% of participants reported heavy alcohol use and 53.3% reported a strong desire for alcohol in the past month. Since the pandemic, 43.7% reported drinking more alcohol. About 71.6% reported ever experiencing violence and 20.5% GBV. During the pandemic, participants reported experiencing violence (26.1%), more violence than usual (13.8%), and GBV (8.9%), with a higher proportion of transmen/transwomen (33.3%) reporting GBV (p=0.001). People who experienced violence during the pandemic had greater odds of reporting heavy alcohol use (OR=1.76,p=0.05) and drinking more during the pandemic (OR=2.04,p<0.01). Those who reported experiencing more violence during the pandemic had greater odds of reporting heavy alcohol use (OR=2.32,p=0.04) and drinking more during the pandemic (OR=2.23,p<0.01). People who experienced GBV during the pandemic reported a stronger desire for alcohol (OR=2.44;p=0.02).

Conclusions: The COVID-19 pandemic increased alcohol-related problems among alcohol-using adults, including increased violence exposure and alcohol use, GBV, and an association between violence/GBV and elevated alcohol use/desire. Targeted outreach is needed to support those who experienced GBV/elevated violence during the pandemic, and to determine the impact of pandemic stressors on violence/alcohol use. Future pandemic preparedness efforts must develop violence prevention strategies and adapt alcohol harm reduction, recovery, and treatment programs to pandemic conditions.

Barriers and Facilitators to Methadone Induction for Emergency Department Patients with Opioid Use Disorder: A Qualitative Study
Background: Emergency department (ED) initiated buprenorphine, a medication treatment for opioid use disorder (OUD), decreases future opioid use and improves treatment retention. However, inadequate symptom control and precipitated withdrawal in areas with a high prevalence of illicit fentanyl are emerging as potential limitations to ED buprenorphine. Methadone is an agonist treatment for OUD with outcomes similar to buprenorphine without the treatment ceiling or precipitated withdrawal.

Objective: Explore barriers and facilitators to the implementation of ED-based methadone induction with key clinician stakeholders.

Methods: We conducted semi-structured interviews using a purposeful sample of stakeholders in emergency and addiction medicine to assess the barriers to and facilitators of ED-based methadone induction. The interview guide was informed by prior interviews on ED buprenorphine induction and developed using the Consolidated Framework for Implementation Research. Participants were recruited through existing resource networks as well as via participant snowball sampling to obtain a diversity of viewpoints. Interviews were transcribed, coded and analyzed iteratively using directed content analysis.

Results: Of the 25 participants interviewed from July to November, 2021, 10 worked in an academic ED, 6 in a community ED, 8 in an outpatient methadone / addiction clinic and 1 as an inpatient addiction medicine provider. Regarding ED providers' experience treating patients with OUD, 6 prescribed buprenorphine a few times per month, 8 prescribed a few times per year, and 2 had never prescribed buprenorphine. Emergency physicians cited a lack of knowledge about methadone and concerns for how methadone might impact ED workflow as common barriers, with the understanding of OUD as a disease and the desire to help patients with OUD as primary facilitators. Methadone providers felt an ED methadone induction was safe and effective and stressed the importance of collaborations to ensure timely follow up.

Conclusions: Participants perceived ED-based methadone favorably, in part due to the continued experience with patients with OUD and the desire to help. Barriers included a lack of education and comfort with methadone among ED providers and the need to establish effective follow-up for continued care between the ED and methadone clinics.

Periconception Cannabis Use - Prevalence and Risk Factors

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Background: Cannabis use among women of childbearing age has been on the rise as most states have legalized marijuana. There has also been an increase of cannabis use in pregnancy, which was exacerbated by the Covid pandemic, with studies reporting a 25% increase since the pandemic began. Prenatal cannabis exposure has been shown to affect the development of the endocannabinoid system in the fetal brain and is associated with small for gestational age and preterm birth.

Objective: To define the prevalence of cannabis use among women in Oregon preconception and during pregnancy and determine whether rates have changed during the pandemic. To compare the rates of self-reported cannabis use with the prevalence of cannabis use disorder as diagnosed through the Structured Clinical Interview for DSM-5 (SCID).

