Alcohol, Other Drugs, and Health: Current Evidence

MAY-JUNE 2023

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***Hosted by* Honora L. Englander & Marc R. Larochelle**

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INTERVENTIONS & ASSESSMENTS

Receipt of Recovery Management Checkups After Screening, Brief Intervention, and Referral to Treatment Improves Outcomes

The identification and management of unhealthy substance use in primary care are public health priorities. Screening, brief intervention, and referral to treatment (SBIRT) has been widely disseminated for this purpose, despite limited evidence of efficacy. Recovery management checkups (RMCs) may consist of personalized feedback, care facilitation, scheduling assistance, and follow-up calls; they are designed to improve substance use treatment engagement, linkage, and retention. This paper provided 3-month results from a randomized controlled trial comparing primary care-based SBIRT with SBIRT+RMC in US Federally Qualified Health Centers (FQHCs).

- Participants were recruited from 4 FQHCs and were included if they had a score of ≥5 on the Alcohol Use Disorders Identification Test (AUDIT), or a score of ≥3 on the Drug Abuse Screening Test (DAST), and were not already engaged in treatment.
- Of the 266 participants, most were male (65%) and Black (81%); the average age was 48. Most participants had alcohol use disorder (68%), followed by cannabis (35%), stimulant (35%), and opioid use disorder (24%).
- Participants who received SBIRT+RMC were significantly more likely than those who received SBIRT alone to access any treatment at 3 months (46 percent versus 20 percent, respectively); they also reported more days of abstinence (41 versus 32 days).

Comments: Substance use disorders are chronic conditions that cannot be sufficiently addressed by a one-time intervention. Most individuals with unhealthy substance use need ongoing treatment and support; recovery management checkups are a promising way of delivering this.

Darius A. Rastegar, MD

Reference: Scott CK, Dennis ML, Grella CE, et al. Using recovery management checkups for primary care to improve linkage to alcohol and other drug use treatment: a randomized controlled trial three month findings. *Addiction*. 2023;118(3):520–532.

Buprenorphine Administration After Opioid Overdose by Emergency Medical Services is Feasible and May Facilitate Entry Into Treatment

Opioid overdose is a major cause of mortality, and medications such as buprenorphine can reduce the risk of recurrent overdose. Many people who experience overdose are resuscitated by emergency medical services (EMS), but decline transport to the hospital, thus closing a potential link to treatment. Researchers assessed a novel program of post-overdose EMS-initiated buprenorphine over 13 months in one US city. Patients who

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Buprenorphine Administration After Opioid Overdose by Emergency Medical Services is Feasible and May Facilitate Entry Into Treatment

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were resuscitated by a buprenorphine-equipped ambulance (BEA) could receive 16 mg of buprenorphine if they had decision-making capacity after naloxone administration, and had a Clinical Opiate Withdrawal Scale (COWS)* score of ≥5, or had no opioid use in the 72 hours prior to the overdose. A follow-up dose of 8 mg of buprenorphine could be administered if withdrawal continued. Patients who received buprenorphine were given a same or next-day appointment in an addiction medicine clinic. Researchers compared individuals who were treated by a BEA with those who were not to determine recurrent overdose, withdrawal scoring, and outpatient follow-up rates.

- Of the 1230 patients with opioid overdose treated by a BEA, only 97 (8 percent) received buprenorphine.
- Those treated by a BEA had greater odds of engaging with outpatient addiction medicine treatment within 30 days (adjusted odds ratio [aOR], 7.24), compared with patients not treated by a BEA.
- Patients who received buprenorphine from a BEA had a mean initial COWS score of 9 and follow-up score of 3.
- Recurrent overdose rates within 24 hours or 7 days were not significantly different between patients who were treated by a BEA and those who were not.

* COWS scores of 5–12 = mild; 13–24 = moderate; 25–36 = moderately severe; >36 = severe withdrawal.

Comments: Buprenorphine administration by EMS following an opioid overdose is a potential approach to engage individuals in treatment. However, only a small proportion of individuals with overdose received buprenorphine and unfortunately the study does not provide detail on the reasons for lack of treatment with buprenorphine. This study failed to show a significant decline in recurrent overdose, but it was not powered to do so. Nevertheless, this is a creative approach that deserves further study and refinement.

Corey McBrayer, DO, MPH** & Darius A. Rastegar, MD

** Rich Saitz Editorial Intern & Grant Medical Center Addiction Medicine Fellow, OhioHealth.

Reference: Carroll G, Solomon KT, Heil J, et al. Impact of administering buprenorphine to overdose survivors using emergency medical services. *Ann Emerg Med*. 2023;81 (2):165–175.

