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BOOK OF ABSTRACTS

NOVEMBER 3-5, 2016

FAIRMONT HOTEL, GEORGETOWN – WASHINGTON, D.C.
Mailing Nicotine Patches to Promote Tobacco Cessation Among Adult Smokers in the General Population: Primary Outcomes From a Randomized Controlled Trial

John A Cunningham PhD; Vladyslav Kushnir MSc; Peter Selby MD; Rachel F Tyndale PhD; Laurie Zawertailo PhD; Scott T Leatherdale PhD – Center for Addiction and Mental Health

2016 John Nelson Chappel - Best Research Award Winner

ECHO-Model Case-Based Learning Enhances Primary Care Treatment of Behavioral Health and Substance Use Disorders

Miriam Komaromy MD; Kathryn Manis MA; Sanjeev Arora MD - ECHO Institute, University of New Mexico Health Sciences Center

2016 Best Abstract - Program and Curricula Award Winner

Positive Changes in Interoceptive Awareness and Emotion Regulation: Impact of Interoceptive Awareness Training for Women in SUD Treatment

Cynthia Price PhD, Sheila Crowell PhD, Sunny Chieh Cheng PhC, Megan Puzia BS, Elaine Thompson PhD – University of Utah

2016 Best Abstract Semi-Finalist Award Winner

A Mixed Method Outcome Evaluation of a Specialist Alcohol Hospital Liaison Team

Grant James McGeechan PhD, MSc, BA (Hons); Kirsty G. Wilkinson MPH; Lynn Wilson PhD; Gillian O'Neill MPH; Dorothy Newbury-Birch PhD, BA(Hons) – Teesside University

Inpatient Addiction Consultation Service and Linkage to Outpatient Addiction Treatment

Paul Andrew Trowbridge MD, MPH; Zoe Weinstein MD; Todd Kerensky MD; Payel Roy MD; Danny Regan RN; Alexander Y. Walley MD, MSc

Implementation of the CCC Substance Use Warmline: A New Resource for Primary Care

Scott Steiger MD; Erin Lutes RN, PHN, MS, CNS; Joanna J. Eveland MD, MS; James J. Gasper PharmD, BCPP; Rebecca Sedillo RN, MS, FNP-C; Brenda Goldhammer MPH; Carolyn Chu MD, MSc; Ron Goldschmidt MD - Clinical Consultation Center, University of California at San Francisco
7 Engaging Nurses in Addiction Care in Community Health Centers Facilitates Access to Treatment
Colleen T LaBelle MSN, RN-BC, CARN - Boston Medical Center

8 Invisible Hand of Medication Maintenance: Pharmacists in the Opioid Abuse Epidemic
Allyssa S. Rivera MS; Sonia Mendoza MA; Alexandrea E. Hatcher MSW; Helena Hansen MD, PhD – New York University

9 Washington State Implementation of a Collaborative Care Model to Treat Opioid Use Disorders in Primary Care and Opioid Treatment Programs
Addy Adwell BSN, RN; Judith Tsui MD, MPH; Elizabeth Speaker MS; Jim Mayfield; Elsa Tamru; Sara Multanen-Karr BA CDP; Molly Carney PhD, MBA; Joseph Merrill MD, MPH; Harvey Funai MSW; Louise May BSN, RN; Jennifer Sherman BSN, RN - Harborview Medical Center

10 Three-Year Retention in Buprenorphine Treatment For Opioid Use Disorder Nationally in the Veterans Health Administration
Ajay Manhapra MD; Ismene Petrakis; Robert Rosenheck – Yale School of Medicine

11 An Assessment of Health Care Needs Among Patients and Providers in Preparation For Implementation of On-Site Primary Care Services in an Opioid Treatment Program
Judith I. Tsui MD MPH; Michelle Peavy PhD; Jessica Paquin BS; Joseph O. Merrill MD MPH; Brigette Folz LICSW; Lisa Chew MD MPH; Molly Carney PhD - University of Washington

12 Long-Term Patients in Office-Based Opioid Treatment With Buprenorphine
Zoe M. Weinstein MD; Hyunjoong W. Kim BA; Debbie M. Cheng ScD; Emily Quinn MA; David Hui BA ; Colleen T. Labelle BSN, RN-BC, CARN; Jeffrey H. Samet MD, MA, MPH – Boston University School of Medicine

13 Trends in Buprenorphine and Naltrexone Dispensation for Adolescents and Young Adults with Opioid Disorder, 2000-2014
Scott E. Hadland MD, MPH; J. Frank Wharam MB, BCh, BAO, MPH; Mark A. Schuster MD, MPH; Fang Zhang PhD; Jeffrey H. Samet MD, MA, MPH; Marc R. Larochelle MD, MPH – Boston Children’s Hospital

15 Outcomes of Onsite Hepatitis C Treatment in an Opioid Treatment Program
Jeanette Tetrauld MD(1,2); Jenna Butner MD (1,2); Neil Gupta (1), Lamia Haque MD (1); Chris Fabian (2); Susan Henry (2); Julia Shil (1,2) – (1) Yale University of Medicine, Internal Medicine Department; (2) APT Foundation

16 Comparison of Post-Cesarean Opioid Analgesic Requirements in Methadone and Buprenorphine Maintained Women
Annmarie Vilkins DO, MSc; Sarah Bagley MD; Kelley Saia MD; Elisha Wachman MD; Kristen A. Hahn; Florencia Rojas-Miguez MPH; Daniel Alford MD, MPH – Boston University of Medicine and Public Health
17 Internal Medicine Resident Assessment of Opioid Overdose Risk and Willingness To Prescribe Naloxone
J. Deanna Wilson MD, MPH; Natalie Spicyn MD, MHS; Pamela Matson PhD, MPH; Anika Alvanzo MD, MPH; Leonard Feldman MD – Johns Hopkins University School of Medicine

18 Barriers and Facilitators to HCV Treatment Among HCV Positive, Reproductive-Aged Women With Opioid Use Disorder
Mary Turowy BS; Penelope Morrison PhD; Megan Hamm PhD; Susan L. Zickmund PhD; Eleanor B. Schwarz MD, MS; Elizabeth E. Krans MD, MSc – University of Pittsburgh

19 Availability of Outpatient Methadone Maintenance Therapy
Timothy B. Creedon MD (1); Daniel J. Sullivan PsyD (2); Benjamin Lê Cook PhD (3) – (1) Brandeis University; (2) Montefiore Medical Center; (3) Harvard Medical School

20 Quantifying the Under-Prescribing of Medication-Assisted Treatment for Alcohol Use Disorder
Paul Joudrey MD MPH; Mat Kladney MD; Chinazo Cunningham MD MS – Montefiore Medical Center

21 Office-based Opioid Disorder Treatment in HIV Outpatient Care Settings
Peter D Friedmann MD, MPH; Donna Wilson MA; Randall Hoskinson, Jr.; Traci Green PhD; Jeff Bratberg PharmD; Michelle McKenzie MA; Josiah Rich, MD – University of Massachusetts Medical School - Baystate

22 Considerations in the Management of IVDU-Related Endocarditis in a patient Enrolled in a Parenteral Opioid Program (PPOP)
Nitasha Puri MD, CCFP, dipABAM; Sarah Ickowicz MD; Leslie Lappalainen MD CCFP dipABAM - Urban Health Research Initiative/Vancouver Coastal Health

23 Reactivity to Uncertain Threat is a Familial Vulnerability Factor For Problematic Alcohol Use
Stephanie M. Gorka PhD; Lynne Lieberman MA; K. Luan Phan MD; Stewart A. Shankman PhD – University of Illinois of Chicago

24 Patterns of Prescription Opioid Misuse among Rural Community Pharmacy Patients: Implications for Practice and Future Research
Gerald Cochran PhD; Rafael Engel PhD; Valerie Hruschak MSW; Ralph Tarter PhD – University of Pittsburgh

25 Psychedelic-Associated Addiction Remission: An Online Survey
Albert Garcia-Romeu PhD; Roland R. Griffiths PhD; Matthew W. Johnson PhD – Johns Hopkins University School of Medicine
26 Transitions To and From At-Risk Alcohol Use in Adults in the United States
Richard Saitz MD, MPH; Timothy C Heeren PhD; Wenxing Zha PhD; Ralph Hingson ScD – Boston University

27 Childhood Adversity as a Predictor of Lifetime Substance Use Patterns by Race/Ethnicity and Gender
Mary Ann Priester MSW, PhD Candidate; Bethany Bell PhD, MPH – University of South Carolina

28 Binge Drinking and Mental Health Among Racial and Ethnic Minorities in the United States
Bongki Woo, MSW – Boston College School of Social Work

29 Opioid Overdose Prevention Program for Shelter Residents; Students as Educators
Noah Gordon Berland MS, Lisa Wang MS; Patrick Malecha; Andrew Hallett - New York University of Medicine

30 Addiction In Pictures: Homeless Perspectives of Addiction Through Photo-Elicitation
Samuel F. Sestito (1); Keri L. Rodriguez PhD (2); Shaddy K. Saba MA (3); James W. Conley (2,4); Michael Mitchell MA (3); Adam J. Gordon MD MPH (1,2,3,4) – (1) University of Pittsburgh School of Medicine; (2) Center for Health Equity Research and Promotion (CHERP); (3) VA Pittsburgh Healthcare System Interdisciplinary Addition Program for Education and Research (VIPER); (4) Mental Illness Research, Education, and Clinical Center (MIRECC), VA Pittsburgh Healthcare System

31 Housing First Client Selection in the Real World: Are Most Vulnerable Selected
Aerin deRussy MPH; Young-Il Kim PhD; Erika Austin PhD, MPH; Sally Holmes MBA; David Pollio PhD; Stefan Kertesz MD, MSc – Birmingham VA Medical Center

32 Can We Support Recovery in Housing First? Findings from VA’S Permanent Supportive Housing Program
Stefan G. Kertesz MD, MSc (1,2); Sally Holmes MBA (3); Erika Laine Austin PhD (1,2); David Pollio PhD (2); Carol VanDeusen Lukas EdD (3,4); Aerin deRussy MPH (1) – (1) Birmingham VA Medical Center; (2) University of Alabama at Birmingham; (3) Boston VA Medical Center; (4) Boston University

33 Utilization of a Sobering Center for Acute Alcohol Intoxication
Shannon M Smith-Bernardin PhD(c), RN, MSN, CARN – University of California, San Francisco

34 “Not a Problem in My Community”: Imams’ Perspectives on Addressing Substance Use
Sarah Mallik MD; Joanna L. Starrels MD, MS; Shadi Nahvi MD, MS – Montefiore Medical Center
The Prevalence of Provider Use of Stigmatizing Language in the Electronic Medical Record of Patients With Substance Use Disorders in an Institutional Culture of Patient-Centered Care
Sean Michael Robinson PhD; Marianne Pugatch MSW, MA, LICSW – Dallas VA Medical Center

A Case of Cutaneous Necrosis: The Effect of Cultural Health Capital on the Negotiation of Stigma Among Nurses in an Inpatient Medical Unit
Sarah Kate Dobbins MPH, RN - University of California at San Francisco School of Nursing

Operationalizing Youth Recovery
Angela Joy Nash PhD, CPNP-PC, PMHS (1); Crystal Collier PhD, LPC-S (2); - (1) University of Texas Health Science Center at Houston School of Nursing; (2) Behavioral Health Institute for the Council on Recovery Houston

Descriptions of Marijuana Use Before, During and After Pregnancy from Qualitative Interviews with Pregnant Women Using Marijuana
Judy C Chang MD, MPH; Jill A. Tarr MSW; Cynthia L. Holland MPH; Keri L. Rodriguez PhD; Kevin L. Kraemer MD; Nancy Day PhD; Doris Rubio PhD; Robert M. Arnold MD – University of Pittsburgh

Peripartum HCV Treatment Willingness Among HCV Positive, Pregnant Women With Opioid Use Disorder
Penelope Morrison PhD, MPH; Mary Turocy BS; Megan Hamm PhD; Susan L. Zickmund, PhD; Eleanor B. Schwarz MD, MS; Elizabeth E. Krans MD, MSc – University of Pittsburgh

Post-Opioid Overdose Follow-up Programs by Police and Fire Departments in Massachusetts
Lyndsay Wilkins; Scott W. Formica MA; Sarah Ruiz MSW; Brittni Reilly MSW; Robert Apsler PhD; Alexander Y. Walley MD, MSc - Boston University School of Medicine

First Year Medical Student Opioid Overdose Reversal Training, an Adjunct to Basic Life Support, a Second Year Analysis
Noah Gordon Berland MS; Aaron Fox MD, MS; Babak Tofighi MD, MSc; Kathleen Hanley MD

Expanding Access to Nalaxone for Family Members: The Massachusetts Experience
Sarah M. Bagley MD (1); Leah Forman MPH (2); Sarah Ruiz MSW (3); Alexander Y. Walley MD, MSc (1) – (1) Boston University School of Medicine; (2) Boston University School of Public Health; (3) Massachusetts Department of Public Health

Polypharmacy and Risk of Non-Fatal Overdose for Patients with HIV Infection and Substance Dependence
Theresa W. Kim MD; Alexander Y. Walley MD, MSc; Alicia S. Ventura MPH; Gregory J. Patts MPH; Timothy C. Heeren PhD; Gabriel B. Lerner BA; Richard Saitz MD, MPH – Boston University School of Medicine, Boston Medical Center
The Trailblazers—Leadership and Staff Perspectives on VA Opioid Overdose Education and Naloxone Distribution (OEND) Among Early Adopters
Elizabeth M. Oliva PhD; Maria Niculete PhD; Rachel Winograd PhD; Matthew D. McCaa BA; Eleanor T. Lewis PhD; Michael F. Cochran MD; P. Eric Konicki MD; Christine M. Wilder MD; Andrea Nevedal PhD; Catherine Barry PhD – US Department of Veterans Affairs

HOPE For Adolescents and Young Adults at Risk for Opioid Overdose: the Hospital-based Overdose Prevention and Education Initiative
J. Deanna Wilson MD, MPH; Natalie Spicyn MD, MPH; Hoover Adger MD, MPH; Pamela Matson PhD, MPH; Leonard Feldman MD – Johns Hopkins University School of Medicine

Regulating Marijuana in California
John T. Carnevale PhD – Carnevale Associates, LLC

Dissemination of an Evidence Based Tobacco Treatment Curriculum to Psychiatry Residency Programs
Smita Das MD, PhD, MPH; Sebastien Fromont MD; Karen Suchanek Hudmon DrPH, RPH; Alan K. Louie MD; Judith J. Prochaska PhD, MPH - Stanford University

Licensed Vocational Nurse Led SBIRT For Hospitalized Patients With Unhealthy Alcohol Use and Promotion of Naltrexone Prescribing for Patients With Alcohol Use Disorders
Sara Jeevanjee MD; Joseph Clement MS, RN, CCNS - Santa Clara Valley Medical Center

A National Study of Smoking Cessation Counseling in Buprenorphine Visits
Phoebe Anne Cushman MD; Zoe Weinstein MD* (joint first author); Lewis Kazis ScD; Howard Cabral PhD – Boston University Medical Center

Impact Of The 2015 CMS Inpatient Psychiatric Facility Quality Reporting (IPFQR) Rule On Tobacco Treatment
Shane Carrillo MS-CR; Niaman Nazir MD; M.P.H., Lisa Shenkman MD; Taneisha S. Scheurmann PhD; Melinda Laxson RN; Eric Howser BA; Kimber P. Richter PhD, MPH, MA – Department of Preventative Medicine and Public Health, University of Kansas Medical Center

Risk for Prescription Opioid Misuse Among Patients with Chronic Pain
Bobbi Jo H Yarborough PsyD; Ning Smith PhD; Scott Stumbo MA; Ben Morasco PhD – Kaiser Permanente Northwest Center for Health Research

Opioid Prescribing Following Non-Fatal Opioid Overdose
Chris J Stock PharmD; Julia Boyle PharmD; Abril Atherton PharmD; Cassandra Clement PharmD – VA Salt Lake City Health Care System
53 Resident Physicians’ Management of Back Pain in an Unannounced Standardized Patient Visit: Opioid vs Non-Opioid Prescribers
Kathleen Hanley MD; Sondra Zabar MD; Hillary Lee BA; Irina Gershgorin PhD; Colleen Gillespie PhD - New York University School of Medicine

54 Exploring the Use of a Mandated Prescription Drug Monitoring Program by Primary Care Physicians in New York City
Bennett Allen MA; Alex Harocopos MS; Rachel Chernick LCSW; Denise Paone EdD – New York City Department of Health and Mental Hygiene

55 Claims-based Patterns of Opioid Medication Consumption and Overdose within a Large Medicaid Program
Gerald Cochran PhD; Adam J. Gordon MD, MPH; Wei-Hsuan Lo-Ciganic PhD, MS, MSPharm; Walid F. Gellad MD, MPH; Winfred Frazier MD; Carroline Lobo MS; Joyce Chang PhD; Ping Zheng MD, MS; Julie M. Donohue PhD – University of Pittsburgh

56 Smartphone Application For Unhealthy Alcohol Use: A Pilot Study
Nicolas Bertholet MD, MSc (1); Jean-Bernard Daeppen (1); Vlad Kushnir MSc (2); John Cunningham PhD (2) – (1) Alcohol Treatment Center, Lausanne University Hospital; (2) Center for Addiction and Mental Health

57 The ASSIST-FC: Reliability and Validity of a Two-Question Version of the World Health Organization’s Alcohol, Smoking and Substance Involvement Screening Test
Bonnie McRee PhD; Thomas Babor PhD; Janice Vendetti MPH; Miranda Lynch PhD – UConn Health

58 Validation of the Tobacco, Alcohol, Prescription Medication, and Other Substance Use (TAPS) Tool for Substance Use Screening and Assessment in Primary Care Patients
Jennifer McNeely MD, MS; Li-Tzy Wu ScD, RN, MA; Geetha Subramaniam MD; Gaurav Sharma PhD; Robert P. Schwartz MD – NYU School of Medicine

59 Momentary Marijuana Desire, Marijuana Use, and Problems with Use Following Motivational Enhancement Therapy plus Ecological Momentary Intervention: A Preliminary Randomized Controlled Trial
Lydia A. Shrier MD, MPH; Pamela J. Burke PhD, RN, FNP, PNP; Meredith Kells MSN, RN, CPNP; Vishnudas Sarda MPH; Cassandra Jonestrask, BA – Boston’s Children’s Hospital

60 Is Screen Time Important? Efficacy of a Computer-Facilitated Brief Intervention For Reducing Adolescent Substance Use is Predicted By Viewing Time
Elizabeth Showalter MPH; John Rogers Knight Jr. MD; Lon Sherritt MPH; Sion Kim Harris PhD – Boston Children’s Hospital Center for Adolescent Substance Abuse Research

61 Evaluation of Routine Screening and Brief Intervention for Unhealthy Drinking Implemented in an Urban Academic Federally Qualified Health Center
Marcus A Bachhuber MD, MSHP – Montefiore Medical Center/Albert Einstein College of Medicine
1. Methods, Preliminary Results and Publication Impact of a Dedicated Addiction Clinician Scientist Research Fellowship
Jan Klimas MSc, PhD; Elaine Fernandes BSc; Kora deBeck PhD; Kanna Hayashi PhD; MJ Milloy PhD; Thomas Kerr PhD; Walter Cullen MD; Evan Wood MD, PhD; Will Small MD – British Columbia Centre of Excellence in HIV/AIDS

2. Addiction/HIV Researchers Mentoring the Next Generation of Clinical Scientists
Jan Klimas MSc, PhD; Ryan McNeil PhD; Keith Ahamad MD; Anabel Mead MD; Launette Rieb MD, MSc, FCFP; dip. ABAM; Walter Cullen MD; Evan Wood MD, PhD; Will Small PhD - British Columbia Centre of Excellence in HIV/AIDS

3. Predictors of Early Dropout in Outpatient Buprenorphine/Naloxone Treatment
David E. Marcovitz MD (1,2); R. Kathryn McHugh PhD (1,3); Julie Volpe MD (4); Victoria Votaw BA (3); Hilary S. Connory MD, PhD (1,3) – (1) Harvard Medical School, MA Psychiatry; (2) Massachusetts General Hospital/McLean Adult Psychiatry Residency; (3) McLean Hospital; (4) Community Health Services

4. Psychosocial Predictors in the Transition from Acute to Chronic Pain: A Systematic Review
Valerie Jean Hruschak MSW, BSW; Gerald Cochran PhD, MSW – University of Pittsburgh

5. Demystifying Pharmacy Students’ Attitudes, Comfort Level, and Knowledge of Substance Use Disorders
Jenna Butner MD (1); Sandy Lerner PharmD(c) (2); Ebtesam Ahmed PharmD, MSc (2) – 1) Yale University School of Medicine; (2) St. John’s University College of Pharmacy

6. What Do Clinicians Want to Know About Opioid Prescribing? A Qualitative Analysis of Their Questions
Phoebe A. Cushman MD; Jane M. Liebschutz MD; Joseph G. Hodgkin BA; Ilana Hardesty BA; Julie White MS; Christopher W. Shanahan MD, MPH; Daniel P. Alford MD, MPH – Boston University Medical Center

7. Comparison of Risk Behavior, Addiction Severity, and History of Overdose Between Active Agonist-Maintained Heroin Users
Jermaine Jones PhD; Briana Todhunter BA; Suky Martinez BA; Sandra D. Comer PhD – Columbia University Medical Center

8. Managing problematic Behaviors Among Patients Taking Long-Term Opioid Therapy: Initial Findings of a Delphi Study
Jessica S. Merlin MD MBA, Sarah Young MSW, Payel Roy MD, Soraya Azari MD, Jamie Pomeranz PhD; E. Jennifer Edelman MD MHS; William C. Becker MD; Joanna Starrels MD MS; Jane M. Liebschutz MD MPH – University of Alabama at Birmingham
9. Barriers and Facilitators Affecting the Implementation of Substance Use Screening in Primary Care Clinics: A Qualitative Study of Patients, Providers, and Staff
Jennifer McNeely MD, MS; Pritika Kumar PhD; Erica Sedlander MPH; Luke Sleiter, MPH; Sarah Farkas; Dennis McCarty, PhD; John Rotrosen, MD – NYU School of Medicine

10. Policy Intervention To Increase Receipt of Medical Attention For College Student Alcohol Intoxication
Sigmund J. Kharasch MD; David R McBride MD; Ward P Myers MD; Richard Saitz MD, MPH – Boston University School of Public Health

11. Outcomes of a Multi-Specialty, Graduate Medical Education Screening, Brief Intervention, and Referral to Treatment (SBIRT) Curriculum For Unhealthy Alcohol and Other Substance Use
Jeanette M. Tetrault MD; Michael L. Green MD; Steve Martino MD; Sheryl Ryan MD; Steve Bernstein MD; Jessica Illuzzi MD; Shara Martel MPH; Michael V. Pantalon PhD; Patrick G. O'Connor MD; David A. Fiellin MD; Gail D'Onofrio MD – Yale University School of Medicine

12. Substance Abuse Visits to the Emergency Department (S.A.V.E.D.)
Jennifer Morrison MD; April Lee MD – Northwell Health at Staten Island University Hospital

13. Infectious Endocarditis and Morbidity: Epidemiological Patterns in the Setting of the Opioid Epidemic
Kinna Thakarar DO, MPH; Kristina Rokas PharmD; F.L. Lucas PhD; Elizabeth Andrews MPH; Christina Dematteo DO; Deirdre Mooney MD, MPH; Spencer Powers MD; Jeffrey A. Rosenblatt MD; August Valenti MD; Marcella H. Sorg PhD; Mylan Cohen MD, MPH – Maine Medical Center

14. The Relationship of Patient Satisfaction and Quality of Life in Medication Assisted Treatment
Emily Loscalzo PsyD; Robert Sterling PhD; Kelly Kehm BA; Stephen Weinstein PhD – Thomas Jefferson University

15. Warm Handoff vs. Fax Referral for Hospital-Initiated Smoking Cessation Among People Living with HIV/AIDS: A Secondary Data Analysis
Laura M. Mussulman MA, MPH; Babalola Faseru MD, MPH; Sharon Fitzgerald MPA; Niaman Nazir MBBS, MPH; Kimber P. Richter PHD, MPH – University of Kansas Medical Center

16. Substance Use Attitudes, Knowledge, Confidence and Practice Behaviors among Medical Residents and Social Work Students Receiving SBIRT Training: Pre-training Differences
Lindsay Rochelle Emery MS; Taylor Berens Crouch PhD; Laura Ting PhD; Michele Beaulieu LCSW-C; Carlo DiClemente PhD; Christopher Welsh MD; Paul Sacco PhD, LCSW – University of Maryland Baltimore County
17. Patient Characteristics Among Opioid Dependent Buprenorphine Treated Patients in a Length of Treatment Study
Nikolay Matveev PhD; Vladimir Zah PhD(c); Martina Imro MSc; Jane Ruby PhD – ZRx Outcomes Research Inc.

18. Attitudes Toward Buprenorphine Among Staff Versus Providers in an Urban Hospital-Based Primary Care Clinic
Leah M Gordon MD MPH; Jocelyn R James MD; Jared W Klein MD MPH; Joseph O Merrill MD MPH; Judith I Tsui MD MPH – Harborview Medical Center, University of Washington

19. Interest in Prescribing Buprenorphine Among Resident and Attending Providers at an Urban Hospital Based Primary Care Clinic
Jocelyn R James MD; Leah M Gordon MD, MPH; Jared W Klein MD, MPH; Joseph O Merrill MD, MPH; Judith I Tsui MD, MPH – University of Washington

20. Early Drinking Onset, Drinker Identity, and Alcohol Outcomes in Young Women
Colleen Corte PhD, RN; Karen Stein PhD, RN, FAAN; Chia-Kuei Lee PhD; Alicia Matthews PhD – University of Illinois at Chicago

21. Characteristics of Brief Intervention and Referral Services Delivered by Advanced Practice Registered Nursing (APRN) Students
J. Aaron Johnson PhD; J. Paul Seale MD; Sharon Chalmers PhD, CNE, APRN, FNP-BC; Freida Payne RN, PhD, FNP-BC; Linda Tuck DNP, M.Ed, RN, APRN, ANP-BC – Augusta University

22. Emergency Department Health Care Provider Views Toward Patients with Alcohol and Drug-Use Disorders
Reyna Puentes BS; Dylan Richards BS; Miriam Alvarez MA; Sandra Oviedo Ramirez BA; Robert Woolard MD; Craig Field MPH, PhD – Department of Psychology, Latino Alcohol and Health Disparities Research (LAHDR)

23. Exploring Health Disparities in Dental Care Providers’ Delivery of Tobacco Use Treatment
Chinyere Mbadiwe BHSc (1,2); Mirelis Gonzalez MS (3); Alena Campo MPH (3); Sarah Borderud MPH (4); Danielle Khalife (4); Jamie Ostroff PhD (4); Yuelin Li PhD (4); Donna Shelley MD, MPH3 (3) – (1) Substance Abuse Research, Education and Training (SARET); (2) New York University College of Dentistry; (3) New York University School of Medicine; (4) Memorial Sloan Kettering Cancer Center

24. 5As Smoking Cessation Counseling in Primary Care; Opportunities for 5As Interventions
Jason M Satterfield PhD; Maya Vijayaraghavan MD MAS; Paula Lum MD; Patrick Yuan BA – University of California, San Francisco
25. Lost in Translation: A Mobile App to Promote Screening, Brief Intervention, and Referral to Treatment (SBIRT) Skills
Khanh Ly BS; Derek Satre PhD; Maria Wamsley MD; Alexa Curtis PhD; Jason Satterfield PhD – University of California, San Francisco

26. Private Health Plans’ Role in Delivery and Payment Reform to Support Integrated Care
Constance Horgan ScD; Sharon Reif PhD; Maureen Stewart PhD; Deborah Garnick ScD; Amity Quinn PhD; Timothy Creedon MA; Brooke Evans MSW, LCSW, CSAC – Brandeis University

27. Pathways to Heroin Injection Among Young Drug Users in California’s Central Valley
Catherine Paquette BA; Jennifer Syvertsen PhD, MPH; Robin Pollini PhD, MPH – Pacific Institute for Research and Evaluation

28. Barriers and Facilitators to Engagement in Hepatitis C Treatment for People Who Inject Drugs
Jennifer R. Reed MS, FNP-BC, NP-C – New York University

29. Healthcare Resource Utilization in Adults Involved in the Criminal Justice System With a History of Opioid Dependence Receiving Extended Release Naltrexone Compared to Treatment as Usual
William Edward Soares III MD MS; Donna Wilson MS; Joshua D. Lee MD; Michael Gordon DPA; Edward V. Nunes MD; Charles P. O’Brien MD PhD; Peter D. Friedmann MD MPH – Baystate Medical Center

30. Pediatricians and Their Screening, Brief Intervention, and Referral To Treatment (SBIRT) Practices
Iman Parhami MD, MPH; Christopher Hammond MD; Michelle Horner DO; Andrea Young PhD; Sharon Levy MD – Johns Hopkins University

31. Current Drug Users and Women Have Higher Rates of Risky Sexual Behaviors
Karran A. Phillips MD, MSc; Landhing Moran PhD; Sara Hertzel BA; David H. Epstein PhD; Kenzie L. Preston PhD – National Institute on Drug Abuse, National Institutes of Health

32. Opioid and Benzodiazepine Prescriptions in Opioid Overdose Survivors Enrolled in a Trial of ED-Initiated Treatment for Opioid Use Disorder
Kathryn Hawk MD, MHS; David A. Fiellin MD; Marek C. Chawarski PhD; Steven L. Bernstein MD; Patrick G. O’Connor MD, MPH; Patricia H. Owens MS; Michael V. Pantalon PhD; Susan H. Busch PhD; Gail D’Onofrio MD, MS

33. Psychosocial Needs of Patients on Medically Assisted Treatment
Alexandrea Hatcher MSW; Allyssa Rivera ADTD; Helena Hansen MD PhD – New York University
34. The Brief Negotiation Interview Adherence Scale for Opioid Dependence: A Validation Study
Michael V. Pantalon PhD (1); James Dziura PhD (1); Fang-Yong Li MPH (1); Patricia H. Owens MS (1); David A. Fiellin MD (2); Patrick G. O’Connor MD (2); Gail D’Onofrio MD (1) – (1) Department of Emergency Medicine, Yale University School of Medicine; (2) Department of Internal Medicine, Yale University School of Medicine

35. Parental Perceptions of ADHD Specific Risk of Alcohol and Marijuana Use for Their Adolescents with ADHD
Elizabeth Harstad MD, MPH (1,3); Dylan Kaye BA (1); Meghana Vijaysimha MPH (1); Lauren Wisk PhD (2,3); Elissa Weitzman ScD, MSc (2,3); Sharon Levy MD, MPH(1,3) - Adolescent/Young Adult Medicine, Boston Children’s Hospital; (3) Department of Pediatrics, Harvard Medical School

36. Diversity of Religiosity in Open 12-Step Groups: Preliminary Findings
Mark D. Thomas PhD – Indiana University - Northwest

37. Reliability and Validity of Past-12-Month Use Frequency Items as Opening Questions For the Updated CRAFFT Adolescent Substance Use Screening System
Sion K. Harris PhD (1,2); Lon Sherritt MPH (1,2); Sarah Copelas BA (1); John Rogers Knight Jr.; MD (1,2), and the Partnership for Adolescent Substance Use Research – (1) Department of Pediatrics, Harvard Medical School; (2) Center for Adolescent Substance Abuse Research, Boston Children’s Hospital

38. Psychophysiological Responding to Negative Mood Induction and Interoceptive Awareness for Women in SUD Treatment
Sheila E. Crowell PhD; Cynthia Price PhD; Megan E. Puzia BA; Mona Yaptangco MA – University of Utah

Arthi K. Narayanan (1); Shaddy Saba MA (2); John H. Harding, Jr. (3,4); James Conley (3,4); Adam J. Gordon MD MPH (1,2,3,4) – (1) University of Pittsburgh School of Medicine; (2) VA Pittsburgh Healthcare System Interdisciplinary Addiction Program for Education and Research (VIPER); (3) Center for Health Equity Research and Promotion (CHERP); (4) Mental Illness Research, Education, and Clinical Center (MIRECC), VA Pittsburgh Healthcare System

40. Retention in a Primary Care Clinic For Homeless Veterans With Substance Use Disorders
Shaddy K. Saba MA; Audrey L. Jones PhD; Lauren M. Broyles PhD; RN; Adam J. Gordon MD, MPH - VA Pittsburgh Healthcare System Interdisciplinary Addiction Program for Education and Research (VIPER)

41. Predictors of Patient Readiness and Confidence to Change Alcohol and Cannabis Use When Screened in Healthcare Settings
Melissa K. Richmond PhD; Ana P. Nunes PhD; Kerryann Broderick BSN, MD; Kelly Marzano MA
103 42. Daily Marijuana Users Identified in Primary Care and Emergency SBIRT Settings: Characteristics and Screening Results
Megan A. O’Grady PhD; Sandeep Kapoor MD; Kristen Pappacena MA; Cherine Akkari MS; Camila Bernal MPH; Jeanne Morley MD; Mark Auerbach MD; Charles J. Neighbors PhD, MBA; Nancy Kwon MD; Joseph Conigliaro MD, MPH; Jon Morgenstern – The National Center on Addiction and Substance Abuse

104 43. Mindfulness Meditation and Nicotine Dependence: Preliminary Findings From an Initial Effectiveness Trial
Isabel Cristina Weiss de Souza MD; Elisa Harumi Kozasa PhD; Sarah Bowen PhD; Kimber Richter PhD; Laisa Marcorela Andreoli Sartes PhD; Ana Regina Noto PhD – Universidade Federal de São Paulo

105 44. The Evolutionary Approach to Cannabinoid Receptors
Maira Carrillo PhD (1); Iram P. Rodríguez-Sanchez (2); Guindon Josee DVM, PhD (3); Hugo A. Barrera Saldana MD (4); Gene Hubbard DVM (5); Edward Dick DVM (6); Anthony G. Commuzzie PhD (7); Natalia E. Schlabritz-Loutsevitch MD, PhD (1) – (1) Texas Tech University HSC School of Medicine at Permian Basin; (2) Universidad Autónoma de Nuevo León, Departamento de Genética; (3) Department of Pharmacology and Neurobiology, Texas Tech University Health Sciences Center; (4) Universidad Autónoma de Nuevo León, Departamento de Bioquímica y Medicina Molecular; (5) Pathology, Texas Biomedical Research Institute; (7) Department of Genetics, Texas Biomedical Research Institute

106 45. Retention in a Primary Care Clinic For Homeless Veterans With Substance Use Disorders
Anita N. Jackson PharmD; Jeffrey Bratberg PharmD; Miranda Monk PharmD (c); John Ferrentino PharmD (c) - University of Rhode Island

107 46. Engagement in the HIV Care Cascade for Methadone Treatment Program Clients
Claire Simeone DNP, FNP, MSN; Brad Shapiro MD, FASAM; Paula Lum MD, MPH - City and County of San Francisco, University of California San Francisco

108 47. Safe and Competent Opioid Prescribing Education: Increasing Dissemination With a Train-the-Trainers Program
Lara Zisblatt EdD, MA (1); Sean M. Hayes PsyD (2); Patrice Lazure (2); Ilana Hardesty (1); Julie L. White MS (1); Daniel P. Alford MD, MPH (3) - (1) The Barry M. Manuel Office of Continuing Medical Education, Boston University School of Medicine; (2) AXDEV Group; (3) Section of General Internal Medicine, Boston Medical Center

109 48. Improving School-Based Health Center Nurse Practitioners’ Skills in Screening and Brief Intervention for Adolescent Substance Use Utilizing an Observed Structured Clinical Exam (OSCE)
Brittany L. Carney MS (1); Renee Aird MS, BSN (2); Judith Bernstein PhD (3); Edward Bernstein MD, Alissa B. Cruz, MPH; Lee Ellenberg MSW; Jennifer Masdea MPH; Deric Topp MPH (3); Enid Watson MDiv (4); Jill Northrup MPH (2); Christine Zakhour MPH (2); Carol Girard MA (5); Daniel P. Alford MD, MPH (6) - (1) Boston Medical Center; (2) Masachussets Department of Public Health; (3) Boston University of Public Health; (4) Institute for Health and Recovery; (5) Massachusetts School of Public Health; (6) Boston University School of Medicine
49. Development and Implementation of an Alcohol Withdrawal Protocol Using a 5-item Brief Alcohol Withdrawal Scale (BAWS)
Darius A. Rastegar MD, Dinah Applewhite BA, Anika A. H. Alvanzo MD, MS, FASAM, FACP, Christopher Welsh MD, Edward S. Chen MD - Johns Hopkins University School of Medicine

50. A Scalable, Online, Multidisciplinary SBIRT Training Program
Matt Guerrieri BS; Mia Croyle MA; Jade Goetz BA; Richard L. Brown MD, MPH - University of Wisconsin Department of Family Medicine and Community Health

51. SBIRT Curricula Implementation and Evaluation at Howard University
Robert William Day MPH, MA; Denise Scott MS, PhD; Gloria Cain, MSW, PhD; Brenda Rodriguez MA, MBA; Nnenna Kalu MS, MPH; Reed Forman MSW; Audene E. Watson MSW, LCSW-C - Substance Abuse and Mental Health Services Administration

52. Provider Attitudes About a Collaborative Care Program for Patients with Chronic Pain on Opioids in a Teaching Clinic
Serena Roth MD; Lorlette Haughton MPH; Sarah Ricketts MD; Laila Khalid MD MPH; Charleen Jacobs ANP-BC; Darlene DeSantis PhD; Naum Shaparin MD; Joanna L. Starrels MD, MS - Montefiore Medical Center/Albert Einstein College of Medicine

53. Evaluating the Acceptability and Effectiveness of SBIRT Training in Social Work and Nursing Education
Adele Levine MPH; Cali-Ryan Collin MSW, LICSW; Jennifer M. Putney, PhD, LICSW Additional Authors: Adele Levine MPH; Cali-Ryan Collin MSW, LICSW; Jennifer M. Putney PhD, LICSW; Kimberly H. McManama O’Brien PhD, LICSW - Simmons School of Social Work

54. Engaging Caregivers in the Healthcare of Persons with HIV/AIDS and Drug Use Disorders
Amy Knowlton MPH, ScD; Mary Mitchell MA, PhD; Jennifer Wolfe MHS, PhD; Cynda Rushton MSN, PhD - Johns Hopkins Bloomberg School of Public Health

55. Advancing Interprofessional Pain Curriculum Through NIH Designated Centers for Excellence in Pain Education
Rosemary C. Polomano PhD, RN, FAAN; Ardith Z. Doorenbos PhD, RN, FAAN; Debra Gordon DNP, RN, FAAN; PaulArnstein, PhD, RN, FAAN - University of Pennsylvania School of Nursing

56. Population-Specific Clinical Tools For Screening and Brief Intervention (SBI)
Carolyn J. Swenson MSPH, MSN; Erin Sharp BA; Amber Quartier BA, CPS II; Jodi Lockhart CPSII; Elizabeth Pace MSM, RN, CEAP, FAAN; Cassidy Smith MPH - Peer Assistance Services, Inc.