Methods: Our study collected data on 225 pregnant women in Oregon during their first or second trimester from February 2019 to February 2022. We collected self-reported cannabis use in the 3 months prior to pregnancy and during pregnancy. The SCID was used to assess for cannabis use disorder.

Results: The pre-pandemic sample from February 2019-April 2020 revealed a rate of preconception cannabis use in the 3 months prior to pregnancy of 24% (29/119). There was an increase to 30% (32/106) from surveys collected during the pandemic from October 2020-February 2022, which was not statistically significant (p=0.41). For cannabis use during
pregnancy, the rate remained the same, from 2.5% (3/119) pre-pandemic to 3.8% (4/106) during the pandemic (p=0.88). The prevalence of cannabis use disorder (CUD) in the prior 12 months, as diagnosed with the SCID, showed a nonsignificant increase from 13.8% (4/29) to 25% (8/32, p=0.44).

**Conclusions:** Although the rise in cannabis use and CUD did not reach statistical significance in this study, this was likely due to the small sample size. Our study revealed that periconception cannabis use is very common, at 30% in the pandemic era, and that 25% of cannabis users have a CUD. Our findings emphasize the need for heightened screening for cannabis use and education on the potential adverse effects of prenatal cannabis exposure to women of childbearing age.

**Perspectives on Emergency Department-Initiated Buprenorphine among Pharmacists: A Multi-Site Qualitative Study**

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**Background:** Emergency Department (ED) initiated buprenorphine improves outcomes for patients with opioid use disorder (OUD), but implementation of this practice is not universal. Clinical pharmacists are well positioned to play an important role in implementation of ED-initiated buprenorphine.

**Objective:** We sought to characterize perceived barriers and facilitators for initiating buprenorphine and identify opportunities to promote readiness among clinical pharmacists in four EDs.

**Methods:** This study was conducted as a part of Project ED Health (CTN-0069, NCT03023930), a multisite hybrid type III effectiveness-implementation study aimed at promoting ED-initiated buprenorphine as part of our formative evaluation. Data collection and analysis were grounded in the Promoting Action on Research Implementation in Health Services (PARIHS) framework to assess perspectives on the “evidence” for buprenorphine initiation in the ED “context” and “facilitation” needs to promote ED-initiated buprenorphine. Using content analysis, an iterative coding process was used to identify overlapping themes.

**Results:** Eight focus groups or interviews were conducted across four sites with 15 participants between April 2018 and July 2020. Identified themes regarding the “evidence” included (1) varied levels of comfort and experience among pharmacists with ED-initiated buprenorphine that increased over time and (2) a perception that patients with OUD have unique challenges relevant to ED care. Regarding the “context,” clinical pharmacists identified (3) the ability to provide on-demand education and regulatory guidance for ED staff and (4) their presence promotes successful program implementation and quality improvement. Regarding “facilitation,” identified factors included: (5) enthusiasm for training to promote practice change and (6) ability to leverage already existing pharmacy resources outside of the ED.

**Conclusions:** ED-based clinic pharmacists play a unique role in the efforts to promote ED-initiated buprenorphine, and pharmacist-specific interventions could facilitate in the successful implementation of this practice.

**Substance Use During an Acute Hospitalization: Current Policies and Best Practices**

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**Background:** People with substance use disorders (SUD) may use non-prescribed/non-ordered substances during an acute hospitalization for many reasons. Hospital policies and responses can often be stigmatizing, erode the doctor-patient relationship, and lead to worse patient outcomes. Currently in the United States there is no consensus on best practices for hospital policies addressing this. Identifying best practices to address inpatient substance use has the potential to improve care for patients with SUD.
Objective: To identify current U.S. hospital policies regarding the use of non-prescribed/non-ordered substances by patients during an acute hospitalization.

Methods: In this cross-sectional study we surveyed providers at U.S. hospitals via addiction medicine focused listservs (i.e. AMERSA, ACAAM). Elements of the survey included current practices and policies and what an ideal policy would include.