Best Practices for Identifying and Treating Alcohol-associated Hepatitis Include Treatment of Alcohol Use Disorder

Alcohol accounts for approximately half of deaths from liver disease worldwide, and deaths from alcohol-associated liver disease have been increasing in the US. Researchers recently summarized the etiology and treatment for alcohol-associated hepatitis, which is characterized by moderately rapid onset of jaundice, malaise, and decompensated liver disease that can be accompanied by either bacterial infection or systemic anti-inflammatory response and multi-organ failure.

- The 3-month mortality rate for alcohol-associated hepatitis among hospitalized patients is 20–50 percent.
- Although it occurs among people with heavy drinking, there are likely a number of modifying social, environmental, genetic, and epigenetic factors that affect the likelihood and severity of illness. There is greater incidence among women and people of Hispanic origin.

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Best Practices for Identifying and Treating Alcohol-associated Hepatitis Include Treatment of Alcohol Use Disorder (continued from page 2)

- Criteria for alcohol-associated hepatitis include:
  - ◊ onset of jaundice within the previous 8 weeks;
  - ◊ consumption of >3 drinks (~40 g alcohol) per day for women and >4 drinks (~50–60 g) per day for men for >6 months with <60 days of abstinence before the onset of jaundice;
  - ◊ a total serum bilirubin level of >3 mg per deciliter (>50 μmol per liter), an aspartate aminotransferase (AST) level of >50 IU per liter, and a ratio of AST to alanine aminotransferase of >1.5 with both values <400 IU per liter; and
  - ◊ no other liver diseases such as drug-induced liver injury and ischemic hepatitis.
- The principal prognostic feature for long-term survival is avoidance of alcohol use. Glucocorticoid administration in severe cases can reduce short-term but not long-term mortality rates. Early transplantation in selected patients reduces mortality.
- Alcohol use disorder is often under-treated among patients with alcohol-associated hepatitis.

Comments: Alcohol-associated hepatitis is a severe form of liver disease caused by heavy alcohol use; the main prognostic factor is the reduction or cessation of subsequent alcohol use. As such, management of alcohol-associated hepatitis should focus on addiction treatment, including the use of counseling and appropriate use of medications to treat alcohol use disorder.

Timothy S. Naimi, MD, MPH

Reference: Bataller R, Arab JP, Shah VH. Alcohol-associated hepatitis. *N Engl J Med*. 2022;387(26):2436–2448.

HEALTH OUTCOMES

Increased Prescribing Flexibility During the COVID-19 Pandemic Was Not Associated With an Increase in Buprenorphine-involved Deaths

To facilitate continued access to buprenorphine for opioid use disorder (OUD) during the COVID-19 pandemic, the US federal government allowed clinicians to initiate buprenorphine remotely, without in-person examinations. This study assessed trends before and during this period of increased flexibility using data from the US Centers for Disease Control and Prevention's State Unintentional Drug Overdose Reporting System from July 2019 to June 2021 in 31 states and the District of Columbia.

- During the study period, there was a total of 89,111 overdose deaths; 74,474 were opioid-involved and 1955 were buprenorphine-involved (2.2% of total and 2.6% of opioid-involved deaths).
- Among buprenorphine-involved overdose deaths, 93% involved another drug, compared with 67% of other opioid-involved deaths.
- The other drugs involved in buprenorphine-involved deaths included: fentanyl (50%), benzodiazepines (37%), cocaine (21%), methamphetamine (21%), anticonvulsants (primarily gabapentin and pregabalin; 19%), alcohol (16%), and antidepressants (14%).
- The proportion of buprenorphine-involved overdose deaths fluctuated, but did not increase during this time period.

Comments: This study reinforces the relative safety of buprenorphine and supports a move toward patient-centered, low-threshold OUD treatment models.

Darius A. Rastegar, MD

Reference: Tanz LJ, Jones CM, Davis NL, et al. Trends and characteristics of buprenorphine-involved overdose deaths prior to and during the COVID-19 pandemic. *JAMA Netw Open*. 2023;6(1):e2251856.

Opioid Use Disorder Treatment Gap Shrank Slightly Between 2010 and 2019, but Vast Majority of Patients Still Do Not Receive Standard of Care

This study investigated whether the gap between the number of persons with opioid use disorder (OUD) and the number who receive medications for opioid use disorder (MOUD) has narrowed over the last decade in the US. Researchers adjusted data from the National Survey on Drug Use and Health to estimate OUD prevalence in the US, and estimated MOUD receipt from other national data for each year between 2010 and 2019.

