

The Evidence for Correctional Medication-assisted Treatment (MAT)

Correctional Medication-assisted Treatment
Research Compendium

Bureau of Justice Assistance (BJA)

Residential Substance Abuse Treatment (RSAT)
Program for State Prisoners

Training and Technical Assistance Resource

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Today's Speakers



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Learning Objectives

Upon completion of this presentation, participants will be able to:

- Describe four of the major benefits found for medication-assisted treatment (MAT) for opioid use disorder (OUD).
- Describe at least one benefit and challenge presented by each of the 3 FDA-approved medications for OUD (MOUD).
- Describe the impact of beginning MAT during versus after incarceration for OUD.

What is MAT?

MAT combines medications with cognitive or behavioral therapies to treat OUD and alcohol-use disorder (AUD).

- There are currently three FDA-approved medications to treat OUD (MOUD).
 - Methadone (agonist)
 - Buprenorphine (partial agonist)
 - Naltrexone (antagonist)

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- 1. Does MAT save lives?
 - 2. Does MAT promote recovery?
 - 3. Does MAT reduce recidivism?
 - 4. Does MAT improve quality of life, health and welfare?
 - 5. How do the three MOUDs compare?
 - 6. Do medications work better in conjunction with psychosocial treatment?
 - 7. Are clients satisfied with MAT?



MAT Research: Community v. Corrections

Community

- Who: Employed, married men with stable residency
- How: Substance use disorder as a result of over-prescription of opioid pain killers
- When: Middle aged

Corrections

- Who: Justice-involved, unemployed, unhoused, with co-occurring mental and chronic illnesses
- How: Illicit use, self-medication, lifestyle, criminal thinking
- When: As youths

Question 1: Does MAT Save Lives?

YES

Does MAT save lives?

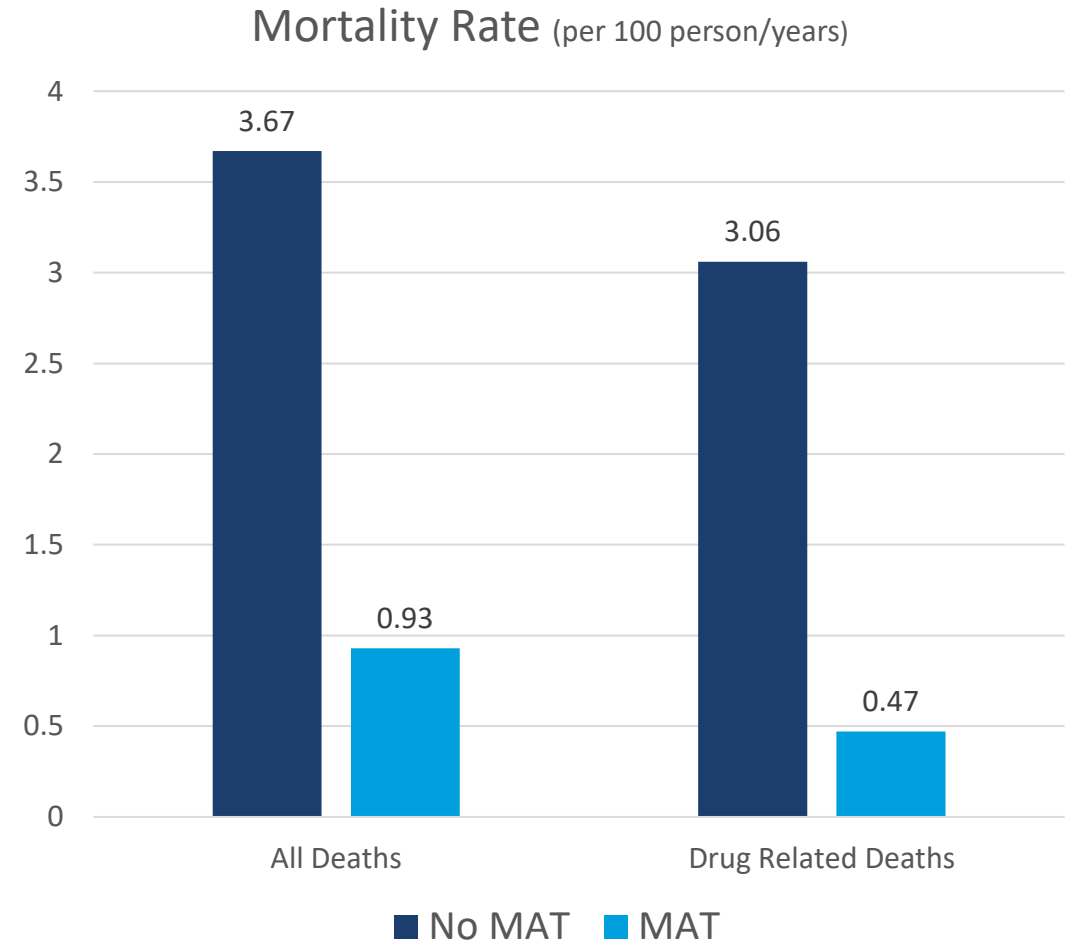
Study:

- 12,260 adults with OUD one month after release - half receiving methadone or buprenorphine prior to release.

Key Finding:

- 75% reduction in overall deaths.
- 85% reduction in fatal overdoses.

Marsden, J., Stillwell, G., Jones, H., Cooper, A., Eastwood, B., Farrell, M., Lowden, T., Maddalena, N., Metcalfe, C., Shaw, J., and Hickman, M. (2017) Does exposure to opioid substitution treatment in prison reduce the risk of death after release? A national prospective observational study in England. *Addiction*, 112: 1408–1418. <https://doi.org/10.1111/add.13779>



Does MAT save lives?