Results: We had 46 responses representing 28 institutions. Respondents thought that inpatient substance use at their hospital was common, with 72% believing it occurred more than once per week. Only 15% reported that their hospital had a formal policy addressing inpatient use of non-prescribed/non-ordered substances and 48% were not sure if a policy existed. For those with a policy, the most common responses to inpatient substance use included: initiation of a behavioral agreement (86%), room search (71%), seizure of substances and paraphernalia (71%), addiction medicine consultation (71%), limiting visitation privileges (57%) social work consultation (57%), initiation of medications for SUD (57%), urine toxicology (43%), access to harm reduction modalities (43%), involvement of law enforcement officers (14%), and hospital discharge (14%). Regarding elements of an ideal policy, respondents prioritized involvement of addiction medicine services (81%), social work (76%) and access to medications for SUD (76%). Respondents believed involvement of local law enforcement (63%) and probation/parole officers (59%), and premature hospital discharge (42%) to be the least helpful responses.

Conclusions: Our results suggest that the use of non-prescribed/non-ordered substances by hospitalized patients is common, but many hospitals do not have known policies to address it. Policies are needed and should promote partnership with patients, increase access to addiction treatment and harm reduction services, and minimize the involvement of the criminal legal system.

Buprenorphine Initiation for Pregnant Patients with Opioid Use Disorder: A Multicenter Observational Study of California Bridge Sites

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Background: Opioid use disorder (OUD) and overdose rates are increasing among pregnant women. Outcomes of emergency department (ED) initiated buprenorphine and linkage to care for pregnant women have not been described.

Objective: We aim to describe treatment and linkage to care for pregnant women with OUD presenting to EDs funded by the CA Bridge Program. Primary outcome was linkage to substance use treatment within 14 days of ED discharge; secondary outcomes included buprenorphine dosing, side effects, and complications.

Methods: The CA Bridge model included low-threshold buprenorphine, linkage to care, and harm reduction technical support to EDs to improve treatment for OUD. This is a retrospective cohort study of pregnant and non-pregnant women of childbearing age with OUD who presented to 17 EDs funded by and reporting data to the CA Bridge Program using descriptive statistics.

Results: Of 250 women of childbearing age who presented to 17 EDs, 22 (6%) were pregnant. The median age of pregnant cohort was 29 (interquartile range [IQR]; 26-32) and 31 (IQR; 27-36) in non-pregnant cohort. 57% of each cohort were white. A majority of non-pregnant (89%) and pregnant (67%) patients presented in opioid withdrawal or were seeking OUD treatment. 29% in each cohort were unhoused. A majority of pregnant and non-pregnant women accepted OUD resources (81% and 77%, respectively), and ED buprenorphine administration (67% and 59%, respectively). Among 14 pregnant women and 136 non-pregnant women who received sublingual buprenorphine, 71% and 89% (respectively) received an initial dose of 8mg or higher; 79% and 91% (respectively) received a total dose of 8mg or higher. There was 1 case of precipitated opioid withdrawal in a non-pregnant patient. 38% of pregnant women and 59% of non-pregnant women had buprenorphine prescribed at ED discharge. Within 2 weeks of discharge, 48% of pregnant women and 31% of non-pregnant women attended follow-up, and 48% of pregnant women and 34% of non-pregnant women confirmed taking buprenorphine.
Conclusions: Pregnant women with OUD who presented to EDs treated with CA Bridge protocols had similar characteristics, treatment patterns, outcomes, and follow up rates as non-pregnant women. EDs may serve an important role for initiating medications for OUD for pregnant women.

Trends in Use and Costs of Presumptive and Confirmatory Urine Drug Tests for Patients Receiving Buprenorphine for Opioid Use Disorder

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Background: Guidelines recommend urine drug testing (UDT) as a monitoring and risk reduction tool for patients prescribed medications for opioid use disorder (OUD). Little is known about the relative use and cost of presumptive UDT, and comparably more specific and expensive, definitive UDT.

Objective: To assess temporal trends in use and costs of UDT.

Methods: We conducted a repeated cross-sectional study using Truven Health Analytics MarketScan® Commercial Claims Database for calendar years 2011-2020. For each year, we identified enrollees with one or more pharmacy claims for buprenorphine for OUD. Within this cohort, we identified all medical claims for presumptive and definitive UDT using Current Procedural Terminology (CPT) or Healthcare Common Procedure Coding System (HCPCS). We report temporal trends in use and total and out-of-pocket costs of UDT per person-year of enrollment.

