

Q. What is contingency management?

A. Contingency management (CM) refers to the systematic reinforcement of desired behaviors (Higgins & Petry, 1999). Grounded on principles of positive reinforcement, CM encourages positive behavior change by rewarding patients, often with financial incentives or ‘vouchers’ exchangeable for goods, based on objective evidence of behavior change (such as abstinence from drinking confirmed by negative breath-alcohol tests, medication compliance, or treatment attendance; Higgins & Petry, 1999). In voucher-based reinforcement therapy, a common CM intervention, patients receive vouchers for providing negative biological samples, which can then be exchanged for goods and services (Lussier, Heil, Mongeon, Badger, & Higgins, 2006). Another CM technique, commonly referred to as the ‘fishbowl’ procedure, involves a lottery system where patients receive draws for providing negative biological samples (Petry & Martin, 2002).

Q. What is the treatment model underlying CM?

A. CM is based on the principle of operant conditioning, the use of consequences (rewards or punishments) to change the form and frequency of voluntary behavior (Higgins & Petry, 1999). In the case of alcohol use disorder (AUD), alcohol use is the behavior, and is positively reinforced by both its biochemical effects on the brain and environmental influences, such as stress and peer reinforcement. Animal research has demonstrated that increasing non-alcohol sources of reinforcement, such as food, can lead to decreases in alcohol use. Likewise, in humans, non-alcohol sources of reinforcement, for example entertainment, can reduce alcohol use. CM aims to achieve behavior change by applying consistent reinforcement (Higgins & Petry, 1999).

Q. Is CM recommended as a front-line treatment for AUD in the Military Health System (MHS)?

A. **No.** Although the *2015 VA/DoD Clinical Practice Guideline for the Management of Substance Use Disorders* recommends CM as an adjunct treatment for stimulant use disorder and opioid use disorder, CM is not included in any recommendations for the treatment of AUD.

The MHS relies on the VA/DoD clinical practice guidelines (CPGs) to inform best clinical practices. The CPGs are developed under the purview of clinical experts and are derived through a transparent and systematic approach that includes, but is not limited to, systematic reviews of the literature on a given topic and development of recommendations using a graded system that takes into account the overall quality of the evidence and the magnitude of the net benefit of the recommendation. A further description of this process and CPGs on specific topics can be found on the VA clinical practice guidelines website.

Q. Do other authoritative reviews recommend CM as a front-line treatment for AUD?

A. **No.** Other authoritative reviews have not substantiated the use of CM as a treatment for AUD.

Several other recognized organizations conduct systematic reviews and evidence syntheses on psychological health topics using similar grading systems as the VA/DoD CPGs. These include the Agency for Healthcare Research and Quality (AHRQ) and Cochrane.

- AHRQ: No reports including CM as a treatment for AUD were identified.
- Cochrane: No systematic reviews including CM as a treatment for AUD were identified.

Q. Is there any recent research on CM as a treatment for AUD?

A. Much of the recent research on CM is focused on treating addictions to substances other than alcohol, such as opioids and cocaine. Though some systematic reviews of CM for the treatment of substance use disorders do include AUD, few trials on AUD were identified, and the authors do not report

specifically on the efficacy of CM as a treatment for AUD (Davis et al., 2016; Prendergast, Podus, Finney, Greenwell, & Roll, 2006).

In recent years, there have been few randomized controlled trials of CM for the treatment of AUD. One trial added a CM intervention to Veterans Health Administration substance use disorders treatment (Hagedorn et al., 2013). Veterans with alcohol dependence (n=191) were randomized to usual care or usual care plus CM. Participants in the CM group had significantly more negative samples, stayed in treatment significantly longer, and had significantly longer periods of abstinence compared to participants in usual care. Other trials of subthreshold 'at-risk' drinkers (not diagnosed with AUD) found that CM programs reduce excessive alcohol consumption (Dougherty et al., 2014; Dougherty et al., 2015).

Q. What conclusions can be drawn about the use of CM as a treatment for AUD in the MHS?

A. The current state of evidence for CM is not mature enough to recommend it as an effective evidence-based treatment for AUD in the MHS. Research on CM as a treatment for AUD is sparse compared to other substances, largely due to the difficulties in confirming abstinence. Common methods for verifying abstinence include breath, blood, and urine tests, but alcohol leaves the body quickly and most trials measure alcohol use only daily or weekly. In recent years, researchers have begun to test new technologies that overcome these issues by continuously monitoring alcohol use. For example, Dougherty et al. (2014) used a transdermal alcohol monitoring device to continuously monitor alcohol use over time in a CM trial. Research using technologies that enable continuous monitoring of alcohol use has the potential to change future recommendations of CM as a treatment for AUD, but the evidence is emerging, and currently consists mainly of small pilot studies. Multiple, methodologically rigorous randomized controlled trials are needed to form a body of evidence supporting the use of CM before it can be considered as an evidence-based treatment for AUD in the MHS.

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