Study:

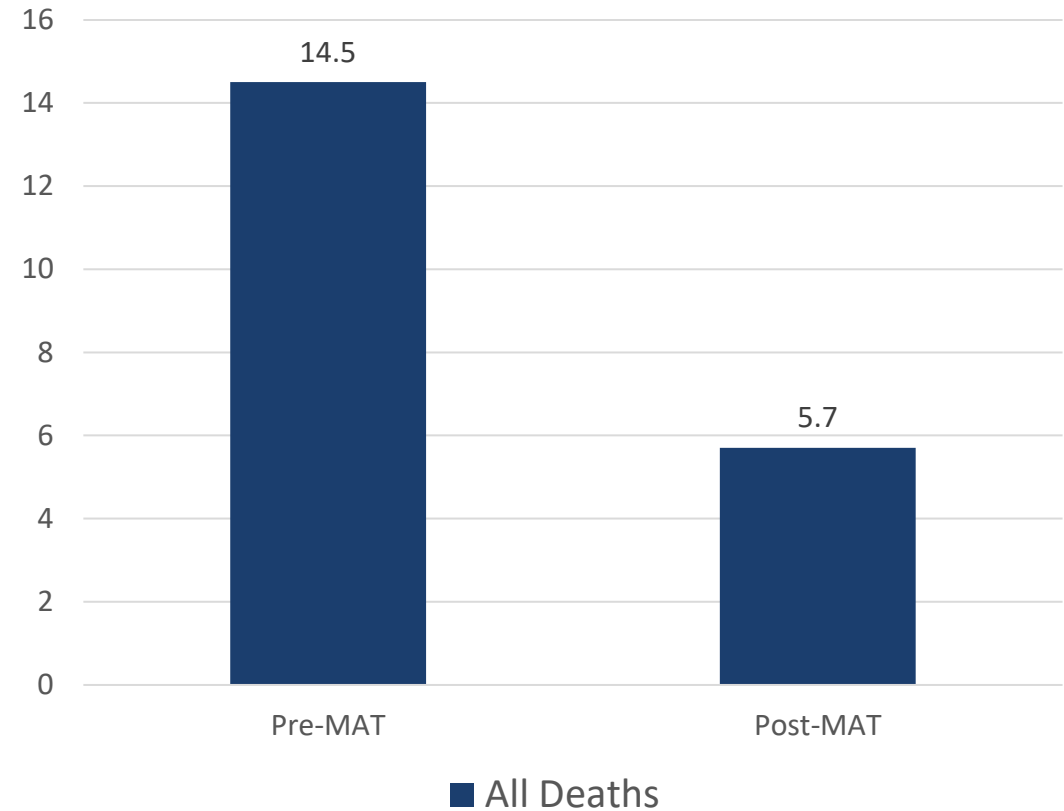
- Post-incarceration deaths pre and post implementation of a statewide correctional MAT program

Key Finding:

- Reduction in post-incarceration overdose deaths from 14.5% to 5.7% of all overdose deaths.

- Green, T. C., Clarke, J., Brinkley-Rubinstein, L., Marshall, B. D. L., Alexander-Scott, N., Boss, R., & Rich, J. D. (2018). Postincarceration Fatal Overdoses After Implementing Medications for Addiction Treatment in a Statewide Correctional System. *JAMA psychiatry*, 75(4), 405–407. <https://doi.org/10.1001/jamapsychiatry.2017.4614>

Percentage of Overdose Deaths Pre and Post MAT Program Implementation



Does MAT save lives?

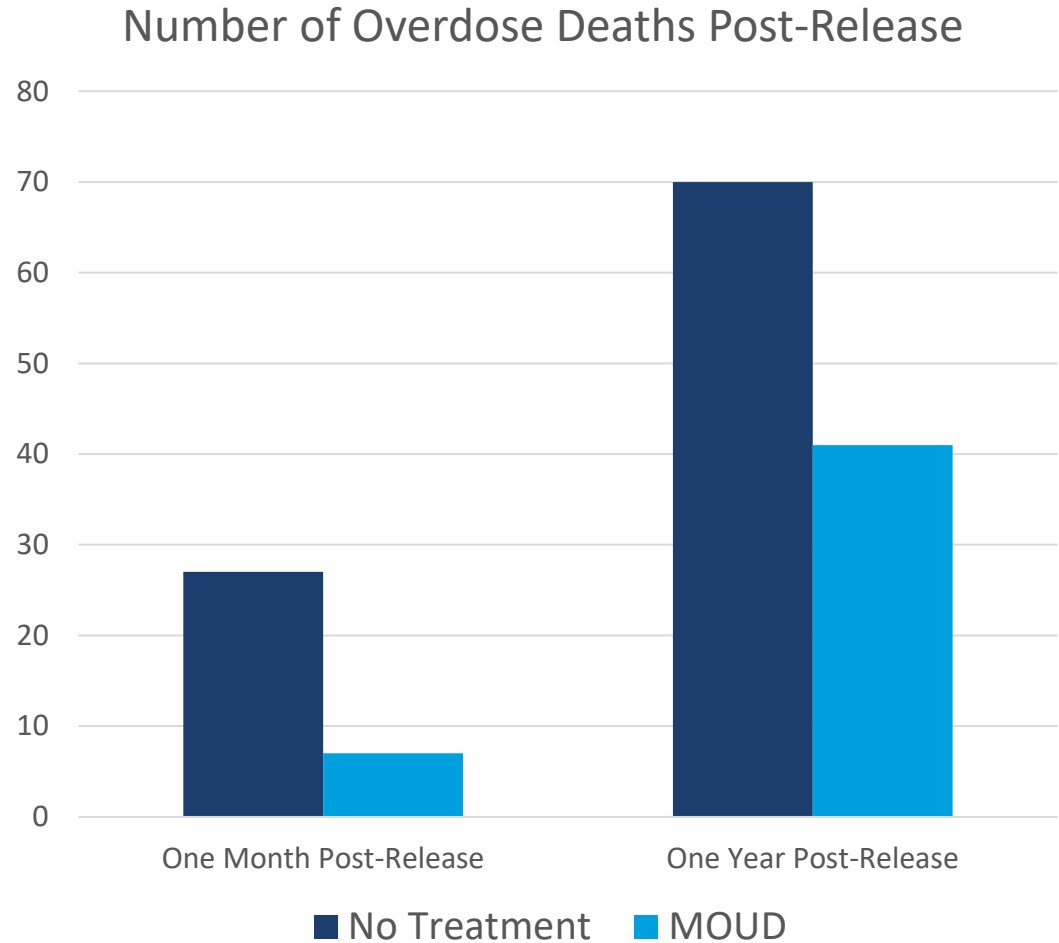
Study:

- 15,797 adults with OUD who were released from New York City jails to the community in 2011–2017.

Key Finding:

- Methadone and buprenorphine treatment for OUD during incarceration was associated with an **80% reduction in overdose mortality risk** for the first month post-release.

- Lim, S, Cherian, T, Katyal, M, Goldfeld, KS, McDonald, R, Wiewel, E, 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. <https://doi.org/10.1111/add.16071>



Does MAT save lives?