Results: From 2011 to 2020 there were 453,098 unique individuals with one or more buprenorphine for OUD prescription, contributing 387,197 person-years of enrollment. Over the 10-year time period, we identified 1,476,181 presumptive UDT and 1,029,758 definitive UDT costing a total of $225,235,545 and $298,382,709 respectively. The mean number of presumptive and definitive UDT increased from 2.8 and 1.4 respectively in 2011 to a peak of 4.6 and 3.6 in 2016 before declining to a mean of 3.0 presumptive and 2.0 definitive tests in 2019. The average total cost per UDT mirrored the use trends, peaking at $197 for presumptive and $448 for definitive UDT in 2016 before declining to $79 and $144 respectively in 2019. The mean out-of-pocket cost was $258 per person-year over the 10-year period, and peaked at $429 per person-year in 2016.

Conclusions: In a cohort of patients receiving buprenorphine for OUD, we identified an increasing trend in use and cost of presumptive and definitive UDT from 2011-2016, followed by a decline in both the use and cost of UDT through 2019. We are not aware of changes to clinical guidance in use of UDT over this timeframe, raising the question of profit driving observed trends. While UDT are recommended by clinical guidelines largely based on expert opinion, more evidence is needed to support the use and frequency of UDT for this indication.

Associations Between Opioid Dose Trajectories and Substance-Related Outcomes

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Background: Uncertainty remains about the longer-term benefits and harms of different opioid management strategies. For instance, potential benefits of opioid tapering include reduced risks of opioid use disorder, overdose, and death. However, patients may also seek care elsewhere and engage in compensatory substance use, which may paradoxically increase the risk of overdose.

Objective: Evaluate the association between opioid dose trajectories and substance-related outcomes.

Methods: We conducted a retrospective cohort study of 3,913 patients in three health systems prescribed long-term opioid therapy with an opioid dose between 50 and 200 morphine milligram equivalents between August 1, 2014, and July 31, 2017. Follow-up ended December 31, 2019. Group-based trajectory modeling identified five opioid dosing trajectories over a one-year trajectory period: one decreasing, three relatively stable (slight decreasing, stable moderate dose, stable high dose), and one high-dose, increasing. We examined outcomes of persistent opioid therapy, health plan
Results: Compared with relatively stable opioid dose trajectories, the decreasing trajectory was associated with a reduced risk of being dispensed opioids at one year (adjusted relative risk [aRR] at site 1, 0.13; 95% CI, 0.10, 0.18; site 2, 0.38; 95% CI 0.34, 0.44; site 3, 0.42, 95% CI 0.32, 0.54) and a reduced incidence of opioid use disorder (adjusted hazard ratio [aHR] 0.40; 95% CI, 0.29, 0.54). However, the decreasing trajectory was also associated with increased health plan disenrollment (aHR 1.70; 95% CI, 1.27, 2.26) and all-cause mortality (aHR 1.56; 95% CI, 1.07, 2.28). In secondary analyses, the decreasing trajectory was not significantly associated with overdose (aHR 0.67; 95% CI, 0.26, 1.25).

Conclusions: The opioid decreasing trajectory was associated with less persistent opioid therapy and opioid use disorder but with an increased risk of health plan disenrollment and mortality. These observational findings should be used to weigh the potential benefits and harms of opioid dose reductions.

Short-Acting Opioids for Withdrawal and Pain in Hospitalized Patients with Opioid Use Disorder: A Case Series

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Background: Hospitals are essential sites of care for opioid use disorder (OUD) and its sequelae, however hospitalized individuals with OUD frequently report untreated withdrawal and pain. Traditional management with non-opioid adjuvants, methadone, or buprenorphine alone may be ineffective for some individuals using fentanyl. Short-acting opioids (SAOs) can serve as a complement, however little evidence exists for the efficacy of this approach.

Objective: To describe the safety and preliminary outcomes of SAOs for withdrawal and pain in 21 hospitalized patients with OUD in an academic hospital in Philadelphia, PA.

Methods: This case-series was deemed IRB-exempt as part of a larger quality improvement project. From August 9, 2021 through March 30, 2022, a pharmacist guided administration of SAOs for patients at risk of undertreated withdrawal and pain with traditional management. We abstracted health records into a secure, web-based platform. Our primary outcome was “safety events”: administration of naloxone, over-sedation, or a fall. Secondary outcomes were pain and withdrawal, discharge on buprenorphine or methadone, patient-directed discharges, and 7-day readmissions.