- Adjusted national estimates of OUD prevalence decreased from 9,448,532 persons in 2010 to 7,631,804 in 2019.
- Over the study period, the number of individuals receiving MOUD at opioid treatment programs (OTPs) increased from 294,491 to 442,741, while those dispensed buprenorphine at pharmacies increased from 167,556 to 581,218.
- The percentage of persons with OUD who did not receive MOUD improved from 95 percent in 2010 to 87 percent in 2019.

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Opioid Use Disorder Treatment Gap Shrank Slightly Between 2010 and 2019, but Vast Majority of Patients Still Do Not Receive Standard of Care (continued from page 3)

Comments: Despite efforts to increase access, the vast majority of persons with OUD in the US still do not receive MOUD. In 2023, the federal requirement for practitioners to obtain a waiver to prescribe buprenorphine was removed, which may improve MOUD access. However, methadone is only available at licensed OTPs, which are strictly regulated. The US healthcare system is failing to deliver first-line treatment to persons with OUD. Increasing access to MOUD will require more ambitious regulatory, financing, and workforce changes.

Aaron D. Fox, MD

Reference: Krawczyk N, Rivera BD, Jent V, et al. Has the treatment gap for opioid use disorder narrowed in the US?: A yearly assessment from 2010 to 2019. *Int J Drug Policy*. 2022;110:103786.

Medications for Opioid Use Disorder Reduce Risk of Overdose Mortality Following Incarceration

Individuals with opioid use disorder (OUD) make up 15–20 percent of incarcerated populations in the US, and are at risk of overdose upon release. While incarcerated, many people with OUD are not provided medication for OUD (MOUD; e.g., methadone or buprenorphine). This retrospective observational cohort study examined 15,797 adults representing 31,382 incarceration events in the New York City jail system, 2011–2017. Researchers investigated rates of overdose and all-cause mortality within the first year after release among individuals who did and did not receive MOUD during incarceration.

- Individuals who received MOUD were more likely to be female, unhoused, have injection drug use, have cocaine use disorder, and be incarcerated for a misdemeanor.
- During the first month post-release, individuals who received MOUD were significantly less likely to experience a fatal overdose (adjusted hazard ratio [aHR], 0.20), and had lower overall risk of mortality (aHR, 0.22), compared with those who did not receive MOUD.
- In the year following incarceration, individuals who received MOUD were significantly less likely to experience a fatal overdose due to heroin, compared with those who did not receive MOUD (crude death rate: 0.49 versus 0.83 per 100 person-years, respectively).

Comments: Providing MOUD to incarcerated individuals reduces the risk of overdose and overall mortality within the first month after release, and reduces the risk of fatal opioid overdoses up to one year. Lack of provision of MOUD to incarcerated individuals disproportionally affects Black and Hispanic individuals who are at heighted risk of incarceration in the US due to structural racism. Provision of MOUD within the jail and prison systems can be one step in alleviating this inequity.

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Reference: Lim S, Cherian T, Katyal M, et al. Association between jail-based methadone or buprenorphine treatment for opioid use disorder and overdose mortality after release from New York City jails 2011–17. *Addiction*. 2023;118(3):459–467.

High Rates of Alcohol-attributable Deaths Among US Adults

Researchers conducted a cross-sectional assessment of deaths due to excessive alcohol consumption among US adults aged 20–64 years. Using national mortality data from 2015 through 2019, the authors estimated mean annual deaths directly attributable to alcohol consumption (i.e., due to injury, cancer, etc), and deaths indirectly attributable to alcohol consumption (i.e., 23 different chronic conditions). Alcohol-attributable deaths were then calculated as a percentage of total deaths, and by sex, age, and state.

- Between 2015 and 2019, it was estimated that approximately 13 percent of annual US deaths were attributable to excessive alcohol consumption (89,697 annual mean alcohol-attributable deaths out of 694,660 annual mean total deaths).
- Men had a higher proportion of alcohol-attributable deaths (15 percent), compared with women (9 percent).
- A higher proportion of alcohol-attributable deaths were estimated to be in younger age groups compared with older age groups (25 percent among adults aged 20–34 years versus 18 percent of adults aged 35–49 years).
- The proportion of alcohol-attributable deaths was generally higher in the mountain West, upper Midwest, and New England states, compared with Michigan, Indiana, New York, New Jersey, and states in the Southeastern US.

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High Rates of Alcohol-attributable Deaths Among US Adults

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- Leading causes of alcohol-attributable deaths by age group were the same for men and women (for adults aged 20–34 years: other poisonings, motor vehicle traffic crashes, and homicide; for adults aged 35–49 years: other poisonings, alcohol-associated liver disease, and motor vehicle traffic crashes).

