

Literature Review: Medication Assisted Treatment (MAT) Related to Opiate Use, Methadone Induction, and Narcan Distribution

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Definition(s):

Medication Assisted Treatment (MAT) is any opioid addiction treatment that includes a U.S. Food and Drug Administration (FDA) approved medication for the detoxification or maintenance treatment of opioid addiction (Substance Abuse and Mental Health Services Administration (SAMHSA), 2005). Methadone (Induction) is the most widely used medication for medication assisted treatment. Narcan (Distribution) is known for its ability to block opioids and reverse overdoses.

Target Population: Individuals with diagnosed opioid use disorders and individuals who have experienced a nonfatal opioid overdose.

Description: MAT may be provided in an opioid treatment program (OTP) or an OTP medication unit (i.e. pharmacy, physician's office) or other healthcare setting (Substance Abuse and Mental Health Services Administration (SAMHSA), 2005) including jail and prison-based facilities. Jail-based MAT programs most commonly provide methadone maintenance treatment, but more are exploring implementation of methadone induction treatment as well. Reentry services and transition planning for individuals with an opioid addiction are very important, as they are most vulnerable to relapse and overdose the first few weeks after being released from jail. Provision of Narcan at jail release is more and more common (NIDA, 2014).

Research Summary:

MAT combines pharmacotherapy with a full program of assessment, psychosocial intervention, and support services. In a comprehensive MAT setting, patients should have access to a variety of psychosocial services and case management, including residential and outpatient programs that offer individual and group counseling on a periodic or as needed basis, peer help programs (such as 12-Step programs), mobile treatment units or other means to access to treatment. More recently, jails have been creating induction and maintenance programs due to the rise of opioid addicted inmates. Such programs have specific eligibility requirements for both the clinical and custody aspects (Maurer K. 2015). This is discussed more fully in the section below. When paired with other modes of treatment, such as counseling, MAT has shown very positive outcomes, including increased treatment retention, decreased illicit opiate use, decreased injection drug use, decreased hepatitis and HIV infections, increased family stability, decreased criminal activity, recidivism and incarceration, increased employment, improved birth outcomes for the children of women treated during pregnancy, lower death rates and decreased incidence of overdose (Miller, 2013).

Multiple Substance Use in MAT

Patients in MAT programs oftentimes use other substances, most commonly alcohol, amphetamines, benzodiazepines, other prescription sedatives, cocaine, and marijuana. This can be especially dangerous when more than one depressant, such as alcohol, benzodiazepines, and barbiturates, are combined because of the stress it puts on the central nervous system (CNS). While combinations of opioid and stimulates are less dangerous than that of the former, they still pose a danger. Aside from Naltrexone, medications utilized in MAT do not address non-opioid substance use. While Tennant and Shannon (1995) found that the methadone concentration in blood appeared to be lowered by cocaine use, and that increased methadone dosages appeared to reduce cocaine use, there is limited recent research (SAMHSA, 2005).

Treatment Stages

MAT has defined treatment stages to provide guidance and a way to measure progress on a care continuum. Most treatment providers emphasize that these stages are not one directional, as patients may experience relapse and set-backs. The stages are also not meant to be viewed as fixed, but rather a dynamic continuum that is based on the individuals' capacities and needs

(SAMHSA, 2005). The treatment stages are also dependent upon the specific type of medication being utilized to assist in detoxification and treatment. The stages include initial screening and assessments, pharmacotherapy treatment induction, stabilization, maintenance, and medication titration if so desired.

Screening & Assessment:

Comprehensive assessment should include the extent, nature, and duration of patient's opioid and other substance use, treatment history, motivation to comply with treatment, medical, psychiatric, and psychosocial needs, functional status, gender, culture, ethnicity, and language, and recovery support outside the OTP. While not a comprehensive assessment, research supports the validity of the Addiction Severity Index (ASI) (McLellan et al. 1992) for the basic information needed to measure patient conditions (SAMHSA, 2005).

Pharmacotherapy Induction:

Choices of medications, including methadone, buprenorphine, and naltrexone, allows for tailored and patient-oriented treatment. Each medication has its own benefits and limitations, and patient-treatment matching should be taken into consideration; this includes dosages, co-occurring disorders, health concerns, and drug interactions. Medication induction is the most dangerous stage of treatment and the patient must be monitored daily to ensure they aren't being overdosed or under dosed.

- Methadone—Methadone is a full agonist and is slow acting, usually lasting between 24-36 hours; it must be taken in the presence of a physician or at a certified opiate treatment program (OTP). It has more potential for abuse, and there are no protective factors for overdosing. Benefits of Methadone include the elimination and/or significant reduction in opiate withdrawal symptoms and drug-seeking behavior, normal patient functioning, no euphoric, tranquilizing, or analgesic effects, no change in tolerance levels over time, and minimal side effects.
- Buprenorphine—Used in MAT to help individuals reduce and/or quit their use of opiates. As an opioid partial agonist, Buprenorphine produces euphoric effects, but on a much weaker scale than heroin or methadone; it also has a ceiling effect, which limits the overdose risk. Because of this, individuals are less likely to abuse buprenorphine, can receive it as a prescription, and take it on a daily or alternate day dose frequency (SAMHSA, 2005).
- Naltrexone (Vivitrol) is an opiate antagonist. Naltrexone is useful for highly motivated patients who have undergone detoxification from opioids and need support to avoid relapse or who desire an expedited detoxification schedule (SAMHSA, 2005)
- Suboxone—Suboxone is a combination of Buprenorphine, a partial agonist, and Naloxone, an opiate antagonist.