57. A Comparison of Instructional Methods for Delivering SBIRT Training to Baccalaureate Nursing Students
Heather Gotham PhD; Sarah Knopf-Amelung MA-R; Jolene Lynn PhD, RN; Pamela Young MSN, BSN, RN; Ronalda Manney Stinson EdD, MSN, BSN, RN; Kendra Barker MEd; Araba Kuofie BA - University of Missouri-Kansas City
58. Assessing Self-Assessment Modules: Identifying Commonly-Selected Addiction Medicine Subject Areas of Practice, Results From MOC Part II
Lia Bennett, MPH, Robert Sokol, MD - American Board of Addiction Medicine

59. Comparing Validated and Novel Risk Tools to Quantify Risk for Opioid Induced Respiratory Depression in an Electronic Medical Record
Kangwon Song PharmD; Jeffrey Fudin BS, PharmD, DAAPM, FCCP, FASHP; Ramona Shayegani PharmD; Jacqueline Pratt Cleary PharmD; Elizabeth M. Oliva PhD - South Texas Veterans Health Care System

60. Cultural Adaptations of Screening, Brief Intervention and Referral to Treatment (SBIRT) in Federally Qualified Health Centers (FQHC): A Case Study Review of Four FQHCs in Puerto Rico
Ibis Carrión-González PsyD; Yessenia Castro PhD; Miguel Cruz-Feliciano PhD; Craig A. Field PhD; Maria del Mar Garcia-Rodriquez MHS, MSW; Holly Hagle PhD; Sarah King - Ireta

61. A Case of Opioid Overdose Reversal: Intranasal Naloxone Kit Delivered
Smita Das MD, PhD, MPH; Murtuza Ghadiali MD; Nina Shah PharmD- University of California at San Francisco

62. The Five-Year Recovery Standard
Robert L. DuPont, MD - Institute for Behavior and Health, Inc.

63. Substance Use and Mental Health Treatment Retention among Emerging Adults
Susie M. Adams PhD, PMHNP, FAANP, FAAN; Siobhan A. Morse MHSA, CRC, CAI, MAC; Sam Choi PhD, MSW; Cayce Watson MSSW, LAPSW; Brian E. Bride PhD, MSW, MPH – Vanderbilt University

64. Integrated Care to Individuals With Substance Use Disorders: Challenges and Opportunities From the Perspective of Brazilian Professionals
Alessandra Bonadio PhD; Maria Valeria Contreras MS; Danilo Locatelli MS; Bruno Bittencourt Psychologist; Tatiana Amato PhD; Eroy Silva PhD, Ana Regina Noto PhD – Universidade Federal de São Paulo

65. Pilot Study of Feasibility and Preliminary Effectiveness of Varenicline For Co-Ocurring Tobacco and Cannabis Use
Tangeria Adams BS; Julia H. Arnsten MD, MPH; Yuming Ning PhD; Shadi Nahvi MD, MS – Montefiore Medical Center/ Albert Einstein College of Medicine

66. Facilitators and Barriers to Participation in Methadone Programs: Findings From a Community Based Mixed Methods Study in Oakland, CA
Alexis N. Martinez PhD; Ashley Bangle BA; Signy Toquinto MA; Maurice Tobin; Loris Mattox BA – San Francisco State University

67. Simultaneous Exposure to Alcohol Use and Alcohol Interactive Medications Mmong Adolescents With a Chronic Medical Condition and Associations With Knowledge: Findings From a Multi-Clinic Study With Implications For Clinical Preventive Services
Elissa R Weitzman ScD, MSc; Quian Huang MPH; Sharon Levy MD, MPH – Boston Children’s Hospital, Harvard Medical School
Mailing Nicotine Patches to Promote Tobacco Cessation Among Adult Smokers in the General Population: Primary Outcomes From a Randomized Controlled Trial
John A Cunningham PhD; Vladyslav Kushnir MSc; Peter Selby MD; Rachel F Tyndale PhD; Laurie Zawertailo PhD; Scott T Leatherdale PhD – Center for Addiction and Mental Health

Objectives: The efficacy of Nicotine Replacement Therapy (NRT) is well demonstrated in clinical trials where NRT is accompanied by behavioral support. Epidemiological data, however, shows that people using NRT are no more likely to successfully quit than those who do not employ NRT. The current trial evaluated the impact of mailing nicotine patches without behavioral support on quit success rates. Methods: A single blinded, two-group randomized controlled trial of adult smokers recruited across Canada by random digit telephone dialing between. A total of 2093 individuals who smoked more than 10 cigarettes per day were interviewed at baseline and asked if they would be hypothetically interested in receiving nicotine patches by mail to quit smoking. Those who were interested and deemed eligible to participate (no contraindications to NRT) (n = 1000) were randomly assigned to be mailed a 5-week supply of nicotine patches or to a no intervention control. Telephone follow-ups were conducted at 8-weeks and 6-months. Participants in the experimental condition were sent a 5-week course of nicotine patches by expedited postal mail (3 weeks of Step 1 [21 mg of nicotine]; 1 week of Step 2 [14 mg of nicotine]; 1 week of Step 3 [7 mg of nicotine]; no behavioral support was provided). Participants randomized to the control condition were not offered the nicotine patches or any other intervention. The primary outcome was 30-day smoking abstinence at 6 months. Results: Follow-up rate was 80.5% at 6-months. Self-reported abstinence rates were significantly higher among participants who were sent nicotine patches compared to the no intervention control (30-day abstinence: 7.6% vs. 3.0%; odds ratio (OR), 2.65; 95% CI, 1.44 - 4.89, p = .002). Usable saliva samples were only returned by half of participants. Biochemically validated abstinence at 6-months was 2.8% among participants in the experimental condition and 1% among those in the control condition (OR, 2.85; 95% CI, 1.02 – 7.96, p = 0.046). Conclusions: The trial provides evidence of the effectiveness of mailed NRT without behavioral support to promote tobacco cessation. The strength of these finding is tempered by the lack of biochemical validation for all participants.
ECHO-Model Case-Based Learning Enhances Primary Care Treatment of Behavioral Health and Substance Use Disorders
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Background: Many primary care patients have behavioral health (BH) and substance use disorders (SUDs), yet PCPs are inadequately trained in caring for these conditions. Project ECHO aims to develop capacity to effectively treat common, complex diseases in rural and underserved areas. The ECHO model uses videoconferencing to simultaneously connect multiple PCPs with academic specialists, and builds PCPs’ capacity via mentorship and case-based learning. The Integrated Addictions and Psychiatry (IAP) TeleECHO Clinic was established in NM in 2005 to expand access to high-quality treatment for BH and SUDs. Objective: Evaluate how PCPs rate the impact of teleECHO participation on patient care

Methods: In 2-hour weekly IAP teleECHO clinics PCPs join specialists in BH and SUDs to discuss de-identified patient cases. Participants seeking CME/CEU credits complete an electronic survey following the teleECHO clinic. Beginning 6/15, participants were asked whether they presented a patient case, how they rate the value of the clinical input received, whether it changed their care plan, and whether they learned something new from discussions of cases presented by other participants. Results: From 6/15-4/16, 134 individuals from 37 clinics from 10 NM counties participated in IAP clinic. 265 post-clinic surveys were received. In 75 of these surveys (28%) respondents reported presenting a patient case, and 58 (77%) stated that the case discussion changed their patient care plan. 62 of 75 (83%) rated the value of the input they received as 5, on a scale of 1 to 5. In addition, 225 of 263 respondents (86%) reported they learned something new from cases presented by others, and 204 of 223 (91%) reported that this would be useful in caring for their patients. Participants reported case discussions improved their knowledge related to diagnosis, behavioral and medical interventions, techniques for monitoring therapies, resources outside their practice, and risk reduction.

Conclusions: PCPs value greatly input they receive during BH and SUD case discussions on the teleECHO network, and report that it changes their treatment plan for their patients. ECHO is an easily replicable model that helps to expand access to high quality care for BH and SUDs by supporting and mentoring PCPs.
**Positive Changes in Interoceptive Awareness and Emotion Regulation: Impact of Interoceptive Awareness Training for Women in SUD Treatment**

Cynthia Price PhD, Sheila Crowell PhD, Sunny Chieh Cheng PhC, Megan Puzia BS
Elaine Thompson PhD – University of Utah

**Background:** Brain imaging studies suggest the importance of interoception for regulation to support relapse prevention among individuals with substance use disorder (SUD). This NIDA-funded study examined Mindful Awareness in Body-oriented Therapy (MABT) as an adjunct to an intensive outpatient program (IOP) for women. With MABT individuals explicitly learn interoceptive awareness skills for regulation.

**Objective:** To examine changes in interoceptive awareness and associated changes in respiratory sinus arrhythmia (RSA) among women in SUD treatment who received MABT compared to Women’s Health Education (WHE) or TAU only.

**Methods:** Women in IOP treatment for SUD (n =145) were randomly assigned to one of 3 study conditions: MABT, WHE or TAU only. The Multidimensional Assessment of Interoceptive Awareness (MAIA) and measures of respiratory sinus arrhythmia (RSA), a psychophysiology indicator of regulation, were examined. Analyses include RM ANOVA and regression analyses. **Results:** Participant ages ranged from 20-61, 91% had public health insurance. Primary drugs used were alcohol (43%), stimulants (43%) and narcotics (20%); 20% use multiple substances. At baseline, 66% screened positive for PTSD, 46% for an eating disorder, and 37% for depression. The MABT group, compared to WHE and TAU, showed significant improvements in interoceptive awareness on MAIA scales Noticing (p=.002), Self-regulation (p =.002), Emotional Awareness (p=.001), Listening to Body (p<.0001) and Trust (p =.03). Compared to WHE and TAU, change in MAIA total scores predicted 3-month RSA in MABT ($B=.40$, $p=.04$). Moreover, at post-test for MABT only, MAIA scores were positively associated with RSA. **Conclusions:** Results demonstrate that MABT increases interoceptive awareness for women in SUD treatment, confirming that, in a distressed sample of women living with particularly taxing personal circumstances, interoception can be learned with individualized coaching. The findings point to the influence of interoceptive awareness on regulation, yielding new and important clinical implications for research and treatment.
A Mixed Method Outcome Evaluation of a Specialist Alcohol Hospital Liaison Team
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Background: The World Health Organisation (WHO) states that the protection of health by preventing risky drinking (increasing and high risk drinking) is a public health priority. The number of alcohol related deaths in the United Kingdom (UK) has risen from 9.1 deaths per 100,000 people in 1992 to 14.3 per 100,000 in 2014, with alcohol related hospital attendances costing the National Health Service £3.5 billion annually. The Royal College of Physicians recommended that major UK hospitals employ specialised alcohol care teams, who should co-ordinate care across all hospital departments. Evidence suggests that such teams are effective at reducing alcohol related hospital admissions, and can improve the care and health outcomes of patients admitted for alcohol use. Objective: To evaluate the effectiveness of an alcohol hospital liaison team at reducing alcohol specific hospital attendances and admissions. Methods: In a mixed method evaluation 96 patients who accessed the team were monitored using data for alcohol specific hospital attendances and accident and emergency (A&E) admissions before, during, and after engaging with the team. A feedback survey was sent to patients and a focus group was held with staff from the team to identify barriers and facilitators to the successful delivery of this service. Results: No differences were observed when looking at alcohol admissions or A&E attendances before patients engaged with the service to those after discharge. Whilst hospital admissions decreased slightly, and A&E attendances increased slightly, these differences were not significant. Hospital admissions and A&E attendances increased significantly during engagement with the service. The focus group identified confusion over who should be delivering brief interventions, and that the team were holding onto patients for too long. Conclusions: The results of this evaluation demonstrated that this team were not effective at reducing alcohol attendances or admissions due to a number of factors. Policy makers should make note of the barriers to effectiveness highlighted in this paper before commissioning alcohol care teams in the future.
Inpatient Addiction Consultation Service and Linkage to Outpatient Addiction Treatment

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**Background:** Approximately 25% of hospitalized patients in the US have an active substance use disorder (SUD). Starting treatment for substance UDs, including medications, in hospitalized patients has been shown to be effective in engaging patient in care, retaining them in outpatient care, and decreasing substance use. In July of 2015, the Boston Medical Center Addiction Consult Service (BMC ACS), consisting of an attending physician, addiction nurse, and trainees, began providing inpatient diagnostic, management, and discharge linkage consultations. **Objectives:** To describe the diagnoses of patients seen, the initiation and management of addiction medications, and the linkages to on-going outpatient care. **Methods:** For quality assurance purposes, the BMC ACS maintains a registry of referred patients. Between 07/2015 and 01/2016, we recorded the substance UDs diagnosed and the medications recommended and initiated. Follow-up data from BMC outpatient clinics and the major methadone referral clinic were recorded. We calculated the number of consults referred and completed, as well as the frequencies of individual SUDs, initiations of addiction medications, and of patients following up outpatient. **Results:** In its first 26 weeks, the BMC ACS completed 343 consults. Seventy-nine percent (271) had an opioid UD, 38% (130) an alcohol UD, 28% (96) a cocaine UD, 8% (29) a benzodiazepine UD, 3% (9) a cannabinoid (included K2) UD, and <1% (1) a methamphetamine UD. Methadone maintenance was initiated in 68 and buprenorphine maintenance in 37. Naltrexone was recommended 47 times (for opioid UD, alcohol UD, or both), acamprosate 12 times, disulfiram 6 times, and topiramate 2 times. Of the patients initiated on methadone, 78% (53/68) came to the methadone clinic post-discharge, and 56% (38/68) remained enrolled 30 days later. Of those started on buprenorphine, 49% (18/37) made their post-discharge clinic visit. For naltrexone, 25% (4/16) presented for post-discharge care, all of these given naltrexone exclusively for alcohol. **Conclusions:** There is need for addiction services that provide diagnostic, management, and discharge linkage consultation. Initiation of addiction medications, particularly opioid agonists, with direct linkage to outpatient care is feasible in the inpatient setting. Further research is needed to determine how to optimize linkage and retain patients in care.
Implementation of the CCC Substance Use Warmline: A New Resource for Primary Care
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**Background:** Approximately 21.5 million Americans have a substance use disorder, and numerous initiatives have begun integrating substance use treatment into primary care “safety net” settings. However, relatively few primary care clinicians are experienced in substance use treatment. **Objective:** The Clinician Consultation Center (CCC) and Bureau of Primary Health Care developed a Substance Use Warmline (SUW) to increase access to addiction medicine consultation for Federally Qualified Health Centers. Free consultation is provided by a team of advanced practice nurses, Addiction Medicine-certified physicians, and clinical pharmacists. The SUW aims to provide on-demand support regarding the medical management of substance use, including issues specific to HIV/HCV prevention and management. **Methods:** Consultation is available Monday – Friday, 10 a.m. – 6 p.m. EST/EDT. Consultations are documented in a standardized database, and caller satisfaction is assessed via a 5-item follow-up survey. Consultation volume and characteristics are monitored weekly. Over the pilot, all consultants reviewed each case for quality control purposes. **Results:** From December 2015-May 2016, 65% of callers were physicians (9% held DATA 2000 waivers); 15% nurse practitioners; 10% physician assistants; 5% clinical social workers, and 5% pharmacists. Psychiatric conditions (73%) and chronic pain (45%) were the most common comorbidities; HIV (15%) and hepatitis C (9%) less common. Prescription opioid use was reported in 54% of cases, stimulants 24%, alcohol use 21%, sedatives/hypnotics/anxiolytics 24%, and non-prescription opioids 12%. Almost half involved multiple substances. Cases involving opioids included specific consultation on interventions to reduce morbidity and mortality, namely treatment of opioid use disorder (buprenorphine 42%, methadone 15%), overdose prevention, opioid tapering and/or changing medications, harm reduction, and behavioral health. 60% of calls involving HIV-positive patients were also referred to the CCC’s HIV/AIDS Warmline. Satisfaction surveys indicated 100% of callers rated the service highly (5/5) on consultation quality and usefulness of information provided. All respondents indicated they would use the service again and recommend it to colleagues. **Conclusions:** Telephone-based substance use consultation is feasible, and an acceptable resource for primary care clinicians. Half of all consultations involved patients who did not clearly meet criteria for substance use disorders; many of these involved chronic use of prescription opioids.
Engaging Nurses in Addiction Care in Community Health Centers Facilitates Access to Treatment
Colleen T LaBelle MSN, RN-BC, CARN - Boston Medical Center

**Background:** The Massachusetts Collaborative Care Model began in 2003 at Boston Medical Center facilitating access to opioid agonist treatment. This team-based approach utilized addiction-trained nurses collaborating with waivered physicians in the evaluation, monitoring, and care management of patients with opioid use disorders in primary care. In an effort to further disseminate office-based treatment in community settings the Massachusetts Bureau of Substance Abuse Services’ (BSAS) funded nurse care managers in community health centers, modeled after the Massachusetts collaborative care model. BSAS also funded a training and technical support provider and this was awarded to the Boston Medical Center nurse model.

**Objectives:** To educate and support nurses and non-physicians in caring for patients with opioid use disorders in community settings. To expanded treatment into underserved communities with multidisciplinary teams that were knowledgeable, engaged, and supported in treating addiction.

**Methods:** Training and technical assistance was provided to all non-physician staff thru formal educational sessions, hands-on shadowing, site visits, meetings, and individual needs assessments. Training session had anonymous evaluations completed by all participants. Waiver trainings were offered often and providers were supported and encouraged to obtain a waiver to treat opioid dependence.

**Results:** Nurses from all funded community settings as well as 9 unfunded sites completed initial trainings and ongoing statewide quarterly trainings. The expansion into the fourteen community settings increased the number of physicians who were “waivered” by 375%, from 24 to 114, within 3 years. During this period the annual admissions of OBOT patients to CHCs markedly increased. Integrating nurse care managers expanded treatment into community sites from 3 sites to 14 funded and 9 non-unfunded sites. Patients treated at these sites had improved health outcomes with decreased hospitalization, decreased emergency room visits, and 53% across all sites remained in care at 12 months.

**Conclusion:** Dissemination of the Massachusetts Model of Office-Based Opioid Treatment employing a collaborative care model with a central role for nursing enabled implementation of effective treatment for patients with an opioid use disorder at community sites throughout Massachusetts while effectively engaging primary care physicians.
Invisible Hand of Medication Maintenance: Pharmacists in the Opioid Abuse Epidemic
Allyssa S. Rivera MS; Sonia Mendoza MA; Alexandrea E. Hatcher MSW; Helena Hansen MD, PhD – New York University

Background: New York City’s most suburban borough, Staten Island, has four times the opioid overdose rates of any borough and the highest rates of opioid analgesic prescriptions. Given that the opioid maintenance treatment drug buprenorphine (commercially known as Suboxone) can be dispensed from a community pharmacy, pharmacists have a unique perspective on the dissemination and implementation of buprenorphine in regards to dosing trends, patient and doctor behavior, and community impact of policy responses to the opioid abuse epidemic in Staten Island. Objective: To understand pharmacists’ role in the regulation and dispensing of prescription opioids (including buprenorphine) in a community with high opioid abuse rates.

Methods: Trained graduate-level interviewers conducted semi-structured interviews with pharmacists throughout Staten Island regarding their experiences with buprenorphine patients, dispensing buprenorphine and opioid analgesics, and new policies such as New York State’s prescription monitoring program, I-STOP. Qualitative data was analyzed using NVIVO 10.0 using thematic coding and content analysis. Results: As part of a larger ongoing study regarding implementation of buprenorphine in different clinical settings, 42 community-based pharmacists were recruited. Pharmacist interviews revealed the following themes: 1) frustration with persistent rates of opioid analgesic prescriptions despite buprenorphine implementation, 2) pharmacists intermediation of the benefits and limitations of new regulatory policies, such as I-STOP and E-Scripts, 3) pharmacists are distinctively situated to make observations about patient and provider behavioral patterns, 4) due to the isolative nature of Staten Island’s healthcare networks, and perceived professional and personal risks associated with opioid users, pharmacists are pushed to rely on their own judgments to assess the legitimacy of opioid prescriptions.

Conclusion: Findings suggest that pharmacists hold a unique perspective of the opioid abuse epidemic as they dispense both buprenorphine and opioid analgesics and observe community-wide patient and prescriber patterns. Pharmacists are underutilized resources in assessing policy and treatment interventions on abuse patterns. Due to pharmacists' critical role in the opioid epidemic, and the information gaps they revealed, communication and collaboration should be enhanced amongst pharmacists and other actors (prescribers, policymakers, law enforcement) by involving pharmacists in clinical decision-making, intervention design, and policy implementation.
Washington State Implementation of a Collaborative Care Model to Treat Opioid Use Disorders in Primary Care and Opioid Treatment Programs
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Background: We describe a Substance Abuse and Mental Health Services Administration (SAMHSA)-funded program to implement the MA-Collaborative Care Model (MA-CCM) in a large urban hospital-based primary care clinic in Seattle/King County and in two rural opioid treatment programs (OTPs) to provide office based treatment for opioid use disorders with buprenorphine. The MA-CCM uses a multi-disciplinary team, at the heart of which is a Nurse Care Manager (NCM). This model was developed in Massachusetts and has not been widely implemented in other states or in OTPs. Objective: Our objective is to improve access to urban and rural treatment for opioid use disorder with buprenorphine using the MA-CCM model in primary care and OTPs in high-need areas of Washington State. Methods: We describe our implementation at three sites (one urban/primary care, two rural/OTP), including unique challenges at each site. We will describe the demographics, substance use patterns and co-morbidities of our population. Preliminary outcomes for the first six months of the program will be summarized including numbers of patients initiated on treatment and retained in the program.

Results: Major challenges were the hiring of staff (NCM and program coordinators); identifying physician prescribers was also difficult at the rural sites. Implementation demonstrated the strength of the model in engaging clinical and administrative staff. Several waivered physicians who had not previously prescribed buprenorphine were newly engaged in providing care. Enrollment began in January 2016, and all sites are approaching target goals. As of April 30th, 2016 we have enrolled 119 persons at all sites total, of which 58% were male, 62% between the ages of 18-35, 83% were white and 46% reported past 30 day use of heroin. To date, 91% of enrolled patients have been retained in treatment. Results will be updated for the presentation.

Conclusions: We successfully implemented the MA-CCM in primary care and OTP sites in Washington State through a SAMHSA-funded program. Once staff was hired, we saw rapid enrollment, mainly of young white adults. Results suggest that the MA-CCM can be used to expand buprenorphine for opioid use disorders in other parts of the country; however, sustainability remains an issue.
Three-Year Retention in Buprenorphine Treatment For Opioid Use Disorder Nationally in the Veterans Health Administration
Ajay Manhapra MD; Ismene Petrakis; Robert Rosenheck – Yale School of Medicine

**Background:** There is a lack of large national level studies on long term retention in buprenorphine treatment for opioid use disorder (OUD) and its correlates. **Methods:** Among veterans with OUD diagnosis who received at least one buprenorphine prescription in fiscal year (FY) 2012 from Veterans Health Affairs facilities nationally, we selected those who received their first buprenorphine prescription after the first 60 days of FY (new starts) as our study population. We calculated the duration of treatment from the first prescription fill date for buprenorphine in FY 2012 to the last fill date in FY 2015, and divided them into four groups on the duration identified: 0-30 days, 31-365 days; 1-3 years; and more that 3 years. We compared these groups on sociodemographic, diagnostic and service use characteristics. Kaplan-Meier curves and Cox proportional hazards models were then used to identify variables independently associated with retention in buprenorphine treatment. **Results:** Of the 3,151 patients newly started on buprenorphine, 61.60% were engaged in treatment for more than a year and 31.83% for more than 3 years. Cox proportion hazards model showed that among the available individual level variables, only black race (Hazards ratio [HR] 1.26; standard error [SE] 0.06; p 0.0003), the Charlson index (reflecting medical illness severity; HR 1.03; SE 0.01; p 0.0132) and emergency room visits during FY 2012 (HR 1.03; SE 0.01; p <0.0001) were independently associated higher odds of discontinuing buprenorphine treatment. Across facilities with 10 or more new buprenorphine patients, an average of 60.99% (SD 12.6%; coefficient of variation = .21) received buprenorphine for more than one year and 30.91% (SD 10.58%; coefficient of variation = .34) for more than 3 years reflecting modest variability across facilities. **Conclusions:** Buprenorphine retention was substantial. Few of the individual level factors correlated with retention, and there was modest variation at the facility level. More research is needed to better understand how to increase treatment retention.
An Assessment of Health Care Needs Among Patients and Providers in Preparation For Implementation of On-Site Primary Care Services in an Opioid Treatment Program

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Background: Individuals with addiction frequently have medical co-morbidities (hepatitis, HIV, chronic pain) and mental health disorders. Research suggests that on-site primary medical care in opioid treatment programs (OTPs) improves addiction related outcomes and reduces healthcare utilization, yet most OTPs currently do not provide on-site primary care. **Objective:** To assess needs for medical and mental health services among patients and providers in a large OTP providing medication-assisted treatment in Washington state in anticipation of implementing on-site primary care. **Methods:** Patients and providers of a large OTP completed surveys which assessed receipt of primary care and mental health care, interest in on-site care, and major health concerns. Summary statistics of patient and provider responses to the survey are provided. Implementation efforts are ongoing: we anticipate presenting data on barriers and facilitators of that process, as well as 3-month outcomes (i.e. numbers of patients seen, medical and mental health diagnoses addressed). **Results:** In total, 262 patients and 28 providers completed surveys. Patients reported a mean duration of treatment at the OTP of 2.73 years. The majority (77.9%) reported that they currently had a primary care provider. However, patients also reported that on average it had been 3.8 months since their last visit, and 50% stated that they would utilize on-site primary care if available. The top 5 health concerns reported by patients were pain, cardiovascular disease, hepatitis C, dental problems and overweight/obesity. Current mental health treatment was reported by 41.2% of clients, but an even larger percentage (46.9%) reported that they would utilize on-site mental health services, if available. Providers estimated that 32.1% of their patients did not currently receive primary care services, and estimated that nearly half (47%) of their clients would benefit from on-site mental health services. **Conclusions:** Our preliminary needs assessment at a large OTP demonstrates that even though many patients currently have a primary care provider, approximately half would be interested in receiving their primary care on-site. Results also identify and pain hepatitis C as major health concerns of the patients: this will be addressed by having providers who can treat hepatitis C, as well as pain.
**Long-Term Patients in Office-Based Opioid Treatment With Buprenorphine**

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**Objectives:** This study examines patient characteristics associated with at least one year of treatment in an Office Based Opioid Treatment (OBOT) program.

**Methods:** This is a retrospective cohort study of adults on buprenorphine in OBOT from 1/2002 to 2/2014. The primary outcome was retention in OBOT for at least one continuous year for any given engagement period. Patients who re-enrolled multiple times in the program contributed repeated observations. Potential predictors included age, race, psychiatric diagnoses, hepatitis C, employment, prior buprenorphine, ever heroin use, current cocaine, benzodiazepine and alcohol use on enrollment. Factors associated with ≥1 year OBOT retention were identified using generalized estimating equation logistic regression models. Reasons for clinic disengagement after ≥1 year (compared to <1 year retention) were examined using bivariate analyses.

**Results:** A majority, 53.7% (664/1237) of patients, were ever retained for a continuous year. In adjusted analyses using 1345 observations, female gender (Adjusted Odds Ratio [AOR] 1.55, 95% CI [1.20, 2.00]), psychiatric diagnosis (AOR 1.75 [1.35, 2.27]) and older age (AOR 1.19 [1.05, 1.34] per 10 year increase) were associated with greater odds of ≥1 year retention. Unemployment (AOR 0.72 [0.56, 0.92]), Hepatitis C (AOR 0.59 [0.45, 0.76]), black race (AOR 0.53 [0.36, 0.78]) and Hispanic race (AOR 0.66 [0.48, 0.92]) (compared to white), were associated with lower odds of ≥1 year retention. Any alcohol (AOR 0.91 [0.65, 1.25]) and cocaine (AOR 0.85 [0.61, 1.19]) use did not appear to be associated with retention. Relapse may be a less common reason for disengagement for the ≥1 year-long engagements (23.3%) compared to the <1 year engagements (40.1%). **Conclusions:** In this collaborative care OBOT program within primary care, a majority of presentations for buprenorphine treatment result in patients being retained in the program for ≥1 year. Those with ≥1 year retention may be less likely to leave due to relapse. Addressing disparities with regard to retention in treatment should focus on patients who are black, Hispanic, unemployed, or have hepatitis C.
Trends in Buprenorphine and Naltrexone Dispensation for Adolescents and Young Adults with Opioid Disorder, 2000-2014
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**Background:** Opioid use disorder (OUD) frequently begins in adolescence and young adulthood. Intervening early with medication-assisted treatment is recommended by major professional organizations. No prior national studies have examined the extent to which adolescents and young adults (collectively, “youth”) with OUD receive pharmacotherapy. **Objective:** To identify trends in receiving buprenorphine and naltrexone for youth with OUD in a large US commercial insurance database (Optum).

**Methods:** We identified 13-25 year-olds who received ≥2 diagnoses of OUD between July 2000 and July 2014. For each claim with an OUD diagnosis, we determined whether youth were dispensed medication in the subsequent 3 months. Medications included: (i) buprenorphine or buprenorphine/naloxone, (ii) oral short-acting naltrexone, and (iii) intramuscular extended-release naltrexone. We limited analyses to months after FDA approval for medications introduced during the study period. We examined time trends in the proportion of youth receiving medications, and identified factors associated with dispensation using multivariable logistic regression. **Results: Among 27,677 youth with OUD, 18,138 (65.6%) were male and 22,222 (87.8%) were non-Hispanic white. Mean age (SD) was 21.2 (2.5) years at first documented diagnosis. Overall, 9,616 (34.7%) were dispensed medication, with 32.5% of all youth receiving buprenorphine or buprenorphine/naloxone; 5.3%, oral short-acting naltrexone; and 0.3%, intramuscular extended-release naltrexone. Dispensation increased over time (Figure). Receipt of medication was less likely among females (adjusted odds ratio [AOR], 0.78; 95% confidence interval [CI], 0.74-0.82), non-Hispanic black youth (AOR, 0.87; 95% CI, 0.76-0.98), Hispanic youth (AOR, 0.80; 95% CI, 0.72-0.90), and adolescents <18 years (AOR, 0.12; 95% CI, 0.10-0.14). **Conclusions:** In this first national study of buprenorphine and naltrexone receipt among youth, dispensation increased over time. Although 1 in 3 youth with OUD received pharmacotherapy, there may exist treatment disparities based on gender, race/ethnicity, and age.
**Figure:** Proportion of youth with an opioid use disorder claim who received medication in the subsequent 3 months.

- **Age (years):**
  - Blue: ≥21
  - Green: 18-20
  - Red: <18

- Key events:
  - Only oral short-acting naltrexone available
  - Buprenorphine and buprenorphine/naloxone FDA approved
  - Intramuscular extended-release naltrexone FDA approved
Outcomes of Onsite Hepatitis C Treatment in an Opioid Treatment Program
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Background: People who use drugs (PWUD) with hepatitis C virus (HCV) infection can be successfully treated for HCV on-site in an opioid treatment program (OTP). This model of care delivery improves access to HCV care for PWUD, ameliorating the HCV burden in this population. The AASLD and IDSA encourage treating all people with HCV infection, as such PWUD should be prioritized due high disease burden and public health implication of viral transmission. Lowering rates of HCV would be furthered by early detection, education, intervention, and maintenance in OTPs. Objective: To describe the demographic and clinical characteristics and treatment outcomes of PWUD engaged in an OTP treated for HCV using Direct Acting Antivirals (DAA). Methods: Fifty patients with opioid use disorder were treated with DAAs from 2014 through 2015 on-site in our OTP. We collected demographic and clinical data including: HCV genotype, medical and psychiatric comorbidities, type of opioid agonist therapy (OAT). DAA and OAT adherence measured by self report, dosing history and pharmacy fills, urine toxicology results during treatment with DAAs, and incarceration rates. HCV treatment outcomes included end of treatment virologic response (EOTR), or negative viral load at completion of therapy, sustained virologic response (SVR), or test of virologic clearance 12 weeks after completion of therapy. Results: 72% of patients were white, 18% Hispanic, and 10% Black. 6% percent of patients were less than 25 years old, 30% were aged 25-35, 30% were aged 36-45, and 34% were above age 45. 80% of the sample had genotype 1, 10% genotype 2, and 10% genotype 3 virus. 74% had active psychiatric comorbidities and 38% had medical comorbidities, including diabetes and hypertension. 72% were on methadone, 18% on buprenorphine, and 10% not on OAT. Adherence was 96% for both DAAs and OAT. 30% had urine toxicology results positive for illicit drugs, and 12% were incarcerated during treatment.86% achieved an RVR, 100% achieved an EOTR, and 98% achieved SVR.

Conclusions: On-site HCV treatment in an OTP with DAAs offers an effective, integrated approach to care for PWUD with HCV infection. Patients treated with DAAs in our sample achieved high rates of SVR consistent non-PWUD populations, in addition to high rates of adherence to DAA and OAT, which may represent reciprocal benefits of integrated care.
Comparison of Post-Cesarean Opioid Analgesic Requirements in Methadone and Buprenorphine Maintained Women
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Background: Opioid agonist treatment (OAT) with either methadone or buprenorphine has long been found beneficial during pregnancy for women who struggle with opioid dependence. With distinct pharmacologic characteristics, however, their optimal use surrounding cesarean sections is a source of debate. Objectives: This study aims to compare peri-operative opioid analgesic requirements for pregnant women with opioid use disorder maintained on OAT, methadone or buprenorphine, and delivered by cesarean section. Methods: We performed a retrospective review of women on methadone or buprenorphine who underwent a cesarean section from 2006-2010. Antepartum OAT was continued unchanged for both the methadone and buprenorphine groups during the peri-operative period. Pre-operative, intraoperative and postoperative opioid requirements (morphine equivalent dose [MED]) were compared between the methadone and buprenorphine groups. Results: There were 140 women on methadone [mean dose 93.7mg, SD 43.2] and 55 women on buprenorphine [mean dose 16.1mg, SD 8.6] in the cohort. Thirty six percent in the buprenorphine group versus 33% in the methadone group [relative risk (RR) 1.1, 95% CI 0.7, 1.7] had elective repeat cesareans. Fewer women in the buprenorphine group had spinal anesthesia (49% vs 70%, RR 0.7, 95% CI 0.5, 0.9). There were no differences in MED intraoperatively. Those in the buprenorphine group required less pre-operative MED [20.4mg (SD 15.8) vs 210.6mg (SD 586.5mg), MD -190.2 (95% CI -425.1, -44.7)] and less MED in the first 24 hours postpartum [246.5mg (SD 615.3) vs 501.2mg (SD 219.8), MD -254.7mg (95% CI -374.6, -134.8)]. There were no differences in postoperative complications between the two groups or length of hospitalization. Conclusions: This study shows that women with opioid use disorder maintained on buprenorphine had lower opioid analgesic requirements post-cesarean section than those on methadone. This has important implications for the management of those with opioid use disorders surrounding surgical procedures.
Internal Medicine Resident Assessment of Opioid Overdose Risk and Willingness To Prescribe Naloxone
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Background: Despite a growing movement encouraging physicians to prescribe naloxone to patients at-risk of overdose (OD), and a high prevalence of eligible patients, few physicians routinely prescribe naloxone, leading to high rates of unmet need.