Results: Of 21 cases, median age was 37, 10 (48%) were female, 20 (95%) were White, and 8 (38%) were houseless. Of 8 cases with completed data abstraction, 6 (75%) regularly injected drugs, and median daily use prior to hospitalization was 28 bags of fentanyl. No safety events were observed with SAOs. Six (75%) patients were discharged on methadone or buprenorphine maintenance, three (38%) patients left as patient-directed discharges, and one patient (13%) was readmitted within 7 days.

Conclusions: SAOs were safe, associated with lower pain and withdrawal, and did not preclude treatment with methadone or buprenorphine in a high-risk hospitalized cohort.

<table>
<thead>
<tr>
<th></th>
<th>Before SAOs</th>
<th>Day 1</th>
<th>Day 2</th>
<th>Day 3</th>
<th>Discharge</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SAOs</strong></td>
<td>None</td>
<td>Oxycodone PO, hydromorphone PO, hydromorphone IV</td>
<td>None</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Daily MME (median, IQR)</td>
<td>N/A</td>
<td>158 (86,255)</td>
<td>340 (257, 473)</td>
<td>395 (123, 436)</td>
<td>N/A</td>
</tr>
<tr>
<td>Max. pain (median, IQR)</td>
<td>9.5 (8.8, 10)</td>
<td>-0.88 (3.83)</td>
<td>-1.9 (3.83)</td>
<td>-1.9 (3.68)</td>
<td></td>
</tr>
<tr>
<td>Individual change* (mean, SD)</td>
<td>-1.7 (5.99)</td>
<td>-1.0 (7.79)</td>
<td>-3.8 (8.53)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. COWS (median, IQR)</td>
<td>14 (6, 15)</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

* Compared to before SAOs.
Nurses' Knowledge, Attitudes, and Beliefs about Neonatal Abstinence Syndrome (NAS) and Breastfeeding

C. Melissa Morelli-Walsh, PhD, RN - New York University Meyers College of Nursing

**Background:** Neonatal abstinence syndrome (NAS) is the anticipated, downstream effect of prenatal drug exposure. Mothers with an opioid use disorder (OUD) may take substitution medications that are present in small amounts in human milk. Human milk and breastfeeding are associated with a decreased severity of NAS symptoms and augmented recovery efforts for mothers with an OUD. Nurses are the essential primary health care providers that provide breastfeeding interventions and support post birth.

**Objective:** The aims of this study were to examine how nurses’ knowledge, attitudes, and beliefs affect their breastfeeding support intentions for families impacted by NAS and to identify nurse’s perceived structural barriers to breastfeeding support.

**Methods:** The study utilized an online, cross-sectional quantitative survey administered to nurses from a suburban hospital in the Northeast. Azjen’s Theory of Planned Behavior guided the survey’s development and its components of attitude, social norm (pressure) and perceived behavioral control were regressed on the breastfeeding support intentions of nurses who work with families impacted by NAS.

**Results:** Overall, 30% of nurses did not support human milk and breastfeeding for families impacted by NAS and 70% of nurses reported intention to support human milk and breastfeeding for families. Nurses with a more positive attitude (odds ratio, (OR) 1.97; 95% confidence interval (CI) 1.14-3.42), greater perceived social norm (odds ratio, (OR) 1.50; 95% confidence interval (CI) 1.02-2.41) and who had greater knowledge about human milk usage in the population of infants with NAS (odds ratio, (OR) 6.58; 95% confidence interval (CI) 2.55-16.96) were more likely to be supportive. Nurses who received workplace opportunities to learn about addiction reported more perceived behavioral control and were more likely to have the clinical intention to support breastfeeding.

**Conclusions:** Families impacted by NAS may receive limited breastfeeding support by nurses. This is especially problematic considering the potential power breastfeeding must ameliorate the symptoms of NAS and assist mothers in their OUD recovery efforts. Further research is warranted to inform effective workplace initiatives to support nurses and their work with families impacted by NAS who choose to breastfeed.

Readiness Groups to Prepare for Tobacco Smoking Cessation in Residential Substance Use Disorders Treatment

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**Background:** Treating tobacco use disorders in substance use disorders (SUD) treatment reduces risk for SUD relapse and tobacco-related poor health outcomes that disproportionately affect SUD clients. California Assembly Bill 541 (signed August 2021) now requires treatment of tobacco use disorders in SUD treatment. Available tobacco smoking cessation interventions provide action-stage content, but most SUD treatment clients are not ready to stop smoking.