...but increased mortality when individuals stop taking these medications

(Marsden, 2017 - see slide 9)

Question 2: Does MAT Promote Recovery?

YES

Does MAT promote recovery?

Study:

- Systematic review of 13 studies within last 5 years conducted in US for adults involved in the criminal justice system, including 6 prison populations and 4 jail populations.

Key Finding:

- Early initiation of all three medications while in custody was associated **with long-term seeking and maintaining treatment** and reduced post-release opioid use.

Sugarman, O. K., Bachhuber, M. A., Wennerstrom, A., Bruno, T., & Springgate, B. F. (2020). Interventions for incarcerated adults with opioid use disorder in the United States: A systematic review with a focus on social determinants of health. *PloS one*, 15(1). <https://doi.org/10.1371/journal.pone.0227968>

Does MAT promote recovery?

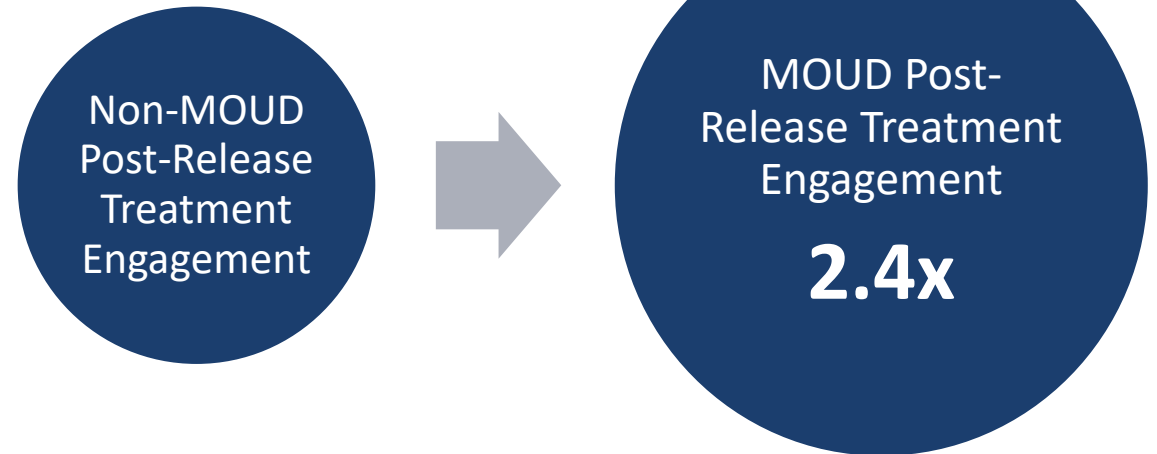
Study:

- 12,260 adults with OUD one month after release - half receiving methadone or buprenorphine prior to release.

Key Finding:

- 2.47 times more likely to enter treatment in the first month post release than non-MOUD individuals.

Marsden, J., Stillwell, G., Jones, H., Cooper, A., Eastwood, B., Farrell, M., Lowden, T., Maddalena, N., Metcalfe, C., Shaw, J., and Hickman, M. (2017) Does exposure to opioid substitution treatment in prison reduce the risk of death after release? A national prospective observational study in England. *Addiction*, 112: 1408–1418. <https://doi.org/10.1111/add.13779>



Does MAT promote recovery?

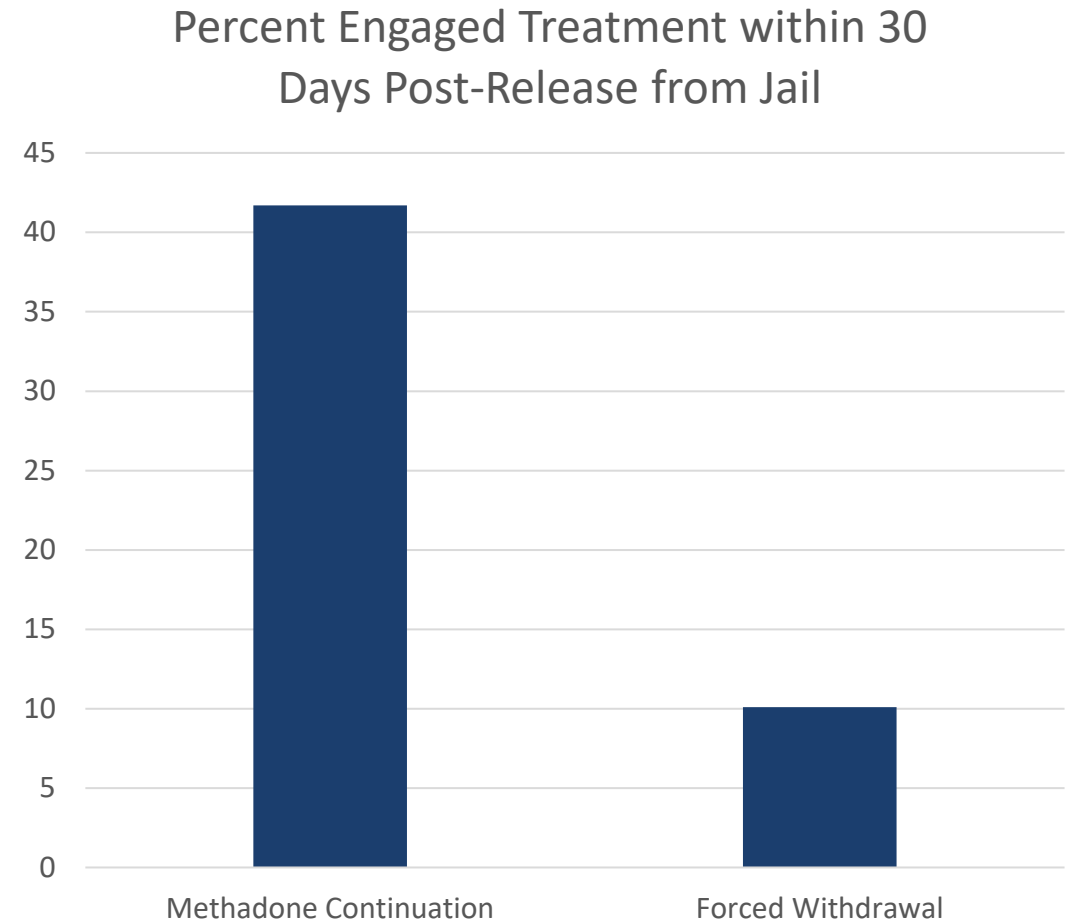
Study:

- 382 males in a jail facility, 184 continued methadone upon entry to the facility, 198 forced to withdraw.