Objectives: To evaluate how physicians-in-training assess risk of opioid overdose in their patients, concordance between risk assessment and naloxone prescribing, and patient and provider factors influencing naloxone prescription. Methods: To determine barriers to naloxone prescription, we anonymously surveyed 148 internal medicine residents at a single program about attitudes related to addiction and naloxone. We provided 7 clinical vignettes representing patients with a range of demographics, substances used, and co-morbidities. Residents classified patients as being “not likely at all” to overdose or at “low”, “moderate” or “high” likelihood of OD and were asked if they would prescribe naloxone to the patient. Descriptive statistics and logistic regression completed using Stata. Results: Ninety-seven internal medicine residents participated. Neither post-graduate year of training, race, or gender of resident was a significant predictor of willingness to prescribe or having prescribed naloxone in the past (p-value>0.05). Even when residents perceived vignette patients to be at moderate or high risk of OD, they were often unwilling to prescribe naloxone. Discordant prescribing patterns were greatest for elderly patients and those lacking certain traditional OD risk factors like IDU. For example, rates of discordant naloxone prescribing were less for patients who injected drugs (IDU) (7.0%) or misused prescription opioids (16.7%) compared to rates (of 43.8-59.1%) in patients taking opioids as prescribed. Residents were 4.5 times more willing to prescribe naloxone in patients with a current substance use disorder (SUD) compared to those without regardless of whether clinical risk factors increased a patient’s overdose risk (95%CI 2.9,7.1;p=<0.0001). Conclusions: Even when residents identify patients at risk of OD in a vignette, they often fail to prescribe naloxone. Systems interventions may be needed to remind physicians about all patients for whom a naloxone prescription and appropriate counseling are indicated. In order to improve rates of physician-prescribing, educational initiatives for physicians should explore reasons for discordant prescribing patterns and help physicians better link risk assessment to naloxone prescription.
Barriers and Facilitators to HCV Treatment Among HCV Positive, Reproductive-Aged Women With Opioid Use Disorder
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Background: Approximately 30% of pregnant women with opioid use disorder (OUD) are diagnosed with HCV infection for the first time during pregnancy, but less than 2% of women are treated one year after delivery. A lack of HCV treatment among reproductive-aged women has serious long-term health implications. Women infected at a young age face a long duration of infection with an increased risk of liver failure and transplantation and remain at risk for vertical transmission in future pregnancies. Few studies have explored barriers and facilitators to HCV treatment among young, reproductive-aged women with OUD. Objective: To understand barriers and facilitators to HCV treatment among HCV positive, reproductive-aged women with OUD. Methods: We conducted individual, semi-structured, qualitative interviews with 40 HCV positive, pregnant women with OUD. Interviews were audio-recorded and lasted between 30 and 60 minutes. Two investigators qualitatively analyzed and independently coded each transcript using Atlas-Ti software for discussions regarding HCV treatment during pregnancy. A two-coder iterative content approach was used to analyze the data. Results: The majority of patients were Caucasian (97.5%), single (75%) and had Medicaid insurance (82.5%). All used medication-assisted treatment with buprenorphine (57.5%) or methadone (42.5%). A majority were aged 25-29 (42.5%), unemployed (47.5%), and had an associate’s/technical school (32.5%) degree. Four themes emerged from our data related to barriers and facilitators for treatment among young, reproductive-aged women. 1) Patients described concerns over the physical side effects and logistics of HCV treatment and that they would impede their ability to care for their children; 2) Patients often did not “feel” sick; thus, they did not feel any urgency for treatment, especially when weighed against their other priorities, such as family and sobriety. 3) In order to pursue and adhere to treatment, patients expressed the need for additional social support to help with childcare and to provide emotional encouragement during treatment; 4) Motivations for seeking treatment included a desire to be healthy for their children, and to not have to worry about the long term implications of HCV. Conclusions: Multiple barriers and facilitators to HCV treatment exist among reproductive-aged women with HCV infection.
**Availability of Outpatient Methadone Maintenance Therapy**

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**Background:** Opioid use disorders (OUDs) persist as a large and growing public health problem across the United States. Multiple forms of effective treatment exist, but they have remained in short supply and have been underutilized where available. Outpatient methadone maintenance therapy (OPMM) is one such treatment, but it has been less frequently studied in recent years.

**Objective:** To assess the availability of OPMM, we investigated two primary research questions: (1) What facility-level characteristics best predict the provision of OPMM? (2) How much of the variation in OPMM availability is attributable to differences between states?

**Methods:** We conducted secondary analysis of facility-level data from the 2012 National Survey of Substance Abuse Treatment Services, studying all privately- and publicly-run facilities surveyed across the U.S. (n=12,352). The outcome of interest was provision of OPMM. Predictor measures comprised a set of facility characteristics (ownership type, hospital affiliation, payment sources, treatment focus, language, religious affiliation, and size) as well as contextual measures including level of urbanization, state, and region. After generating descriptive univariate and bivariate statistics, we estimated multilevel logistic regression models to investigate our research questions while accounting for clustering of facilities within states.

**Results:** About 9% of facilities reported offering OPMM. All else equal, facilities that were private and for-profit, accepted Medicaid, provided services in languages in addition to English, and operated in the Northeast were among the most likely to offer OPMM. Non-profit facilities not affiliated with hospitals and those in rural areas were among the least likely. About 18% of variation in the probability of offering OPMM could be attributed to differences between states.

**Conclusions:** Very few facilities offered OPMM in 2012, consistent with trends observed over the previous decade. Most facility characteristics examined in this study were strong independent predictors of OPMM availability. Even so, OPMM availability continued to vary widely between states. By examining these differences in OPMM availability between facilities and regions, key catalysts and obstacles that support and thwart further implementation of OUD treatment can be targeted. Persisting state, regional, and urban/rural variation suggest external, contextual dynamics like resource availability and political climate need to be addressed.
Quantifying the Under-Prescribing of Medication-Assisted Treatment for Alcohol Use Disorder
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**Background:** In the United States, alcohol use disorder (AUD) causes substantial morbidity and mortality. Medication-assisted treatment (MAT) is effective in reducing negative consequences of AUD. Despite benefits of MAT, it is vastly underutilized. It is unclear how prescribing MAT for AUD compares to prescribing MAT for other substance use disorders. **Objective:** To quantify how under-prescribed MAT for AUD is, we compared MAT prescriptions for tobacco use disorder (TUD) with MAT prescriptions for AUD. **Methods:** We completed a retrospective cohort study of 9015 patients within a large urban health system from 2010-2014 with both AUD and TUD (via ICD9 codes or problem lists). We extracted medical record data, including: sociodemographic characteristics, Charlson comorbidity scores, outpatient visits, and prescriptions. MAT for AUD included prescriptions for acamprosate, naltrexone or topiramate within one year of AUD diagnosis. MAT for TUD included prescriptions for nicotine replacement therapy, bupropion or varenicline within one year of TUD diagnosis. Using chi-square and t-tests, we compared the proportion of patients receiving MAT prescriptions for AUD vs. TUD. We then examined factors associated with MAT for AUD, using tests described above, then multivariate logistic regression. **Results:** Mean age was 48.3 years; most patents were men (68.1%) and non-Hispanic black (41.1%). Patients were significantly less likely to receive MAT prescriptions for AUD than for TUD (2.1% vs. 12.4%, P<0.001). In adjusted analyses, women (aOR=1.42, 95%CI:1.04-1.91), patients with a higher frequency of outpatient visits (aOR=1.01, 95%CI:1.01-1.01) and patients prescribed MAT for TUD (aOR=1.77, 95%CI:1.24-2.54) were significantly more likely to be prescribed MAT for AUD. Conversely non-Hispanic black patients (aOR=0.42, 95%CI:0.27-0.63), Hispanic patients (aOR = 0.62 95%CI:0.27-0.63) and less severely ill patients (aOR=0.89,95%CI:0.82-0.96) were less likely to be prescribed MAT for AUD. **Conclusions:** Patients were significantly less likely to receive MAT prescriptions for AUD than for TUD. Additionally, those receiving MAT prescriptions for TUD were more likely to receive MAT prescriptions for AUD. Patient level factors alone are unlikely to account for the differences in MAT prescribing and successful TUD treatment adoption strategies should guide investigation into improvement in AUD treatment adoption.
Office-based Opioid Disorder Treatment in HIV Outpatient Care Settings
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Background: Persons Living with HIV (PLWH) have high rates of opioid use, and overdose is a significant and growing cause of preventable morbidity and mortality. HIV outpatient practices are promising settings in which to implement interventions to reduce overdose and treat opioid use disorders, however most HIV clinicians are not fully implementing office-based opioid treatment for their patients. Objective: The goal of this survey was to determine HIV clinics’ practices and capacities in relation to opioid addiction treatment. Methods: Using public information from the Health Resources and Services Administration (HRSA) and the CDC we contacted Ryan White part A and C grantee clinics in states with at least 500 PLWH and in the top half nationally for opioid overdose. Administrators were surveyed regarding their HIV client and provider makeup, office-based opioid treatment (OBOT) practices and electronic health record capabilities. Results: A total of 186 units from 29 states were contacted, 83 units responded and 81 (44%) of the contacted units, from 25 states, were consented and surveyed. A majority (57%) of clinics treat more than 500 PLWH, with 35% treating over 1000. Most clinics had one to six physicians and one to three nurse practitioners treating PLWH. In these HIV clinics, 35% had at least one client who died of an opioid overdose in the past two years, 28% did not know, and only 37% definitively said none. Of units, 64% reported that no clinicians prescribed buprenorphine, 70% had no one prescribe extended release naltrexone, and 69% had no naloxone prescribed. at 20% of surveyed units.
Conclusions: HIV clinics care for patients suffering from opioid addiction, however only a minority employ physicians prescribing OBOT or naloxone to reduce overdose. These findings speak to the need to expand opioid disorder treatment in HIV settings.
Considerations in the Management of IVDU-Related Endocarditis in a patient Enrolled in a Parenteral Opioid Program (PPOP)
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Background:
Injection drug use is an important risk factor for the development of infective endocarditis. Valve surgery is an established course of management for infective endocarditis in some patients, however it is generally only considered for individuals who are abstinent from substance use. Maintenance therapy with injectable opioids is being investigated as a treatment for severe, refractory opioid use disorders. Currently, an approach to valve surgery for patients prescribed parenteral opioids is not well established.

Learning Objectives:
1. Describe the association between injection drug use and infective endocarditis
2. Identify risks and benefits of prescribed parenteral opioid maintenance programs
3. Discuss factors to consider in case management around valve replacement
4. Question ethical approaches to treatment for severe relapsing substance use disorder

Case Presentation:
A 45-year-old female was diagnosed with sepsis and aortic valve endocarditis with severe aortic regurgitation. She reported intravenous cocaine use and treatment in a PPOP. The cardiac surgery team agreed to replace her valve if she remained abstinent from cocaine, and agreed that she could continue to receive parenteral opioids as treatment for her opioid use disorder. One month following discharge, the patient returned with recurrent MRSA bacteremia, reporting ongoing intravenous cocaine use. Echocardiogram revealed prosthetic valve endocarditis. The patient was not felt to be a candidate for repeat cardiac surgery, and passed away in hospital due to heart failure.

Discussion:
The decision around the initial surgery hinged on the conclusion that the PPOP was effective at reducing illicit opioid use and harm, thereby ensuring lower risk of reinfection despite ongoing injections. The decision around surgical intervention on second presentation was more complex, as the patient continued using intravenous cocaine for which there are few evidence-based treatments. That said, when, if ever, is it reasonable to withhold medical treatment for a complication of severe substance use disorder? Is ongoing risk predictable, and is it ethical to limit the number of chances a patient should have to attempt recovery? We must continue to study and integrate evidence-based interventions to address substance use, and to engage in self-reflection and debate when making decisions around substance use disorder and its associated complications.
Reactivity to Uncertain Threat is a Familial Vulnerability Factor For Problematic Alcohol Use
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**Background:** An emerging hypothesis is that individuals who exhibit heightened baseline reactivity to uncertain threat find alcohol especially reinforcing, setting the stage for excessive, continuous use. However, no study to date has directly examined whether current problematic drinkers exhibit heightened reactivity to uncertain threat as would be expected. It has also yet to be investigated if reactivity to uncertain threat is a predisposing vulnerability factor or an acquired factor as a result of chronic alcohol use.

**Objective:** The present study was therefore designed to examine the association between current problematic alcohol use and reactivity to uncertain threat during sobriety in two, independent samples. An additional aim was to explore whether heightened reactivity to uncertain threat was a familial factor – correlated within biological siblings – and observed within healthy adults with a family history of alcohol use disorder.

**Methods:** In Study 1 (n=221) and Study 2 (n=74), adult participants completed the same well-validated threat-of-shock task which separately probes responses to temporally predictable and unpredictable threat. Startle eyeblink potentiation was measured as an index of aversive responding. Problematic alcohol use was defined as number of recent binge episodes in Study 1 and total scores on a self-report measure of hazardous drinking in Study 2. As part of Study 1, two biological, adult sibling dyads completed the laboratory tasks and all available family members completed a clinical diagnostic interview.

**Results:** As hypothesized, results indicated that more alcohol binges, \( b = 16.87, t = 4.44, p < 0.001 \), and greater hazardous drinking scores, \( F(1, 58) = 2.68, p < 0.04 \), were associated with greater startle potentiation to unpredictable, but not predictable, threat. Within Study 1, startle potentiation to uncertain threat was correlated within adult sibling dyads, \( r = 0.31, p < 0.05 \), and predicted the family density of alcohol use disorders above and beyond the participants’ own alcohol use status, \( \beta = 0.19, t = 2.42, p < 0.05 \).

**Conclusions:** The findings are notably consistent with the notion that heightened reactivity to uncertain threat is a familial vulnerability factor for problematic alcohol use. This trait-like behavioral phenotype may be a novel prevention and intervention target for alcohol use disorder.
Patterns of Prescription Opioid Misuse among Rural Community Pharmacy Patients: Implications for Practice and Future Research
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Background: Previous research has demonstrated that opioid medication misuse has a disproportionately negative impact on rural communities in the US. Given the ubiquity of these locations nationally, medication expertise of pharmacists, and ease of access for patients; community pharmacy is well positioned to advance current efforts to address opioid medication misuse by providing necessary coordination of health needs for patients who misuse. Objective: The purpose of the current study was to: (1) provide pilot evidence that rural community pharmacy patients can be effectively screened for misuse within the pharmacy workflow and (2) to compare demographic and behavioral, mental, and physical health characteristics of rural and urban community pharmacy patients. Methods: We administered a 10-15 minute computer tablet-based health screening survey in two rural and two urban community pharmacy settings in Western Pennsylvania. Validated brief screening instruments were employed to ask patients about opioid medication misuse, illicit drug use, unhealthy alcohol consumption, depression, post-traumatic stress disorder (PTSD), general health, and pain. T-tests and chi-square statistical tests were conducted to examine differences between rural and urban respondents. Logistic regression was employed to identify health and demographic risk factors associated with rural and urban opioid medication misuse. Results: Participants (N=333; response rate=71.2%) filling opioid medications in rural community pharmacy settings had significantly ($p<0.05$) poorer overall health, higher pain levels, lower levels of education, and a higher rate of unemployment compared to patients urban in pharmacies. Increased odds for opioid medication misuse was detected among rural patients who screened positive for illicit drug use (AOR: 14.34, 95% CI=2.16-95.38), PTSD (AOR: 5.44, 95% CI=1.52-19.50), and ≤high school education (AOR: 6.68, 95% CI=1.06-42.21). Only illicit drug use was associated with urban misuse (AOR: 4.33, 95% CI=1.12-16.58). Conclusion: Rural community pharmacy appears to be a viable location for screening opioid medication misuse and/or health conditions that increase risk for misuse. Research must seek to confirm the findings herein in order to provide additional support for implementation of routine screening of rural community pharmacy patients for opioid medication misuse.
Psychedelic-Associated Addiction Remission: An Online Survey
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**Background:** Anthropological and laboratory data suggest psychedelics may confer protective benefits against alcohol and other drug addiction. **Objective:** To examine instances in which naturalistic psychedelic use may have led to reduced alcohol or other drug use. **Methods:** An anonymous online survey assessed demographics, drug use history, addiction/withdrawal severity, and data on participants’ psychedelic-occasioned experience and perceived effects on substance use. **Results:** Participants (N=842) were predominantly White (84%), males (78%), in the US (62%), mean age 29 yrs. Participants reported reductions in alcohol (47% of participants), cannabis (23%), opioid (16%), and stimulant (14%) use after taking a psychedelic. 45% (n=382) reported continuous substance use reduction lasting ≥1 yr. since their reference psychedelic experience. LSD (41%) and psilocybin (31%) were most commonly associated with reduced substance use. 93% of participants met DSM 5 criteria for a substance use disorder (SUD) before their reference psychedelic experience, with 70% having a severe SUD. Afterward, 23% met criteria for a SUD, with 6% meeting severe SUD criteria. 394 reported reduced alcohol use from a mode of 5-6 drinks on ≥4 days/week to a mode of 1-2 drinks/month, with 23% (n=91) reporting total alcohol abstinence since their psychedelic use. 197 reported reduced cannabis use from a mode of 1-2 uses on ≥4 days/week to a mode of 1-2 uses/week, with 19% (n=38) reporting total cannabis abstinence since their psychedelic use. 131 reported opioid reduction from a mode of 1-2 uses on ≥4 days/week to a mode of total opioid abstinence (n=76; 58%) since their psychedelic use. 120 reported stimulant reduction from a mode of 1-2 uses on ≥4 days/week to a mode of total stimulant abstinence (n=55; 46%) since their psychedelic use. **Conclusions:** Psychedelic use may sometimes lead to persisting reductions in alcohol and other drug use, consistent with prior research suggesting efficacy of psychedelic-facilitated addiction treatment. Further controlled research in this area is indicated.
Transitions To and From At-Risk Alcohol Use in Adults in the United States
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**Background:** At-risk drinking is common but transitions to and from at-risk and lower risk (including no) use have not been well-studied. **Objective:** To assess those transitions and factors associated with them. **Methods:** We used data from the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) collected in 2001-2002 (time 1) and in 2004-2005 (time 2) from non-institutionalized adults. Separate logistic regression analyses assessed i) transitions from past year at-risk alcohol use (>14 drinks per week or >4 drinks for men; >7 and >3, respectively, for women) at time 1 to lower use at time 2, and ii) transitions from lower alcohol use at time 1 to at-risk use at time 2. Final models retained variables significantly associated with outcomes. **Results:** Of 43093 adults, 34509 (80%) had data at both time-points. Of 9012 (28%) with at-risk use at time 1, 73% had at-risk use and 27% did not, at time 2. Of 25497 (72%) without at-risk use at time 1, 15% had at-risk use and 85% did not, at time 2. Significant predictors of transition to at-risk use at time 2 were younger age (18-20), aOR 23; alcohol disorders, aOR 4; male sex, never married, age at first drink <18, smoking, drug use, excellent health, aORs from 1.3 – 2.0; black race and any adverse experiences, aOR 0.8. Significant predictors of transitions to low-risk (or no) use at time 2 were younger age (aOR 0.15); dependence, aOR 0.5; abuse, aOR 0.4; male sex, never married, age at first drink <18, smoking, drug use, excellent health, aOR 0.7–0.8; black race, aOR 1.7 and alcohol disorder treatment, aOR 1.8. **Conclusions:** Many adults transition to and from at-risk alcohol use. While many factors are associated with transitions to at-risk or low risk use, young age is the strongest predictor of transition to at-risk use and also the strongest negative predictor of transition to low risk use. Findings have implications for prevention, including screening and brief intervention and understanding self-change.
Childhood Adversity as a Predictor of Lifetime Substance Use Patterns by Race/Ethnicity and Gender
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Background: Childhood adversity (CA) has been associated with substance use during adolescence and adulthood. Extant studies examining CA in relation to substance use (SU) classes have focused exclusively on child maltreatment and overlooked differences by race/ethnicity and gender. Objective: Using prospective data from the NLSY97, this study identifies and describes patterns of SU from adolescence to early adulthood and examines how factors of CA influence SU class membership by race/ethnicity and gender. Methods: Using 13 years of prospective data from the National Longitudinal Survey of Youth 1997 (N = 8646), latent class growth modeling and step3 regression procedures were used to identify type and prevalence of lifetime SU patterns and examine the relationships between CA variables and SU class membership. SU included marijuana use, binge drinking, and smoking. CA included victimization (e.g. physical/sexual assault, robbery, arson), death of a close relative, parental divorce, household member incarceration, household member unemployment, and/or homelessness prior to the age of 18. All analyses were conducted using LatentGold and were stratified by race/ethnicity and gender. Results: Initial results for Black and White men reveal differences in lifetime SU classes and influence of CA on class membership. For Black males, four latent classes emerged: non-users (56%), smokers (20%), binge drinkers (14%), and polysubstance users (10%). Compared to those with no CA, those reporting victimization had higher probability of being in the binge drinkers class (20% vs. 14%) and almost twice the probability of being in the polysubstance class (14% vs 7%). For White males, different patterns of lifetime SU emerged: non-users (42%), binge drinkers (18%), smokers and binge drinkers (21%), and binge drinkers and marijuana users (19%). For White males, those reporting victimization had higher probability of being in the smokers and binge drinkers class (28% vs. 19%) compared to those with no CA; those reporting all types of adversity except parental divorce had four times greater probability of being in the smokers and binge drinkers class (74% vs 19%). Conclusion: Findings highlight risk factors for typologies of SU behavior and can inform targeted SU interventions in service settings that serve youth coping with adversity.
Binge Drinking and Mental Health Among Racial and Ethnic Minorities in the United States
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Background: Research tends to show that racial/ethnic minorities face greater health burden and disparities. Despite this general finding, research has not typically examined if factors related to binge drinking and mental health are similar, especially across racial/ethnic groups. Objective: The present study examined whether racial discrimination influences involvement in binge drinking and mental health of racial/ethnic minorities, and whether sociocultural resources, particularly ethnic identity and social support, function as protective factors. Furthermore, the study investigated how the impact of racial discrimination and ethnic identity on health vary across racial/ethnic minority groups. Methods: The present study conducted secondary data analysis of 2013 National Epidemiologic Survey on Alcohol and Related Condition-III. The analytic sample included 3 racial/ethnic minority groups, including African Americans (n=5,106), Asian Americans (n=1,092), Latino Americans (n=4,873) who drank alcohol at least once in the past 12 months. Dependent variables were frequency of binge drinking in the past 12 months and mental health impairment in the past 4 weeks. Independent variables included racial discrimination in the past 12 months, ethnic identity, and social support. Interaction terms were added to examine if race/ethnicity moderate the links between independent and dependent variables. A single group path analysis was conducted with LISREL 9.2. Results: The results showed that more exposure to racial discrimination was associated with increases in binge drinking (γ=.05, p<.001) and mental health impairment (γ=.06, p<.001) for all racial/ethnic minority groups. Stronger ethnic identity (γ=-.03, p<.001) and social support (γ=-.15, p<.001) were associated with lower mental health impairment. More frequent binge drinking was associated with severer mental health impairment (β=.10, p<.001). Racial discrimination had stronger positive association with both binge drinking (γ=.05, p<.001) and mental health problems (γ=.06, p<.001) for Latinos compared to other groups. Ethnic identity had a stronger negative association with mental health impairment for Latinos (γ=-.02, p<.001). Conclusion: Racial discrimination has negative influence on both binge drinking and mental health problems for all racial/ethnic minority groups, while ethnic identity and social support mitigate the health risks. The strong influence of racial discrimination and ethnic identity on health among Latino Americans is worth examining in future studies.
**Opioid Overdose Prevention Program for Shelter Residents: Students as Educators**
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**Background:** The rate of overdose deaths from prescription opioid analgesics in the US increased threefold for men between 1999 and 2010. Since the New York City Department of Homeless Services’ first annual report in 2006, overdose has been the leading external cause of death among homeless men. The 2013 report found that drug overdose accounted for 33% of all external causes of death and was second only to heart disease in all-cause mortality. **Objectives:** Our primary objective was to educate and empower shelter residents, to respond to, and prevent deaths from opioid overdoses. Secondarily we aimed to reduce opioid overdose deaths in the NYC shelter system. Not quantifiable for our program, a chief motivation for the program was to introduce medical students to shelter residents. **Methods:** We introduced an Opioid Overdose Prevention Program (OOPP) with naloxone at the only intake shelter for single adult Men in NYC. The OOPP conducted semimonthly trainings during dinner hours, using a standard model established by the NYC Department of Health and Mental Hygiene. Trainings consisted of two student trainers, with up to six shelter residents, which lasted for 30 minutes. To receive naloxone, residents demonstrated competency to responsibly administer naloxone and to safely administer naloxone. Prior to the establishment of standing order, an over seeing physician was always present. **Results:** From January 2013 through May 2016, 18 medical students participated as trainers. Over this time period, over 150 shelter residents were successfully trained and received naloxone. Of these 150 trained residents, there were three confirmed reversals at the shelter, all of which resulted in a successful resuscitations. **Conclusions:** Creating an OOPP for a high risk population is effective and educational for shelter residents as demonstrated by the three document and verified reversals. With approximately one verified rescue for every fifty kits distributed, in our small program, we observed a high rate of verified reversals per distributed kit. With our small sample size, these results are not generalizable, but they demonstrate the feasibility of training and empowering shelter residents to prevent opioid overdose deaths.
Addiction In Pictures: Homeless Perspectives of Addition Through Photo-Elicitation

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**Background:** Homeless persons often have addictions and associated comorbidities that complicate access to longitudinal healthcare services, like primary care environments. Perspectives of homeless persons toward substance use (SU), addiction, and addiction treatment are relatively unknown. A better understanding of perceptions of homeless patients enrolled in primary care environments may improve addiction treatment engagement in these settings.

**Objective:** We sought to understand the perspectives on SU, addiction, and addiction treatment among homeless persons engaged in primary care services through photo-elicitation.

**Methods:** Patients were recruited from primary care medical home clinics between September 2014 and March 2015. Participants were given digital cameras and prompts for taking photographs about their health and health care. Two photo-elicitation interviews were conducted on topics including: 1) factors contributing to their physical and mental health, health-maintenance decisions, and health-related behaviors; and 2) quality of care and perceived barriers and facilitators to accessing healthcare services. As part of this secondary analysis, transcripts from the audio-recorded interviews were analyzed to identify instances and context of addiction in participants’ health narratives.

**Results:** Among 20 participants, SU/addiction themes were discussed in more than half (69%; 15 subjects) of the 36 photo-elicitation interviews. Discussions of SU centered on the negative impacts of on health and wellness (e.g., HIV, poor nutrition) as well as the positive effects of sobriety (e.g., quality of life, longevity). Recovery talk included recollections of a pivotal time in their lives which influenced their decision to “get back on the right track” and abstain, such as hospitalization or gaining access to addiction treatment, but emphasized that it is “up to you” to decide to undertake the difficult task to get and remain “clean and sober”. Treatment talk noted the importance of building trust, as well as open and honest communication with caring, non-judgmental healthcare providers and family/friends who provide encouragement and offer the necessary ongoing assistance (e.g., housing, treatment) for patients to maintain sobriety.

**Conclusions:** Homeless persons with SU/addictions have intimate perspectives on SU and addiction that can contribute to addiction engagement in primary care settings. Their perspectives offer meaningful insights to improve patient-centered care in primary care environments.
**Housing First Client Selection in the Real World: Are Most Vulnerable Selected**
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**Background:** Housing First (HF) offers permanent supportive housing for homeless persons, including persons with addiction or psychiatric illness. HF emphasizes prioritizing the most vulnerable clients for rapid placement into housing, focusing on those experiencing multiple medical and social vulnerabilities, chronic homelessness and costly service utilization. In 2012 the US Department of Veterans Affairs (VA) declared a policy of HF for its HUD-VASH housing program. There has been no study of whether real-world HF programs successfully prioritize clients for housing according to vulnerability. **Objectives:** We reviewed VA data to assess whether VA’s allocation of HUD-VASH housing vouchers shifted toward the “most vulnerable” from 2011-2012 (pre-HF) to 2013-14 (post-HF). **Methods:** We reviewed data for 15,675 Veterans assessed for homeless services across 8 VA Medical Centers from 2011 to 2014. We stratified clients by HUD-VASH entry, comparing entrants to non-entrants on vulnerability characteristics in VA medical and homeless intake records. We modeled HUD-VASH entry with two logistic regression models, one for 2011-12 (pre-HF) and one for 2013-14 (post-HF). In a combined model we tested the interaction of vulnerability x time to see if any characteristics gained importance across eras. **Results:** Chronic homelessness, female gender, and custody of children were positively associated with HUD-VASH entry, with chronic homelessness gaining in importance over time (interaction p<0.001). Elevated hospital use was inversely associated with HUD-VASH entry. Alcohol and drug use disorder had either no associations or weak associations with housing entry in either era (Table 1). **Conclusions:** A shift toward greater prioritization of chronically homeless persons was observed but we found little evidence to show greater prioritization of persons with other vulnerabilities, including addiction. Non-prioritization of clients with addiction may mitigate some program risk but also falls short of the HF aspiration of prioritizing the most vulnerable for permanent supportive housing.
Can We Support Recovery in Housing First? Findings from VA’S Permanent Supportive Housing Program
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Background: Housing First (HF) is an evidence-based intervention that offers permanent supportive housing for highly-vulnerable homeless individuals. It includes commitments to supportive services and a modern recovery philosophy. Aligned with harm reduction, HF requires removal of traditional preconditions to housing entry, such as sobriety. Some suggest that HF may not be suitable for persons with addiction. To date, there has been little research examining whether HF domains relevant to addiction recovery (sufficient supportive services, recovery philosophy, and harm reduction) can be implemented with fidelity. Objectives: From 2011 to 2014, the US Department of Veterans Affairs (VA) transitioned to a HF approach in its supportive housing program for >75,000 persons. We used this naturalistic window to assess HF fidelity when adopted on a large scale.

Methods: We operationalized HF into 20 criteria grouped into 5 domains. We assessed 8 VA Medical Centers twice (one year apart) through in-person semistructured interviews with staff and leadership (n=175 interviews). We scored each HF criterion using a 1-4 (low-high fidelity) scale. The no preconditions criterion was considered a proxy for harm reduction. Sufficiency of supportive services were operationalized with 6 service adequacy criteria. Modern recovery philosophy was operationalized through assessing use of motivational interviewing and the role of client choice in determining their services and goals. Results: There were two HF domains (no preconditions, rapidly offering permanent housing) where high fidelity was readily attained. Two HF domains (sufficient supportive services, a modern recovery philosophy) had distinctly lower fidelity. Interviews suggested that operational issues such as shortfalls in staffing and training likely hindered fidelity in these domains. Fidelity was inconsistent across sites for the domain centered on prioritizing the most vulnerable clients. Conclusions: This real-world, national HF program reflects challenges under-reported from research demonstration studies. We observed lower levels of progress in assuring sufficient supportive services or a modern recovery philosophy. However, the harm reduction concept of removing preconditions to housing placement was fully embraced. Under real-world conditions, large-scale HF implementation will require additional investment in client services and staff training to assure that results agree with those found in research.
Utilization of a Sobering Center for Acute Alcohol Intoxication
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Background: This study investigates the population utilizing the San Francisco Sobering Center, providing short-term (4-12 hour) monitoring and nursing care for adults with acute alcohol intoxication. Sobering centers have emerged as an alternative care site to emergency department and jail for those with acute intoxication. Objective: This cross-sectional study provides an in-depth analysis of demographics, health status, and service utilization by a sobering center population. We distinguish characteristics of low (1-2 visits) versus higher (3+ visits) users.

Methods: This analysis included users of the Sobering Center from July 2014 to June 2015 (n=1,271). Continuous variables included age, length of homelessness, healthcare service utilization, and related costs. Categorical included ethnicity, housing status, homeless history, language, and gender. Lifetime health diagnoses were dichotomized as Yes/No utilizing the Elixhauser Comorbidity Index. We analyzed the data via analysis of variance, chi-square, and t-tests. Results: In the year of analysis, there were 1,271 unduplicated clients totaling 3,452 encounters. The population was primarily male (82%) and ethnically diverse. Unduplicated clients were distributed into two groups: low users (n=1013, 1-2 visits) and high users (n=258, 3+ visits). As compared to low users, high users were older (49.6 vs. 43.1 years, p=0.000), had a 100% a history of homelessness (vs. 72%, p=0.000); was more likely to be homeless during the last year (99 vs. 65%, p=0.000); and spent more time homelessness (9.1 vs. 5.7 years; p=0.000). High users had significantly higher rates of hypertension (41 vs. 19%), depression (64 vs. 33%), psychoses (46 vs. 21%), and drug abuse (63 vs. 33%) as compared to low users (p=0.000). In addition to sobering visits, utilization of ambulance (p=0.016) and ED (p=0.000) was significantly greater for the high users compared to low users.

Conclusions: Our analysis provides the first comprehensive look at the characteristics of the population using a sobering center. Our findings indicate the overall population, though heterogeneous, has substantial rates of homelessness, co-occurring diagnoses, and rates of system-wide utilization. High users as compared to low users had significantly greater prevalence of chronic disorders and homelessness. Sobering programs may be an important hub in which to connect with a medically and socially complex population.
“Not a Problem in My Community”: Imams’ Perspectives on Addressing Substance Use
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Background: Mainstream Islam prohibits alcohol and other drugs, yet substance use is prevalent in Muslim-American communities. In separate surveys, almost 50% of Muslim-American undergraduate students reported drinking alcohol, and 14% of Muslim-Americans reported binge drinking. Most American faith-based organizations addressing substance use such as Twelve-step programs are rooted in Christian traditions. Previous studies have not examined how imams, leaders of mosques, address substance use in their communities. Objectives: This study aimed to 1) explore imams’ perspectives on how substance use affects their communities and 2) describe their perspectives toward Muslim-Americans dealing with these issues. Methods: Imams in the Bronx and upper Manhattan regions of New York City were recruited by random sampling of mosques followed by snowball sampling until thematic saturation was reached. Ten semi-structured interviews were conducted by a Muslim-American investigator in 2015. Using a modified Grounded Theory approach and Dedoose software, an initial coding scheme was created based on the first three interviews. Codes were iteratively refined using constant comparison methods to identify prominent themes. Results: Of ten participants, all were male, five were over age 50, and nine were born outside the United States. Substance use was not perceived to be a prevalent issue affecting individuals that attend the mosque regularly; rather, it was viewed as affecting non-mosque going Muslims and non-Muslims. However, a less prominent theme reflected an opposing view: substance use is a highly prevalent and stigmatized issue among Muslims. Imams associated substance use with shame and withdrawal from the mosque community. Finally, imams emphasized spiritual consequences of drug use; for example, individuals with addictions to substances experience a distance from God, whereas overcoming these addictions can restore closeness to God. Conclusions: Imams held divergent views about the prevalence of substance use among Muslim-Americans. Prominently, they believed substance use is external to the Muslim community. This view may lead to missed opportunities for Muslim faith-based organizations to address substance use within and beyond mosque-going communities. Further research is necessary to understand barriers and facilitators and to develop interventions for faith-based organizations to help individuals with substance use disorders.
The Prevalence of Provider Use of Stigmatizing Language in the Electronic Medical Record of Patients With Substance Use Disorders in an Institutional Culture of Patient-Centered Care
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Background: Substance use disorders (SUD) remain among the most stigmatized diagnoses within mental health today, with evidence that perceived stigma is associated with delayed treatment seeking as well as increased use of costly inpatient services. As part of the growing culture of patient-centered care, the Department of Veterans Affairs (VA) now provides patients nationwide with access to their electronic medical records (EMRs). Detecting prevalence of provider use of stigmatizing language in the EMR is a critical step in establishing the need for interventions to ensure successful patient-centered partnerships with providers. Objective: To conduct a quality improvement (QI) project with the goal of ascertaining if a clinician or systems-level intervention is needed to facilitate higher quality patient-centered care for the treatment of patients with SUDs.

Methods: A randomly selected sub-set of EMRs (5%, n=20) from a VA facility in the Northeastern United States were reviewed for the presence of potentially stigmatizing terms (i.e., “alcoholic”, “addict”, “clean”, and “dirty”) using a system-based free-text search in the clinical notes of patients who completed a SUD Intensive Outpatient treatment program. A single trained reviewer performed data extraction across individual EMR clinical notes. Notes reviewed included those by different types of providers (e.g., physicians, nurse practitioners, psychologists).