Comments: This study suggests that there are high rates of premature death due to excessive alcohol consumption in the US, particularly among younger age groups, men, and in specific states and regions. To prevent these deaths, there is a need for broader implementation of evidence-based individual and population-level prevention and treatment policies.

Elizabeth A. Samuels, MD, MPH, MHS

Reference: Esser MB, Leung G, Sherk A, et al. Estimated deaths attributable to excessive alcohol use among US adults aged 20 to 64 years, 2015 to 2019. *JAMA Netw Open*. 2022;5(11):e2239485.

Hospital Admissions Increase as More Young Children Are Being Exposed to Cannabis Products

While cannabis products remain illegal in the US by federal law, most states have laws that allow people to use cannabis for "medical" or non-medical purposes. This study used the National Poison Data System to examine trends in cannabis ingestion among children <6 years, between 2017 and 2021.

- A total of 7043 pediatric cannabis exposures were recorded in the 5-year time period; rates of exposure increased by almost 1400 percent between 2017 (207 cases) and 2021 (3054 cases).
- Hospital admissions, ICU admissions, and moderate and major health effects all increased during the study period.
- More than 97 percent of exposures occurred in residential settings.

Comments: Few US states regulate the types of cannabis products that can contain tetrahydrocannabinol (THC), leading to an array of edible products on the market—including candies, baked goods, and soft drinks—that are very attractive to children. Many states also do not limit the amount of THC that can be contained in a single serving, which allows highly concentrated products to enter the marketplace. This combination of highly palatable and highly concentrated products is associated with increasing frequency and severity of pediatric cannabis exposure. Appropriate regulation is needed to protect children.

Sharon Levy, MD

Reference: Tweet MS, Nemanich A, Wahl M. Pediatric edible cannabis exposures and acute toxicity: 2017–2021. *Pediatrics*. 2023;151(2):e2022057761.

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Initial Use of Smokeless Tobacco Among Adolescents is Associated With Later Multiple Nicotine Product Use and Higher Nicotine Dependence

Up to a quarter of US high school students use nicotine products in a given month; multiple product use is associated with higher levels of nicotine dependence,* which negatively impacts cessation efforts. This study used data from the Population Assessment of Tobacco and Health (PATH) to investigate the association between the type of first nicotine product tried and subsequent multiple nicotine product use and dependence.

- Combustible cigarettes were the most common product of first use (48 percent), followed by e-cigarettes (16 percent), cigars (12 percent), hookah (15 percent), and smokeless tobacco (9 percent).
- Adolescents who first tried smokeless tobacco were more likely to report subsequent multiple nicotine product use (adjusted odds ratio, 1.92).
- Those who first tried smokeless tobacco had higher nicotine dependence scores once dependence was established.

* Defined as having ≥1 symptom of nicotine dependence according to the 7-item version of the Wisconsin Inventory of Smoking Dependence Motives (WISDM).

Comments: While most public health efforts are aimed at combustible and e-cigarette prevention, this study highlights the need for prevention of use of other nicotine products, including smokeless tobacco. Of note, the dataset used for this study was collected during the early phases of e-cigarette introduction to the US; e-cigarette use has since surpassed that of other nicotine products among youth.

Corey McBrayer, DO, MPH** & Darius A. Rastegar, MD

** Rich Saitz Editorial Intern & Grant Medical Center Addiction Medicine Fellow, OhioHealth.

Reference: Simon P, Buta E, Jackson A, et al. The first nicotine product tried is associated with current multiple nicotine product use and nicotine dependence among a nationally representative sample of U.S. youths. *Prev Med*. 2023;169:107437.

Listen to Episode 3 of our new podcast, "**Behind the Evidence**," supported by the Grayken Center for Addiction at Boston Medical Center.

Hosted by addiction medicine specialists Honora L. Englander, MD (Oregon Health & Science University) and Marc R. Larochelle, MD, MPH (Boston Medical Center/ Boston University Chobanian & Avedisian School of Medicine), each episode of "Behind the Evidence" offers thoughtful discussion of one or more recent significant publications in the clinical addiction literature. Through author interviews and expert insights, "Behind the Evidence" will appeal to clinicians, as well as anyone who is interested in the latest developments in addiction medicine research.

Episode 3 features an interview with **Dr Christopher Jones,** PharmD, DrPH on his article, "Receipt of Telehealth Services, Receipt and Retention of Medications for Opioid Use Disorder, and Medically Treated Overdose Among Medicare Beneficiaries Before and During the COVID-19 Pandemic," that was recently summarized in *AODH*.

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