**Objective:** This study evaluated the feasibility and effects in Medicaid funded residential SUD treatment of a three-session readiness group that included a 24-hour non-smoking experience with optional NRT prior to a four-session smoking cessation group.

**Methods:** Procedures: Among adult clients in two California Medicaid-funded residential SUD treatment programs who smoked tobacco, those who completed informed consent for this university IRB approved study participated in a three-session weekly smoking cessation readiness group, then a four-session weekly smoking cessation group, and self-report surveys before/after each group series.

**Analyses:** Changes from before to after the readiness group were analyzed using Chi-square tests.

**Results:** Most of the 109 participants were male (85.3%), Black (30.0%), Other/multiracial (31.1%), or White (23.6%), followed by Asian/Pacific Islander (13.6%), and Native American (1.8%); Latinx ethnicity was reported by 22.9%.
Many had less than high school education (24.8%) and fair/poor perceived health (21.1%). The most frequent drugs of choice were methamphetamine (32.1%), alcohol (25.7%), and opiates (21.3%). Cigarettes per day ranged from 0-30 (mean 10.2, SD 6.9); some had recently quit (10.1%). Most smoked within 30 minutes of waking (80.2%), and 28.4% also vaped nicotine in the past 30 days. From before to after the group, days per week smoked decreased (92.9% of 99 vs. 75.0% of 64 smoking daily, χ²(6)=14.6, p=.02), with a trend toward more 24-hour non-smoking efforts (31.4% to 42.9%, χ²=4.9, p=.08).

Conclusions: The dropout from the first to third readiness group (99 to 64 reporting on daily smoking) reflected a number of factors, including residential program dropout and primary counselors prioritizing other groups for clients. Among those who completed the readiness group, many participated in the 24-hour non-smoking experience, and the proportion smoking daily decreased significantly.

Construct Validity of the REDUCE-HARM: An Interprofessional Measure of Attitudes and Confidence with Core Addiction Concepts in Pre-Clinical Health Professions Students

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Background: Existing survey measures lack contemporary concepts in addictions care and are not designed for pre-clinical health professions students. We developed the REDUCE-HARM (an interprofessional attitudes and confidence in addiction treatment measure) based on subject area expert input but further investigation of its construct validity is needed.

Objective: To assess the construct validity of the REDUCE-HARM.

Methods: We sent the REDUCE-HARM to pre-clinical nursing, pharmacy, and medical students at four large academic medical centers across the United States from December 2021 - February 2022. Participants provided information on demographics and experience with addiction care, and filled out the 24 attitudes and confidence items. Construct validity was evaluated for the full REDUCE-HARM and the predetermined attitudes and confidence sub-scales with Cronbach’s alpha and principal component analysis (PCA). T-tests were used to compare the attitude and confidence scores between participants who had experience working with people who use drugs (PWUD) or had already taken an addiction focused elective with participants who had not.

Results: Of the 171 participants who completed the survey, 69% were female, 46% were white, and 56% had worked with people who use drugs or taken an addiction elective. 48% of participants were enrolled in medicine, 29% in pharmacy, and 23% in nursing programs. Cronbach’s alphas were 0.91 (95% CI 0.90 – 0.93), 0.80 (95% CI 0.76 – 0.83), and 0.94 (95% CI 0.92 – 0.95) for the REDUCE-HARM, attitudes sub-scale, and confidence sub-scale respectively. PCA demonstrated a two-factor structure of the REDUCE-HARM, a two-factor structure of the attitudes sub-scale, and a one-factor structure of the confidence sub-scale. Differences in mean attitude and competency scores among those with prior experience working with PWUD or with an addiction elective and those without either experience were statistically significant (attitudes: p = 0.026; confidence: p < 0.001).

Conclusions: This analysis supports the construct validity of the REDUCE-HARM and its use in measuring health professions students’ attitudes and confidence in core addiction concepts. Future research should evaluate reliability of this measure and its responsiveness to educational interventions.