Results: Veterans were 95% male. One hundred percent had at least one active SUD diagnosis, with 20% having two diagnoses and 10% three (concurrent) SUD diagnoses. The majority (70%) had an alcohol use disorder, a little over a third (35%) had an opioid use disorder and less than 20% had a cocaine, cannabis, or stimulant use disorder. The proportion of records that used the term “alcoholic” or “addict” was high (75%, CI[56-94], and 60%, CI[39-82], respectively). The vast majority of those sampled (90%) used the term “clean” (80%, CI[63-98]) or “dirty” (10%, CI[0-23]) primarily when describing negative or positive urine toxicology screenings.

Conclusions: Use of potentially stigmatizing terminology by providers was commonplace for patients completing specialized SUD treatment. Given the high prevalence of provider language that is non-patient-centered, non-diagnostic, and potentially stigmatizing, further assessments and interventions may be warranted.
A Case of Cutaneous Necrosis: The Effect of Cultural Health Capital on the Negotiation of Stigma Among Nurses in an Inpatient Medical Unit
Sarah Kate Dobbins MPH, RN - University of California at San Francisco School of Nursing

Background:
“Janie” was a 46 year old African American female, admitted for debridement of cutaneous necrosis on her buttocks, legs, and feet, attributed to Levamisole-adulterated crack cocaine.

Learning objectives:
In this presentation, learners will understand how Janet Shim’s theory of Cultural Health Capital played out in the nursing care of “Janie.” Learner will be able to explain how differential care and stigma, which involves labeling and stereotyping, unfolded in an inpatient hospital unit where unequal power dynamics existed.

Case Presentation:
Janie had untreated bi-polar disorder, lost her housing after being admitted to the hospital, and has been smoking crack regularly for over 20 years. Crack is her drug of choice, and she reiterates that she only smokes it and does not inject it. Janie quickly alternates between being angry, hostile, and uncooperative and being pleasant, overly-familiar, and accommodating. She often lays in bed naked, has labile affect, but is logical, coherent, and able to make her own decisions regarding her care. Her wounds extend from her buttocks and labia to her feet and require daily wet-to-dry dressing changes. She is prescribed Tylenol every 6 hours for pain and morphine only before her dressing changes every other day. Janie reports high levels of pain at all hours, is bed-fast, and must use a bedpan.

Discussion:
Janet Shim has outlined a theory of Cultural Health Capital (CHC) for use in healthcare settings. This theory illustrates how broad social inequalities operate in patient-provider interactions. This presentation will explore the exchange of cultural health capital between the nurses and Janie, and show how stigma was negotiated in the context of the inpatient unit. Janie’s capital -- her knowledge, skills, resources, and behaviors -- was not valued by her providers, and the communication and exchange process culminated in differential treatment. Despite having no history of prescription drug misuse, Janie is labeled a “pain seeker” and she was often left for several hours unmedicated for pain. The content and tone of each healthcare encounter with her nurse caregivers reflected social inequities and stigma.
Operationalizing Youth Recovery
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Background: Treatment focus for substance use disorder (SUD) has shifted towards integrated systems of recovery-oriented services that build resilience and support affected individuals to achieve sustained recovery. A key factor in recovery support is helping individuals build “recovery capital,” the internal and external resources that an individual can draw upon to establish and sustain recovery. Little is known about recovery-oriented models for youth, and the processes by which youth achieve long-term recovery have not been operationalized. The Alternative Peer Group (APG) is a recovery support model that integrates recovering peers and pro-social recreational activities into comprehensive treatment services for youth. APGs promote youth’s engagement in treatment and accumulation of recovery capital. Even with a 40 year history in Houston, APGs have never been the subject of a clinical trial. Objective: To report results of two completed phases of a multi-phasic mixed-methodologies research project that aims to employ recovery-oriented research methods informed by young people in recovery (YPR) that will capture the processes and outcomes of participation in an APG. Methods: Phase I: The PI conducted ethnographic work from 2011 to 2013 with participants and alumni of one APG. Employing thematic content analysis, a model of the youth recovery process emerged from the data. From that model, instruments were selected and study protocols developed for longitudinally measuring variables that capture the processes and outcomes of recovery for participants of an APG. Phase II: In 2015, YPR (ages 18 to 35) participated in a focus group to provide feedback on the model and proposed research methods. Results: Youth recovery is a protracted iterative process that requires relationships with recovery role models. Variables to measure include global outcomes (improvement in symptoms and functioning), recovery processes (change over time in motivation, readiness, and drug avoidance self-efficacy), and accumulation of recovery capital (peer recovery support, 12 step involvement, life satisfaction, and spiritual well-being). Conclusions: A study to pilot these methods with participants of one APG will be launched summer 2016. These methods provide the foundation for a program of recovery-oriented research to test the effectiveness of APGs and other recovery support models for youth.
Background: Marijuana is the most commonly used illicit drug during pregnancy in the United States. Studies suggest that rates of perinatal marijuana use may be as high as 29% in certain pregnant populations. Little is understood about perinatal marijuana use. Objectives: To describe reasons and patterns of use from the perspectives of women who used marijuana during pregnancy. Methods: We conducted three semi-structured interviews—one interview during each trimester—with pregnant women who admitted using marijuana during their pregnancy at three study visits. During the interviews, we asked women to describe marijuana use before and during pregnancy and obtained urine for testing.

Results: Twenty six women participated in these interviews. First marijuana use occurred around ages 12 or 13 years during social situations. Women described living in communities where marijuana use was common. Most women reported smoking daily before pregnancy and during the first trimester. Most smoked blunts with only a few smoking joints. Amounts of use ranged from “just taking 1-2 hits” of a joint or blunt to smoking 7 blunts a day. At their second trimester visit, 10 participants (40%) reported that they had quit using marijuana with 9 urine tests confirming this report. Some described themselves as having quit if they only took “a hit once in a while” or no longer used their own money to purchase the marijuana. Those who continued to use described reducing use from daily to weekly and from smoking full joints or blunts to “taking a few hits (ranging from 1-7). At the third trimester visit, 11 (44%) reported that they had quit use with confirmatory urine tests. Regarding plans for post-pregnancy use, 1/3 indicated they were not going to use, 1/3 indicated definite plans for use and 1/3 expressed uncertainty.

Conclusion: Women who used marijuana during pregnancy described a habit of chronic use that began prior to pregnancy but decreased in amount during pregnancy. Almost half stopped use by their third trimester and 1/3 described plans to remain quit after delivery.

Practice Implications: Understanding the patterns and trajectory of marijuana use during pregnancy will inform counseling interventions and supportive resources.
Peripartum HCV Treatment Willingness Among HCV Positive, Pregnant Women With Opioid Use Disorder

Penelope Morrison PhD, MPH; Mary Turocy BS; Megan Hamm PhD; Susan L. Zickmund, PhD; Eleanor B. Schwarz MD, MS; Elizabeth E. Krans MD, MSc – University of Pittsburgh

Background: Approximately 60% of pregnant women with opioid use disorder (OUD) are Hepatitis C virus (HCV) positive. New HCV treatment regimens are significantly more effective, have fewer side effects than interferon and ribavirin-based regimens and are designated Pregnancy Category “B” (safe to use in pregnancy). While safer drugs raise the possibility of treatment during pregnancy to prevent neonatal transmission, the willingness of pregnant women to pursue HCV treatment during pregnancy or the postpartum period remains unknown.

Objective: To understand beliefs, feelings and concerns regarding peripartum HCV treatment among HCV positive, pregnant women with OUD. Methods: We conducted semi-structured, qualitative interviews with 40 HCV positive, pregnant women with OUD. Interviews were audio-recorded and lasted between 30 and 60 minutes. Two investigators qualitatively analyzed and independently coded each transcript using Atlas-Ti software for discussions regarding HCV treatment during pregnancy. A two-coder iterative content approach was used to analyze the data.

Results: The majority of participants were Caucasian (97.5%), single (75%) and had Medicaid insurance (82.5%). All used medication-assisted treatment with buprenorphine (57.5%) or methadone (42.5%). A majority were aged 25 -29 (42.5%), unemployed (47.5%), and had an associate’s/technical school (32.5%) degree. Four themes emerged: 1) distrust of treatment safety during pregnancy - patients believed that taking HCV medications during pregnancy was not safe and, in general, wanted to avoid medications while pregnant; 2) concerns regarding HCV treatment side effects – patients expressed concerns over the adverse impact of treatment side effects on themselves and their babies; 3) ambivalence regarding neonatal transmission - patients struggled to weigh the potential risks associated with HCV treatment against the possible benefits of a decreased risk of neonatal transmission; 4) concerns related to breastfeeding – patients who intended to breastfeed expressed concern about the risk of infant drug exposure through breastmilk if they were treated in the postpartum period.

Conclusions: HCV positive, pregnant women with OUD identified several concerns related peripartum HCV treatment. Intensive education and counseling regarding the risks and benefits of HCV treatment will be necessary prior to offering peripartum treatment and should be incorporated into peripartum HCV treatment protocols.
Post-Opioid Overdose Follow-up Programs by Police and Fire Departments in Massachusetts
Lyndsay Wilkins; Scott W. Formica MA; Sarah Ruiz MSW; Brittni Reilly MSW; Robert Apsler PhD; Alexander Y. Walley MD, MSc - Boston University School of Medicine

**Background:** Police and fire department staff are often the first responders to an overdose and, thus, know where and among who overdoses occur. In addition to being equipped with naloxone, many departments are looking for ways to respond to the opioid overdose epidemic. Public safety (police/fire) and public health (harm reduction and treatment) partnerships have emerged to provide overdose prevention services and referrals following an overdose event. **Objective:** To identify Massachusetts first responder programs that are early adopters of post-overdose follow-up programs and to describe their key characteristics. **Methods:** The MA Department of Public Health distributed a survey to all police and fire chiefs to determine whether first responder agencies conducted outreach to people who had overdosed and how communities collaborate to provide these services. Qualitative interviews were conducted among representatives from departments with select programs. Researchers used a semi-structured interview guide, recorded the interviews, and reviewed the audio recordings; using a matrix, the interviews were coded according to common themes and programmatic elements. The results were refined iteratively by the research team based on ongoing review of the matrix. **Results:** Of 351 towns, 181 police and fire departments responded from 110 towns (31%) to the survey; 55 departments reported that they had programs directed at people who had overdosed. Representatives from 22 departments were interviewed. Qualitative analysis defined four program types: 1) Home Visit – first responder and collaborator go to the home of the overdose victim and offer support and resources, 2) Prescriptive Treatment – first responder goes to the home and offers entry to treatment, including court mandated treatment 3) Clinician-based Outreach – clinician embedded in the department outreaches to OD victim with limited participation of public safety, and 4) Drop-In– stations offer access to treatment without threat of arrest for people voluntarily presenting. **Conclusion:** First Responders are reacting to the opioid crisis by innovating outreach programs to people who have overdosed. The structures of these programs are diverse and range from active to passive in engagement, and from harm reduction to mandated treatment. Future studies should further characterize program models and examine outcomes.
First Year Medical Student Opioid Overdose Reversal Training, an Adjunct to Basic Life Support, a Second Year Analysis
Noah Gordon Berland MS; Aaron Fox MD, MS; Babak Tofighi MD, MSc; Kathleen Hanley MD

**Background:** Drug overdose deaths are the leading cause of accidental deaths ages 25-64. More than 38% of drug overdose deaths are attributed to prescription opioids. Opioid overdose prevention programs have utilized naloxone training to reduce accidental opioid overdose deaths. In year one we had a 63% response rate and saw large statistically significant improvements in knowledge and preparedness, but not attitudes. **Objectives:** To integrate opioid overdose reversal training (OORT) using naloxone into basic life support training (BLS) to improve participants’ knowledge of opioid overdoses, self-reported preparedness to reverse opioid overdoses, and attitudes towards patient’s with substance use disorders. **Methods:** This is the second year of OORT as a part of BLS training for first year medical students. Pre- and post-test surveys were used to assess knowledge (11 items), attitudes (11 items) and preparedness (12 items). Surveying was performed electronically and on paper, at the time of training. Changes in pre-test and post-test results were assessed with paired t-tests. All analyses were conducted in R, the statistical computing language, and only included students with completed pre- and post-tests. **Results:** 127 students participated in the training, 112 completed pre and post-tests for a response rate of 88.2%. The mean pre-training knowledge score was 3.6 (sd = 1.64), the mean post-training score was 9.4 (sd = 1.5), this was statistically significant (p<0.01) and large (Cohen’s d = 2.8). The mean pre-training preparedness score was 30.1 (sd = 6.5), the mean post-training score was 44.3 (sd = 5.2), this was statistically significant (p<0.01) and large (Cohen’s d = 2.7). The mean pre-training attitudes score was 47.4 (sd = 6.8), the post-training attitudes score was 47.8 (sd = 7.2), this was not statistically significant (p<0.1) and was small (Cohen’s d = 0.1). **Conclusions:** These results are consistent with our first year of training. The year to year reproducibility supports their generalizability. The training continues to be associated with large statistically significant increases in knowledge and preparedness and high yield. Based on these results we recommend inclusion of OORT in BLS training at other institutions to mitigate rising opioid overdose deaths.
Expanding Access to Nalaxone for Family Members: The Massachusetts Experience
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Background: Overdose education and naloxone distribution (OEND) is a recommended strategy to address the rise of opioid-related overdose deaths in the United States. Despite evidence that families affected by opioid use want OEND, they are often not specifically included in OEND programs. In Massachusetts, the Department of Public Health (MDPH) Overdose Education and Naloxone Distribution Program provides OEND to family members. Objectives: Using MDPH data, the aims of this study are to 1) describe characteristics of family members who receive naloxone 2) identify where family members receive naloxone and 3) describe characteristics of rescues by family members. Design and Methods: We conducted a retrospective review of program data collected using enrollment and refill forms between 2008-2015. We used descriptive statistics to describe characteristics of family members including demographics, enrollment location, history of witnessed overdoses and characteristics of rescues attempts.

Results: Family members of people who use substances were 27% (10,838/40,817) of total program enrollees. Family members who reported substance use were, on average, 35.5 years old, 50.5% female, 82.9% white, had witnessed an average of 4.3 overdoses and obtained OEND most frequently at drop-in centers. Family member non-users were, on average, 49.2 years old, 73.8% female, 91.7% white, had witnessed an average of 1.5 overdoses and obtained OEND most frequently at community meetings. Family members were responsible for 20% (n=860/4340) of the total rescue attempts. Conclusions: When available in the community, family members access and obtain OEND in diverse settings. Family members are active responders to the overdose epidemic by attempting rescues of both family members and non-family members. Understanding that family connections to people at risk for overdose are common should inform the future expansion and enhancement of OEND strategies. Intervention strategies for family members should be included in efforts to expand overdose education and naloxone.
**Polypharmacy and Risk of Non-Fatal Overdose for Patients with HIV Infection and Substance Dependence**

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**Objective:** To determine if number and type of medication (i.e. sedating) are associated with nonfatal overdose (OD) among patients with HIV infection and substance dependence.

**Methods:** For each Boston ARCH participant, the overall number of medications and number of sedating medications were identified by electronic medical review. Outcomes were i) lifetime and ii) past-year nonfatal OD requiring medical attention. We used logistic regression to examine the association between the total number of medications 1) overall 2) sedating and 3) non-sedating each outcome; receiver operating curve analyses determined the optimal discriminating number of medications for identifying outcomes (Youden index). Adjusted models included one of the following covariates in each model: age, sex, race/ethnicity, Charlson Comorbidity Index Score, physical functioning, depressive symptoms, recent (past 30-day) heavy drinking (NIAAA criteria), cocaine, illicit opioid and/or illicit sedative use. Number of sedating medications was included in the model examining non-sedating medications as the main predictor. **Results:** Among 250 participants, 80% were prescribed >1 sedating medications; 51% exceeded NIAAA drinking limits; 23% and 9% had past-month illicit opioid and sedative use, respectively; 64% reported lifetime non-fatal OD and 7% past-year non-fatal OD. The median number (interquartile range) of medications was 10 (7,14) overall and 2 (1,3) sedating. The odds of lifetime non-fatal OD were significantly higher with each medication overall (odds ratio [OR] 1.06, 95% Confidence Interval [CI] 1.01,1.11) and each sedating medication (OR 1.33, 95%CI= 1.15,1.54, p<0.001) but not with each non-sedating medication. Optimal cutoffs for predicting lifetime non-fatal OD were: 8 + overall and 3+ sedating medications. Although not statistically significant, the odds of past-year non-fatal OD were higher with each medication overall and each sedating medication. Results of adjusted models were not different in magnitude, direction, or statistical significance. **Conclusion :** Number of current medications, especially sedating medications, was associated with lifetime non-fatal OD. Association with past-year non-fatal OD was not detected possibly due to a low number of past-year non-fatal ODs. Sedating medications were prescribed to the majority of patients. Polypharmacy among HIV patients with substance dependence warrants further research to determine whether reducing sedating medications lowers overdose risk.
The Trailblazers—Leadership and Staff Perspectives on VA Opioid Overdose Education and Naloxone Distribution (OEND) Among Early Adopters
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Objective: Stetler et al.’s (2011) guide for applying a revised version of the Promoting Action on Research Implementation in Health Services (PARIHS) framework in implementation trials was used to identify barriers and facilitators of OEND implementation. The PARIHS framework identifies three key factors that influence successful implementation of evidence-based practices: Evidence, Context, and Facilitation. Methods: Semi-structured interviews were conducted with 41 leaders and staff from VISNs 10 and 21 (65% response rate). ATLAS.ti software was used to facilitate qualitative coding. Higher level coding categories were consistent with the revised PARIHS framework and fine-grained codes emerged from the data. A subset of transcripts were coded by one author and reviewed by two others to establish consistency and then all transcripts were coded; disagreements were resolved by discussion. Results: Preliminary results suggest that important facilitators of OEND include: research and clinical perceptions of the need for OEND, leadership and pharmacy support, and having a Champion/Stakeholder invested in OEND, especially one who was motivated to implement OEND. Important barriers to OEND include not having enough time for implementation (e.g., added on top of normal duties), concerns about risk compensation, and patients reportedly not seeing themselves as at-risk. This study identified important implementation considerations, including the need for effective collaboration across services/disciplines and to expand OEND beyond mental health into Primary Care and Pain Treatment Clinics. Conclusions: Leaders and staff understand the need for OEND. Support from leadership, identifying a motivated OEND champion, and effective collaboration (specifically pharmacy involvement) can help speed OEND implementation. Provider concerns about patient risk compensation need to be addressed given the lack of evidence for this. Staff should consider employing strategies that could promote greater patient acceptance of life-saving naloxone (e.g., motivational interviewing techniques).
Background: To confront historic levels of overdose nationwide, many initiatives focused on increasing naloxone prescribing by adult providers or community-based programs for adult patients excluding providers caring for young people with opioid use. The roots of addiction often begin in adolescence, and yet there is limited training in pediatric residency programs on reducing opioid-associated morbidity and mortality.

Objectives: To assess residents’ exposure to patients with opioid use, assessment of overdose risk, and attitudes related to naloxone prescription in pediatric settings.

Methods: The HOPE: Hospital-based Overdose Prevention and Education Initiative teaches residents to assess overdose risk, provide risk reduction counseling, and prescribe naloxone. Prior to implementation, residents from categorical and combined pediatric programs were surveyed in 2016. The anonymous survey utilized 4-point Likert scales to evaluate knowledge and attitudes with clinical vignettes assessing how residents evaluated risk and willingness to prescribe naloxone.

Results: Forty-nine categorical residents were included (75.4%=RR). The vast majority of categorical pediatric residents (89%) reported exposure to patients misusing opioids and also to those who were at-risk of overdose (89%). One hundred percent of residents “somewhat” or “strongly agreed” they wanted to learn about addiction in residence and 98% wanted to learn how to deliver risk reduction counseling, yet few residents (22%) felt they received sufficient training in addiction. Although the majority of residents feel it is their responsibility to educate patients about overdose (94%) and report exposure to eligible patients, few residents had ever prescribed naloxone (10%) or counseled patients on reducing overdose risk (41%). Despite the majority reporting a willingness to prescribe naloxone (89%) and also exposure to eligible patients (89%), there remains an action gap in prescription of naloxone. Several common barriers to prescribing were identified including knowledge deficits on how to prescribe and eligibility criteria.

Conclusions: Pediatric residents are commonly exposed to AYA with opioid use. There is high unmet need with few residents delivering interventions to reduce risk. In order to adequately address the opioid epidemic and reduce the burden of overdose deaths, it is critical to expand educational efforts to all residency programs, including those devoted to the care of AYA.
Regulating Marijuana in California
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**Background:** With the nation’s most populous state on the verge of legalizing recreational marijuana, America is about to step foot into a new era within the regulation of recreational drugs. This major policy shift raises an important challenge: How should we regulate an industry that used to be illegal under state law and remains illegal under federal law? **Objective:** This research explores the approach other states – focusing on Washington and Colorado – have taken for structuring regulatory systems to determine the best regulatory approach for California. The findings and recommendations have application to other states now consideration recreational marijuana. The research does not address the wisdom of marijuana legalization but looks at how to design regulations that reconcile important but differing policy goals: limiting the impact of the illegal market, reducing harm to public health and safety, and raising revenue for the state. **Methods:** The authors conducted a comprehensive qualitative review of recreational and medicinal marijuana laws in states that have them. They also conducted a series of key informant interviews with government officials immersed in substance abuse treatment, prevention, law enforcement, and regulation of marijuana laws in their state. **Results:** Three general lessons for California stand out: (1) Both Colorado and Washington significantly adjusted marijuana regulation shortly after legalization. (2) Such an adaptable regulatory model will require a mechanism for collecting data on the marijuana market and evaluating the consequences of use. (3) This is a venture into uncharted territory, and marijuana remains illegal under federal law. **Conclusion:** This analysis suggests California pursue a relatively restrictive, single regulatory model that includes both recreational and medical marijuana markets. A tighter unified market increases transparency and the scope for data collection while decreasing the possibility of illegal diversions and the enforcement burden. California should build the capacity to change into both legislation and regulations, requiring reporting and data collection to guide future policy decisions. The research offers detailed recommendations in five key areas: cultivation & production; sales, use, and consumption; taxes & finance; public health & safety; and governance.
Dissemination of an Evidence Based Tobacco Treatment Curriculum to Psychiatry Residency Programs
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Background: People with psychiatric and addictive disorders have the highest rates of tobacco use and related morbidity/mortality; treatment of tobacco in psychiatric/addiction settings is often avoided and has been historically discouraged. Psychiatry residency is an opportune setting to provide training and potentially increase treatment. **Objective:** This study focuses on the dissemination of Psychiatry Rx for Change, a 4 hour curriculum developed for psychiatry residency programs and focused on identifying and treating tobacco dependence among individuals with mental illness. **Methods:** The curriculum (evidence-based, patient-oriented cessation treatments relevant for all tobacco users, including those not yet ready to quit), previously tested in a pilot study, was disseminated within 8 training programs across 4 western states. Surveys to assess knowledge, attitudes and practice habits were administered before, after and 6 months post-training. Website usage was also assessed. **Results:** 119 valid surveys at baseline with 72 post surveys were collected (44% PGY3, 56% female, 53% Caucasian and 38% never tried tobacco). Residents attended an average of 3.2 hours (SD=1.0) of the 4-hour curriculum. The curriculum was associated with significant improvements in residents' knowledge and confidence for treating tobacco, regardless of program site, resident smoking status, level or interest, or PGY level. There also were significant improvements in attitudes about barriers (with program and training year effects). Over 90% of participants recommended the training to other programs, stating it would increase the number of patients they counsel and improve the quality of their tobacco counseling; 77% rated the training to be as good as or better than other didactics in their program. The online Psychiatry Rx for Change curriculum has been accessed by >3500 registrants with >15,000 file downloads (most accessed are the medication guide, epidemiology slides, counseling guide, treatment slides, and medication interaction guide). **Conclusions:** Dissemination of the evidence-based Psychiatry Rx for Change residency curriculum positively impacted knowledge and confidence across training sites, training year, regardless of smoking status and interest in the curriculum. This model standalone tobacco treatment curriculum can be implemented in psychiatry residencies and disseminated widely, thereby reaching the most disproportionately affected and often ignored population of smokers.
Licensed Vocational Nurse Led SBIRT For Hospitalized Patients With Unhealthy Alcohol Use and Promotion of Naltrexone Prescribing for Patients With Alcohol Use Disorders
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Background: A discharge planning protocol for medicine residents caring for hospitalized patients with alcohol use disorders (AUD) increased naltrexone prescribing at discharge from 0% to 60% of eligible patients and decreased 30 day readmissions and emergency room visits at an academic, urban county hospital (Wei, 2014). Here, we describe the implementation of a program informed by this protocol composed of two licensed vocational nurses (LVNs) with a supervising MD and RN. Objective: To examine a LVN-led program’s ability to identify hospitalized patients with unhealthy alcohol use and offer naltrexone and outpatient substance use referrals to individuals with AUD. Methods: All adult patients admitted to San Francisco General Hospital with either a positive nursing admission screen (using by the single alcohol screening question) or physician orders placed for CIWA monitoring for suspected alcohol withdrawal symptoms were consented and seen. Trained LVNs screened patients using the AUDIT tool and performed a brief intervention for those with unhealthy alcohol use, which we classified as a score >8. They determined eligibility for naltrexone based on liver function tests and opioid use. For those with AUD, defined as an AUDIT >15, LVNs assessed interest in naltrexone (if eligible) and outpatient substance use referral and notified patients’ medical providers and/or social workers if interested. Results: Between October 1, 2015 and April 30, 2016, 778 of 1224 (63.6%) identified patients were evaluated. Of the patients seen, 575 (73.9%) had unhealthy alcohol use, and 450 (57.8%) had an AUD. Among the patients with AUD, 115 (25.6%) were eligible for naltrexone. Among those eligible, 81 were interested in naltrexone and 48 (41.7%) received naltrexone at discharge. About a quarter (28.2%) of patients with AUD requested outpatient substance use counseling, and 3 presented to their appointment. LVNs reported comfort in administering SBIRT and feeling that their work was impactful for patients and valued by healthcare providers. Conclusions: An inpatient, LVN-led SBIRT team effectively identified patients with unhealthy alcohol use, assessed for eligibility and interest in alcohol pharmacotherapy, and facilitated naltrexone prescribing at discharge. Interventions to improve receipt of naltrexone at discharge are ongoing. LVNs found implementing SBIRT feasible and rewarding.
Background: Guidelines recommend smoking cessation counseling at every medical visit. Patients with opioid use disorder (OUD) have high rates of smoking-related morbidity, and smoking cessation improves addiction outcomes. Buprenorphine is an effective treatment for OUD prescribed by both primary care physicians (PCPs) and specialists. Objective: To evaluate the frequency of smoking cessation counseling for smokers prescribed buprenorphine versus smokers not prescribed buprenorphine in a national sample of outpatient visits. Methods: We performed a cross-sectional analysis of visits for adult (>18 years) smokers in the National Ambulatory Medical Care Survey (years 2003-2010, 2012) combined with the National Hospital Ambulatory Medical Care Survey (2003-2010), using survey analysis techniques to account for weighting. After performing descriptive statistics, we ran bivariate analyses of our main predictor (buprenorphine versus non-buprenorphine visits) and outcome (smoking cessation counseling versus none), first on the entire sample and then stratified by physician specialty (PCP versus psychiatry/substance abuse). We also created a multivariable logistic regression model, adjusting for year. Results: Buprenorphine was prescribed in 242 of the 47,146 visits for adult smokers. Patients prescribed buprenorphine were younger (35.0 versus 48.2 years; p <0.001) and more likely to have Medicaid (39.6%; p < 0.001). In bivariate analysis, counseling occurred more frequently in buprenorphine (41.0%) than non-buprenorphine visits (19.5%; p = 0.005). When we stratified by physician specialty, PCPs showed no difference in counseling between buprenorphine (23.9%) and non-buprenorphine visits (24.2%; p= 0.97), but psychiatrists/substance abuse specialists counseled more frequently in buprenorphine (59.2%) versus non-buprenorphine visits (17.7%; p = 0.0004). In adjusted analysis, PCPs’ odds of counseling were 0.99 (p = 0.98) and psychiatrists’/substance abuse specialists’ odds of counseling were 5.50 (p= 0.003) in buprenorphine versus non-buprenorphine visits. Conclusions: Our study highlights a missed opportunity for all providers to engage in smoking cessation counseling. PCPs did not demonstrate differential counseling for buprenorphine versus non-buprenorphine visits. Psychiatrists performed better than PCPs in offering smoking cessation counseling during buprenorphine visits, but their overall rates were low. Given the particular risks of smoking for patients with OUD, further work should address barriers to smoking cessation counseling in buprenorphine visits.
Impact Of The 2015 CMS Inpatient Psychiatric Facility Quality Reporting (IPFQR) Rule On Tobacco Treatment
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Background: Patients with mental illness account for 44.3% of the annual tobacco-consumption in the U.S. and account for nearly half of the annual deaths attributable to smoking. Life expectancy for patients receiving public mental health treatment is 25 years below that of the general population, with heart disease as the leading cause of death. An estimated $168 billion dollars are spent annually in direct care for smoking-related illnesses, half of which is paid through Medicare and Medicaid, which are the principle sources of health care coverage for people with severe mental illness (SMI).

Objective: In its fiscal year (FY) 2015 final rule, the Centers for Medicare & Medicaid (CMS) required reporting of tobacco treatment quality measures as part of the Inpatient Psychiatric Facilities Prospective Payment System (IPF PPS). This study evaluates the impact of that policy at a large academic medical center that opted to improve performance as it implemented reporting measures.

Methods: Electronic medical record data were collected retrospectively for all inpatient psychiatric admissions one year prior to and following implementation of the rule (Jan 1st 2014 to December 31st 2015). Data from admissions (2014=292; 2015=338) were analyzed to determine changes in the provision of tobacco treatment including the proportions of patients screened for tobacco use, receiving tobacco cessation counseling, and receiving tobacco cessation medication(s).

Results: Compared to the year before the CMS rule, screening for admissions increased significantly (85% vs 97%; p<.001). Even greater pre-post rule increases were found for referral to cessation counseling (4.3% vs. 73.8%; p<.001), receipt of counseling (7.8% vs. 67.1%; p<.001) and referral for cessation medication (32% vs. 68.4%; p<.001). Even though statistically non-significant, the number of tobacco users who actually received medications increased markedly between 2014 and 2015 (24.3% vs. 34.9%; p=0.064). Gains in screening, referral, and treatment did not differ by psychiatric diagnosis.

Conclusions: The IPFQR Program resulted in dramatic changes in tobacco-related screening, documentation, and cessation treatment for psychiatric inpatients. Should CMS link prospective payment to performance, it could have a major impact on quality of care for tobacco dependence.
Risk for Prescription Opioid Misuse Among Patients with Chronic Pain
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Background: Misuse of prescription opioids is a growing public health concern. Identifying and managing risk for opioid misuse, while adequately addressing chronic pain, is a particularly complex problem for health professionals and patients with chronic pain. Objective: Identify factors associated with risk for prescription opioid misuse among patients being treated for chronic pain in two large health systems. Methods: Study settings included Kaiser Permanente Northwest (KPNW) and the VA Portland Health Care System (VA). Participants were KPNW members (n = 332) and VA patients (n = 186), aged >18, with a prior year ICD-9-CM musculoskeletal pain diagnosis and a current prescription for long-term opioid therapy. We measured opioid risk using a modified version of the Pain Medication Questionnaire (PMQ), which assesses beliefs and behaviors related to misuse of pain medications and includes items that are sensitive to misuse that may be related to dissatisfaction with pain treatment. Two sets of analyses were conducted. Participants were divided into three groups based on distribution of their PMQ scores. Group differences were assessed using chi-square tests and analysis of variance. A multivariate linear regression model (using continuous PMQ scores) was conducted to predict factors associated with increased risk of opioid misuse. The model controlled for age, gender, income, and morphine equivalent dose; independent variables included pain intensity, alcohol (AUDIT-C) and drug use (DAST), and pain catastrophizing. Results: Participants were 47% female, mean age 59 years. Bivariate analyses show that being male, disabled, having an alcohol or substance use diagnosis, or being a smoker are associated with being in the highest PMQ-score group. Multivariate analyses showed that pain intensity (b = .08, p<.001), alcohol use (b = .36, p<.05), drug use (b = 1.56, p<.001), and pain catastrophizing (b = .24, p<.001) predict higher PMQ scores, after controlling for covariates. Conclusions: Among a large sample of patients taking prescription opioids for chronic pain, we identified a number of risk factors associated with risk for possible opioid misuse. Study findings indicate areas for potential intervention to reduce prescription opioid misuse.
Opioid Prescribing Following Non-Fatal Opioid Overdose
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Background: Veterans are over-represented among opioid overdose deaths. For each fatal overdose, there are 10 or more non-fatal opioid overdoses (NFO). History of overdose significantly elevates risk for a subsequent overdose. Among non-veterans, over 90% of those experiencing NFO are again prescribed opioids. Little is known about opioid prescribing following NFO in veterans. Objectives: Objectives are to describe prescribing of opioids following NFO, occurrence of a subsequent overdose following an index NFO, incidence and cause of death following NFO, and opioid and dose prescribed before and after NFO. Methods: A retrospective chart review of veterans treated for opioid overdose at the George E. Wahlen VA Medical Center (VAMC) was performed. Patients who had experienced a non-fatal opioid overdose between 2009 and 2013 were included and followed until January 1st 2016.

Data extracted were days after NFO until an opioid was prescribed, name and dose of opioid, type of clinic generating prescriptions, days until another overdose event occurred, and incidence and cause of death during the follow-up period. Opioid overdose was defined by: documentation of ‘overdose’ or respiratory depression and response to full dose naloxone in notes. Descriptive statistics were used to report outcomes. Results: Chart review identified 56 patients who met inclusion criteria. Following an index NFO 80% (46 patients) were again prescribed an opioid. Three-fourths (42 patients) had the same opioid and dose prescribed before and after the NFO. A subsequent overdose event occurred in 25% (14 patients) of the population with 1 fatal event. Only 1 patient had a medication overdose recorded on their problem list. Conclusions: Many people who experience NFO are continued on opioids and experience repeat overdose events. ‘Overdose’ is not noted in patients’ medical problem lists. Patient and prescribers may benefit from better information on the risks of prescribing opioids following an NFO. Further studies are needed to tease out the reasons for opioid re-prescribing following overdose and the impact of changes in provider and patient education and health record documentation.
Resident Physicians’ Management of Back Pain in an Unannounced Standardized Patient Visit: Opioid vs Non-Opioid Prescribers
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Background: Opioid analgesics are effective and appropriate therapy for many types of acute pain. Epidemiologic evidence supports a direct relationship between increased opioid prescribing and increases in opioid used disorders and overdoses. Despite a lack of consensus and much controversy on their use, there are some best practices that should be followed when opioids are prescribed. Objective: To tailor our residency curriculum, we designed and fielded an unannounced standardized patient (USP) case involving a patient with acute back pain who is requesting Vicodin®(325/5mg). We describe residents’ case management and examine whether their management decisions, including opioid prescribing, were related to their core clinical skills. Methods: Results are based on 50 (USP) visits with residents in two urban primary care clinics. Highly trained USPs portrayed a patient with an acute episode of lower back pain who was taking leftover Vicodin® with effective pain relief but was running out. USPs completed a behaviorally anchored checklist assessing physicians’ communication, assessment, physical examination, patient education, and treatment plan as well as their satisfaction and activation. Information on prescriptions, referrals, and treatment plan recommendations was systematically abstracted from the encounter note. We describe how residents managed this case, using both USP report and chart review data, and compare summary clinical skills scores between those who prescribed Vicodin® and those who did not. Results: 18/50 residents prescribed Vicodin® (10-60 pills). Among those who did not prescribe, (32/50), most (50%) prescribed ibuprofen. 83% of the prescribers and 72% of non-prescribers ordered physical therapy (NS). 13/18 prescribers documented checking the prescription monitoring database. Prescribers had significantly better communication scores than non-prescribers (relationship development: 65% vs. 48% well done, p=0.03; patient education: 59% vs. 31% well done, p=.02). Assessment summary scores were also higher (60% vs. 46%) but not significantly (p= 0.60). Patient satisfaction and activation scores were higher in the prescribers than non-prescribers (71% vs. 39% p=.004 and 48% vs. 26% p=.034 respectively). Conclusions: Most Vicodin® prescribers did not follow prescribing guidelines and they demonstrated better communication and assessment skills than the non-prescribers. Results suggest the need to guide residents in using a systematic approach to prescribing opioids safely.
Exploring the Use of a Mandated Prescription Drug Monitoring Program by Primary Care Physicians in New York City
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Background: In August 2013, New York State (NYS) law mandated prescription drug monitoring program (PMP) usage prior to controlled substance prescribing. Although PMPs historically have functioned as law enforcement tools, the New York City (NYC) Department of Health and Mental Hygiene (DOHMH) recommends that physicians utilize the NYS PMP to educate patients about safer use of controlled substances.