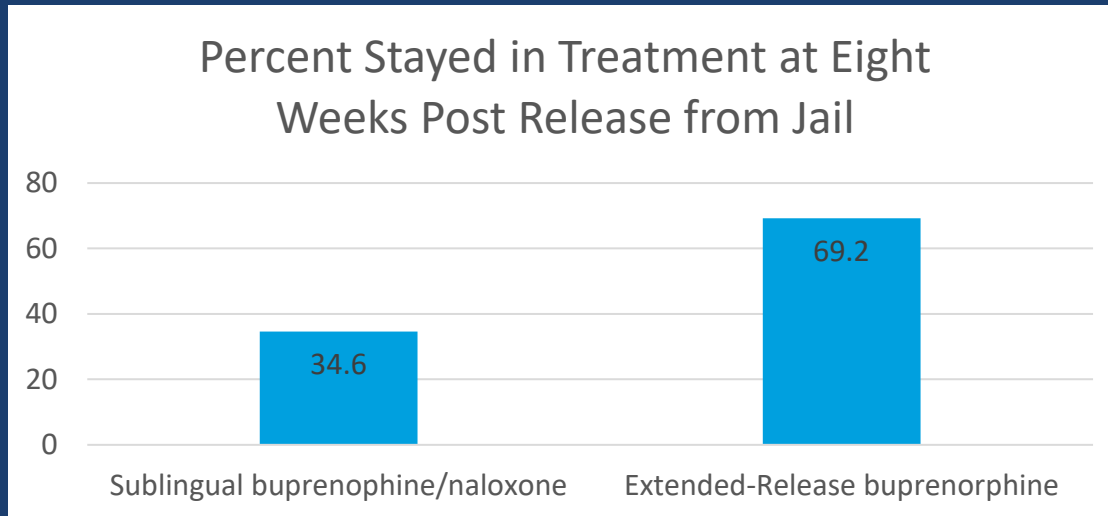
Key Finding:

- The methadone continuation group was **6.46 times more likely to engage with treatment** post-release within 30 days.

Moore, K. E., Oberleitner, L., Smith, K. M. Z., Maurer, K., & McKee, S. A. (2018). Feasibility and Effectiveness of Continuing Methadone Maintenance Treatment During Incarceration Compared With Forced Withdrawal. *Journal of addiction medicine*, 12(2), 156–162. <https://doi.org/10.1097/ADM.0000000000000381>



Does MAT promote recovery?



Challenge

Without continued medication, post-release, effectiveness fades. Retention rates are lower, especially for justice-involved people.

Lee JD, Malone M, McDonald R, et al. (2021). Comparison of Treatment Retention of Adults With Opioid Addiction Managed With Extended-Release Buprenorphine vs Daily Sublingual Buprenorphine-Naloxone at Time of Release From Jail. *JAMA Network Open*, 4(9).

<https://doi.org/10.1001/jamanetworkopen.2021.23032>

Question 3: Does MAT Reduce Recidivism?

Mostly Yes

Does MAT reduce recidivism?

Study:

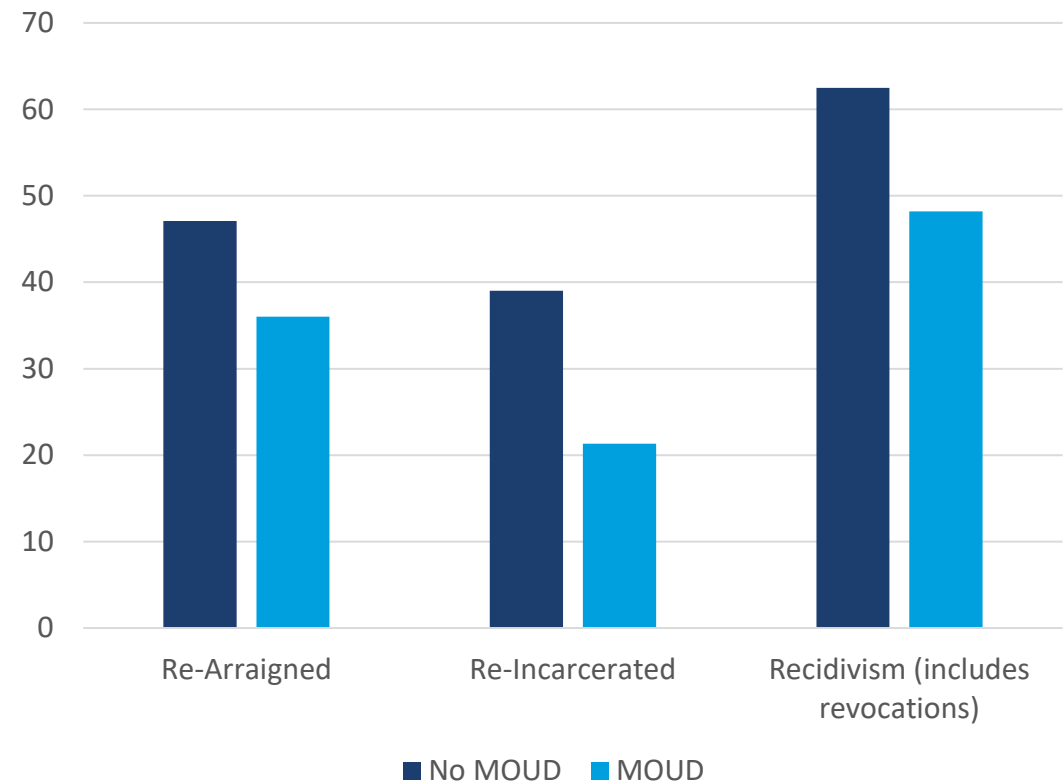
- Natural experiment comparing two neighboring county jails – one providing buprenorphine and one not.

Key Finding:

- Jail providing buprenorphine saw lower rates of recidivism across all measurements.

Evans, E. A., Wilson, D., & Friedmann, P. D. (2022). Recidivism and mortality after in-jail buprenorphine treatment for opioid use disorder. *Drug and alcohol dependence*, 231(109254).
<https://doi.org/10.1016/j.drugalcdep.2021.109254>

Recidivism Post-Release Percent at Jail
with and without MOUD



Does MAT reduce recidivism?