Increasing Access to Medications for Opioid Use Disorder in the Inpatient Hospital Setting: A Rapid Qualitative Analysis of Stakeholder Perspectives

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Background: Expanding access to medications for opioid use disorder (MOUD) is a public health priority. Inpatient initiation of MOUD is safe and feasible but clinicians have been slow to adopt practices like diagnosing opioid use
disorder (OUD), getting x-waivered, and initiating MOUD. Hospital interventions that reflect careful understanding of barriers to MOUD initiation will help avoid missed opportunities for hospital-based initiation.

**Objective:** To describe barriers to and facilitators of adopting practices to increase adoption of MOUD in the inpatient setting at two Veterans Affairs (VA) hospitals.

**Methods:** As part of a needs assessment for a multi-project VA Quality Enhancement Research Initiative (QUERI) focused on increasing adoption of MOUD in the hospital, the study team conducted WebEx based interviews with local stakeholders. Interview questions were developed using the Consolidated Framework for Implementation Research’s (CFIR) interview guide and adapted to assess barriers and facilitators to 3 MOUD-relevant practices: screening and diagnosis, initiating MOUD, and referral and care coordination.

**Results:** 30 clinicians (hospitalists, pharmacists, nurses, consulting physicians) from two VA hospitals completed interviews. Barriers to MOUD included problem prevalence (issues related to long term opioid prescriptions for pain were seen as more prevalent than frank OUD); a preference among hospital clinicians to “focus on acute needs”; lack of awareness of available resources and experts; and complicated referral paths to outpatient care. Facilitators included a new outpatient clinic to address comorbid pain and aberrant opioid-related behaviors; existing consultants for inpatient and outpatient substance use care; and initiatives to educate residents on treatment of OUD.

**Conclusions:** The inpatient hospital setting is complex. Addressing OUD in hospitals is dependent on effective support from multiple clinicians and services, and some key resources are lacking. Perhaps more important, however is this: addressing OUD without addressing pain related opioid prescribing, may be insufficient in hospital-based responses to older Veterans. Emerging facilitators included clinical resources, a shift in educational commitment and rising requests for help from opioid-expert consultants. A multi-faceted strategy to overcome the barriers, leverage the facilitators, and strengthen commitment of important stakeholders is a necessary next step.

**Lower the Flag: An Investigation into Behavioral Alerts in the Electronic Health Record**

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**Background:** Electronic health record (EHR) behavioral alerts (BAs) are prominent, unstructured, and often permanent communication tools used to notify providers about patient incidents.

**Objective:** This study examined 1) the demographic characteristics of primary care patients with BAs and 2) the content, tone, and perceived intention of BAs in one large, urban, academic health system.

**Methods:** We compared the demographic characteristics for patients with BAs to the general patient population at the largest University of California San Francisco Health primary care practice using descriptive statistics. We examined provider-generated text for all active BAs at this practice qualitatively. Using modified grounded theory, three researchers separately coded each flag, and 31 inductive codes were grouped into themes; discrepancies were resolved via consensus.

**Results:** Out of 27,023 patients, 517 (2%) had a total of 620 BAs. Statistically significant differences were found between patients with and without BAs; patients with BAs were more likely to be Black (23% v. 8.5%, p<0.001), have public insurance (77.8% v. 41.9%, p<0.001), and have a psychiatric (62.7% v. 30.7%, p<0.001) or substance use (36.2% v. 5.8%, p<0.001) diagnosis. BA authors most commonly referenced “substance” prescription or use, “aggression,” and “medical illness.” Themes related to BA tone included “spectrum of negativity” (punishing, assuming), “criminalization” (describing patient’s actions as criminal), “dramatization” (embellished language), “overuse of the system,” and “spectrum of positivity” (advocating for the patient). Perceived intention was seen in four overlapping and intertwined themes: 1) coordinating and communicating, 2) venting, 3) warning others, and 4) limit setting.

**Conclusions:** BAs appear to use stigmatizing language, label patients, and reflect a dissonance between a patient-specific approach and a one-size-fits-all directive. This study suggests the biased application of BAs and exposes how a tool meant to facilitate communication and coordination of care can result in stigmatization without clear improvement
in quality of care and safety. Written notes like BAs can bias provider attitudes and future behaviors: health systems must reform this tool, provide policy to guide its use, and ensure education to enhance clear communication.