Objective: This qualitative study examined NYC primary care physicians’ (PCPs) utilization of the mandatory NYS PMP and the influence of the PMP on interactions with patients and controlled substance prescribing.

Methods: We conducted in-depth interviews with 53 PCPs recruited by telephone from a random list provided by DOHMH’s Primary Care Information Project. Eligible participants wrote at least one opioid analgesic prescription per month in the six months prior to interview. The interview guide encompassed: experiences with PMP implementation; integration of PMP in clinical decision making; patient reactions to PMP; and PMP’s effect on physician/patient relations. Interviews were audio-recorded and transcribed. Transcripts were coded independently by three investigators, with differences resolved by consensus. Major themes included: frequency of PMP use; clinical responses to PMP data; and attitudes toward patients with possible substance use disorders.

Results: Participants ranged in age from 32 to 80 years. The majority were male (n=34) and non-Hispanic white (n=27). All participants were licensed in internal or family medicine, and most (n=33) practiced in private settings. Years practicing ranged from two to 51 (median=19). Findings indicated that some participants reported no PMP usage. For those utilizing the PMP, when data pointed to irregular prescriptions, a majority used it to terminate medication or medical care. Additionally, many participants were judgmental toward patients with possible substance use disorders.

Conclusions: Our data indicate that contrary to DOHMH recommendations, the PMP prompted many participants to curtail medication and/or care, which may lead to negative health outcomes. This suggests a need for provider education on PMP as a tool to educate patients about safer use of controlled substances. Findings on provider attitudes and stigma toward substance use demonstrate the need for public health messaging and medical education on treating patients engaged in illicit drug use.
Claims-based Patterns of Opioid Medication Consumption and Overdose within a Large Medicaid Program
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Background: Improved monitoring by health systems may identify and target resources to patients with heightened risk of opioid medication overdose. Nonetheless, consensus has not been reached in the field regarding indicators for identifying overdose risk in administrative claims data. Objective: The current project examined the association between opioid medication overdose and validated indicators of problematic opioid consumption within health care claims data. Methods: Pennsylvania Medicaid claims (2007-2012) were used to construct a retrospective cohort for the current study. Cohort members included patients initiating opioid treatment who were: 18-64 years of age, non-dual eligible, without cancer diagnosis, and not in long-term care facilities or receiving hospice. The outcome variable was overdose (defined by medical claims for opioid medication poisoning). Problematic opioid medication consumption indicators included: (1) opioid ‘misuse’ (a construct based on number of opioid prescribers, number of pharmacies, and days of opioids supplied), (2) opioid ‘abuse’ (medical claims with an opioid use disorder diagnosis concomitant with opioid prescription fills), and (3) high daily dosages of opioid medication (morphine milligram equivalents/day [MME/day]). Multivariate mixed models were used to estimate associations between overdose and problematic consumption. Results: The study cohort of 372,347 included a total of 583,013 opioid treatment episodes. We identified 2,880 (0.5%) episodes with probable misuse, 20,893 (3.6%) with possible misuse, 19,019 (3.3%) with abuse, and 15,554 (2.7%) opioid treatment episodes with ≥100 MME/day. A greater portion of overdose events was found among: members with probable (1.8%) and possible (0.9%) misuse compared to those without misuse (0.2%, p<0.001), enrollees with abuse (1.5%) compared to those without abuse (0.2%, p<0.001), and enrollees with ≥100 MME/day (0.5%) compared to those with lower MME/day (<20, 20-49.9, and 50-99.9 MME/day, all= 0.20%; p<0.001). Probable misuse (adjusted odds ratio [AOR]=2.60, 95% CI=1.92-3.52), abuse (AOR =2.47, 95% CI=2.06-2.97), possible misuse (AOR=2.04, 95% CI=1.72-2.42), and ≥100 MME/day (AOR=1.54, 95% CI=1.16-2.04) were each associated with significantly increased odds for overdose in the adjusted multivariate model. Conclusion: Claims-based indicators of problematic opioid consumption may be employed in health system data to monitor patients with heightened overdose risk. These patients could be targeted for additional care and/or possible prescribing restrictions.
Smartphone Application For Unhealthy Alcohol Use: A Pilot Study
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**Background:** Smartphone, an item people carry with them almost all the time, offers opportunities in delivering interventions for unhealthy alcohol use at the user's convenience. We developed a smartphone application with 5 modules: 1. Personal feedback, 2. Self-monitoring of drinking, 3. Designated driver tool, 4. Blood alcohol content calculator, 5. Information. **Objective:** We assessed 1.) the smartphone application’s acceptability and 2.) association between use of the application and subsequent drinking. **Methods:** 130 adults with unhealthy alcohol use (>14 drinks/week or >=1 episode/month with 6 or more drinks), recruited in Switzerland (n=70) and Canada (n=60), were offered to use the application. Follow-up was at 3 months. We assessed appreciation, usefulness and frequency of use of the modules, and drinking outcomes (drinks/week, binge). Associations between application use and drinking at follow-up were evaluated with negative binomial and logistic regression models, adjusted for baseline values. **Results:** There were changes from baseline (BL) to follow-up (FU) in number of drinks/week, BL: 15.0(16.5); FU: 10.9(10.5), p=0.0097, and binge drinking, BL: 95.4, p<0.0001. All modules were favorably rated by those who used them: median ratings were between 6 and 8 (scale of 1-10). Except for the personal feedback module, absence of use was reported by 46.4 of participants (23). Participants using the application more than once reported significantly fewer drinks/week at follow up (IRR=0.69[0.51;0.94]) but not less binge drinking (OR=0.76[0.33; 1.74]). **Conclusions:** A smartphone application for unhealthy alcohol use appears acceptable. Nevertheless, without prompting, its use is infrequent. Those who used the application more than once reported less drinking at follow-up. Efficacy of the application should be tested in a randomized trial with strategies to increase frequency of its use.
The ASSIST-FC: Reliability and Validity of a Two-Question Version of the World Health Organization’s Alcohol, Smoking and Substance Involvement Screening Test
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Background: The Alcohol, Smoking and Substance Involvement Screening Test (ASSIST), an 8-question instrument developed by the World Health Organization, screens for problem or risky use across nine psychoactive substance categories. Substance involvement scores are calculated by summing across questions for each category separately to identify low-, moderate- or high-risk use. Although the ASSIST has acceptable psychometric properties and has been widely translated and disseminated, it is considered by many health professionals to be relatively long for clinical use.

Objective: The purpose of this study was to identify, through a series of statistical analyses, a shorter subset of questions from the full ASSIST instrument that were comparable in psychometric properties for the classification of low, moderate and high risk substance use. Methods: Existing data from three large datasets were used for the study; two from World Health Organization ASSIST clinical trials and the third from the evaluation of the Connecticut SBIRT Program. Two datasets were used to examine reliability metrics and conduct classification analyses for combinations of ASSIST items. The third was used to estimate sensitivity, specificity and positive predictive value for a shortened ASSIST instrument using a structured diagnostic interview, the MINI-Plus.

Results: The combination of Question 2 (frequency of current use) and Question 6 (concern by others), hereafter known as the ASSIST-FC, was identified from four combinations of the best performing items based on reliability analyses and yielded the most comparable 3-group classification to the full ASSIST across instrument possibilities. With the exception of the “hallucinogen” and “inhalant” categories, concurrent validity with the MINI-Plus was highly comparable across the full ASSIST and ASSIST-FC. Sensitivity, specificity and positive predictive value were also comparable across the two instruments with the exception of the “sedative” category.

Conclusions: The number of items on the ASSIST-FC is significantly reduced from the number of items on the original assessment. The ASSIST-FC shows no substantial loss in reliability, validity and predictive ability compared to the full-length version. Not only is the new instrument supported statistically, but intuitively as a clinical tool with the natural combination of “frequency of current use” and “concern by others” items.
Validation of the Tobacco, Alcohol, Prescription Medication, and Other Substance Use (TAPS) Tool for Substance Use Screening and Assessment in Primary Care Patients
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Background: Substance use is a leading cause of morbidity and mortality that is under-identified in medical practice. The TAPS Tool was developed to address the need for a substance use screening approach that is brief, accurate, and sufficiently detailed to inform clinical care in medical settings. Through a 4-item screen followed by a modified ASSIST-lite, it identifies past-year use of tobacco, alcohol, illicit drugs, and non-medical use of prescription medications, and provides a substance-specific assessment of current use and risk level for eight substance classes.

Objectives: This study sought to validate the TAPS Tool for identification of problem use and substance use disorders in adult primary care patients. Methods: A multi-site validation study was conducted by the National Drug Abuse Treatment Clinical Trials Network in five geographically diverse primary care clinics. A total of 2,000 adults were consecutively enrolled from clinic waiting areas. Participants were randomly assigned in counter-balanced order to complete interviewer-administered and self-administered (iPad) versions of the TAPS Tool. The TAPS Tool was compared to the reference standard modified Composite International Diagnostic Interview to determine its diagnostic accuracy for identifying current problem use and DSM-5 substance use disorder (SUD) for each substance class. Results: The self-administered and interviewer-administered TAPS Tool had similar diagnostic characteristics, and interviewer-administered results are presented here. For identifying problem use, at a cutoff score of >1 the TAPS Tool had sensitivity and specificity of 0.93 and 0.87, respectively, for tobacco, and 0.74 and 0.79 for alcohol. For problem use of illicit and prescription drugs, sensitivity ranged from 0.82 for marijuana to 0.63 for sedatives, and specificity was 0.93-1.0. Sensitivity was lower for identifying SUD. At a cutoff of >2, sensitivity of the TAPS Tool for identifying SUD ranged from 0.74 for tobacco to 0.48 for prescription opioids, while specificities were 0.89 or greater. Positive predictive value of the TAPS Tool for identifying SUD ranged from 0.43 for alcohol to 0.93 for heroin.

Conclusions: The TAPS Tool detected clinically relevant substance use and risk level in a diverse sample of primary care patients, and could ease barriers to incorporating substance use screening into medical settings.
Background: Ecological Momentary Interventions (EMIs) influence health behavior in real time, in real life. We developed an intervention to reduce marijuana use that couples Motivational Enhancement Therapy (MET) with smartphone-based EMI (momentary assessment plus responsive motivational messaging), MOMENT. Objective: To determine whether the MOMENT intervention reduced momentary marijuana desire, marijuana use, and problems with use from baseline to 3-month follow-up, compared to MET only. Methods: Primary care patients age 15-24 years using marijuana ≥3 times/week were randomized to MOMENT (MET/momentary assessment/motivational messaging) vs. No-Feedback (MET/momentary assessment) vs. MET only. All participants were assigned to two MET sessions. In MOMENT, MET was followed by two weeks of mobile assessment of marijuana use and momentary factors related to use, with motivational messaging in response to reporting a personal top-3 trigger, marijuana desire (0-9), and use. All participants provided momentary data for one week at baseline and three months; those in MOMENT and No-Feedback also provided data for two weeks in intervention. Using mixed effects models, we tested whether momentary marijuana desire changed from baseline to 3-month follow-up and whether differences existed by arm. 30-day percent days abstinent (PDA) and POSIT problems with use (0-17) were also compared between baseline and follow-up. Results: Seventy youth (M = 20.7 years, 60% female; use for M = 5.7 years) were assigned to MOMENT (n = 27) vs. No-Feedback (n = 15; assignment suspended to enhance enrollment in other arms) vs. MET-only (n = 28); 68 (97%) provided data on N = 2780 momentary reports. Sixty-three percent (44/70) completed the 3-month follow-up. At follow-up, participants reported significantly higher PDA (median 50% vs. 18.5% at baseline, p<0.0001), lower POSIT scores (median 1 vs.4 all substances, p<0.0001; 1 vs.3 marijuana, p<0.0001) and lower momentary marijuana desire (estimate -1.683, p<0.001), compared to baseline. Similar changes were observed across arms. Conclusions: Among adolescent/youth primary care patients using marijuana frequently, brief MET, MET-plus-momentary assessment, and the MOMENT MET-plus-EMI were all associated with improved marijuana outcomes at 3 months. Small sample size and non-equivalent distribution of marijuana use severity across arms may have impeded detection of any differential treatment effects.
Is Screen Time Important? Efficacy of a Computer-Facilitated Brief Intervention For Reducing Adolescent Substance Use is Predicted By Viewing Time
Elizabeth Showalter MPH; John Rogers Knight Jr. MD; Lon Sherritt MPH; Sion Kim Harris PhD – Boston Children’s Hospital Center for Adolescent Substance Abuse Research

**Background:** A previous study found that, compared to treatment as usual, a computer-facilitated screening and clinician brief advice system, which included a computer program that administered pre-visit screening, immediate personalized risk feedback, followed by educational content on use-related health risks, was associated with decreased substance use among adolescent primary care patients at 3- and 12-month follow-ups. Time spent using the computer program, as a proxy for attention, may predict intervention efficacy. **Objective:** To test the effect of time spent on the computer program on participant substance use outcomes at 3- and 12-month follow-ups. Age and prior substance use experience were treated as effect moderators. **Methods:** We analyzed a subset of data from a quasi-experimental, asynchronous comparative effectiveness trial of 12-18 y/o patients at 7 New England primary care sites. The intervention group completed a computerized screener, received immediate feedback and information on the health risks of consuming alcohol, marijuana and other non-tobacco drugs (‘substances’), followed by a physician’s brief advice. Time spent on each page of the intervention was recorded, as well as adolescent past 3-month substance use at baseline and 3-and 12-month follow-up points. We used stratified generalized estimating equation modeling, controlling for age, sex, race/ethnicity, parent education level, peer risk, and adjusting for within-site clustering. **Results:** Of the 652 subjects in our subset sample, 119 (21%) reported past-3-month use of at least one substance at baseline. Baseline users who spent at least the median time on the informational portion had 0.35 times the odds (64.34% decreased odds) of using substances in the past 3 months at the 12-month follow-up compared to those who spent less than the median time on the intervention (95% CI 0.15, 0.78, p-value=0.01). Time spent on the informational portion did not have a significant effect on likelihood of past 3-month use at 12 months for baseline non-users. **Conclusions:** Among youth who used substances at baseline, greater attention to information regarding the health risks of substance use is associated with lower substance use at 12-months. Strategies to encourage attention to health information may benefit teens with substance use.
Evaluation of Routine Screening and Brief Intervention for Unhealthy Drinking Implemented in an Urban Academic Federally Qualified Health Center
Marcus A Bachhuber MD, MSHP – Montefiore Medical Center/Albert Einstein College of Medicine

Background: Screening and brief intervention (SBI) is an evidence-based intervention for unhealthy drinking that is suitable for primary care settings. Despite its potential benefits, it has not been widely implemented in healthcare settings; barriers to conducting SBI in routine practice are incompletely understood. Objective: To evaluate the implementation of routine SBI for unhealthy drinking in the adult medicine department of an academically-affiliated Federally Qualified Health Center in the Bronx, NY. Methods: Our model consisted of nurses screening all patients (i.e., new, established, and urgent care/walk-in) with the Alcohol Use Disorders Identification Test (AUDIT-C) and, if screening positive, physicians or trainees providing counseling or referral to specialty services. To evaluate this program, we extracted demographic and visit data from the electronic health record on eligible patients and tabulated the percent screened overall and in each month, the percent screening positive, the percent of patients screening positive who were counseled, and factors associated with being screened and counseled, including demographics, patient type, and presence of chronic conditions. Results: Between October 2013 and September 2014, 9,119 adult patients attended one or more visit. Patients were majority women (67.5%) and Hispanic/Latino (54.5%). Overall, 46.2% were screened with 19.0 to 35.8% of eligible patients screened in each month. Increasing age (OR: 0.92 [95%CI: 0.89 to 0.95]), female sex (OR: 0.86 [95% CI: 0.78 to 0.94]), hypertension (OR: 0.69 [95% CI: 0.60 to 0.78]), and diabetes (OR: 0.76 [95%CI: 0.65 to 0.87]) were associated with a lower odds of being screened. Of all screened patients, 7.5% (n=317) screened positive and 42.6% (n=135) of those were counseled. Women with a positive screen were less likely to be counseled than men (OR: 0.49 [95% CI: 0.30 to 0.79]). Conclusions: Our model of SBI resulted in screening of nearly half of all eligible patients. Consistent with previous research, older adults and women were less likely to be screened. Those with chronic medical conditions were also less likely to be screened. When screening positive, women were also less likely to be counseled. Future efforts to improve SBI delivery should focus on older adults, women, and those with chronic medical conditions.
Poster Presentations

1. Methods, Preliminary Results and Publication Impact of a Dedicated Addiction Clinician Scientist Research Fellowship
Jan Klimas MSc, PhD; Elaine Fernandes BSc; Kora deBeck PhD; Kanna Hayashi PhD; MJ Milloy PhD; Thomas Kerr PhD; Walter Cullen MD; Evan Wood MD, PhD; Will Small MD – British Columbia Centre of Excellence in HIV/AIDS

Objectives: To describe the design and first-year data from a study that prospectively evaluates how a dedicated research-training program for addiction medicine physicians contributed to subsequent research involvement and research productivity. Methods: In order to evaluate our Canadian research-training fellowship, funded by the U.S. National Institute on Drug Abuse (NIDA), we compared accepted fellows with non-admitted controls, based on baseline questionnaire and rate of peer-reviewed publication. Participants’ publication rates were followed via biomedical databases (e.g., PubMed, EMBASE) after applying to the program.

Results: At baseline (N=8, five women), six participants reported any past research involvement, three had one or more advanced graduate degrees (e.g., MPH, PhD) and four had published peer-reviewed publications as a first author (total of six). They were internal medicine physicians (one), family physicians (five), psychiatrists (one) and one public health physician. At the end of the one-year fellowship, four fellows published more first-author publications than four controls (seven vs. one). Discussion: Based on the first-year data, we expect that, with further prospective follow up and cohorts of fellows and controls, undertaking the research fellowship program will be independently associated with significant research outputs, signalling successful training of the next generation of addiction clinician-scientists, who can help close the gap between clinical evidence and standards of care in this area.
2. Addiction/HIV Researchers Mentoring the Next Generation of Clinical Scientists
Jan Klimas MSc, PhD; Ryan McNeil PhD; Keith Ahamad MD; Anabel Mead MD; Launette Rieb MD, MSc, FCFP; dip. ABAM; Walter Cullen MD; Evan Wood MD, PhD; Will Small PhD - British Columbia Centre of Excellence in HIV/AIDS

**Background:** Despite a large evidence-base upon which to base clinical practice, most health systems have not combined the training of healthcare providers in addiction medicine and research. As such, addiction care is often lacking, or not based on evidence or best practices.

**Objectives:** We undertook a qualitative study to assess the experiences of physicians who completed a clinician-scientist training in addiction medicine within a hospital setting.

**Methods:** We interviewed physicians from the St. Paul’s Hospital Goldcorp Addiction Medicine Fellowship and learners from the hospital’s academic Addiction Medicine Consult Team in Vancouver, Canada (N=26). They included psychiatrists, internal medicine and family medicine physicians, faculty, mentors, medical students and residents. All received both addiction medicine and research training. Drawing on Kirkpatrick’s model of evaluating training programmes, we analysed the interviews thematically using qualitative data analysis software (Nvivo 10).

**Results:** We identified five themes relating to learning experience that were influential: (i) attitude, (ii) knowledge, (iii) skill, (iv) behaviour and (v) patient outcome. The presence of a supportive learning environment, flexibility in time lines, highly structured rotations, and clear guidance regarding development of research products facilitated clinician-scientist training. Competing priorities, to include clinical and family responsibilities, hindered training.

**Conclusion:** Combined training in addiction medicine and research is feasible and acceptable for current doctors and physicians in training. However there are important barriers to overcome and improved understanding of the experience of addiction physicians in the clinician-scientist track is required to improve curricula and research productivity.
3. Predictors of Early Dropout in Outpatient Buprenorphine/Naloxone Treatment

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Objectives: Identifying predictors of early drop out from outpatient treatment of opioid use disorder (OUD) with buprenorphine/naloxone (BN) may improve care for subgroups requiring more intensive engagement to achieve stabilization. However, previous research on predictors of dropout among this population has yielded mixed results. The aim of the present study was to elucidate these mixed findings by simultaneously evaluating a range of putative risk factors that may predict dropout in BN maintenance treatment.

Methods: Outpatient medical records and weekly supervised urine toxicology results were retrospectively reviewed for patients at two community psychiatric clinics (n=202): a private hospital clinic (n=84) and a federally qualified health center (n=118). A forward stepwise logistic regression was utilized to investigate the association between early dropout (i.e., discontinuing treatment within the first three months of clinic entry) and extracted sociodemographic, clinical, substance use, and treatment history variables. Results: Overall, 56 of 202 participants (27.7%) dropped out of treatment. The multivariable analysis indicated that age under 25 (B=1.47, SEB=.52, p <.01) and opioid use in month 1 (B=1.50, SEB=.41, p<.001) were significantly associated with early dropout; those with a history of suicide attempt were significantly less likely to drop out (B=-1.44, SEB = .67, p<.05). Conclusions: Consistent with previous research, younger age and use of opioids during the first month of treatment predicted early dropout. Having a history of prior suicide attempt was associated with 3-month BN treatment retention, which has not been previously reported.
4. Psychosocial Predictors in the Transition from Acute to Chronic Pain: A Systematic Review
Valerie Jean Hruschak MSW, BSW; Gerald Cochran PhD, MSW – University of Pittsburgh

Background: Chronic non-cancer pain (CNCP) is a major health problem which psychosocial factors have significant implications. The impact on individuals’ quality of life, health care utilization, and social resource expenditures provides a compelling motive to better understand the mechanisms involved in the development of chronicity. **Objective:** There is a gap in regards to evidence for the prevention of chronicity specifically addressing psychological and social domains. The goal of this systematic review was to investigate psychosocial factors that predict the transition from acute to chronic pain. **Methods:** This systematic review was conducted and reported in accordance with the PRISMA guidelines. Four databases were searched with terms related to “psychosocial”, “acute”, and “chronic pain”. A total of 1,389 studies were identified in which titles, abstracts, and full texts were assessed for inclusion criteria. A data template was used to capture pertinent details, and overall themes and patterns were organized according to type of pain examined and psychosocial variables measured. **Results:** Of the 17 articles that met inclusion criteria, 14 (82%) reported an association between psychosocial factors and chronicity. A total of 5 of the studies (29%) demonstrated that depression was a possible predictor of transition from acute to chronic pain and fear avoidance was found to be associated with chronicity by 6 of the studies (35%). This review provides evidence that psychosocial factors are associated with chronicity within CNCP. Further, these findings support the importance of psychosocial interventions in pain care and the need for interdisciplinary supports and the development of strategies targeting prevention and early intervention. There is a particular need for strategies to target clinical guidelines, including the formulation of state and national policies, and evaluation frameworks to ensure long-term sustainability of these practices in pain care. **Conclusions:** This review has found promising results that supports the understanding that psychosocial factors are associated with chronicity within CNCP. Although further research is needed to include better controlled and large scale data to determine what psychosocial predictors are most influential in which pain conditions.
5. Demystifying Pharmacy Students’ Attitudes, Comfort Level, and Knowledge of Substance Use Disorders
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**Background:** To date, there is minimal research on pharmacy students’ attitudes, comfort level, and knowledge of substance use disorders (SUD). Pharmacists play a crucial role in screening and treating SUDs as they are on the front-lines in the community. There is a shortage of addiction-related curricula in most pharmacy programs throughout the United States, and pharmacy students’ comfort level and attitudes on SUD topics remain largely unknown.

**Learning Objectives:**
1. To understand pharmacy students’ attitudes and comfort level on addiction-related topics.
2. To assess pharmacy students’ knowledge of SUDs.
3. To evaluate pharmacy students’ preparedness in screening, recognizing, and treating SUDs.

**Methods:** A 15 question survey utilizing Survey Monkey technology will be administered to 5th and 6th year pharmacy students at St. John’s University School of Pharmacy. Questions will be in the following multiple choice format: 5 questions on students’ comfort level with addiction, 5 questions on students’ knowledge base of addiction, 5 patient cases further exploring students’ knowledge of SUDs.

**Results:** Data will be collected in an ongoing fashion as results from the survey are acquired.

**Conclusions:** Pharmacy students’ comfort level and attitude towards addiction-related topics is deficient. The frequency of screening for SUDs in the community pharmacy setting is lacking. More research is needed on this topic as pharmacists play a vital role in screening and treating patients with SUDs. Instituting curricula on addiction in pharmacy training programs is fundamental to enhancing future pharmacists' comfort level, knowledge, and assessment of addiction.
6. What Do Clinicians Want to Know About Opioid Prescribing? A Qualitative Analysis of Their Questions
Phoebe A. Cushman MD; Jane M. Liebschutz MD; Joseph G. Hodgkin BA; Ilana Hardesty BA; Julie White MS; Christopher W. Shanahan MD, MPH; Daniel P. Alford MD, MPH – Boston University Medical Center

Background: In 2012, the FDA responded to the opioid epidemic with a Risk Evaluation and Mitigation Strategy, requiring manufacturers of extended-release/long-acting opioids to fund continuing medical education based on the “FDA Blueprint for Prescriber Education.” Topics in the Blueprint are “Assessing Patients for Treatment,” “Initiating Therapy, Modifying Dosing, and Discontinuing Use,” “Managing Therapy,” “Counseling Patients and Caregivers about Safe Use,” “General Drug Information,” and “Specific Drug Information.” Based on the Blueprint, “Safe and Competent Opioid Prescribing Education” (SCOPE of Pain) offers live trainings for physicians and other prescribers. During trainings, participants submit questions on index cards about workshop content and their clinical experiences. Objective: To compare themes that arise from questions asked by SCOPE of Pain participants with content of the FDA Blueprint in order to evaluate whether the Blueprint meets prescribers’ educational needs. Methods: We conducted qualitative analyses of all 915 questions submitted by 2,786 participants in 29 trainings across 16 states from May 2013 to May 2015. We used the constant comparative method to code the questions. Themes that emerged were then compared to the topics of the Blueprint. Results: Most themes fell into the Blueprint’s topics. Four main themes diverged: Participants (1) Sought information on safe alternatives to opioids. (“In an opioid naive patient who has chronic low back pain, discuss medicines/therapies you could use before starting opioids.”) (2) Identified barriers to ideal prescribing. (“What do you do when pain clinics only want to treat patients with procedures but don't want to manage medical therapies?”) (3) Voiced uncertainty about the role of government. (“What is the legal process for reporting a patient for suspected diversion?”) (4) Raised concerns about navigating the provider-patient relationship. (“When taking over a difficult panel how do you discuss that you want to change the regimen but not harm the relationship?”). Conclusions: In addition to learning the mechanics of prescribing, providers want to understand the role of government and effective patient communication. Aware of opioids’ limitations, providers also seek advice on alternatives therapies. Future updates to the FDA Blueprint and other educational guidelines on opioid prescribing should address providers’ additional specific concerns.
7. Comparison of Risk Behavior, Addiction Severity, and History of Overdose Between Active and Agonist–Maintained Heroin Users
Jermaine Jones PhD; Briana Todhunter BA; Suky Martinez BA; Sandra D. Comer PhD – Columbia University Medical Center

Background: The fundamental goal of agonist maintenance therapy is to decrease the use of illicit opioids and abusive patterns of licit opioid use. Studies have shown that agonist maintenance therapy significantly improves general psychosocial function, though we know that even while in agonist maintenance, illicit opioid use and risk behaviors persist. Objective: This study sought to characterize and compare psychosocial function of non-treatment seeking heroin users to those in opioid agonist maintenance therapy. Additionally, we sought to understand how these variables were related to overdose history. Methods: This study compared individuals who were currently using heroin and not treatment seeking (Current) to those in treatment and maintained on methadone or buprenorphine (In Tx). Participants completed basic demographic information, a substance use inventory, the Addiction Severity Index (ASI), the Risk Assessment Battery (RAB), and a Treatment Services Review (TSR). We ran a MANOVA between our groups with a series of drug use variables as our outcomes (ASI scores, RAB total, frequency of heroin use, polysubstance use, and number of lifetime overdose events that they had experienced). Results: Our sample included 32 active heroin users and 46 participants maintained on an opioid agonist. Our analyses revealed a significant effect of user type on drug use variables (p < .001). Separate univariate ANOVAs revealed non-significant effects on the ASI (Current: .278; In Tx: .242, Possible Range: 0 – 1.00 ), RAB (Current: 4.96; In Tx: 4.17, Possible Range: 0 - 40), and lifetime overdoses (Current: .58, In Tx: .50). Active users reported significantly greater past month use of heroin (5.5 vs 1.75 days/week, p<.001) and greater past month concomitant drug use (Current: 1.79 other drugs; In Tx: .944 other drugs, p<.05). Conclusions: Overall illicit drug use was greater among active users, reiterating the clinical utility of agonist maintenance. However, the finding that addiction severity and risk behaviors did not differ between these groups implies that much can still be done to provide care for current and former illicit opioid users. Though we did not find a relationship between these variables and drug overdose, ongoing prospective analysis may allow us to determine their relationship to overdose risk.
8. Managing Problematic Behaviors Among Patients Taking Long-Term Opioid Therapy: Initial Findings of a Delphi Study
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**Objective:** To use the Delphi method to elicit expert opinion and develop consensus on which problematic behaviors are most common and challenging, and how these behaviors should be managed. **Methods:** Using a Delphi approach, experts in pain and opioid management in primary care settings completed four rounds of web-based questionnaires. Common and challenging behaviors most frequently identified by participants were: using more opioid medication than prescribed, aggressive behavior, taking opioids for symptoms other than pain, substance use, asking for increase in opioid dose, and missing appointments. Participants then described their management approach to each behavior. Qualitative data was analyzed using a thematic approach. Participants rated common management approaches for each behavior on a scale of 1 (not at all important) to 9 (extremely important). Disagreement was defined as one-third or more of responses in the 1-3 range and one-third or more in the 7-9 range; the absence of disagreement was considered consensus. An important management strategy had consensus and a median value of ≥ 7. Consensus strategies with medians between 4 and 6 were of “uncertain” importance. **Results:** Of 30 respondents, 83% were physicians, 10% nurse practitioners, and 7% nurses. Physicians were boarded in Internal Medicine (91%), Pain (22%), and Addiction (22%). There was consensus that 56 of 82 management strategies to address problematic behaviors were important. Across all behaviors, important management strategies included: determining if a pattern of behavior has been present, reviewing a treatment agreement, ordering urine toxicology tests, utilizing non-opioid therapies, and assessing for substance use disorders. There was consensus agreement about tapering opioids only for methamphetamine and heroin use; for other behaviors, participants disagreed or were uncertain. There was consensus agreement about stopping opioids only for heroin use. **Conclusions:** We identified important management strategies for addressing problematic behaviors among patients on LTOT. The final round will establish consensus where there was disagreement and clarify uncertain results. Our findings will provide guidance for primary care providers managing problematic behaviors.
9. Barriers and Facilitators Affecting the Implementation of Substance Use Screening in Primary Care Clinics: A Qualitative Study of Patients, Providers, and Staff
Jennifer McNeely MD, MS; Pritika Kumar PhD; Erica Sedlander MPH; Luke Sleiter, MPH; Sarah Farkas; Dennis McCarty, PhD; John Rotrosen, MD – NYU School of Medicine

**Background:** Alcohol and drug use is a leading cause of morbidity and mortality that frequently goes unidentified in medical settings. As part of a study to implement the NIDA Common Data Elements for collecting substance use screening information in electronic health records (EHRs), we interviewed key primary care stakeholders. **Objective:** To identify barriers and facilitators affecting the implementation of substance use screening in primary care clinics. **Methods:** Focus groups and individual qualitative interviews were conducted with 67 stakeholders, including primary care patients, medical providers (physicians, medical assistants, nurses), and administrators, in two health systems. Analysis of transcribed interviews was guided by the Knowledge to Action (KTA) framework (Graham, 2006), which guides the selection and implementation of new clinical practices. **Results:** Factors affecting implementation based on KTA elements were identified from participant narratives. Identifying the problem: Participants unanimously agreed that knowledge of a patient’s substance use is important for patients’ health and quality care, that substance use is not properly identified in medical settings, and that universal screening is the best approach. Adapting knowledge: The majority of patients and providers stated that the primary care provider should play a key role in substance use screening and interventions. There was discrepancy of opinion regarding the optimal approach to delivering screening. Some felt that patients should self-administer questionnaires, while others thought that patients would be more comfortable having face-to-face discussions with their primary care provider – though not with other members of the care team. Many providers reported that being able to take effective action once unhealthy substance use is identified is crucial. Assessing barriers: Patients expressed concerns about confidentiality, ‘denial’, and providers’ lack of empathy. Barriers identified by providers included individual-level factors such as lack of knowledge and training, and systems-level factors including lack of time, resources, space, and communication between members of the medical team. **Conclusions:** Based on these findings, we designed and are testing an implementation strategy utilizing universal screening, patient self-administered questionnaires, and EHR-integrated clinical decision support to assist providers in conducting brief motivational counseling and providing referrals to address unhealthy substance use in primary care clinics.
10. Policy Intervention To Increase Receipt of Medical Attention For College Student Alcohol Intoxication
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– Boston University School of Public Health

Background: Alcohol intoxication is a significant problem on college campuses. Fear of reporting can lead to fatalities. In 2009, a large urban university implemented a policy of mandatory university police notification with transport to an emergency department by emergency medical services. **Objective:** To describe emergency department visits by college students for alcohol intoxication after policy implementation. **Methods:** We evaluated a retrospective cohort of university students during the academic years (Sep-June) 2007-2011 (2 years prior to and 3 years after the above policy was initiated). Data were from university health center, police and records from one large hospital. **Results:** 971 students were transported to local hospitals for alcohol intoxication. The mean annual number of transports 2 years prior to the policy was 131 and 3 years after was 236 (p<0.01). Of those at the hospital of record (n=679) 55% were female, mean age was 19, 84% were under 21. The mean blood or breath alcohol level was 192 mg/dL; 95% had levels over 80 mg/dL; 19% of students had levels >250 mg/dL; mean length of stay was over 4 hours; 1.3% were hospitalized; 9% had 2 or more repeat visits for intoxication. Mean alcohol levels were similar before and after the policy. **Conclusions:** While definitive conclusions must be limited by the study design, adoption of a university policy to transport students with alcohol intoxication to emergency departments was followed by an increase in such visits. Despite a larger number and presumably broader population who might not previously have been evaluated medically, the levels of serious intoxication were substantial.
11. Outcomes of a Multi-Specialty, Graduate Medical Education Screening, Brief Intervention, and Referral to Treatment (SBIRT) Curriculum For Unhealthy Alcohol and Other Substance Use
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Background: Alcohol and other substance use cause significant morbidity and mortality; yet, many physicians fail to recognize it. The Substance Abuse and Mental Health Services Administration (SAMHSA) funded Screening, Brief Intervention, and Referral to Treatment (SBIRT) initiatives to identify patients with unhealthy alcohol and substance use, provide brief counseling, and refer to specialty treatment. In 2008, Yale University received SAMHSA funding to train Internal Medicine (IM), Obstetrics and Gynecology (OB), Pediatrics (Peds), Psychiatry (Psych), and Emergency Medicine (EM) residents in SBIRT. Objective: To evaluate knowledge acquisition and skill implementation after SBIRT training among residents in IM, OB, Peds, Psych, and EM. Methods: The SBIRT training session included didactic teaching, video examples, and skills practice using specialty-specific cases. After the training session, residents were observed performing SBIRT with a standardized patient and skills were assessed using a standardized checklist. Skill implementation was assessed via electronic survey at 30 days and 3 years post-training which queried participants about SBIRT use in clinical practice. Resident knowledge acquisition was assessed by completing a knowledge test at baseline, 30 days and 3 years post-training. Results: Between 2008-2013, we trained 554 residents (264 IM, 41 OB, 106 Peds, 54 Psych, 89 EM). 46% were PGY-1, 41% PGY-2, 11% PGY-3, and 2% PGY-4. The sample was 45% male. 93% completed 30 day and 77% of those eligible (348/451) completed the 3 year follow-up surveys. At 30 days, residents documented performance of 1249 SBIRTS: 561 in IM, 42 in OB, 101 in Peds, 174 in Psych, and 371 in EM. At 3 year follow up, 66% (231/348) reported using SBIRT skills in clinical practice. Scores on the knowledge survey increased by 14% from baseline at 30-days and by 8% at 3-years post training. Conclusions: Implementation of a multi-specialty graduate medical education SBIRT curriculum is feasible. An SBIRT curriculum has a lasting impact on resident knowledge. Residents incorporate SBIRT in patient care encounters and continue to use these skills subsequently in clinical practice.
12. Substance Abuse Visits to the Emergency Department (S.A.V.E.D.)