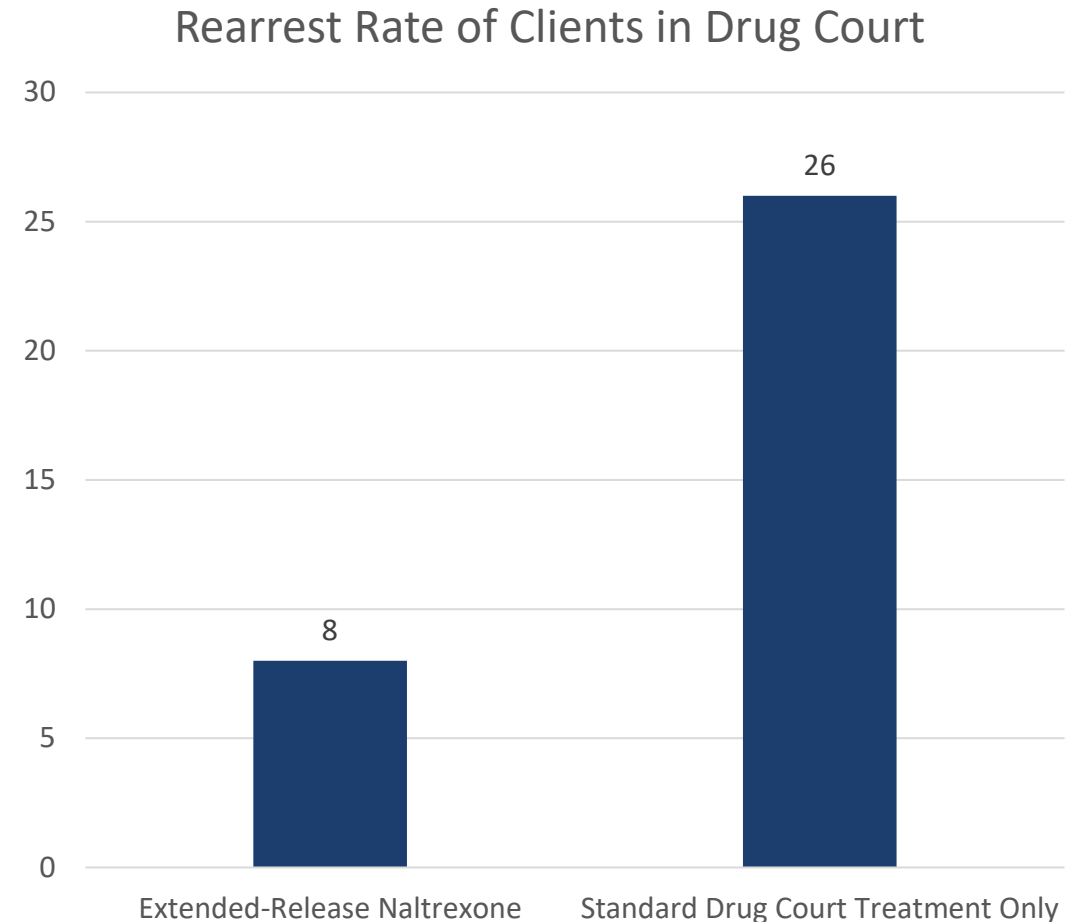
Study:

- Comparison of clients receiving extended-release naltrexone in three drug courts with matched clients receiving standard drug court treatment.

Key Finding:

- Clients receiving extended-release naltrexone missed 57% fewer drug court sessions and had an 8% rearrest rate compared to 26% for non-MAT clients.

Finigan, M. W., Perkins, T., Zold-Kilbourn, P., Parks, J., & Stringer, M. (2011). Preliminary evaluation of extended-release naltrexone in Michigan and Missouri drug courts. *Journal of Substance Abuse Treatment*, 41(3), 288-293. <https://doi.org/10.1016/j.jsat.2011.04.003>



Does MAT reduce recidivism?

Study:

- 22,275 Swedish prisoners released from 2005 to 2010 and followed through 2013.

Key Finding:

- Rates of violent reoffending were significantly lower during periods when antipsychotics, psychostimulants, and **medications for substance use disorder** were dispensed, compared with periods in which they were not.

Swanson J. (2016). Mental Illness, Release From Prison, and Social Context. *JAMA*. 316(17), 1771–1772. <https://doi.org/10.1001/jama.2016.12434>

Does MAT reduce recidivism?

Outliers

Baltimore Pre-Release Study found no association between buprenorphine retention over one year and decreased criminal behavior, and no association with days of heroin use

Gordon, M. S., Kinlock, T. W., Schwartz, R. P., O'Grady, K. E., Fitzgerald, T. T., & Vocci, F. J. (2017). A randomized clinical trial of buprenorphine for prisoners: Findings at 12-months post-release. *Drug and Alcohol Dependence*, 172, 34-42.
<https://doi.org/10.1016/j.drugalcdep.2016.11.037>

Prison Methadone Study found that increased retention in methadone treatment 30 days after release was not associated with reduced recidivism, except for a subset who re-engaged with the same provider as their provider in prison

Moore, 2018 – see slide 16

Question 4: Does MAT Improve Quality of Life, Health, and Welfare?

Yes

Does MAT improve quality of life, health, and welfare?