Stabilization

After the induction phase, which can take anywhere from 4-8 weeks, the stabilization phase begins. This phase begins when the patient is no longer experiencing uncontrollable cravings for opioid agonists, experiencing no withdrawal symptoms, and is experiencing minimal to no side effects. For Buprenorphine, most patients stabilize at a dosage of 16-32 mg/day and for Methadone, most patients stabilize at daily doses of 80 to 120 mg/day (SAMHSA, 2004)

Maintenance

After the stabilization phase, the patient transitions to the maintenance phase. The maintenance phase is the longest phase, and could potentially be an indefinite period. Patients that are clinically stable and want to slowly taper off methadone maintenance treatment typically don't experience problems until the daily methadone dose reaches 30 mg or less. At this point, opioid withdrawal symptoms often emerge.

Jail-based Treatment

As outlined on the first page, jail based treatment programs exist and may have clinical and custody eligibility requirements. Examples for the clinical eligibility requirements include being a previous methadone patient (for maintenance, not induction programs), being within 5 days of last dose, verification by methadone OTP, agreement with program rules, mandatory weekly counseling, random urine testing, and/or a minimum of 1-year commitment. Examples of custody eligibility requirements include being unsentenced with a bond that's \$50,000 or more, being sentenced for 2 or more years, a specific medical/mental

health score, no protective custody, and/or no affiliations with gangs etc. Regardless of the agreed upon target population, agreements and MOU's should be in place to document agency responsibilities (especially if an outside treatment program is contracted), define the target population, and specify the desired treatment outcomes. These should be reviewed on a regular basis for quality assurance.

Some additional elements that should be considered include data sharing across agencies, court schedules, sentencing, security needs, and resources, continuity of care (following patients from jail to prison and through release and reentry), frequent drug testing (for example Instant Cups for urine testing) to ensure compliance, regularly schedule assessments to document progress, and transition planning for continued treatment in the community once released. Additional findings suggest that treatment approaches should target factors that are associated with criminal behavior; treatment that provides specific cognitive skills training to reduce "criminal thinking," by recognizing errors in judgement that lead to drug abuse and criminal behavior. Finally, a balance of rewards or incentives and sanctions encourage pro-social behavior and treatment participation in jail settings (NIDA, 2014).

Preventing Relapse & Overdose

Narcan Distribution

Naloxone, also known as Narcan, is a FDA-approved emergency medication to prevent opioid overdose and death. When distributed in communities, Narcan can reduce overdose deaths by 50% (StopOverdose, 2015), and the intranasal Narcan can reverse heroin overdoses 87% of the time (Kerr et. all. 2009). The Center for Disease Control and Prevention opioid prescribing guidelines released in 2016 recommend considering naloxone and overdose prevention education for patients and household members of patients prescribed opioids with a history of overdose, history of substance use disorder, higher opioid dosages (≥ 50 MME/day), or concurrent benzodiazepine use.

Prescribers and pharmacists need guidance on who should receive naloxone rescue kits. One approach is to develop an overdose risk tool to help deliver overdose education naloxone distribution (OEND) to people at risk for overdose. However, OEND should target people most likely to witness another's overdose, in addition to focusing on individuals who are at risk themselves. Therefore, providing OEND to the social networks of those identified to be high risk for overdose might be especially efficient. Importantly, the social networks of people who use opioids may not be interacting with community based OEND programs or health care personnel may not be identifying them as potential beneficiaries of OEND.

For jail populations, or inmates preparing for release, provision of a Narcan kit and information on opioid overdose reversal is pertinent. Best practices recommend inmates participate in a pre-release planning process that includes information on continuing their treatment in the community.

Performance Metrics

While generalizable performance metrics exist, more and more clinicians are recommending that outcomes be client centered and not treatment program based. In other words, treatment provided should use validated and reliable assessments and screenings to identify the needs of the client initially, and then on an ongoing basis to monitor their regress and progress. For example, if the client is homeless, one measurable outcome may include obtaining housing.

More general outcomes tend to be related to quality of life improvement, both emotionally and physically, such as access to care, client progress through stages or treatment/levels of care, retention in treatment and medication compliance, frequency of substance use (reduced number of X, Y, Z), cost effectiveness, level of functioning, utilization of services, post-treatment engagement with support systems, reduced symptom severity (using ASAM criteria), reduced hospitalizations and emergency room visits, reduced non-fatal and fatal overdoses. Other outcomes related to the criminal justice system include recidivism, such as re-arrest rates, failure to appear (FTA) in court and other probation violations.

Conclusion

In conclusion, MAT has shown to be an effective approach for the detoxification, treatment, and relapse prevention of opioid addicted individuals in primary care and treatment facilities. Specific medications utilized for MAT include Methadone, Buprenorphine, and Naltrexone. Each medication has benefits and drawbacks, and determination of which medication to use should be based upon clinical assessments and the individuals' needs. MAT, specifically utilizing Methadone, has also had

positive outcomes within jail-based populations. While maintenance programs are more common, induction programs are gaining more attention. Utilization of appropriate screens and assessments are recommended to help identify and treat the targeted population.

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