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**Background:** Adolescent alcohol and substance use (SA) remains a significant public health problem. The Youth Risk Behavior Survey (NYC, 2013) revealed that Staten Island youth had the highest percentage (28.5%) of alcohol use and opioid use (4.7%) in NYC. **Objectives:** The objectives of this study were to quantify the prevalence of SA-related visits among 13-20 y/o’s to Staten Island University Hospital’s Emergency Department (ED) and to identify associated variables. **Method:** Retrospective data from patients 13-20 y/o was collected from ED visits between 1/1/2012 and 12/31/2012 (n = 7680). 107 visits with SA ICD-9 codes were eligible for the study. Variables reviewed included age, gender, ethnicity, month, SA type, injuries, chronic illness, mental health condition, medications, tobacco, zip code, and insurance status. The proportion of SA-related visits to the ED during the study period was calculated. A control group of patients, 13-20 y/o, who visited the ED during the same time period with a non-SA-related diagnosis, were randomly selected (n = 214). The primary objective of the statistical analysis was to determine whether any significant differences exist between SA-related visits and non-SA-related visits on demographic and clinical factors. Summary statistics were calculated. Either the Chi-Square or the Fisher’s exact test were used to determine if any significant differences (p value of <0.05) exist between cases and controls. **Results:** Alcohol-related visits were the most common (42.0%). Opioid-related visits were second (17.7%); marijuana-related visits third (12.1%). Tobacco use and diagnosis of depression or anxiety were significantly more prevalent among SA-related visits compared to non-SA-related visits (p<0.0001). Among SA-related visits, 9.4% were 13-14 y/o, 31.8% were 15-17 y/o, and 58.9% were 18-20 y/o. Non-SA-related control visits were 25%, 32.1% and 42.9%, respectively. These age group differences were significant (p=0.002). The majority of SA-related visits were male (58.9%) compared with non-SA-related visits where the majority were female (52.8%). This difference was marginally significant (p=0.048). **Conclusion:** Consistent with national data, alcohol-related visits were most common. Opioid-related visit data confirms the growing opioid abuse problem. Our findings suggest that there are identifiable at-risk populations to whom prevention strategies should be targeted.
13. Infectious Endocarditis and Morbidity: Epidemiological Patterns in the Setting of the Opioid Epidemic
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Background: The opioid epidemic is widespread, and unsafe injection practices among people who inject drugs (PWID) can lead to complications. In Maine, there has been a perceived surge in infectious endocarditis in the setting of increasing injection drug use (IDU). Objective: Our primary objective was to examine differences in demographics, health characteristics, and health service utilization between PWID and non-injection drug users (non-PWID) with endocarditis. We also examined the association between IDU and morbidity, defined as emergency department visits within 3 months of admission or cardiac surgery. Methods: We performed a retrospective analysis of adult patients with definite or possible infectious endocarditis admitted to a tertiary care center in Portland, Maine between January 1, 2013 and January 1, 2016. Descriptive, bivariate and multivariate analyses were performed. Results: One-hundred and seven patients were included, of which 42 patients (39.3%) had a history of IDU. Compared to non-PWID, PWID were more likely to be homeless (21.4% vs 1.5%, p=0.001), be on medicaid (56.1 vs 21.7, p<0.001) or uninsured (34.1% vs 1.6%, p<0.001), have a history of incarceration (28.6% vs 1.5%, p<0.001), and lacking a primary care physician (28.6% vs 10.8%, p=0.02). PWID also had a higher prevalence of hepatitis C (73.8% vs 1.5%, p<0.001), mental health conditions (100% vs 29.2%, p<0.001), amphetamine (9.5% vs 0%, p=0.02), cocaine (38.1% vs 1.5%, p<0.001), and alcohol use disorders (33.3% vs 4.5%, p<0.001), other illicit drug use (66.7% vs 7.7%, p<0.001), and had significantly longer length of stays (25.6 days vs 17.1 days, p=0.008). Only 11.9% of the PWID group received medication treatment for addiction (MTA) prior to admission. Only 23.8% were discharged on MTA and 2.6% with a naloxone rescue kit. Injection drug use was not associated with morbidity (0.76, 95% CI 0.20-2.89). Conclusions: Our results highlight existing health disparities between PWID and non-PWID with infectious endocarditis. Injection drug use was not associated with morbidity, but these results show the need to deliver comprehensive health services to this marginalized population.
14. The Relationship of Patient Satisfaction and Quality of Life in Medication Assisted Treatment
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**Background:** The advent of the consumer movement in medical care has contributed to measures of patient satisfaction becoming an increasingly important aspect of the treatment delivery system. Despite these changes, the satisfaction of individuals undergoing treatment for substance use disorders remains largely unknown with those studies which have addressed the issue yielding mixed results. For example, Carlson and Gabriel (2001) demonstrated across a variety of inpatient and outpatient samples that high levels of satisfaction were strongly correlated with participation in services and positive treatment outcomes. McClellan and Hunkeler (1998), however, found little to no relationship between patient satisfaction and treatment outcomes in a sample of individuals participating in outpatient care. More recently, studies have begun to examine the relationship between patient satisfaction and retention/treatment outcome in a methadone maintained population (Kelly et al., 2010; de los Cobos et al., 2016). **Objectives:** The present study expands on the existing literature by 1) reporting on the development of a patient satisfaction measure designed exclusively for a medication assisted treatment setting, and 2) assessing the relationship of satisfaction with overall quality of life and positive change since treatment initiation. The instrument consisted of 10 items designed to assess satisfaction with the environment of care and the two additional questions which addressed perceived improvement and quality of life (QOL). The relevance of overall QOL has recently been identified by Laudet et al. (2009) as an essential outcome of substance abuse treatment. **Methods:** The measure was administered anonymously to 306 individuals (52.5% female) receiving medication assisted treatment who were co-enrolled in the outpatient or intensive outpatient levels of care. **Results:** A principal components analysis yielded a two-factor solution (clinical environment of care, personal well-being/quality of life). Internal consistency of the environment of care factor was quite good (Cronbach’s α = 0.954). Surprisingly, satisfaction with the environment of care was not predictive of either self-reported quality of life or perceived improvement. **Conclusions:** The current study suggests that while satisfaction can be meaningfully assessed in the medication assisted treatment environment, it may not be predictive of treatment outcome in this unique population. Possible explanations for this unexpected finding will be considered.
15. Warm Handoff vs. Fax Referral for Hospital-Initiated Smoking Cessation Among People Living with HIV/AIDS: A Secondary Data Analysis
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Background: The prevalence of smoking among people living with HIV/AIDS (PLWHA) remains higher than the general population. Life expectancy among PLWHA has increased over the past decade, however, PLWHA who smoke will die younger than their non-smoking peers. The primary goal of this secondary data analysis was to examine the effects of warm handoff vs. fax referral to the quitline for smoking cessation among hospitalized smokers living with HIV/AIDS. Methods: Hospitalized smokers (N = 25, 76.0% male, 48% African American) with a diagnosis of HIV/AIDS were identified, approached, and randomized to one of two treatment groups. At the bedside for participants in warm handoff, staff contacted the tobacco quitline which provided inpatient telephone counseling. Participants randomized to fax were fax-referred to the quitline on the day of discharge, and the quitline enrolled and counseled the participants as outpatients. The quitline provided continued outpatient counseling to participants in both conditions. The main outcome was verified tobacco abstinence at 6-months post randomization. Results: Enrollment and participation in quitline counseling was high among both warm handoff and fax-referred participants, 100.0% and 71.4% respectively. Follow up for outcome data collection in both groups was greater than 90% at 6 months. Verified abstinent rates were 45.5% in warm handoff versus 14.3% in fax referral at 6 months (not significant). Conclusions: It is highly feasible to enroll, engage, and retain hospitalized smokers among PLWHA in smoking cessation interventions. The marked advantages of warm handoff suggests it is a promising intervention for hospitalized PLWHA.
16. Substance Use Attitudes, Knowledge, Confidence and Practice Behaviors among Medical Residents and Social Work Students Receiving SBIRT Training: Pre-training Differences
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**Background:** Limited research has explored differences across disciplines on Screening, Brief Intervention and Referral for Treatment (SBIRT) trainings. Tanner et al. (2012) found little group variation between nursing students and medical students, although this study involved only a small number of physicians. Babor et al. (2004) found that non-physicians had lower pre-training confidence and knowledge than physicians. Understanding differences among professionals before SBIRT training would help the focus and development of future trainings to meet the needs of trainees and be more effective. **Objective:** We sought to identify pre-training differences among social work students and medical residents in knowledge about SBIRT, attitudes about substance use treatment, pre-training SBIRT behaviors, and confidence carrying out SBIRT. **Methods:** We used Multiple-Indicator Multiple-Cause (MIMIC) modeling to compare pre-training SBIRT knowledge and behaviors, substance treatment attitudes, and SBIRT-related confidence among Internal Medicine (IM) medical residents (n=163) and social work (SW) students (n=320). Using common items from pre-surveys, latent variables for attitudes, behaviors (i.e. screening, brief intervention, referral for treatment), and confidence were created, with a summed variable based on knowledge questions. These variables were then regressed on a grouping variable with sociodemographic (sex, age, race/ethnicity) and personal substance use related covariates (college drinking and drug use, smoking status, and family history). **Results:** SW students were more likely to be female, African American and less likely to be Asian American than IM residents. They also reported greater levels of alcohol, smoking and other drug use history. MIMIC modeling indicated that SW students displayed less punitive substance use attitudes (b=.860; z=5.23; p<.001), but significantly less experience with screening (b=-1.73; z=-10.48; p<.001), brief intervention (b=1.21; z=-9.98; p<.001) and referral for treatment (b=-1.21; z=9.54; p<.001) than IM residents. No differences were identified in pre-training knowledge and confidence. **Conclusions:** Social work students’ and medical residents’ different attitudes about substance use may be a function of perceived role identity or personal characteristics. Conversely, social work students’ comparatively limited experience working with patients using aspects of SBIRT may contribute to attitudes differences. However, results demonstrated that prior experience with SBIRT behaviors prior to training may have limited impact on knowledge and confidence.
17. Patient Characteristics Among Opioid Dependent Buprenorphine Treated Patients in a Length of Treatment Study
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**Background:** Previous studies demonstrated differences in patterns of resource use and cost across the groups of patients who were medically discontinued after different lengths of treatment (LOT), with buprenorphine medicated assisted treatment (BMAT). **Objectives:** The objective of the study was to explore similarities and differences in patient characteristics for patients medically discontinued across 6 time treated cohort groups particularly the group 12-17 months, previously identified as the optimal minimum LOT. **Methods:** A retrospective analysis of demographic characteristics of opioid dependent patients previously treated with BMAT and medically discontinued after 3-5, 6-11, 12-17, 18-23, and 24+ months was conducted on the Truven Health MarketScan Medicaid dataset between 2007-2014, age of 16-65 years (N=29,062) treated with at least 2 pharmacy fills of buprenorphine (all formulations) for a minimum 3 months. Medical discontinuation was defined as either the last dose as lower than the preceding dose or lower than the average daily dose for the entire treatment period. Mean age, gender, and race were compared across all six LOT groups. **Results:** There were no statistically significant differences in the demographic characteristics (age, gender, or race) of controlled discontinued patients among all six LOT groups (p>0.1 for all intergroup comparisons). **Conclusion:** In a group of medically controlled BMAT patients where 12-17 months was previously identified as the optimal minimum length of treatment, there were no differences in general demographic characteristics.
18. Attitudes Toward Buprenorphine Among Staff Versus Providers in an Urban Hospital-Based Primary Care Clinic
Leah M Gordon MD MPH; Jocelyn R James MD; Jared W Klein MD MPH; Joseph O Merrill MD MPH; Judith I Tsui MD MPH – Harborview Medical Center, University of Washington

Background: Prior research has identified a perceived lack of clinic support as a barrier for physicians who prescribe buprenorphine. Little is known about attitudes toward buprenorphine among staff who work in primary care clinics where this medication is prescribed. Objective: We sought to compare staff and providers’ perspectives on 1) the effectiveness of buprenorphine for treatment of opioid addiction, and 2) the role of primary care providers (PCPs) in providing buprenorphine treatment. Methods: Clinical providers (physicians and ARNPs) and staff in a large, urban, hospital-based primary care clinic were asked to complete a self-administered survey which included belief, assessed using a Likert scale from 1 (strongly disagree) to 5 (strongly agree), in the effectiveness of buprenorphine for the treatment of opioid addiction, and opinion as to whether or not PCPs should prescribe buprenorphine. We used multivariable logistic regression to examine differences between provider and staff responses after adjustment for age, race and gender. Results: The sample comprised 71 members of the clinic team, of which 25 (35%) were staff. In the overall sample, 71% were women, 36% were non-white, and the mean age was 38 (SD±13). There were no significant differences in age or sex, but staff were significantly more likely to be non-white than providers (54% v. 26%, p=0.02). Fewer of the staff believed strongly that buprenorphine (i.e. Likert >4) was effective compared to providers (25% v. 58%, p=0.02) and fewer believed that PCPs should prescribe buprenorphine (63% v. 87%, p=0.03). After adjusting for age, non-white race, and gender, staff were significantly less likely than providers to have a strong belief in the effectiveness of buprenorphine (aOR=0.21; 95% CI: 0.06-0.77, p=0.02), and marginally less likely to believe that PCPs should prescribe buprenorphine (aOR=0.29; 95% CI: 0.07-1.12, p=0.07). Conclusions: Staff in this urban primary care clinic were less likely than providers to believe strongly in the effectiveness of buprenorphine and may also be less likely to believe that PCPs should prescribe it. Educational efforts directed toward staff may help to foster a more supportive environment for prescribing buprenorphine for opioid use disorders in office-based settings.
19. Interest in Prescribing Buprenorphine Among Resident and Attending Providers at an Urban Hospital Based Primary Care Clinic
Jocelyn R James MD; Leah M Gordon MD, MPH; Jared W Klein MD, MPH; Joseph O Merrill MD, MPH; Judith I Tsui MD, MPH – University of Washington

**Background:** Academic medical centers provide opportunities to train physicians to prescribe buprenorphine to better treat the epidemic of opioid use disorders. However, it is unclear whether trainees and faculty believe they should prescribe buprenorphine and are interested in becoming waivered. **Objective:** In advance of implementing a program for treating opioid use disorders with buprenorphine in primary care, we sought to assess attending and resident physicians’ current attitudes toward buprenorphine and interest in becoming waivered to prescribe it.

**Methods:** Internal medicine resident and attending physicians in a large, urban, hospital based primary care clinic were asked to complete a self-administered survey evaluating experience with buprenorphine, perceptions of its effectiveness for treatment of opioid addiction, and interest in becoming waivered to prescribe. We also assessed attitudes toward primary care based management of addiction and inclusion of buprenorphine training in residency. We compared demographics, training-related factors, and perceived effectiveness between providers who did and did not express high interest in becoming waivered to prescribe buprenorphine. **Results:**
The sample consisted of 44 providers: 28 (64%) residents and 16 (36%) attendings. Although few respondents (4 attendings and 1 resident) were waivered, the majority endorsed believing that primary care providers should provide buprenorphine (86%) and that residents should be trained to prescribe (86%). Only 19% expressed confidence in discussing buprenorphine with patients. Of those without waivers, 67% indicated a high interest in becoming waivered. Providers with high interest were younger (mean age 32 v. 43 years, p=0.0009) and more likely to endorse the greatest belief in buprenorphine effectiveness (85% v. 44%, p=0.009), compared to those without high interest. Higher interest was observed among residents in the primary care v. categorical track (92% v. 57%, p = 0.04). **Conclusions:** In this academic primary care clinic with high prevalence of substance use disorders, most providers lack waivers to prescribe buprenorphine, yet there is high interest in obtaining waivers, especially among younger physicians, residents in the primary care track, and those who believe that buprenorphine is highly effective. A low level of confidence in discussing buprenorphine with patients is a potential area for improvement.
20. Early Drinking Onset, Drinker Identity and Alcohol Outcomes in Young Women
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**Background:** A drinker identity -- a valued identity by college age -- has been shown to predict alcohol use and alcohol-related problems. Yet contributing factors are unknown. **Objective:** To determine relationships between early drinking onset, drinker identity, and alcohol use outcomes in young women. **Methods:** Data were drawn from a larger cross-sectional study of identities and behavior in community-recruited young people aged 16-24. These analyses focused on 76 young women (Mean age 20.2 years; 59% White and 31% Black; 20% reported Hispanic ethnicity). In individual data collection sessions, participants completed a survey that included questions about the drinker identity (drinking is part of my self-image, drinking is part of who I am, drinking is part of my personality, and others view drinking as part of my personality), age of drinking onset, and other questions not reported here. Drinker identity questions were rated on a 5-point scale (1=strongly disagree to 5=strongly agree). The drinker identity score is the mean across the items with high scores indicating a stronger identification with alcohol, i.e., drinking is a central source of self-definition. Age of first drink < 14 was considered early drinking onset. Following the survey, participants completed a 90-day Timeline Followback to measure alcohol use over the last 90 days. **Results:** Fifty-two percent of the sample endorsed at least one drinker identity item. Thirty-seven percent of the sample reported early onset drinking, and they had significantly higher drinker identity scores than those who did not (2.1 vs 1.4, p=.008). Most of the sample (82%) reported some drinking in the last 90 days. Among those who reported drinking, 69% had at least one episode of heavy drinking (4+) in the last 90 days. High drinker identity scores were associated with more drinks/day (rho=.62), heavy drinking (rho=.57), and number of heavy drinking days (rho=.57) in the last 90 days. **Conclusions:** Early drinking onset may be an important modifiable precursor of the drinker identity. Delaying drinking onset may prevent development of the drinker identity – a cognitive factor that motivates high levels of alcohol use and distinguishes young women at highest risk for heavy drinking.
21. Characteristics of Brief Intervention and Referral Services Delivered by Advanced Practice Registered Nursing (APRN) Students

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**Background:** Brief interventions (BIs) for unhealthy alcohol/drug use are comprised of several specific components. Health professional students receiving training in screening, brief intervention and referral to treatment (SBIRT) are taught these components and practice SBIRT skills via role play or with standardized patients. Information is limited, however, on characteristics of BIs delivered by students in clinical practice settings. **Objective:** This study examines assessment logs completed by APRN students to identify components of BIs and referrals to treatment (RT) utilized with actual patients. **Methods:** As part of a SAMHSA-funded SBIRT training grant, three APRN programs required students to practice SBIRT in clinical settings and complete assessment logs for each patient screened. Logs included results of single item screening questions for tobacco, alcohol and drugs and, where indicated, a completed AUDIT or DAST. Students recorded patients’ risk levels based on AUDIT/DAST scores, which of 10 BI/RT components were performed, and patients’ responses. **Results:** 113 students submitted assessment logs. Of 538 patients screened (mean age 44; SD 15.0; 53.5% female), 348 (64.7%) were positive on the single alcohol or single drug screening question, among which 122 (35%) recorded high risk AUDIT/DAST scores. Discussions regarding consequences of use and safe levels of use were the most commonly reported BI components, appearing on 266/348 (76%) and 245/348 (70%) of assessment logs, respectively. Just over half (51%) of the logs indicated use of the “readiness to change” ruler, while 115/348 (33%) indicated use of a decisional balance discussion. Goal-setting was included in 149/348 (43%) BIs. Most common RT steps included referral to a mutual help group, 52/348 (15%), or a specialty treatment program, 28/348 (8%). **Conclusions:** Patient logs demonstrate that APRN students trained in SBIRT employed many of the skills they were taught, including patient education, motivational enhancement, goal setting for decreased alcohol/drug use, and referral to mutual help groups and specialty treatment. Findings also helped faculty identify underutilized SBIRT steps which may be addressed specifically in future SBIRT trainings.
22. Emergency Department Health Care Provider Views Toward Patients with Alcohol and Drug-Use Disorders
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**Background:** Emergency department (ED) visits provide an opportune moment for screening, brief intervention, and referral to treatment for patients with substance-related problems. Studies have found that health care provider’s positive views toward substance-using patients often deteriorate with time. This is important as the attitudes of health care providers toward patients with substance use problems significantly impact the quality of care provided. **Objective:** The present study examines differences in views toward patients with alcohol and drug use disorders between groups based on hours of training and number of patients seen among health care providers. **Methods:** Participants were ED providers in practice (n = 93) and in training (n = 30) at a trauma Level I hospital. Participants completed a brief survey assessing their views about patients with alcohol use and drug-use dependence disorders and medical experience background. Groups were categorized by number of patients seen and hours of training. To examine differences among providers in practice and in training, we conducted one-way ANOVAs where hours of training and number of patients seen were the independent variables and views toward patients with alcohol use disorders was the dependent variable. **Results:** Among providers in practice, groups based on number of patients seen demonstrated mean differences on views, such that group who had seen more patients had greater negative views. Among providers in training, groups based on hours of training received and groups based on number of patients seen both demonstrated mean differences on views. Groups with more training had less negative views; groups who had seen more patients had greater negative views. The interaction between hours of training and number of patients seen was significant: Groups with the fewest hours of training and most patients seen had the most negative views. **Conclusions:** These findings suggest a need for continued training on alcohol and drug-use disorders throughout training and practice to increase knowledge and decrease negative views. Given that the interaction with amount of training was significant, increased training may be one way to counter the development of negative views, thus improving the quality of care provided to these patients in an ED setting.
23. Exploring Health Disparities in Dental Care Providers’ Delivery of Tobacco Use Treatment
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Background: The United States Public Health Service Guidelines for Treating Tobacco Use and Dependence recommends that all health care providers implement the 5As model (“ask”, “advise”, “assess”, “assist” and “arrange”) when treating a patient who is a tobacco user (Fiore, 2008). Dental health providers are ideally situated to address tobacco use among their patients; however, the tobacco use treatment clinical practice guidelines are underutilized by dental health providers. Noncompliance with the clinical practice guidelines may lead to treatment and tobacco-related disparities among patients. Objective: To determine if disparities are present among varying racial and ethnic groups when being asked about tobacco use and advised to quit by dental health providers per the clinical practice guidelines. Methods: Data were collected as part of a larger cluster randomized clinical trial focused on evaluating three system-level strategies to improve implementation of tobacco use treatment guidelines. Patient exit interviews (Pbert, 1999) were conducted with 1,015 smokers in 13 dental clinics across New York City, assessing delivery of the 5As by dental health providers. Likelihood of being asked about tobacco use and advised to quit were analyzed by race (as compared to whites), ethnicity (as compared to non-Hispanics), English proficiency, smoking frequency, and oral morbidities.

Results: Tobacco users who identified as black were most likely to be asked about tobacco use and advised to quit by their dental health provider. Tobacco users who identified as Hispanic were least likely to be asked about tobacco use by their dental health provider as compared to their non-Hispanic counterparts. Conclusion: The results demonstrate that there are disparities present among varying racial and ethnic groups when being asked or advised about tobacco use by dental health providers. Black patients were most likely to be asked about tobacco use and advised to quit which deviates from the literature traditionally suggesting that black patients are more susceptible to disparities perpetuated by health care providers as compared to their white counterparts (Chapman, 2013). Further research is needed to build an understanding of how providers’ implicit and unintentional biases can influence tobacco-related disparities among their patients (Chapman, 2013).

References:
24. 5As Smoking Cessation Counseling in Primary Care; Opportunities for 5As interventions
Jason M Satterfield PhD; Maya Vijayaraghavan MD MAS; Paula Lum MD; Patrick Yuan BA – University of California, San Francisco

**Background:** Clinical practice guidelines for the treatment of tobacco use disorder recommend that clinicians implement the 5As (ask, advise, assess, assist, and arrange) for smoking cessation counseling at every clinical encounter. **Objectives:** To examine the prevalence of receipt of 5A’s for cessation counseling among patients and adherence to 5A’s counseling among clinicians from 3 diverse primary care clinics. **Methods:** We surveyed a cross-sectional sample of 462 current smokers and 61 clinicians from 3 primary care clinics in San Francisco about their tobacco use behaviors and receipt of 5As counseling, clinicians’ adherence to 5As counseling, and demographics. We used logistic regression to analyze factors associated with patient receipt of counseling. We conducted a subgroup analysis among patient (n=214) and clinician (n=61) clusters to examine factors associated with 5As counseling. **Results:** The proportions of patients who self-reported receipt of 5As counseling were: ask, 49.9%; advise, 47.2%; assess, 40.6%; assist, 44.9%; and arrange, 22.4%. In multivariable analysis, older age was associated with receipt of assess (Adjusted odds ratio (AOR 1.0, 95% CI 1.0-1.01) or assist (AOR 1.0, 95% CI 1.0-1.04). Receipt of ask, advise, or assess differed between sites. Patients recruited from an academic HIV practice in a public hospital had lower odds of being asked about tobacco use (AOR 0.3, 95% CI 0.2-0.5), advised to quit smoking (AOR 0.5, 9% CI 0.3-0.8), or assessed for readiness to quit (AOR 0.6, 95% CI 0.3-0.9) compared to patients in an academic internal medicine practice in the same hospital. While the majority of clinicians reported asking (91.8%), advising (91.8%), and assessing (93.4%) tobacco use most of the time or always during a clinical encounter, fewer reported assisting (65.7%) or arranging (19.7%) follow-up. In multivariable models of patient-physician clusters, clinician self-report of 5As counseling was not associated with patient self-report of receipt of 5As counseling. **Conclusions:** Only half the patients reported being screened, and fewer reported being counseled against tobacco use. There was discordance between patient and clinician self-report of receipt of and adherence to 5A’s counseling. Our findings confirm the need for interventions to increase clinician-delivery of cessation counseling in routine primary care.
25. Lost in Translation: A Mobile App to Promote Screening, Brief Intervention, and Referral to Treatment (SBIRT) Skills
Khanh Ly BS; Derek Satre PhD; Maria Wamsley MD; Alexa Curtis PhD; Jason Satterfield PhD
– University of California, San Francisco

Background: Despite advances in evidence-based teaching, the transfer of SBIRT skills from the classroom to clinical care remains problematic. Students may demonstrate SBIRT proficiency in the classroom yet fail to use SBIRT in clinical placements. To address these challenges, the San Francisco SBIRT Interprofessional team developed a mobile app to facilitate transfer of SBIRT skills. Objective: This theory-based, mobile app serves as a reference guide, clinical tool, and data collection instrument. The Theory of Planned Behavior (TPB) was used to conceptualize the primary obstacles and facilitators of skill translation – 1) beliefs about SBIRT, 2) social norms, and 3) perceived behavioral control. Initial TPB-based assessments tailor the student’s experience by “assigning” exercises designed to increase behavioral intention to deliver SBIRT. This abstract describes the mobile app, beta testing, and randomized trial.

Methods: Twenty-two nurse practitioner students used the app for 3 months during their clinic rotations. Learners completed an “onboarding” survey to tailor their app experience and were asked to use the app while screening and counseling patients regarding substance use. Learners completed brief questionnaires regarding SBIRT usage at the end of each clinic shift. TPB surveys will be repeated at the end of the beta-testing period followed by debrief interviews. A randomized trial including social work, psychology, and nursing trainees will begin in August 2016. Results: Beta-testing will be completed in Summer 2016. Beta-test outcomes will be used for app improvement. The primary educational outcome is self-reported SBIRT utilization as measured by percent of patients screened and percent of at-risk patients receiving a brief intervention. Scores on the System Usability Scale and qualitative analyses of debrief interviews will assess app quality and areas for improvement. Conclusions: Training models for alcohol and drug use interventions are hindered by the challenge of skill translation to clinical settings. Technology has the potential for efficiently improving SBIRT translation if designed with the user in mind and evaluated in a real world setting. We share our development and beta-testing methodology and initial results in order to encourage improvement of implementation strategies for digital learning tools in health care.
26. Private Health Plans’ Role in Delivery and Payment Reform to Support Integrated Care
Constance Horgan ScD; Sharon Reif PhD; Maureen Stewart PhD; Deborah Garnick ScD; Amity Quinn PhD; Timothy Creedon MA; Brooke Evans MSW, LCSW, CSAC – Brandeis University

**Background:** Integration is a model of health care delivery strategically designed to address challenges inherent in preventive medicine and chronic disease management. Integrating medical and behavioral health care depends on coordination between providers, payers, and policymakers.

**Objective:** This study examines health plan activities related to integrated care.

**Methods:** Data are from the fourth round of a nationally representative survey of private health plans. Health plan executives were asked about their plans’ three commercial products (e.g., HMO, PPO, POS) with the highest enrollment in the 2014 benefit year. 274 plans responded (80% response rate), reporting on 705 products. Results are reported at the product level and weighted to be nationally representative and account for complex survey design.

**Results:** 28% of products reimbursed for case managers while 98% provided case managers to address behavioral health in primary care. Only 7% of products reimbursed for consultation between primary care providers and behavioral health providers. In contrast, 29% of products directly provided consultation to support behavioral health in primary care. Just over half of health plan products formally encourage primary care practices to become medical homes. Of those, 82% of products encourage inclusion of behavioral health. Nearly 60% of products use global payments, and 43% of those include behavioral health. Similarly, 57% of products use bundled payments for behavioral health.

**Conclusion:** Health plans are facilitating and supporting integrated care through delivery and payment policies. In order for integration to work well where it’s helpful, changes are required to align payment and delivery systems, and health plans are situated prominently at the nexus of these systems.
27. Pathways to Heroin Injection Among Young Drug Users in California’s Central Valley
Catherine Paquette BA; Jennifer Syvertsen PhD, MPH; Robin Pollini PhD, MPH – Pacific Institute for Research and Evaluation

**Background**: The rising rate of heroin use in the United States has led to increased attention on factors such as prescription drug misuse, which may lead to heroin use and injection initiation. Previous research has shown that the drug use pathways of young people who inject drugs may be significantly different than those of older people who inject drugs. This study uses qualitative methods to examine the drug use transitions of young people who inject heroin in two predominantly rural counties, Fresno and Kern, where rates of injection drug use are among the highest in the United States. **Objective**: To describe the drug use and transitions which led to heroin injection in a sample of young drug users. **Methods**: We conducted semi-structured qualitative interviews between March and December of 2015 with a sample of 47 people who inject drugs in Fresno and Kern counties. The sub-sample used for this analysis included 17 individuals under the age of 40 whose current drug of choice was heroin. **Results**: The analysis identified three primary pathways leading to heroin injection. The largest group was comprised of individuals who started with a wide range of recreational drugs, began using oxycodone, and then transitioned to heroin. A second group transitioned to heroin directly from non-opioid recreational drugs. For both of these groups, early substance use was characterized by poly-drug use, which often included both stimulants (such as cocaine and methamphetamine) and depressants (such as prescription opioids and benzodiazepines). The third and smallest group reported little to no recreational drug use prior to heroin initiation. This group transitioned to heroin after becoming addicted to pharmaceutical opioids that had been legitimately prescribed to them. **Conclusions**: Most of the young drug users in this sample experimented with multiple types of drugs, including stimulants and pharmaceutical opioids, before transitioning to heroin use and injection. This study highlights the need for preventive interventions that address both recreational drug use and prescription drug misuse and that take into account the complexities of poly-substance use among young drug users.
28. Barriers and Facilitators to Engagement in Hepatitis C Treatment for People Who Inject Drugs
Jennifer R. Reed MS, FNP-BC, NP-C – New York University

**Background:** Hepatitis C virus (HCV) is a serious and often life-threatening disease that disproportionately affects people who inject drugs (PWID). Early diagnosis and treatment can halt progression of liver damage and eliminate the risk of transmission to others, but PWID face multiple barriers to care. **Objective:** The purpose of this integrative review is to explore the personal barriers and facilitators to engagement in HCV treatment for PWID. **Methods:** An electronic literature search was conducted of PubMed, Embase, PsycInfo, and CINAHL for studies published between January 2007 and May 2015, and included both quantitative and qualitative studies conducted in the United States and internationally. A total of 273 studies were screened, and sixteen were included in the final review. A quality appraisal was conducted to assess the methodological rigor of each included study using the Crowe Critical Appraisal Tool (CCAT). **Results:** Engagement in HCV treatment consists of several steps: willingness to engage in treatment, specialist assessment, treatment initiation, treatment adherence, and treatment completion. Five themes of self-perceived barriers and facilitators emerged across all steps of engagement. These included availability of support, competing priorities, emotional factors, HCV knowledge, and health concerns. Individuals who were engaged in harm reduction services, those who had not recently injected drugs, and those who were HIV negative were more likely to be engaged in HCV treatment. Also, being White, male, having health insurance, and experiencing acute symptoms of HCV was associated with specialist assessment and treatment initiation. There were high rates of adherence and completion for participants who initiated treatment, indicating that most of the personal barriers to care exist in the initial stages of the engagement process. **Conclusions:** Overall, it was found that stable, relatively healthy individuals who were knowledgeable about the risks of HCV and the benefits of treatment were the most likely to engage in treatment. Many participants in this review cited a lack of support, competing priorities, and health concerns as barriers to treatment engagement. It is important that health care providers are aware of the barriers PWID may face when diagnosed with HCV to facilitate timely engagement in HCV treatment.
29. Healthcare Resource Utilization in Adults Involved in the Criminal Justice System With a History of Opioid Dependence Receiving Extended Release Naltrexone Compared to Treatment as Usual

William Edward Soares III MD MS; Donna Wilson MS; Joshua D. Lee MD; Michael Gordon DPA; Edward V. Nunes MD; Charles P. O’Brien MD PhD; Peter D. Friedmann MD MPH – Baystate Medical Center

**Background:** Opioid use disorder has reached epidemic proportions, with overdose now the leading cause of accidental death in the US. Extended release naltrexone (XR-NTX) has emerged as a medication treatment that reduces opioid use and craving. However, the effect of XR-NTX therapy on acute healthcare utilization, including emergency department visits and inpatient hospitalizations, remains uncertain. **Objective:** Evaluate hospital-based healthcare resource utilization in adults involved in the criminal justice system with a history of opioid use disorder randomized to XR-NTX therapy compared with TAU during a 6-month treatment phase and 12 months post-treatment follow up. **Methods:** This retrospective secondary analysis uses data collected in a published randomized trial. Comparisons of the number of emergency department visits, hospital admissions (for drug detox, psychiatric care and other medical reasons) and days hospitalized were performed using chi square tests for any admission and negative binomial models for number of admissions and days admitted. **Results:** Of the 308 participants randomized, 96% had utilization data (76% complete 6 months, 67% complete follow up). No significant differences were seen in overall healthcare utilization (IRR=0.87 95%CI 0.62-1.23, p=0.43), or substance use-related drug detox hospitalizations (IRR=0.96, 95%CI 0.39-2.35, p=0.93). Despite having more participants report chronic medical problems at baseline (43% vs. 32%, p=0.05), those receiving XR-NTX generally experienced equivalent or lower rates of healthcare utilization compared to TAU. The XR-NTX group had significantly lower non-detox related hospital admissions (IRR=0.46, 95%CI 0.25-0.86, p=0.01) and fewer non-detox related days hospitalized (IRR=0.36, CI 0.16-0.83, p=0.02) during the course of the entire study. **Conclusions:** XR-NTX decreased non-detox related hospitalizations compared to TAU. Provider concerns regarding healthcare utilization should not preclude the consideration of XR-NTX as therapy for opioid addiction.
**30. Pediatricians and Their Screening, Brief Intervention, and Referral To Treatment (SBIRT) Practices**  
Iman Parhami MD, MPH; Christopher Hammond MD; Michelle Horner DO; Andrea Young PhD; Sharon Levy MD – Johns Hopkins University

**Background:** Since preliminary data supports the efficacy of SBIRT in pediatric settings, the American Academy of Pediatrics (AAP) recommends that SBIRT is included in every health maintenance visit for adolescents. **Objective:** To examine self-reported pediatrician SBIRT practices using data from a national survey. **Methods:** In 2014, an electronic, anonymous, and optional questionnaire was distributed to all AAP members that approximately included 20 items on SBIRT related practices, 10 items on their attitudes regarding SBIRT, and 10 sociodemographic items. Two binomial variables were created to categorize their reported screening frequency (screening at every health maintenance visit or sooner) and utilization of all SBIRT components (screening at every health maintenance visit or sooner, using structured screeners, provide praise for negative screens, providing brief advice, providing motivational interviewing, and referring to treatment when necessary). **Results:** Pediatricians(n=350) from five geographic regions spanning the U.S. completed this questionnaire. Out of the 305 pediatricians that regularly treat adolescents, 221(72%) reported screening for alcohol at every health maintenance visit or more often. Compared to respondents that screened less frequently, this group was more likely to use structured screeners [4.10,1.20-14.01,0.016(Odds ratio, 95th percentile, p)], provide praise to negative screens [2.86,0.96-8.57,0.06], and provide motivational interviewing to a positive screen [2.33,0.95-5.67,0.06](Table 1). Approximately 10%(n=30) reported utilizing all SBIRT components. The reported barriers for SBIRT implementation included confidentiality (43%), lack of clinical expertise (26%), and reimbursement (25%). Respondents wanted referral information (50%), access to patient education materials (47%), and implementation guides (45%). **Conclusions:** While a majority of pediatricians reported annual alcohol screening, few use the full SBIRT model. Future research efforts should explore how SBIRT is disseminated and implemented in real-world pediatric settings and examine barriers to implementation of the full SBIRT model.