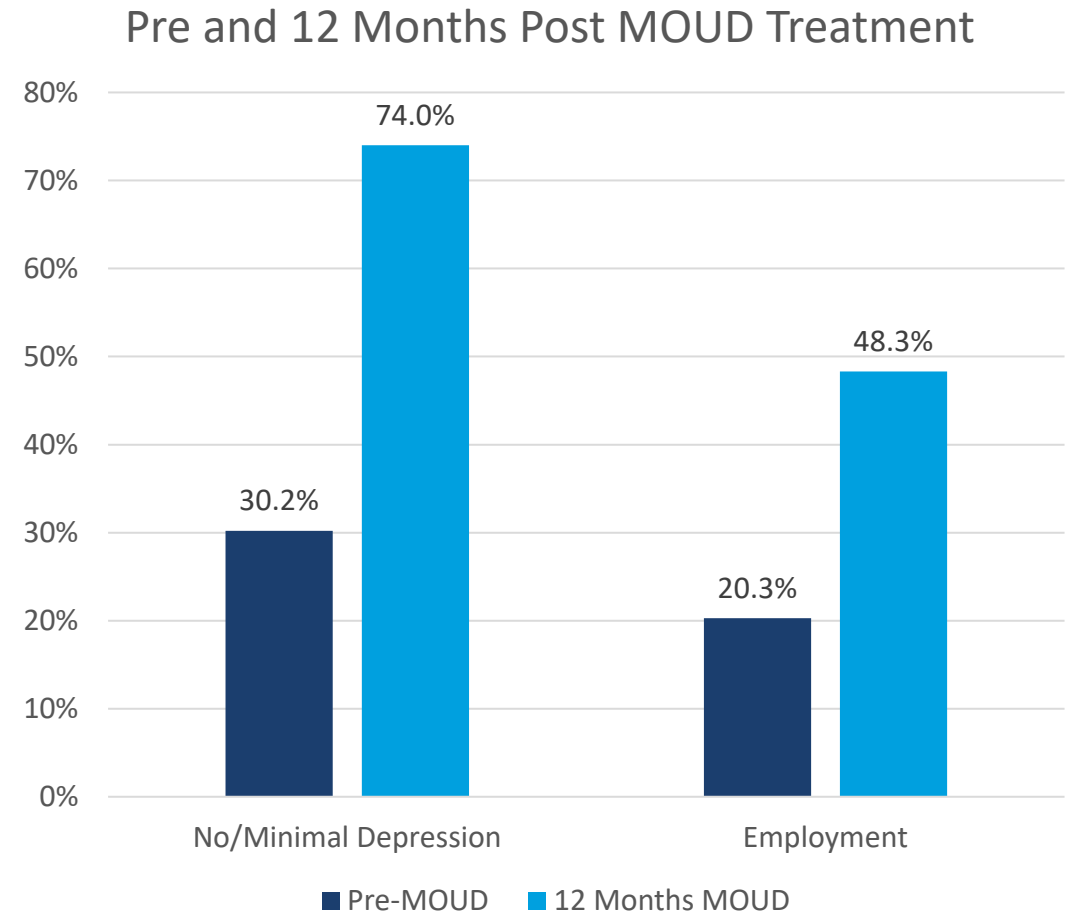
Study:

- 12-month outcomes for an observational study for community long-acting buprenorphine subcutaneous injection for moderate to severe OUD.

Key Finding:

- During the program, participants had fewer withdrawal symptoms, lower pain, positive health-related quality of life, minimal depression, and higher employment versus pre-trial visit.

Ling, W., Nadipelli, V. R., Aldridge, A. P., Ronquest, N. A., Solem, C. T., Chilcoat, H., Albright, V., Johnson, C., Learned, S. M., Mehra, V., & Heibreder, C. (2020). Recovery From Opioid Use Disorder (OUD) After Monthly Long-acting Buprenorphine Treatment: 12-Month Longitudinal Outcomes From RECOVER, an Observational Study. *Journal of addiction medicine*, 14(5), e233–e240. <https://doi.org/10.1097/ADM.0000000000000647>



Does MAT improve quality of life, health, and welfare?

Study:

- Systematic review on the effects of long-acting injectable buprenorphine and its impact on social determinants of health.

Key Findings:

Long-acting injectable buprenorphine was associated with:

- Increased employment and employment duration;
- Increased pro-social activities;
- Increased “positive psychosocial feedback”;
- Improved social relationships; and,
- And lower rates of recidivism.

Martin, E., Maher, H., McKeon, G., Patterson, S., Blake, J., & Chen, K. Y. (2022). Long-acting injectable buprenorphine for opioid use disorder: A systematic review of impact of use on social determinants of health. *Journal of Substance Abuse Treatment*, 139(108776). <https://doi.org/10.1016/j.jsat.2022.108776>

Question 5: How do the Medications Compare?

How Does Methadone and Buprenorphine Compare?

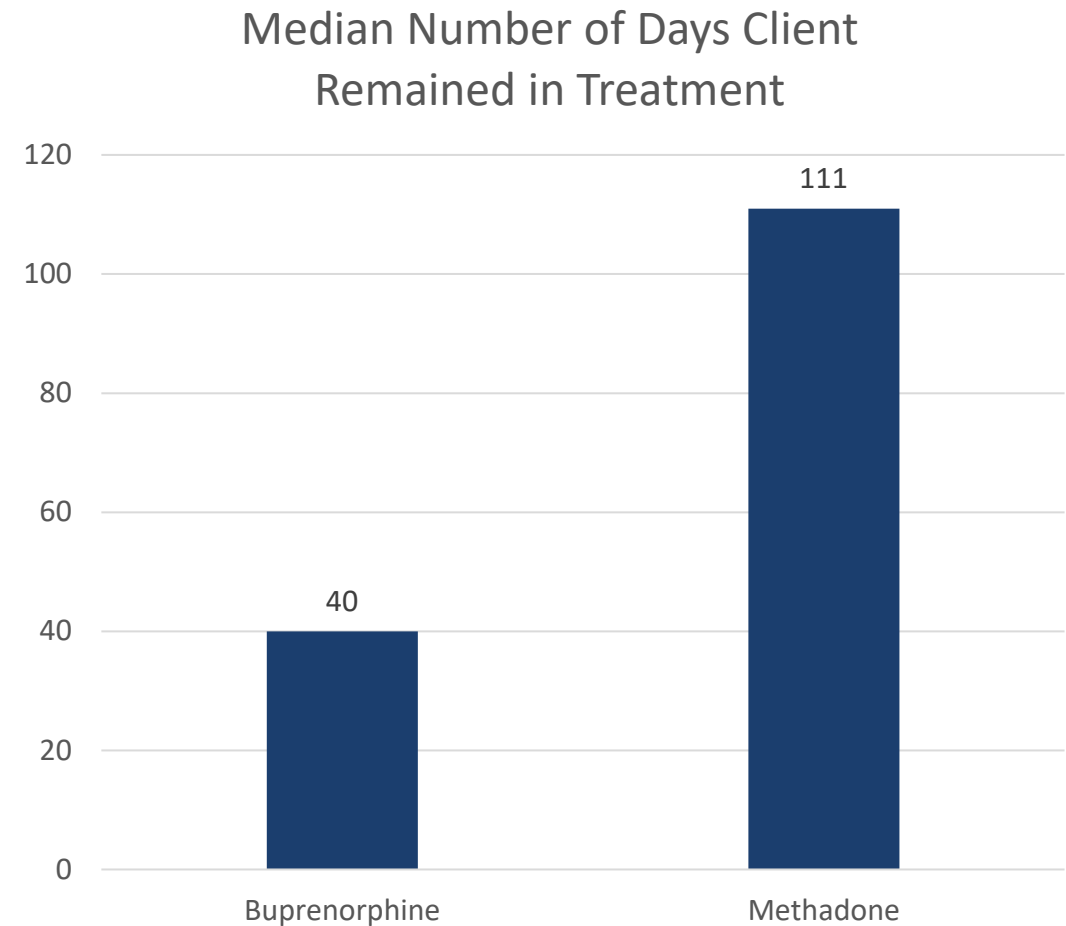
Study:

- UK community-based cohort study of 11,033 people prescribed MOUD.