**Table 1. Pediatrician’s self-reported screening frequency and the relationship with each SBIRT component**

<table>
<thead>
<tr>
<th>Screen At Every Health Maintenance Visit Or Sooner</th>
<th>Odds Ratio (95th percentile)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Yes(n=221)</strong></td>
<td><strong>No(n=29)</strong></td>
</tr>
<tr>
<td>Use structured screeners</td>
<td>32%(n=71)</td>
</tr>
<tr>
<td>Provide praise</td>
<td>93%(n=206)</td>
</tr>
<tr>
<td>Provide brief advice</td>
<td>91%(n=200)</td>
</tr>
<tr>
<td>Provide MI</td>
<td>43%(n=94)</td>
</tr>
<tr>
<td>Refer to treatment</td>
<td>67%(n=149)</td>
</tr>
</tbody>
</table>

**Note:** Data from 55 pediatricians were excluded due to incomplete responses.
31. Current Drug Users and Women Have Higher Rates of Risky Sexual Behaviors
Karran A. Phillips MD, MSc; Landhing Moran PhD; Sara Hertzel BA; David H. Epstein PhD; Kenzie L. Preston PhD – National Institute on Drug Abuse, National Institutes of Health

**Background:** HIV risk behavior includes drug risk behavior and sexual risk behavior and may be influenced by an individual’s activity space. **Objective:** We sought to assess sexual risk behavior and neighborhood-level indicators of social and drug disorder exposure in a cohort of non-drug users (NDU) and drug users (CDU). **Methods:** We analyzed data from 415 participants enrolled in a 12 month study of genetics and environment on drug use trajectories. Participants completed the HIV Risk-taking Behavior Scale, Addiction Severity Index, and PhenX Drug Use Survey. Neighborhood risk was determined using the Neighborhood Inventory for Environmental Typology (NIfETy). **Results:** Of the 415 participants enrolled, 123 (30%) were non-drug users (NDU), 139 (34%) current marijuana users (CMU), 83 (20%) current opioid or stimulant users (COSU), and 70 (16%) current alcohol and other substance users (OTH). The CMU, COSU, and OTH groups were collapsed into one group, CDUs, which was compared to NDUs. After controlling for age, race, gender, marital status, and NIfETy score, ordinal logistic regression demonstrated that CDUs had significantly more sexual partners than NDUs (coeff 0.165, 95%CI 0.025, 0.305, z=2.31, p=0.021). Condom use, regardless of partner type was not different between the CDU and NDU groups (p=n.s.) but condom use was lower among women having sex with their regular partners (p=0.030). **Conclusions:** Working with CDUs to decrease risky drug behavior is an important part of recovery; this analysis demonstrates that it may be equally important to work with CDUs to decrease their risky sexual behavior. Regardless of drug use status, it is of paramount importance to work specifically with women to increase their ability to negotiate condom use with their partners in order to decrease risk.

Financial Support: This research was supported by NIDA-IRP, NIH.
Background: Co-prescribing of opioids and benzodiazepines is associated with increased risk of opioid overdose. The relationship between Prescription Drug Monitoring Program (PDMP) data and opioid overdose survivors with untreated opioid use disorder (OUD) receiving Emergency Department (ED) initiated treatment is unclear. Objective: Among individuals receiving ED-initiated treatment for OUD, to compare past-year PDMP opioid and benzodiazepine prescriptions between those presenting to the ED after opioid overdose and those presenting for non-overdose ED events. Methods: Three hundred and twenty nine opioid-dependent patients were enrolled in a previously reported randomized clinical trial comparing 3 strategies of ED-initiated treatment of OUD. PDMP prescription data for benzodiazepines and opioids in the year prior to study enrollment were extracted from our state’s PDMP. Descriptive statistics, Spearman’s rank correlation coefficient and Fisher’s exact tests were calculated to detect differences in prescribing between patients enrolled after ED-visit for overdose vs. non-overdose related ED-visit. Results: Nine of 29 (31%) patients with overdose related ED-visits (median=3, [IQR 1,4]) and 109 of 300 (36%) patients with non-overdose related ED visits (median=2, [IQR 1,6]) had past-year PDMP opioid prescriptions. Two of the 29 (7%) patients with overdose related ED-visit (range=10-11) and 72 of 300 (24%) non-overdose related ED-visits (median=2, [IQR 1,10]) had past-year benzodiazepine prescriptions. One out of 29 (3%) patients enrolled after ED visit for overdose and 37 of 300 (12%) participants with non-overdose ED visit had both opioid and benzodiazepine prescriptions in the PDMP in the year prior to study enrollment (p=0.26) No association was observed between number of PDMP opioid prescriptions and ED overdose presentation status (P=0.6). Patients with study enrollment after an overdose related-ED visit were less likely (Rho= -0.109) than those with non-overdose related ED-visit to have PDMP benzodiazepine prescriptions (P=0.049). Conclusion: Since few patients with untreated OUD who receive ED-initiated treatment have evidence of opioid or benzodiazepines in the PDMP, regardless of overdose status at ED admission, alternative sources of assessing opioid and benzodiazepine co-exposure should be sought.
33. Psychosocial Needs of Patients on Medically Assisted Treatment
Alexandrea Hatcher MSW; Allyssa Rivera ADTD; Helena Hansen MD PhD – New York University

**Background:** Medically assisted treatment (MAT) has been shown to be effective but little is known about the psychosocial needs of patients upon treatment initiation. This study explores the psychosocial needs of buprenorphine patients with attention to social attachment, the impact of treatment related changes in social networks, and the stigma surrounding previous abuse and treatment recovery with MAT will be incorporated. **Objectives:** Understanding the psychosocial adjustments to MAT with regard to attachment, social networks, and stigma. **Methods:** Semi-structured interviews combining qualitative questions about buprenorphine patients’ views on stigma and opioid dependence with quantitative stigma scales and social networks name generators were conducted with patients recruited from primary care and substance abuse treatment programs in two public New York City hospitals. Trained graduate level interviewers conducted face to face semi-structured interviews lasting 30 minutes to 2 hours. Qualitative data were analyzed using NVIVO 10.0 using thematic coding and content analysis. Quantitative stigma scales questions were analyzed using factor clustering and ANOVA to identify and characterize groups of experiences of stigma and the effect of opioid treatment setting and demographic factors on these groupings were analyzed. **Results:** Qualitatively, patients report struggling with the loss of social ties because of the loss of their drug using networks. Due to the stigmatizing nature surrounding drug use, patients experience feelings of isolation in treatment and a loss of the former self. Quantitatively, patients who are housed report higher rates of addiction secrecy. Also, patients with higher education have higher rates with addiction secrecy. When coupled with qualitative themes it is found that patients hide MAT treatment from family to buffer the stigma of their previous addiction. **Discussion:** Preliminary findings suggest that MAT patients need psychosocial interventions that prevent isolation and reduce stigma. Traditional modalities like Alcohol Anonymous or Narcotics Anonymous isolate patients from expressing their lived experiences and inadvertently further stigmatize them. Modalities like dance therapy and art therapy emphasize creativity and expression to open up dialogue and connectedness to one another, to supplement the loss of these drug using networks.
Background: In clinical trials, we demonstrated that Brief intervention (BI) can motivate individuals with harmful and hazardous alcohol drinking seen in the emergency department (ED) to reduce their alcohol consumption, and that practitioner adherence to one such BI, the Brief Negotiation Interview (BNI), can be measured using the BNI Adherence Scale (BAS). However, no psychometrically-validated instrument for evaluating the extent to which healthcare practitioners correctly implement the BNI for moderate to severe opioid use disorders (OUD) has been reported in the literature.

Objective: Our objective was to develop and examine the psychometric properties of a revised BAS for moderate to severe OUD (BAS-O).

Methods: In the context of our randomized controlled trial evaluating the efficacy of three models of ED care for OUD namely Referral, Brief Intervention, and Brief Intervention with ED-initiated buprenorphine, we developed and subsequently examined the psychometric properties of the BAS-O, a 37-item scale that requires raters to answer whether or not (“yes” or “no”) each of the critical actions of the BNI for OUD was correctly implemented by the practitioner. Items pertained to each of the four steps of the BNI: 1) Raise the Subject, 2) Provide Feedback, 3) Enhance Motivation and 4) Negotiate & Advise. A total of 215 audio-recorded BNI for OUD encounters were rated by three trained raters who were independent of the study team, and blind to study hypotheses, treatment and assignment. Psychometric tests of internal consistency, reliability and validity were used to evaluate the ratings, including exploratory and confirmatory factor analysis.

Results: The results indicated the BAS-O has good to excellent psychometric properties, in terms of 1) internal consistency, 2) discriminant validity, 3) inter-rater reliability and 4) construct validity. A 13- item, two-factor solution accounted for nearly 80% of the variance, where Factor 1 addressed “Autonomy and Planning” (7 items) and Factor 2 addressed “Motivation & Problems” (6 items). However, predictive validity was not found.

Conclusions: This study suggests that the BAS-O is a psychometrically valid measure of adherence to the BNI for OUDs, one that provides practitioners with a brief, objective method of evaluating BNI skill performance.
35. Parental Perceptions of ADHD Specific Risk of Alcohol and Marijuana Use for Their Adolescents with ADHD

Elizabeth Harstad MD, MPH (1,3); Dylan Kaye BA (1); Meghana Vijaysimha MPH (1); Lauren Wisk PhD (2,3); Elissa Weitzman ScD, MSc (2,3); Sharon Levy MD, MPH (1,3) – (1) Division of Developmental Medicine, Boston Children’s Hospital; (2) Division of Adolescent/Young Adult Medicine, Boston Children’s Hospital; (3) Department of Pediatrics, Harvard Medical School

**Background:** Youth with Attention-Deficit/Hyperactivity Disorder (ADHD) are at increased risk for early initiation of alcohol and marijuana use and development of substance use disorders. Additionally, alcohol and marijuana use can worsen ADHD symptoms, decrease compliance with medications and behavioral/organizational support, and exacerbate poor outcomes.

**Objective:** To describe parental perceptions of ADHD-specific alcohol and marijuana use risk for their adolescents with ADHD.

**Methods:** Parents of adolescents with ADHD ages 13-18 years were recruited via a national ADHD website to complete an online survey about perceptions and knowledge of adolescent alcohol and marijuana use harm as related to their adolescent with ADHD. We used frequencies to report demographics and parental perceptions and knowledge.

**Results:** Of 171 individuals who clicked on the study link thus far, ninety-four parents (55%) completed the survey regarding their adolescents with mean age of 15.2 years, of whom 66.0% were male and 91.5% white. Most adolescents (72.3%) took prescription ADHD medication. Co-occurring anxiety or depression was reported in 56.4% and conduct or oppositional disorders reported in 34.0% of adolescents. While most parents reported talking to their adolescent about alcohol (91.5%) and marijuana (84.1%), fewer talked about alcohol (54.3%) or marijuana (51.1%) use risks specifically related to ADHD. Approximately one third of parents recognized that their child with ADHD was at greater risk of initiating alcohol use (32.5%) and marijuana use (39.4%) than peers. Seventeen percent of parents thought that their child consuming up to one drink (11.7%) or up to two drinks (5.3%) was not dangerous. The majority (88.3%) of parents want their adolescent’s ADHD care provider to discuss ADHD-specific alcohol and marijuana use risk with their adolescent now or in the future.

**Conclusion:** Although parents of adolescents with ADHD are discussing alcohol and marijuana use with their adolescents, they may not consistently discuss or understand ADHD-specific risks for substance use. However, parents are receptive to providers discussing ADHD-specific substance use risks with their adolescents.
36. Diversity of Religiosity in Open 12-Step Groups: Preliminary Findings
Mark D. Thomas PhD – Indiana University - Northwest

**Background:** Twelve-step groups boast a membership in the tens of millions with 115,000 active Alcoholics Anonymous groups worldwide, offering members an inexpensive mechanism to obtain social support so critical for maintaining sobriety. Twelve-step groups have been long-identified with spirituality and religion. However, many patients balk at the idea of attending 12-step groups because of the expectation that religion will dominate the work done in these groups. This represents an important barrier for many who might otherwise benefit from 12-step groups. Despite the presence of self-help groups with a non-spiritual focus, the ubiquity of 12-step groups makes their examination compelling. **Objectives:** The purpose of the present study is to examine the level of religiosity among open 12-step groups. **Methods:** Data for this project were based on observing 50 unique open 12-step meetings. Because of the observational nature of the study, religiosity was measured by recording the number of religious references stated during each meeting. Data on religiosity were categorized as being low (0 to 3 religious references), medium (4 to 9 religious references) and high (10 or more). Data pertaining to the racial and gender makeup of the groups were also collected. **Results:** It was indicated that despite the reputation of 12-step groups as being highly religious, over a quarter of the open 12-step groups included in this study appeared to have a low level of religiosity. However, Chi Square analysis indicated that location of the meeting at a religious institution (e.g., church) was not associated with a high level of religiosity. Finally, based on simple linear regression, neither the number of persons of color nor the number of women present at the observed meetings appear to influence the level of religiosity. **Conclusions:** The above results suggest that even though all 12-step programs work from the same steps, traditions, and general group format, they appear to vary in terms of group religiosity. Though some groups place a great deal of emphasis on religion, a substantial portion of groups in this study did not. Implications of these results suggest that 12-step groups may be an option for non-religious people seeking help with maintaining sobriety.
37. Reliability and Validity of Past-12-Month Use Frequency Items as Opening Questions For the Updated CRAFFT Adolescent Substance Use Screening System
Sion K. Harris PhD (1,2); Lon Sherritt MPH (1,2); Sarah Copelas BA (1); John Rogers Knight Jr.; MD (1,2), and the Partnership for Adolescent Substance Use Research – (1) Department of Pediatrics, Harvard Medical School; (2) Center for Adolescent Substance Abuse Research, Boston Children’s Hospital

**Background:** To obtain use frequency information, the “yes”/”no” opening questions to the CRAFFT, a widely-used adolescent substance use screener, were replaced with questions asking for past-12-month number of substance use days. **Objectives:** The aim of this study was to assess the reliability and criterion validity of these consumption opening questions among adolescent primary care patients. **Methods:** We recruited an age-gender-balanced convenience sample of 708 12- to 18-year-old patients arriving for annual well-visits from February 2015-April 2016 at five pediatric primary care offices in Massachusetts USA. Before the medical visit, participants self-administered the screener on a tablet computer. The opening items asked “During the past 12 months, on how many days did you use [alcohol, cannabis, etc.]?.”, with numeric key-pad response and instruction “(Put 0 if none)”, followed by the “Car” item of the CRAFFT. Only those reporting any use days subsequently completed the five RAFFT questions (Relax, Alone, Forget, Family/Friends, Trouble). A confidential research staff-administered 12-month substance use Timeline Follow-Back (TLFB) interview was the criterion standard. For test-retest reliability, a subsample of 250 participants completed the identical screener within two weeks. We computed sensitivity (Sn), specificity (Sp), positive and negative likelihood ratios (LR+/−) for any-use validity. Intra-class correlation coefficients (ICC) were computed for days-of-use validity and test-retest reliability (95% confidence intervals for all). All participating IRBs approved the study protocol, including a waiver of parental consent. **Results:** Overall sample mean age=14.6, SD=1.9 years; 51.3% were girls; 43.1% White non-Hispanic, 11.4% Black non-Hispanic, 31.2% Hispanic, 14.3% Asian/Other; 71.2% had college-graduate parents. The subsample completing re-test had older mean age (15.2 vs. 14.3 years, p<0.001). Compared to the criterion standard, the screener’s consumption items had Sn=.96 (.94-.97), Sp=.81 (.74-.86), LR+=5.0 (3.7-6.9) LR−=.05 (.04-.08) for identifying any use. ICCs for days-of-use were alcohol=.79 (.76-.81) and marijuana=.84 (.81-.86). There was insufficient other-drug use for analysis. Test-retest reliability was high: ICC for alcohol=.84 (.80-.88) and marijuana=.88 (.85-.90). **Conclusions:** Asking adolescents to input the number of past-12-month days of use is a valid and reliable way to initiate CRAFFT screening.
38. Psychophysiological Responding to Negative Mood Induction and Interoceptive Awareness for Women in SUD Treatment
Sheila E. Crowell PhD; Cynthia Price PhD; Megan E. Puzia BA; Mona Yaptangco MA – University of Utah

**Background:** This NIDA-funded RCT examines Mindful Awareness in Body-oriented Therapy (MABT) for women in Substance Use Disorder (SUD) treatment. MABT is designed to teach interoceptive awareness skills for self-care and emotion regulation. Models of interoceptive awareness suggest that psychophysiological processes may serve as one mechanism linking treatments with improved outcomes. However, there are few studies that examine psychophysiological processes in chemically dependent women. **Objective:** To understand psychophysiological mechanisms underlying SUD in women and to examine distinct response patterns to three different tasks. **Methods:** Participants (N=116) engaged in a psychophysiological assessment at their pre-treatment appointment. Respiratory sinus arrhythmia (RSA) a measure of parasympathetic influences on heart rate, and electrodermal activity (EDA), a measure of sympathetic influences on palm sweat, were assessed in response to three tasks. Tasks included negative mood induction in response to a film clip and to rumination task, and then an interoceptive awareness meditation task. Multilevel models were used to examine changes from resting baseline to the three tasks. **Results:** For the film task, results indicated a significant decrease in RSA, $\gamma_{10} = -0.18$, SE = 0.05, $p < .001$, and an increase in EDA $\gamma_{10} = 0.62$, SE = 0.11, $p < .001$. For the rumination task, results showed decrease in RSA, $\gamma_{10} = -0.24$, SE = 0.06, $p < .001$, but no effect for EDA. For the interoceptive awareness task, results indicate an increase in RSA, $\gamma_{10} = 0.46$, SE = 0.08, $p < .001$, and a decrease in EDA, $\gamma_{10} = -0.38$, SE = 0.12, $p = .001$. **Conclusions:** Negative mood induction produced both sympathetic activation and parasympathetic withdrawal whereas interoceptive awareness produced the opposite pattern of results. This suggests that participants may have become less distressed and better regulated with this task. Findings contribute to the incipient literature on translation of psychophysiological measurement to clinical settings with complex samples and have important implications for research and treatment involving interoceptive awareness training for women’s SUD treatment.

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Background: The US has been confronted with addiction-related crises impacting deleteriously the health and productivity of the nation. The Democratic National Committee (DNC) and the Republican National Committee (RNC) have endorsed national policy platforms for electing Presidential candidates. Objectives: We sought to characterize the addiction-related statements within the political platforms of the DNC and RNC and to examine how these policies may be concordant or discordant and who they may change over time. Methods: Within the federal DNC and RNC political platforms for the last 10 federal election years, we conducted searches to identify addiction-related key words (based on expert consensus, n=60). We determined the number of times that these key words were mentioned in the platforms as well as extracted the content of the policy narrative. Among three independent coders, we compared the number of mentions of addiction-related key words in each platform, whether these policies were concordant or discordant between the parties, and examined how these policies changed over time. Results: Within each party, the number of mentions of key words (e.g., drug, smoking) decreased over time (e.g., specific illicit substances (e.g., marijuana, heroin, and cocaine) were not mentioned after the year 2000). Both parties similarly highlighted policies to address the drug trade with other nations, "narco-terrorism", advocated general strategies of public education regarding addictions, expansion of drug courts, and access to treatment (e.g., insurance issues, local initiatives). At times, the parties concurred on issue (e.g., access to treatment) but differed on the approach (e.g., local ("faith base") initiatives (RNC), national initiatives (DNC). Many addiction-related policy statements were repeated verbatim from year to year (particularly statements about targeting drug traffickers and involving parents in adolescent treatment). RNC and DNC platforms were more concordant than discordant in each election year and over time: both parties presented similar statements of advocacy for addiction-related education, prevention, and treatment. Conclusions: We found that the RNC and DNC platforms advocated for some addiction-related policies that decreased in number over time, were devoid of details and specifics, and were more concordant than discordant. Further work will further examine how these policies changed historically and whether policies of the winning party influenced subsequent legislative action.
40. Retention in a Primary Care Clinic For Homeless Veterans With Substance Use Disorders
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Background: The Addiction Triage for Homeless: Enhancing VA Medical Homes (ANTHEM) clinic is a specialized, integrated primary care clinic for homeless Veterans. Many ANTHEM patients have a history of substance use disorders (SUD), which can complicate their health management and affect appointment follow-through. Retention is therefore important for these patients’ medical and SUD-related clinical outcomes. Determining retention rates in patients with and without SUD, and identifying patient characteristics associated with retention, are critical steps towards developing retention interventions. Objectives: To determine rates of patient retention in ANTHEM and the extent to which various sociodemographic or clinical factors were associated with retention. Methods: For this program evaluation, we reviewed ANTHEM electronic medical record (EMR) visit notes of Veterans enrolled in the ANTHEM clinic as of April 2016. We excluded those who had been patients for less than one year. We defined patients retained in care (retention) if they had any ANTHEM visits in the last year. Clinical diagnoses were identified from the EMR. Chi-square tests were used to test for differences in ANTHEM retention based on sociodemographic and clinical characteristics such as age, race, SUD, and mental health diagnoses. Results: We reviewed the records of 186 ANTHEM patients, and excluded 28 who had been patients for less than one year (N=158). Patients were frequently male (97%), age 51-64 (60%), and White (52%). In addition, 41% experienced chronic pain, 59% had a mental health disorder, and 73% had an SUD. Among all established patients, 114 (72%) were retained in care. Rates of retention were not significantly different for patients with history of SUD (74%) compared to those without (67%), X2=0.65, p>.05. We found 81% of White patients were retained in care compared to just 65% of non-Whites, X2=5.00, p=.025. No other sociodemographic or clinical characteristics were significantly associated with retention. Conclusions: ANTHEM patients with an SUD history are returning for care at rates similar to those without SUD. This suggests that ANTHEM’s specialized model may allow for effective engagement of patients with SUD. The discrepancy between whites’ and nonwhites’ retention requires additional examination.
41. Predictors of Patient Readiness and Confidence to Change Alcohol and Cannabis Use when Screened in Healthcare Settings.
Melissa K. Richmond PhD; Ana P. Nunes PhD; Kerryann Broderick BSN, MD; Kelly Marzano MA

Background: Alcohol and cannabis are two of the most commonly used substances, and healthcare providers in states with legal access to cannabis will likely see an increase in patients using cannabis. How ready patients are to change their substance use influences the type of interventions that healthcare professionals provide. Literature examining readiness to change (RTC) for patients screened in healthcare settings is emerging but limited. Using data from a screening, brief intervention, and referral to treatment (SBIRT) initiative, the current study sought to examine factors that contribute to patient RTC. Objectives: 1. To determine how ready and how confident patients are to change alcohol or cannabis use after screening positive through an SBIRT initiative; 2. To identify patient characteristics that predict greater RTC and confidence. Methods: In Colorado primary care (PC) and emergency settings, health educators administered the ASSIST tool (World Health Organization) to identify patients with unhealthy substance use. A subset of patients who screened positive for alcohol (n=2126) or cannabis (n=404) indicated how ready and confident they were to change their use on a 10-point RTC scale. Scores of 7 and higher were coded as ready/confident. Logistic regressions examined predictors of RTC and confidence. Results: 1. For alcohol, 68.6% were ready (M = 7.58, SD = 2.76) and 51.2% were confident (M = 7.02, SD = 3.31). For cannabis, 44.9% were ready (M = 5.49, SD = 3.63) and 61.7% were confident (M = 7.02, SD = 3.31). 2. Patients with higher alcohol (OR = 1.04, p < .001) and cannabis (OR = 1.07, p < .001) ASSIST scores, and younger patients (alcohol OR = 0.990, p = .006; cannabis OR = 0.978, p = .005), indicated greater RTC. For alcohol, females indicated greater RTC than males (OR = 1.32, p = .008). Younger patients (OR = .988, p = .001), patients with lower alcohol ASSIST scores (OR = .976, p < .001), and patients screened in PC (OR = 1.52, p < .001) had higher confidence to change alcohol use. For cannabis, younger patients (OR = .979, p = .005) were more confident and PC patients were less confident (OR = .623, p = .035). Conclusions: Patients with more risky use are more ready, but less confident in ability, to change alcohol use. Younger patients may be particularly ready to change cannabis and alcohol use, and greater targeting of this population in healthcare settings may be beneficial. Understanding factors that contribute to greater RTC assists healthcare professionals to tailor interventions to motivate patients towards reduced risky substance use.
42. Daily Marijuana Users Identified in Primary Care and Emergency SBIRT Settings: Characteristics and Screening Results
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**Background:** Marijuana is the most widely used illicit substance in the US. Its rates of use as well as rates of daily users have steadily increased over the past several years. Within primary care settings, individuals who screen positive for drugs most commonly use marijuana. An estimated 25-50% of daily users will develop cannabis use disorder, making them a potentially important focus in healthcare settings. **Objective:** This study examined the characteristics and screening results of daily marijuana users identified in healthcare settings as part of an interdisciplinary Screening, Brief Intervention, and Referral to Treatment (SBIRT) program. **Method:** Patients presenting to an Emergency Department (ED) or primary care practice were screened for risky substance use with the AUDIT and DAST-10 and, if positive, were further assessed on psycho-social factors, substance use severity, and demographics (n = 1604). **Results:** Of the patients who screened positive and participated in the assessment, 44% used marijuana at least one day in the past 30 and 15% used marijuana 25 or more days. These daily users (n = 239) had relatively low DAST-10 scores (M = 3.02) and 42% screened into the moderate or higher risk category on the DAST-10 (3+). Using multivariate logistic regression analyses, we identified significant predictors of 1) being a daily user (vs. non-daily) and 2) screening as moderate/high risk (vs. low) on the DAST-10. Among the marijuana users (n = 739), daily use was significantly predicted by being male, Latino, and an ED patient. Among daily users, significant predictors of screening moderate/high on the DAST-10 were: younger age, being a user of other drugs, and more frequent alcohol use. **Conclusions:** Findings suggest that while SBIRT programs in healthcare settings are likely to encounter daily marijuana users, the majority may screen at low risk for health or psycho-social problems. Patients who screen into higher risk categories are likely to be younger and using other substances. Therefore, interventions for daily marijuana users may need to be tailored such that interventions for lower risk patients focus on reducing marijuana use, while interventions for higher risk patients be adapted for multiple substances and younger users.
43. Mindfulness Meditation and Nicotine Dependence: Preliminary Findings From an Initial Effectiveness Trial
Isabel Cristina Weiss de Souza MD; Elisa Harumi Kozasa PhD; Sarah Bowen PhD; Kimber Richter PhD; Laisa Marcorela Andreoli Sartes PhD; Ana Regina Noto PhD – Universidade Federal de São Paulo

**Background:** Smokers often have a difficult time giving up tobacco, and relapse among those who succeed is prevalent. Integration of mindfulness meditation practices into smoking cessation treatment is gaining popularity around the world. Studies among smokers have found associations between mindfulness meditation and both lower withdrawal severity and sustained cessation. **Objectives:** The current study evaluated the effectiveness of a Mindfulness-based Relapse Prevention (MBRP) program as an adjunct to standard guidelines-based tobacco treatment. **Methods:** Adults diagnosed with nicotine dependence (N = 86) were randomized to either a control group (CG) in which they either received only standard treatment, or standard treatment plus eight sessions of MBRP (MBRP). We used the Fisher’s exact test for between-group differences, and the McNemar’s exact test to compare the proportion of abstinent participants at end of standard treatment (T1) and at the six-month follow-up (T3). All analyses used an intent-to-treat approach in which participants who were lost to follow up were counted as smokers. **Results:** The proportion of abstinent individuals in the control group after six months (14.3%) was not statistically significant (OR = 0.65, IC95% = 0.17 - 2.30; p = 0.57) compared to the MBRP group (20.5%), even though the latter presented a trend to advantage. In MBRP, there were no statistically significant differences between abstinence in T1 and T3 (McNemar’s c2 = 3.27, df = 1, p = 0.07), since for each abstinent patient, 1.3 patients relapsed. However, in CG relapse rates rose between T1 and T3 (McNemar's c2 = 19.05, df = 1, p = 0.005), as 3 patients relapsed for each 1 abstinent. **Conclusion:** Preliminary findings suggest lower relapse indices among the patients who participated in MBRP. Future definitive trials are warranted.
44. The Evolutionary Approach to Cannabinoid Receptors

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Introduction: The endogenous cannabinoids (ECB) system, is comprised of anandamide, 2-arachidonoyl glycerol, endocannabinoid receptors (CNR1 and CNR2) and synthesizing/degrading enzymes. The reports regarding the therapeutic effect of endocannabinoids are sometimes controversial. The reason for this problem might lay in the structural and functional ECB differences in different models and organisms studied. The goal of this study was to evaluate our recently published data on the cDNA composition of ECBs in baboons (Rodriquez-Sanchez et al., 2016) and compare it to known functional and structural variants (from genotype to genotype to phenotype) in humans and to described phenotypes in the baboons (from phenotype to phenotype). Material and methods: The sequences obtained were translated using the Transeq online program and aligned with human orthologous human gene [GenBank: CNR1 ID: 1268; CNR2 ID: 1269] using the CLUSTAL W program. Naturally occurring mutations are listed on the Human Gene Mutation Database (HGMD): http://www.hgmd.org. Results: Among the members of the ECB family, the CNR1 was the most conserved gene between humans and baboons with 98% homology (Figure 1). The phenotypes, associated with the mutations of the untranslated regions of this gene in humans are not described in the baboons. In contrast, one of the differences in the CNR2 structure was detected in the only clinically known region showing the relevant polymorphism in the human receptor. Phenotypes associated with this polymorphism are not described in the baboons (Figure 2). Conclusion: The presented data provides important information for translational and pharmacological studies of substance of abuse in non-human primate model.
Background: Pharmacists and student pharmacists are uniquely positioned to make a significant impact on community-level prescription opioid use disorder prevention and treatment efforts. Overdose education and naloxone training was recently implemented into the required curriculum of the College of Pharmacy at the University of Rhode Island in an effort to better prepare student pharmacists to address opioid use disorder and overdose risk in the community.

Objective: This study was designed to compare the retention of naloxone, overdose and opioid use disorder knowledge between student pharmacists who received a didactic lecture only, with students who received the same lecture content plus a skills-based objective structured clinical examination (OSCE) with a standardized patient actor.

Methods: Students in their first-professional year (P1) of the Doctor of Pharmacy program (n=129) and students in their second-professional (P2) year (n=123) were eligible for study participation. Students attended required lectures on overdose risk factors and response to opioid overdose, including detailed naloxone training. P2 students were additionally required to participate in an OSCE assessment following the didactic lecture component. An anonymous, voluntary survey was offered to all students approximately 6 months after they participated in the lecture or lecture plus OSCE. The survey consisted of 10 objective questions and 11 subjective questions regarding opioid overdose, opioid use disorder and use of naloxone. Study methodology was reviewed and approved by the Institutional Review Board.

Results: A total of 99 P1 students (76.7%) and 116 P2 students (94.3%) completed the survey. P1 students were found to be more knowledgeable regarding the duration of naloxone action and identification of risk factors for opioid overdose. P2 students were found to be more knowledgeable regarding non-medical ways patients may obtain opioids and the correct order of emergency response during a suspected opioid overdose. Subjectively, 69.7% of the P2 students reported feeling confident in their ability to counsel patients on overdose prevention compared with 48.5% of the P1 students. (p<0.05).

Conclusions: Overall P1 and P2 students performed similarly in response to survey questions designed to assess retention of knowledge following a lecture-only or lecture plus OSCE related to opioid use and overdose.
46. Engagement in the HIV Care Cascade for Methadone Treatment Program Clients
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Background: Persons living with HIV and at-risk substance use are often less engaged in HIV care, have higher morbidity and mortality and are at increased risk of transmitting HIV to uninfected partners. We developed a quality-improvement tracking system at an urban methadone clinic to monitor clients along the HIV care cascade and identify clients needing intervention. Objective: To identify characteristics associated with HIV treatment retention and viral suppression among methadone clients. Methods: We reviewed electronic medical record data from 2015 for all methadone clients with known HIV disease, including age, gender, race, HIV care sites, HIV care visit dates and HIV viral load. Clients received HIV primary care at the methadone clinic, a nearby HIV specialty clinic or community clinics. Retention was defined as an HIV primary care visit in both halves of the year. Viral suppression was defined as an HIV viral load < 40 copies/ml at the last lab draw. Using IBM SPSS, data were analyzed with Chi-square test of independence and Fisher’s exact test. Results: The population (n=68) was 62% male, 84% age 45 or older and 60% non-Caucasian. Of these 68 clients, 74% (n=50) were retained in care and 81% (n=55) were virally suppressed. Retention in care was higher for clients receiving HIV care at the methadone clinic compared with community clinics (93% vs. 45%, p=0.021). Viral suppression was significantly higher for women (p=0.012) and clients 45 years or older (p=0.029). There was a non-significant trend towards greater viral suppression for clients receiving care at the methadone clinic compared to the HIV clinic or community clinics (93% vs. 79% vs. 73%, p>0.05). Conclusions: Retention in HIV care and viral suppression are high in this urban methadone clinic with integrated HIV services. In addition to finding that male and younger clients had higher rates of persistent viremia, this quality improvement analysis supports integrating HIV primary care with methadone treatment services for this at-risk population. Limitations include small group size.
Background: Due to the high prevalence of prescription opioid misuse, the US Food and Drug Administration (FDA) mandated a Risk Evaluation and Mitigation Strategy (REMS) requiring manufacturers of extended-release/long-acting (ER/LA) opioids to fund continuing education based on an FDA curricular Blueprint. Objective: This paper describes the Safe and Competent Opioid Prescribing Education (SCOPE of Pain) Train-the-Trainers program and its impact on 1) disseminating the SCOPE of Pain curriculum and 2) knowledge, confidence, attitudes, and performance of the participants of trainer-led compared to expert-led sessions. Methods: SCOPE of Pain is a 3-hour ER/LA opioid REMS training. In addition to expert-led live statewide trainings, a Train-the-Trainer (TTT) program was developed to increase dissemination. Participants who attended expert-led trainings could apply to attend a 2-hour Train-the-Trainers (TTT) workshop. These trainers were expected to conduct SCOPE of Pain trainings at their institutions. Learners of both the trainer-led and expert-led SCOPE of Pain programs were surveyed immediately post- and 2-month post-trainings to assess improvements in knowledge, confidence, attitudes, and self-reported guideline-based opioid prescribing practices. Results: During nine months (5/2013 - 2/2014), 89 trainers were trained through nine TTT workshops in nine states. Over 24 months (5/2013 – 4/2015), 33% of the trainers conducted at least one SCOPE of Pain training with a total of 79 trainings that trained 1,419 individuals. The average number of trainings of those that conducted at least one training was 2.8 (range 1-19). The participants of the trainer-led programs were significantly more likely to be practicing in rural settings (chi-square, p<0.001). In comparing the 17% (70/424) of participants from the primary target audience for the trainer-led programs who completed the 2-month follow-up survey to the 26% (128/489) from the expert-led trainings, there were no significant differences in improvements in participant knowledge, confidence, attitudes, and performance. Conclusions: The SCOPE of Pain TTT program holds promise as an effective dissemination strategy to increase the utilization of guideline-based safe opioid prescribing practices when treating chronic pain.
48. Improving School-Based Health Center Nurse Practitioners’ Skills in Screening and Brief Intervention for Adolescent Substance Use Utilizing an Observed Structured Clinical Exam (OSCE)

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Background: In Massachusetts, Nurse Practitioners (NPs) in school based health centers (SBHCs) provide a variety of healthcare services to adolescents. The MA Department of Public Health made substance use (SU) screening and brief intervention (SBI) a performance measure for NPs in SBHCs. Despite initial training efforts, gaps in SBI confidence, attitudes and skills persisted. Objective: To improve SBHC NPs SBI knowledge, confidence, attitudes and practice, a skills-based training was developed using an observed structured clinical exam (OSCE) utilizing standardized patients that focused on adolescent SU. Methods: The 5-hour OSCE training was required of all DPH funded SBHC NPs and included: a 60-90 minute lecture covering screening and brief negotiated interview (BNI) skills including a review of motivational interviewing followed by 2 OSCE stations and observation of 2 peers performing the OSCE and ending with a debrief session with all NPs and OSCE faculty to discuss SBI implementation in clinical practice. Participants completed pre, immediate-post and 3-month follow-up surveys to assess knowledge, confidence, attitudes, and self-reported clinical practice. NPs were asked at follow-up if they had taught SBI to their colleagues. Results: 33 NPs completed this training. Immediate-post assessment demonstrated improved knowledge, confidence and attitudes with 100% reporting that the training was a valuable learning tool and intended to make a change in their practice. Of the 77% (24/33) completing the 3-month follow-up, 100% (24/24) reported fully or partially implementing SBI practice change. The top 3 practice changes included 88% asking adolescents the pros/cons of their SU, 83% asking more open-ended questions, and 83% using reflective listening. Additionally, at follow-up 67% reported teaching their colleagues about SBI. Conclusions: A skills-based OSCE training of nurse practitioners from school based health centers can be used to improve knowledge, attitudes, confidence and self-reported practice change and further dissemination of adolescent SBI.
49. Development and Implementation of an Alcohol Withdrawal Protocol Using a 5-item Brief Alcohol Withdrawal Scale (BAWS)

Darius A. Rastegar MD, Dinah Applewhite BA, Anika A. H. Alvanzo MD, MS, FASAM, FACP, Christopher Welsh MD, Edward S. Chen MD - Johns Hopkins University School of Medicine

**Background:** The standard of care for alcohol withdrawal is symptom-triggered dosing using the Clinical Institute Withdrawal Assessment for Alcohol (CIWA-Ar). However, this 10-item scale is cumbersome and there is interest in developing simpler scales.

**Objectives:** To develop and implement an alcohol withdrawal protocol utilizing a simplified scale. **Methods:** We initially piloted a 6-item scale developed at another institution. Based on a comparison with the CIWA-Ar, we adapted this into a 5-item scale that we called the Brief Alcohol Withdrawal Scale (BAWS – figure 1). We compared this to the CIWA-Ar and developed a protocol. This was implemented on an inpatient unit dedicated to treating substance withdrawal. We collected data on the first 3 months of implementation and compared this with the 3 months prior. **Results:** A BAWS score of ≥3 predicted CIWA-Ar≥8 with a sensitivity of 85% and specificity of 66%. The demographics of patients in the two time periods were similar; the mean age was 46, 71% were male, 31% received concurrent treatment for opioid withdrawal and 14% were on methadone maintenance. During the BAWS phase, patients received significantly less diazepam (mean 81 vs. 60 mg, p value <0.001). In none of the 664 admissions in either phase did a patient experience a seizure or delirium or require transfer to a higher level of care. **Conclusion:** A protocol utilizing a 5-item withdrawal scale performed well in this setting. Its use in other settings, particularly with patients with concurrent medical illnesses or severe withdrawal, needs to be explored further.
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**TOTAL**
50. A Scalable, Online, Multidisciplinary SBIRT Training Program
Matt Guerrieri BS; Mia Croyle MA; Jade Goetz BA; Richard L. Brown MD, MPH- University of Wisconsin Department of Family Medicine and Community Health

Objectives: Although SBIRT is widely recommended, many healthcare professionals lack competence to deliver SBIRT, and many training programs lack expertise to teach it. At the University of Wisconsin, 2,025 trainees of multiple disciplines will complete an online SBIRT curriculum between 2016 and 2018. We will assess whether the program enhances trainees’ intention, knowledge and competency to deliver SBIRT, beginning with the results of a 2016 pilot. Methods: With funding from SAMHSA’s SBIRT Medical Professional Training Program, we developed a two-part, online SBIRT training. Part 1 consists of ten learning modules that address the rationale and steps for performing SBIRT. Modules include narrated slide shows, video demonstrations, quizzes and discussion forums. Part 2 includes one-on-one practice sessions via videoconference between trainees and trained actors. To assess competence, a final videotaped session was graded according to a skills checklist. Analyses compared trainee perceptions, knowledge, competence, and intentions before and after training, by discipline, and by additional factors. Results: As of June 2016, 496 trainees completed the curriculum: 294 nursing (268 BSN, 26 DNP), 171 medical (MD), 17 rehabilitation psychology (MS), and 14 social work (BSW) students. Average completion time was 7 hours. Across modules, a mean of 85% of trainees rated each module “very” or “mostly clear,” and 82% rated the pace “about right.” Most trainees (68%) were satisfied or very satisfied with their training experience. After the training, mean SBIRT knowledge scores improved 8% (p<.001). Of trainees who attempted the final skills assessment, 430 (83%) passed in one attempt. Incorrect classification of risk category was the leading reason for failure. Between 80% and 90% of trainees expected to use the information gained in the training, expected it to benefit their patients, and reported that it enhanced their skills. Overall favorability toward implementing SBIRT did not change significantly after the training but remained high (5.15 out of 7). Only pre-training favorability and training usefulness measures correlated with post-training favorability (p<.001).

Conclusions: The pilot curriculum was acceptable to trainees across disciplines and successful in teaching SBIRT delivery. With modification, online SBIRT training may help strengthen national capacity to deliver SBIRT.
Background: According to the Substance Abuse and Mental Health Services Administration (SAMHSA) 2012 National Survey on Drug Use and Health (NSDUH) over 10% of US population live with some level of a substance use disorder (SUD). Only 6.3% of U.S. individuals aged 12 and older received treatment for SUD in 2013. Severe shortages of primary care and behavioral health providers delivering SUD screening, brief intervention and referral to treatment (SBIRT) exacerbated the problem. In 2013, behavioral health workforce turnover rates ranged from 18.5% to 33.2% due largely to lack of training, education and compensation. This problem is further exacerbated by the increased demand in SUD treatment due to parity requirements under the Affordable Care Act.

Objective: To demonstrate that training the medical and behavioral health workforce increases identification of SUDs and increases the likelihood that future behavioral health personnel will impact early identification of SUD and avoid the progression into dependency.

Methods: Since 2003 SAMHSA has funded 17 Medical Residency cooperative agreements and 88 Health Professional training grants, training 6,700 medical residents and 24,000 health professionals including nurses, social workers and others. The SAMHSA Medical Residency/Medical Professionals/Student Training grant portfolio is in the process of finalizing SBIRT curricula for use with grantees. The program was evaluated by analyzing follow-up data from follow-up survey instruments including the government performance and results act (GPRA) customer survey.

Results: At Howard University, over 50% of trainees shared training information with others and over 65% applied training to profession/field training. Trainees reported performing screening and brief intervention 12 months after training. Resident trainees in particular stated that they intend to use SBIRT techniques as part of patient care.

Conclusions: Addressing the paucity of substance abuse training in the behavioral health teaching institutions is a difficult process. This activity shows that when behavioral health/substance abuse training in academic settings is robustly supported, there is great enthusiasm for incorporating it into general university curriculum. This program shows promise in promoting behavioral health teaching and workforce development in the substance abuse and primary care field.
52. Provider Attitudes About a Collaborative Care Program for Patients with Chronic Pain on Opioids in a Teaching Clinic
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Background: Primary care providers (PCPs) often lack the training and resources to provide comprehensive management to patients with chronic pain. Collaborative pain care models aim to integrate pain care management and behavioral health into primary care settings and help PCPs manage chronic pain. Objective: To describe PCPs’ perspectives on the utility and limitations of a collaborative pain care model. Methods: The Collaborative Pain Intervention for Long-term Opioid Treatment Safety (CoPILOTS) program was piloted in an urban primary care teaching practice from July 2014 to June 2015. Patients on chronic opioid analgesics were referred to the program by their PCP. Components of the program included: comprehensive pain assessment, screening and treatment for mental health and substance use disorders, interdisciplinary team-based recommendations to PCPs to optimize pharmacologic and non-pharmacologic treatments, and care management (facilitated referrals, outreach, direct telephone access). Following the pilot, we administered a web-based or paper questionnaire to all PCPs at the practice to assess their experiences with the CoPILOTS program. We conducted frequency analyses of questionnaire responses. Results: Surveys were completed by 65 (76%) of 85 eligible PCPs; 49 (75%) were internal medicine residents and 15 (23%) were attendings. Only 18% felt comfortable managing patients with chronic pain. Most (66%) were aware of the CoPILOTS program, and of these, 33 (79%) had referred patients. Among those who didn’t refer, not being aware how to refer was the most common reason (50%). Among 38 providers who referred patients to CoPILOTS, most felt that the team-based recommendations were useful (66%), that CoPILOTS was generally helpful (63%) and time saving (63%), and that it improved their knowledge about managing chronic pain (55%). Many providers reported that CoPILOTS improved linkage to mental health (47%) and addiction treatment (32%), improved monitoring for opioid misuse (63%), and assisted them with reducing or discontinuing opioids in high-risk patients (42%). Conclusions: A collaborative pain care program can help PCPs to improve chronic pain and opioid management and link patients to mental health and addiction treatment. Future collaborative pain care models in teaching clinics should focus on engaging all providers and maximize opportunities for PCP education.
53. Evaluating the Acceptability and Effectiveness of SBIRT Training in Social Work and Nursing Education

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**Background:** Over the past decade, illicit drug use has steadily increased and alcohol use disorders continue to be prevalent in the United States. Training health professionals in screening, brief intervention, and referral to treatment (SBIRT) can help reduce and prevent substance use among the patients they serve. Social workers and nurses are particularly well positioned to use SBIRT, as they are often the front line providers of services, highlighting the need for their education to include SBIRT training that is acceptable and effective. **Objectives:** The purpose of this study was to evaluate the acceptability of a SBIRT training program for social work and nursing students, as well as the effectiveness of the training in increasing substance use knowledge, confidence in SBIRT skills, and attitudes about the importance of integrating SBIRT into practice.

**Methods:** Participants included 152 bachelor’s- and master’s-level social work (n=102) and nursing (n=50) students. Students were trained using a flipped classroom model which included one hour of knowledge-based SBIRT training via self-paced asynchronous online instruction and one hour of in-class skills-based practice and discussion. Training satisfaction was measured with the Government Performance and Results Act (GPRA) instrument. Knowledge of substance use, confidence in SBIRT skills, and attitudes about the importance of integrating SBIRT into practice were measured pre- and post-training by the Missouri University Alcohol and Drug Education for Prevention and Treatment Attitudes, Knowledge, and Skills instrument (AKS).

**Results:** More than 85% of students agreed or strongly agreed on 7/7 GPRA items related to training quality, relevance to career, and SBIRT skill development. Students demonstrated significant changes from pre- to post-training on six AKS items related to substance use knowledge, confidence in SBIRT skills, and attitudes about integrating SBIRT into practice. On average, students rated their agreement with each statement 0.84 points higher on a 7-point Likert scale from pre- to post-training. **Conclusions:** Results suggest flipped classroom models are acceptable formats for incorporating SBIRT training into social work and nursing curricula, and do increase substance use knowledge, confidence in SBIRT skills, and attitudes about the importance of integrating SBIRT into practice.
54. Engaging Caregivers in the Healthcare of Persons with HIV/AIDS and Drug Use Disorders

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**Background:** Racial/ethnic minorities with behavioral (drug or mental) health problems have a high burden of chronic pain and other chronic conditions and disparities in health outcomes. Our research indicates the role of informal (unpaid) caregivers in engagement in care and treatment and health outcomes of disadvantaged persons with HIV/AIDS and drug use disorders (PHDUD). Engaging caregivers in the care process of patients with serious chronic conditions and co-occurring behavioral health problems can help to improve the patients’ health outcomes, with implications for health disparities and palliative care. **Objective:** We present evidence-based practices for identifying and engaging PHDUDs’ caregivers, and evidence of clinician opportunities for promoting mutual caregiver-patient-provider understanding and treatment support for improved treatment adherence and health outcomes in a vulnerable population. **Methods:** Results are from our community-based longitudinal studies of HIV clinic patients that comprised semi-annual surveys, viral load, and audio-computer assisted interview (ACASI) assessment of substance use and antiretroviral (ART) adherence. We present practices using a support network inventory and patient approval process to identify and engage patients’ ‘care partners’ to promote mutual understanding and treatment support. **Results:** In our prior studies, the vast majority of PLDUD identified persons providing emotional support or instrumental health-related assistance, and most (67%-75%) recruited at least one caregiver to a study. PLDUD and caregivers alike had a high burden of chronic pain and other conditions. Nearly three-quarters (72%) of caregivers reported involvement in the patients’ medical treatment decisions, and a significant proportion reported being less than satisfied in their provider’s involvement of their main supportive tie in their health care. Regression analyses indicated that caregiver-patients’ mutual support and communication, and patient-centered patient-provider communication were variously associated with patients’ ART adherence, viral control, and mental and physical well-being. **Conclusions:** Engaging caregivers early in the treatment process of persons with serious chronic conditions and substance use disorders, and facilitating mutual understanding and treatment support, is important for promoting health outcomes and symptom management through illness progression. Caregiver engagement practices have potential implications for improving PLDUDs’ health disparities, and introducing opportunities for palliative care and proxy health care decision making with illness progression.
55. Advancing Interprofessional Pain Curriculum Through NIH Designated Centers for Excellence in Pain Education
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Background: In response to advancing interprofessional pain education, the National Institutes of Health (NIH) Pain Consortium designated 11 U.S. academic institutions as Centers of Excellence in Pain Education (CoEPEs). These centers create, implement and Objectives: (1) To addresses the biopsychosocial scientific and practice foundations of interprofessional pain education curricula using innovative interprofession educational methods; and (2) to report evaluation data from two CoEPEs, the University of Pennsylvania (UPenn) and University of Washington (UW), on disseminate interprofessional pain curricular resources. 

Methods: The UPenn CoEPE conducts an annual 5-day, interprofessional academic course for graduate nursing, dental medicine, and pharmacy students. Learning is facilitated through interactive sessions with faculty, collaborative learning groups (CLGs), simulation exercises, and on-line modules. Evaluation strategies include competency performance through CLG and simulation exercises, pre- and post-survey data using the Interprofessional Attitude Scale (IPAS), and satisfaction surveys. Data are presented for 2016 students (N=76). The UW CoEPE delivers pain education to its health science students via three platforms: (a) a telehealth case conference program reaching medical, nursing, and pharmacy students during clinical rotations; (b) an interprofessional education program reaching six UW health sciences schools; and, (c) integration of pain management into curricula for dental, medical, nursing, physician assistant, and pharmacy programs. Students (N = 248) were evaluated for self-efficacy, pain knowledge and a subset of students (n = 31) for interprofessional collaboration. 

Results: UPenn students reported high satisfaction in 10 areas (mean scores from 4.86 to 5.33 (1 lowest to 6 highest). Students achieved > 90% correct responses in participation in on-line learning modules. IPAS team-based care, attitude and bias domain scores improved from pre-course to 6 weeks and 3 months post-course. Results from UW students include a significant increase in knowledge from 62% pre-test to 86% post-test (p < 0.01) and greater self-efficacy from pretest (mean 23) to posttest (mean 26) (p<0.01). 

Conclusion: NIH CoEPEs are dramatically expanding the scope and focus of pain education and have demonstrated the impact of innovative, interprofessional health profession education in improving clinical care, increasing learner satisfaction, and supporting system-wide sustainability of pain management education.
56. Population-Specific Clinical Tools For Screening and brief Intervention (SBI)
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Background: Colorado received two, consecutive SAMHSA Screening, Brief Intervention, and Referral to Treatment (SBIRT) grants administered by the Colorado Office of Behavioral Health (2006-2011; 2011-2016). The Colorado program trained more than 7,000 practicing health professionals and health professions students in diverse settings on adult and adolescent screening and brief intervention. This provided opportunities to identify priority needs for tools to guide effective conversations with patients about alcohol and drug use. Objectives: The Colorado program identified the following needs for clinical guidance tools: 1) information for linking alcohol and drug use to overall health and wellness; 2) scripted examples of motivational interviewing techniques; 3) information that provokes curiosity in patients about how alcohol is associated with health; 4) guidance on determining substance use risk levels in adolescent patients; 5) specific guidance for conversations with female patients across the lifespan; and 6) guidance on risks associated with marijuana at different ages and life stages. Methods: Tools were developed with input and feedback from: 1) primary care health educators at SBIRT data collection sites; 2) school-based health center clinicians and program managers; 3) diverse clinicians and public health professionals from a Colorado-based nonprofit organization focused on preventing substance exposed pregnancies; and 4) nursing students and faculty. Further assessment of tools is collected from participants in training sessions, during role-plays and on evaluation forms. Results: The following clinical tools were developed and will be exhibited: 1) general alcohol screening and brief intervention pocket card; 2) adolescent screening and brief intervention for alcohol and marijuana pocket card; 3) women and substance use pocket card (addresses alcohol and marijuana); 4) Alcohol and health “We Ask Everyone” poster for health care settings; 5) alcohol and health wallet card for patients; and 6) updated marijuana clinical guideline reflecting clinical concerns associated with medical and recreational marijuana. Conclusions: Health professionals still benefit from brief, printed tools to guide clinical practice and motivational interviewing for conversations with patients about alcohol and drugs. It is essential to systematically collect feedback from end-users and monitor research to maintain up to date, clinical tools for SBI practice.
57. A Comparison of Instructional Methods for Delivering SBIRT Training to Baccalaureate Nursing Students
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Background: The University of Missouri-Kansas City (UMKC) Screening, Brief Intervention, and Referral to Treatment (SBIRT) for substance use training project educated baccalaureate nursing (BSN) students through didactics, role plays with classmates, standardized patient practice, and clinical experience to help students achieve competency. Objective: The goal of the project was to help students achieve competency in practicing SBIRT, including universal and targeted screening for substance use, delivering a brief negotiated interview, and referring patients to addiction treatment when appropriate. Methods: Across three years, 239 BSN students were trained (year 1 = 95, year 2 = 98, year 3 = 46). Instructional methods for didactics varied by year: year one: in person, classroom learning; year two: asynchronous, voice-over-PowerPoint presentations; year three: asynchronous, interactive online learning course. Didactics covered what is SBIRT, screening for substance use, communication style, brief negotiated interview, and referral to treatment. Following didactics, all students completed role plays with classmates, practice with two standardized patients, and SBIRT implementation at their clinical rotations (or role play practice with classmates if clinical sites did not allow). Students completed surveys prior to and immediately after SBIRT training. Surveys covered attitudes, knowledge, and training satisfaction. Skills were assessed by expert coding of an audio-recorded interaction with a standardized patient actor using an SBIRT fidelity scale that included an item on motivational interviewing style. One-way ANOVAs and post-hoc independent samples t-tests were conducted to assess post-training knowledge, attitude, and skill differences among the instructional methods. Results: Although there were no differences between the learning groups in satisfaction with the training, knowledge gained, or competence, there were a few differences related to attitudes and motivational style. Among those differences, post-hoc comparisons showed that the in-person group generally performed significantly better than the voice-over-PowerPoint group, but there were no significant differences between the in-person and interactive online course groups. Conclusions: As health professions programs increasingly infuse SBIRT training, the instructional methodologies for doing so should be evidence-based to maximize impact. Our findings suggest that more interactive didactic approaches, including in-person and online course methodologies, are more effective at increasing positive attitudes than voice-over-PowerPoint lectures.
Background: The American Board of Addiction Medicine (ABAM) launched a state-of-the-art web-based portal to support the educational requirements of a Maintenance of Certification (MOC) program. MOC Part II is a process that assesses and enhances the clinical knowledge and practice skills of addiction medicine certified physicians. ABAM developed Self-Assessment Modules (SAMs) by selecting journal articles with topics related to the science and clinical practice of addiction medicine. A committee of addiction medicine experts created four multiple-choice questions related to the content of the article. These assessments provide physicians with a valuable and effective learning opportunity, using the highest standards in evidence-based care.

Objective: Utilizing data from the self-assessments, we seek to identify the subject areas of addiction medicine core content commonly chosen by physicians and compare those results to subject areas less commonly chosen and how it relates to areas of practice.

Methods: Diplomates are provided a bank of SAMs to choose from and are encouraged to choose a topic most relevant to their practice. Each SAM contains four multiple-choice questions that are digitized on a web portal. The SAM modules provide instantaneous feedback to users. Users are allowed one re-take if a passing score (75%) is not achieved on the first attempt.

Results: 2,630 diplomates completed SAMs in 2015. 55,876 SAMs were completed and 205,350 SAM questions answered. The SAM with the most registered users was perception and use of e-cigarettes and snus (Zhu S-H, Gamst A, Lee M, et al.), (92% registered (1,901) 98% completed (1,881) and 96% passed (1,881). The second highest rate of registered users was the AHEAD Randomized Trial (Satiz R, Cheng D, et.al). Commonly chosen topics include alcohol (26% N=14,307), cannabis (13% N=7,269) and opioids (12% N=6,988), followed by other illicit drugs (10% N=6007). Diplomates chose cannabis (13%) related SAMs more often than pediatric and adolescent (9%) related SAMs. SAM topic with least number of registered users is screening and brief intervention (.5% N=3,139).

Conclusion: A majority of ABAM diplomates chose SAM topic areas that are aligned with the most commonly used addictive substance. There is a need for higher quality studies on screening and brief intervention.
Background: Rates of opioid overdose deaths (heroin and opioid analgesics) have quadrupled since 2000 (CDC, 2014). In 2012, 80% of drug overdose deaths in the United States were unintentional and 72% of deaths related to prescription medications involved opioids (CDC, 2014). STORM is a clinical decision support tool that uses predictive analytics and Veterans Health Administration (VHA) electronic medical record data to risk-stratify patients for overdose or suicide. RIOSORD is a validated 15-item multivariate linear regression model that quantifies percent risk opioid induced respiratory depression (OIRD). Objective: To compare the effectiveness of two tools intended to identify patients at-risk for an opioid overdose among patients prescribed opioids: (1) Risk Index for Overdose or Serious Opioid-Induced Respiratory Depression (RIOSORD) and (2) Stratification Tool for Opioid Risk Mitigation (STORM). Method: Observational data were collected and analyzed iteratively over a 19-month period (October 2014 – May 2016). Detailed process maps were created at baseline (phase I, Datamart), six months (phase II, STORM), and 17 months (phase III, RIOSORD) to depict interactions between the pharmacist, processes, and clinical decision support tools. Results: Utilization STORM and RIOSORD optimized the identification of Veterans at risk for OIRD. Hierarchal task analysis modeled the workflow and Soft Systems Management assessed the flow of information. Mean task times to review electronic records and identify patients in need of naloxone were: 90 minutes with Datamart, 30 minutes with STORM, and 15 minutes with RIOSORD. Gaps between the tools functionality and needs of the provider were identified and reported to the creators of these two tools to improve the usability. Conclusion: This study shows that clinical decision support tools can have a significant impact on increasing the identification of patients at-risk for opioid overdose, particularly among patients prescribed opioids. Once identified, risk mitigation strategies such as qualification for in-home naloxone, counseling, adjusted medication regimen, and other actionable therapeutic decisions can be employed to decrease patients’ risk for opioid overdose-related morbidity and mortality.
60. Cultural Adaptations of Screening, Brief Intervention and Referral to Treatment (SBIRT) in Federally Qualified Health Centers (FQHC): A Case Study Review of Four FQHCs in Puerto Rico
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Background
Since the expansion of access to healthcare services with the passage of the Patient Protection and Affordable Care Act and the Mental Health Parity and Addiction Equity Act, Federally Qualified Health Centers (FQHCs) are encouraged to become fully integrated centers. Addressing substance use within the patient population has become a critical aspect of reaching fully integrated care. Many FQHCs are implementing Screening, Brief Intervention, and Referral to Treatment (SBIRT) as one vehicle to assist in integration. SBIRT is a comprehensive public health approach for delivering early substance use intervention. Studies have found that heavy-drinking Hispanic persons who received brief motivational intervention (BMI) were significantly more likely to reduce subsequent alcohol use than non-Hispanic persons. The BMI subsequently underwent a process of cultural adaptation. This case study will examine the opinions and perceptions of FQHC providers in Puerto Rico regarding the utility of the elements of the culturally adapted BMI (CA-BMI).

Learning Objective
Identify cultural adaptations for implementing SBIRT

Case Presentation
Twenty providers from four FQHCs participated in a 2-day workshop involving SBIRT and motivational interviewing (MI) booster training, and an introduction to CA-BMI. CA-BMI developers conducted a focus group with the attendees. There was broad consensus that CA-BMI was consistent with the MI spirit, and that CA-BMI would be acceptable to both patients and providers. CA-BMI was believed to enhance traditional brief interventions by providing more structure and concrete tools, facilitating rapport and communication of empathy. There was broad consensus that some degree of adaptation to their specific population would be necessary, such as the need to consider Puerto Rican culture and adaptations might be necessary in regards to literacy/education, geographic region, gender, and presenting problem.

Discussion
Providing culturally adapted site-specific training to FQHCs can enhance implementation activities. Providers found barriers and facilitators to implementing and sustaining SBIRT: Barriers - financing structure to support SBIRT and other integration activities were needed; Facilitators - providing training and TA based on cultural values.
61. A Case of Opioid Overdose Reversal: Intranasal Naloxone Kit Delivered
Smita Das MD, PhD, MPH; Murtuza Ghadiali MD; Nina Shah PharmD- University of California at San Francisco

**Background:** Opioid overdose is a growing concern in the United States and internationally. Prehospital or pre-medical-personnel (lay person) administration of naloxone, an opiate antagonist, to reverse overdose, is an expanding mode of harm reduction. Recently community clinics, methadone clinics, needle exchanges, some pharmacies and other health care facilities have made naloxone available to the community.

**Learning objectives:** The audience should be able to 1) summarize the indication and efficacy of naloxone in emergency overdose situations, 2) recognize early sobriety as a dangerous time for opiate overdose 3) describe the lay delivery preparations of naloxone for the community including the autoinjector and nasal spray kits, and 4) recommend naloxone to patients and the community to support the herd effect of opiate overdose reversal education.

**Case:** This case describes heroin overdose reversal of a 28 year-old male who has been using about a gram of heroin intravenously for 3 years, but recently had reduced frequency of use in an attempt to stop. He was seen initially 1 week prior inducing buprenorphine in our clinic. After the initial intake he used intravenous heroin, in a larger amount than over the past several weeks, and lost consciousness and was difficult to arouse. A friend with him noted the patient’s respirations to become shallow and administered naloxone nasal spray that the patient had obtained from a needle exchange, but did so intravenously by attaching an unused drug needle to the syringe barrel in place of the nasal atomizer. The patient’s overdose was reversed and he recovered.

**Discussion:** This is case describes use of a community-distributed naloxone nasal spray being administered intravenously by a lay person (bystander). The case emphasizes the efficacy of naloxone in overdose reversal, and also the need for education or instructions on naloxone use by others (not just the user). Finally it highlights the risk of overdose in those entering treatment, seeking intoxication one last time. Naloxone education and distribution, as a highly effective public health tool, is recommended for providers including physicians (especially those addiction and/or those prescribing opioids), pharmacists and staff at recovery programs.
62. The Five-Year Recovery Standard
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**Background:**
Today treatment for substance use disorders (SUDs) is different from treatment of other serious, chronic illnesses. Its segregation from the rest of health care is now waning with implementation of health care reforms. Health insurers are now required to cover and health care organizations are now required to provide prevention, screening, brief interventions and treatment for SUDs. This shift requires changes in how SUDs are conceptualized, managed and how they are evaluated for effectiveness and value to bring these into line with other serious chronic illnesses.

**Learning Objectives:**
1. Critique the mismatch between short-term SUD treatment and the lifelong nature of addiction.
2. Summarize the outcomes of the PHP system of care management – the New Paradigm.
3. Describe the proposed universal five-year recovery standard.

**Presentation/Discussion:**
This presentation advocates a consensus method of measuring and managing addiction services outcomes and for judging effectiveness and value of services based on the goal of five-year recovery. In this context, the definition of recovery is that of the Betty Ford Institute Consensus Panel, including no use of alcohol, marijuana or other drugs of abuse. Physician health programs serve as a model of chronic disease management for SUDs.

Using the five-year recovery standard gives a level playing field for comparing a wide range of addiction treatment programs. It encourages all treatment programs to focus on their long-term outcomes. It facilitates innovation in treatment and rewards programs and modalities that are better able to achieve long-term recovery with resulting sustained functional and health improvements.

**References:**


63. Substance Use and Mental Health Treatment Retention among Emerging Adults
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Background: In Western and European cultures where marriage and parenthood are increasingly delayed to the late twenties and early thirties, a distinct developmental stage between adolescence and adulthood has been described as “emerging” or “young” adults. Development theory suggests that these “younger” adults have less social control and exercise higher levels of impulsivity and risky behavior than their older counterparts. Objective: This study examined the effect of age on treatment retention among adults with co-occurring substance use and mental health disorders enrolled in private, residential treatment. Methods: Study participants included 929 adults (198 young adults, 18-25 years, and 761 older adults, ≥ 26 years) receiving private residential treatment in the U.S. Participants completed the Addiction Severity Index (ASI), URICA Contemplation Scale, and socio-demographic data at admission (baseline). Clinicians used DSM-5 Diagnostic Criteria to determine diagnoses. Bivariate analyses, life tables, and Cox regression (survival analyses) were used to examine the effects of age on treatment retention. Results: Among younger adults, shorter treatment retention was predicted by female gender, higher severity of ASI employment score, higher severity of substance use-related employment problems, and higher scores on the URICA contemplation scale. Among older adults, shorter treatment retention was predicted by female gender, diagnosis of mood disorders compared to diagnosis of dementia, higher severity of ASI employment score, and higher severity of ASI composite psychiatric score. Similar survival lines were identified for the first 20 days of treatment, but after 25 days the trajectories separated with approximately 50% of young adults remaining in treatment by 30 days compared to only 40% of older adults. Conclusions: Results underscore the need to tailor age-specific intervention programs to foster intrinsic self-motivation to actively engage young adults in substance abuse treatment.
64. Integrated Care to Individuals With Substance Use Disorders: Challenges and Opportunities From the Perspective of Brazilian Professionals
Alessandra Bonadio PhD; Maria Valeria Contreras MS; Danilo Locatelli MS; Bruno Bittencourt Psychologist; Tatiana Amato PhD; Eroy Silva PhD, Ana Regina Noto PhD – Universidade Federal de São Paulo

Background: The complex, multidimensional and chronic nature of substance use disorder and the wide range of problems that it can cause to individual’s life justify the relevance of a continuing and integrated model of care. Objective: To analyze the challenges and opportunities of an integrated approach to assist people with substance use disorders, from the point of view of professionals working in public health services, social welfare and justice system in the city of São Paulo, Brazil. Methods: We conducted seven focus groups (FGs), about the challenges faced on the daily routine assistance, with 70 professionals from different public services, who was taking part in addiction training courses offered by UNIFESP, as continuing professional development program. Results: The articulation between the different services that integrate the network care emerged as the main challenge faced in their daily routine, meaning difficulties in communication and working together in both spheres: inter and intra services. It has also emerged a linear conception of networking assistance, centralized mainly in health services, tending to compromise the necessary comprehensiveness of care. Feelings of helplessness and frustration were also highly reported, concerning the abstinence centered approach and a healing expectation. As a way to overcome these challenges, professionals pointed out the need for enhancement spaces of reflection and exchange of experiences between professionals, as well as the emphasis on continuing professional development courses on addiction issues. Conclusion: Within a limited vision about the networking care, the assistance provided tends to be impaired, as the individual happens to be seen as a client of one or another specific service, and not as part of a comprehensive network system of care, in which all services involved are equally co-responsible. The current network model of care still seems to be anchored primarily in the health field, emphasizing the necessary challenge of overcoming the health/disease paradigm. It is not just about assist a ‘patient’ in his addiction recovery process, but it is about to assist the individual as a hole, in a wider process of achieving and maintaining his social and civil rights, from the human rights and citizenship perspective.
65. Pilot Study of Feasibility and Preliminary Effectiveness of Varenicline For Co-Occurring Tobacco and Cannabis Use
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**Background:** The high prevalence and health burden of co-occurring tobacco and marijuana use makes it essential to evaluate treatments that may address use of both substances. To date, few studies have evaluated treatments to address co-occurring tobacco and marijuana use; these are limited by poor enrollment, adherence, and retention. Only one case series has evaluated varenicline for co-occurring use. **Objective:** To evaluate the feasibility and preliminary effectiveness of varenicline for treatment of co-occurring tobacco and marijuana use. **Methods:** Subjects were recruited from outpatient substance abuse treatment programs (SATP) in the Bronx, NY. Subjects reporting cannabis use 5 or more days a week, with toxicology tests showing cannabis use, without unstable mental illness, were eligible. The intervention included 4 weeks of standard clinical care (SCC) in an outpatient SATP and 4 weeks of SCC plus standard dosing of varenicline (SCC+VT). Feasibility outcomes were enrollment rates, retention, tolerability of varenicline and medication adherence. Cannabis use outcomes were marijuana craving, marijuana use and toxicology-verified marijuana abstinence. Tobacco outcomes were tobacco use and biochemically-verified tobacco abstinence. **Results:** Of 193 persons screened, 148 reported no past-week marijuana use; 7 were enrolled. Subjects were Latino (n=4) or Black (n=2), mean age of 47 years, all had opioid and cocaine use disorders. Retention at 8 weeks was 100%. No adverse effects prompted varenicline discontinuation, and varenicline adherence was 62%. Compared to both baseline and SCC alone, subjects receiving SCC+VT reported a lower frequency and quantity of cannabis use. In the SCC+VT phase, participants also reported fewer cigarettes smoked per day. However, subjects did not achieve cannabis or tobacco abstinence. **Conclusion:** Recruitment in a SATP yielded few subjects with frequent cannabis use, but facilitated retention. Among persons with co-occurring tobacco and cannabis use, varenicline is well-tolerated. Varenicline may reduce cannabis use, and reduce tobacco use, and warrants further clinical investigation.
66. Facilitators and Barriers to Participation in Methadone Programs: Findings From a Community Based Mixed Methods Study in Oakland, CA
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**Background:** Research shows that participation in methadone drug treatment (MDT) programs can reduce overdose deaths and HIV incidence among opioid-addicted individuals.  
**Objective:** The objective of this mixed methods pilot study, conducted as an academic-community collaboration, was to examine facilitators and barriers to successful participation in MDT programs among African Americans in Oakland, CA.  
**Methods:** We conducted outreach in three methadone clinics and recruited African Americans (2013-2014;N = 93) who had been currently enrolled in a MDT program for a minimum of 21 days. Study participants were interviewed using a quantitative survey that included social, economic, and geographic questions about their histories of drug treatment. Following the quantitative phase of the study, we used purposive sampling to select 15 participants for qualitative interviews. Multiple linear regression analysis was conducted using SPSS, using percentage of missed methadone doses in the past month as an outcome variable. We generated themes from transcribed qualitative interviews using an open coding process.  
**Results:** The sample was 48% men, with an overall mean age of 45 years. The mean age at which participants first entered any form of drug treatment was 31 years. Forty-eight percent of the sample was homeless, or unstably housed, and 44% missed at least one dose during the past month. Multivariate analysis showed that reporting higher scores on a perceived discrimination scale, lack of family support, being Hepatitis C negative, having overdosed in the past 12 months, and living in a neighborhood with perceived high levels of social disorder, were significantly associated with higher percentages of missed methadone doses. Qualitative themes include the importance of family support for entry into a MDT program, and the importance of place, which manifested itself as socially disordered neighborhood spaces that contribute to missing doses. Participants also brought up fear and mistrust of methadone itself.  
**Conclusions:** Quantitative and qualitative findings suggest that family support and neighborhood dynamics are important to successful participation in MDT programs. The experiences of discrimination, and fears of methadone as a harmful substance, should be further studied as a barrier to ongoing participation in MDT programs.
Background: For the one-quarter of US youth with a chronic medical condition, alcohol use and binge drinking may pose significant risk for harm related to simultaneous exposure to alcohol-interactive (AI) medications. This issue is under-addressed in research and care. Objectives: We estimated the prevalence of simultaneous exposure to alcohol use and AI medications among a medically heterogeneous sample of chronically ill adolescents, testing also mediating effects of knowledge on this relationship. Methods: Eligible youth with a chronic medical condition ages 9 to 18 years at one of five hospital clinics completed a structured electronic survey. We estimated prevalence and demographic correlates of past year alcohol use and binge drinking using age/gender cutoffs. Associations between drinking and use of AI prescription medications were examined using multilevel multivariable regression in models controlling for demographics, mental health and clinic. Results: Of 505 youth (participation rate 77%), average age was 16 years, 80.4% were in high school, 52% were female, 75% were White, and 70.6% had at least one college educated parent. Among high school youth (n=406), 86.5% (n=357) were taking AI prescription medications. Of these, 36.7% reported past year alcohol use of which 33.8% reported binge drinking. Simultaneous exposure to past year alcohol use and AI medications was correlated with age (p<.0001). The adjusted odds of past year alcohol were 0.60 (95% confidence interval: 0.52, 0.70) (p<.0001) among high school youth taking AI prescription medications compared to those not taking them. The protective association between AI medication use and past year drinking was reduced when participant knowledge about AI issues was included in the model (adjusted OR 0.67; 95% confidence interval: 0.44, 1.02, p=0.062), suggesting that knowledge may partially mediate this relationship. Conclusions: Alcohol use is prevalent among youth with chronic medical conditions taking alcohol interactive medications. Use of AI medications was protective of drinking and participant knowledge regarding AI issues partially mediated this relationship, suggesting the importance of targeted educational interventions that center on avoiding risk and minimizing interactions. These findings support efforts to mount widespread alcohol screening and prevention programs targeting youth with chronic medical conditions in healthcare settings.