Key Finding:

- Buprenorphine was associated with lower all-cause mortality and drug-related mortality than methadone ***while in treatment***. However, patients on methadone remained in treatment longer. Overall mortality rates were comparable.

Hickman, M., Steer, C., Tilling, K., Lim, A. G., Marsden, J., Millar, T., Strang, J., Telfer, M., Vickerman, P., & Macleod, J. (2018). The impact of buprenorphine and methadone on mortality: a primary care cohort study in the United Kingdom. *Addiction* (Abingdon, England), 113(8), 1461–1476. <https://doi.org/10.1111/add.14188>



Methadone vs. Buprenorphine

Study:

- Australian non-randomized trial in correctional setting of oral methadone vs. extended-release injectable buprenorphine (N=67).

Key Findings:

- Both medications saw similar high retention rates, significant decline in injection drug use and non-prescribed opioid use, and no diversion was identified.

Dunlop, A. J., White, B., Roberts, J., Cretikos, M., Attalla, D., Ling, R., Searles, A., Mackson, J., Doyle, M. F., McEntyre, E., Attia, J., Oldmeadow, C., Howard, M. V., Murrell, T., Haber, P. S., and Lintzeris, N. (2022). Treatment of opioid dependence with depot buprenorphine (CAM2038) in custodial settings. *Addiction*, 117(2), 382– 391. <https://doi.org/10.1111/add.15627>

Study:

- Men with OUD at Rikers Island Jail not enrolled in community methadone treatment and sentenced to 10-90 days in jail (N=116) were randomly assigned either to buprenorphine or methadone maintenance.

Key Finding:

- Completion rates in jail both equally high, but buprenorphine group more likely to report to post-release treatment. No post release differences in illicit opioid use, re-arrests, or reincarceration.

Magura, S., Lee, J. D., Hershberger, J., Joseph, H., Marsch, L., Shropshire, C., & Rosenblum, A. (2009). Buprenorphine and methadone maintenance in jail and post-release: a randomized clinical trial. *Drug and alcohol dependence*, 99(1-3), 222-230. <https://doi.org/10.1016/j.drugalcdep.2008.08.006>

Methadone vs. Buprenorphine

Meta-analyses, systematic reviews also found outcomes dependent upon buprenorphine dosage with higher doses generally associated with more parity with methadone outcomes in terms of illicit opioid use and retention.

Thomas, C.P., Fullerton, C.A., Kim, M., Montejano, L., Lyman, D.R., Dougherty, R.H., Daniels, A.S., Ghose, S.S. & Delphin-Rittmon, M.E. (2014). Medication-assisted treatment with buprenorphine: assessing the evidence. *Psychiatric services*, 65(2), 158-170. <https://doi.org/10.1176/appi.ps.201300256>

Agonist vs. Antagonist

- **Multiple studies, including randomized trials**, found extended-release naltrexone to be comparable to (and in one better than) buprenorphine in outcomes, including reducing heroin use, other opioids, other illicit drugs, fatal and non-fatal overdoses (Institute, 2018; Murphy, 2019, Tanum, 2017).
- **Multiple studies** found fatal and non-fatal overdoses equivalent for naltrexone and buprenorphine, but higher methadone fatal overdoses during the first 28 days. After 28 days and post-treatment, rates equivalent among all three (Kelty, 2017).
- **BUT** antagonist more likely to be discontinued compared to agonist (Zhang, 2022), but once begun on antagonist, retention rates same for jail population (Lee, 2018).

What is the effect of MOUD delivery systems?

Study:

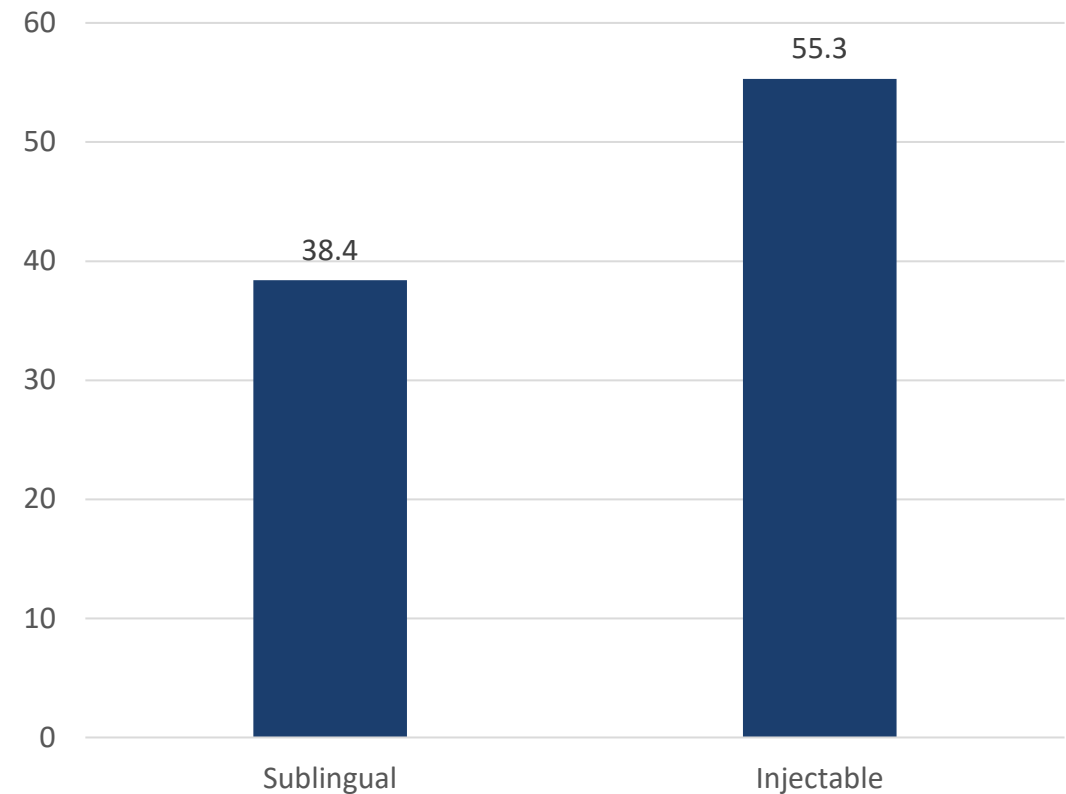
- People in jail were randomly assigned to receive extended-release or daily sublingual buprenorphine.

Key Finding:

- Extended-release patients had fewer in-jail clinic visits and increased retention in treatment post-release. However, patients preferred sublingual buprenorphine.

Lee, J. D., Malone, M., McDonald, R., Cheng, A., Vasudevan, K., Tofighi, B., Garment, A., Porter, B., Goldfeld, K. S., Matteo, M., Mangat, J., Katyal, M., Giftos, J., & MacDonald, R. (2021). Comparison of Treatment Retention of Adults With Opioid Addiction Managed With Extended-Release Buprenorphine vs Daily Sublingual Buprenorphine-Naloxone at Time of Release From Jail. *JAMA network open*, 4(9). <https://doi.org/10.1001/jamanetworkopen.2021.23032>

Rates of Opioid Negative Urinalysis at Eight Weeks Post-Release



Question 6: Do Medications Work Better in Conjunction with Psychosocial Treatment?

Yes

Concurrent Treatment with MAT

Community-Based Studies

- **State Medicaid study** found that behavioral health therapy associated with a low risk of treatment discontinuation for persons on methadone, naltrexone, or buprenorphine (Zhang, 2022).
- **A meta-analysis** found cognitive behavioral therapy added to pharmacotherapy, motivational enhancement therapy, contingency management, and 12-step facilitation did equally well in increasing treatment retention (Ray, 2020).
- **A study** found all the OUD medications have been found to be compatible within the context of 12-step based treatment and the combination is associated with favorable outcomes (Klein, 2019).

Question 7: Are Clients Satisfied with MAT?

Are Clients Satisfied with jail MAT?

YES, but...

Qualitative study of individuals released from jail on any of the three MOUDs:

- Satisfaction with naltrexone's long-acting antagonist effects and craving control
- Similar satisfaction regarding effects of methadone and buprenorphine maintenance among retained-in-treatment individuals
- Addressing basic needs (housing and economic security) most important to reduce barriers to treatment.

Velasquez, M., Flannery, M., Badolato, R., Vittitow, A., McDonald, R. D., Tofighi, B., Garment, A. R., Giftos, J., & Lee, J. D. (2019). Perceptions of extended-release naltrexone, methadone, and buprenorphine treatments following release from jail. *Addiction science & clinical practice*, 14(1), 37. <https://doi.org/10.1186/s13722-019-0166-0>

MAT Research Compendium

Now available online at www.RSAT-TTA.com

Bureau of Justice Assistance (BJA)
Residential Substance Abuse Treatment (RSAT) Program for State Prisoners
Training and Technical Assistance Resource



Correctional Medication-Assisted Treatment Research Compendium

April 2023



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- Institute for Clinical and Economic Review. (2018, October 25). Extended-release opioid agonists and antagonist medications for addiction treatment (MAT) in patients with opioid use disorder: Effectiveness and value. Evidence report. https://icer.org/wpcontent/uploads/2020/10/ICER_MAT_Evidence_Report_102518-1.pdf
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Resources

- [Investigation of the Cumberland County Jail – Report](#)
- [SAMHSA, Medications for Substance Use Disorders](#)
- [National Institute on Drug Abuse, Effective Treatments for Opioid Addiction](#)
- [American Society of Addiction Medicine – Practice Guidelines for the Use of Medication in the Treatment of Addiction Involving Opioid Use](#)
- [FDA Safety Announcement, Harm reported from sudden discontinuation of opioids](#)
- [National Sheriff’s Association and National Commission on Correctional Health Care – Jail-Based Medication-Assisted Treatment](#)

QUESTIONS

- ▶ Type your questions in the Q&A box on your screen.

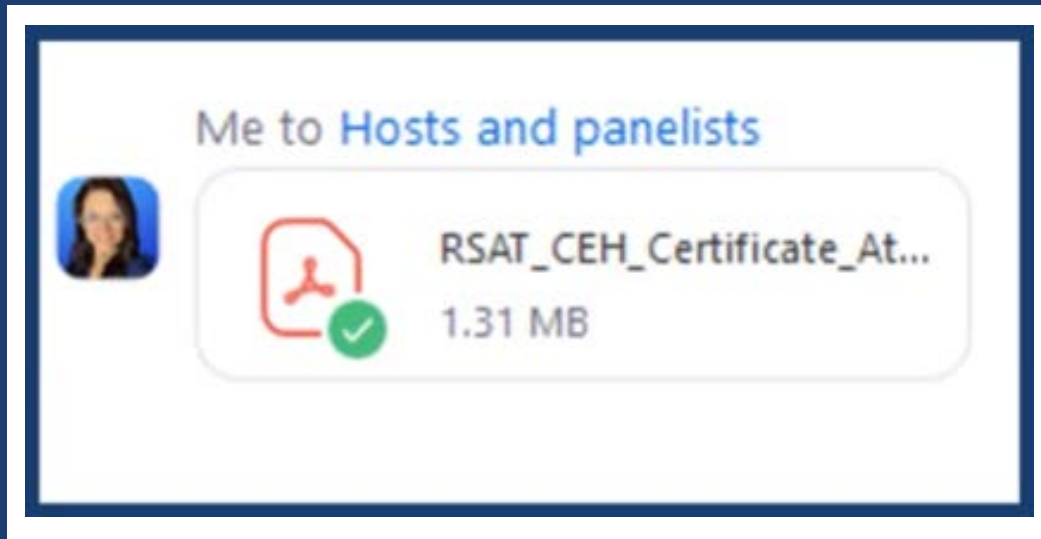


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You can download the certificate of attendance from the chat.





CERTIFICATE OF CONTINUING EDUCATION



1 Continuing Education Hour (CEH) approved by NAADAC, the Association of Addiction Professionals



Pass 10-question quiz with 7 correct answers



Download certificate upon completion of the quiz

May 24, 2023 RSAT webinar CEH quiz link:

<https://survey.alchemer.com/s3/7334506/May-24-2023-RSAT-Webinar-CEH>

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