



## Contingency Management Fact Sheet

### What is Contingency Management?

Contingency management (CM) is a behavioral intervention that promotes healthy behavior using positive reinforcement in the form of rewards [1]. Originally developed to treat substance use disorders, CM was adopted by public health practitioners and policymakers to help bring about a variety of positive health outcomes, including employment seeking behaviors [2], starting and continuing to take prescribed medications for the prevention of HIV [3], and remaining engaged in HIV care [4], [5]. Rewards can be cash or cash-equivalent vouchers, vouchers for goods and services, or tickets for random draws from a pool of prizes [6]. CM is called different names depending on one's discipline; in public policy research, for example, CM involving financial incentives may also be referred to as "conditional cash transfers" or "conditional economic incentivization."

### How Does CM Work?

A premise of CM is that human behaviors are shaped by their consequences. Positive reinforcement such as economic incentives can be useful in encouraging healthy behaviors and ensuring they continue [7]. CM can also help overcome errors in judgement that may lead to unhealthy behaviors. One such error is present-bias: the human tendency to place inordinate weight or focus on immediate concerns or rewards when making decisions [8], [9].

To illustrate using HIV as a focus: patients may choose not to adhere to HIV medication for short-term benefit of non-adherence (e.g., avoiding stigma, reduced costs to access care, and reduction in medication side effects) over the substantial long-term benefits of staying in care (e.g., viral suppression, better overall health, and increased life expectancy). With incentives for behavior (i.e., HIV care visits) and biomarkers (i.e., viral load reduction), CM can provide immediate rewards for staying in care and, in doing so, lead to improved health outcomes [4], [5].

### Is CM efficacious for individuals living with HIV?

Several randomized controlled trials have assessed the efficacy of CM interventions to improve HIV-related outcomes [10]–[12]. These studies have shown that financial incentives have led to improved retention in HIV care [11], [13]–[15] and increased adherence to antiretroviral therapy (ART) [16]–[18]. Although results related to financial incentives to achieve viral load suppression have been mixed [11], [12], a recent study published by a CHIPTS investigator found that CM combined with peer health navigation was associated with a 2.4-fold increase in the likelihood of viral suppression [19], [17].

There is also evidence that CM can effectively address the needs of substance-using people living with HIV. When combined with psychotherapy, CM was associated with reduced cravings for methamphetamine among a cohort of HIV-positive sexual minority men [20]. Further, CM, when combined with peer health navigation, was shown to improve ART among transgender women of color who are living with HIV [5], [19].

### **What are key concerns with CM?**

Even though cash incentives are not often used with CM, key concerns include potential abuse where incentives have some financial value, as well as the moral and ethical considerations of “paying people to do what they should be doing.” Concerns are heightened when CM interventions give financial incentives to individuals who use substances. These concerns related to financial abuse arise within a specific context—recent incidents of fraud uncovered the unethical marketing practices of some drug treatment facilities [21], [22]. Moreover, concerns of many around the idea of using “taxpayer money” to pay “drug addicts” or “meth addicts” “cold hard cash” or “cash rewards” for engaging in treatment is seen as a significant barrier to accepting a CM intervention [23]. Finally, there remains questions about the long-term sustainability of CM. While evidence clearly demonstrates that CM is efficacious, some opponents raise the concern of long-term sustainability after the targeted rewards are removed. Given that funding restrictions often limit follow-up beyond 12 months, this concern is warranted; it is, however, a critique that can be lodged against any behavioral interventions (i.e., do outcomes diminish once the intervention ends).

### **Is CM a viable solution for substance use treatment and HIV care?**

Despite concerns, community-based organizations, researchers, advocates, policymakers and legislators will continue to test the viability of CM as an evidence-based intervention for improving health outcomes [24]. Research settings will continue to implement and evaluate CM in substance use treatment, HIV care, and other public health settings. Meanwhile, communities seeking to address HIV-related outcomes and substance use in their jurisdictions will continue to look to additional solutions that can bridge innovative low-barrier treatment options, such as CM, to help onboard affected individuals onto a pathway of wellness and long-term recovery [25].

### **Conclusion**

Notwithstanding concerns about the ethics of and long-term fiscal commitment to CM, CM can be an effective strategy to improve health outcomes among people living with HIV. Research settings and communities should and will continue to implement and evaluate CM to improve substance use treatment and HIV care.

### **Acknowledgements**

This project was made possible with funding by National Institutes of Health (P30 MH 58107) and California HIV/AIDS Research Program (RP15-LA-007). The authors wish to thank Dr. Cathy Reback for her reviewing and offering feedback on the final brief.

## References

1. M. Prendergast, D. Podus, J. Finney, L. Greenwell, and J. Roll, "Contingency management for treatment of substance use disorders: a meta-analysis," *Addiction*, vol. 101, no. 11, pp. 1546–1560, Nov. 2006, doi: 10.1111/j.1360-0443.2006.01581.x.
2. K. Silverman *et al.*, "A RANDOMIZED TRIAL OF EMPLOYMENT-BASED REINFORCEMENT OF COCAINE ABSTINENCE IN INJECTION DRUG USERS," *J. Appl. Behav. Anal.*, vol. 40, no. 3, pp. 387–410, Sep. 2007, doi: 10.1901/jaba.2007.40-387.
3. R. J. Landovitz, J. B. Fletcher, S. Shoptaw, and C. J. Reback, "Contingency management facilitates the use of postexposure prophylaxis among stimulant-using men who have sex with men," *Open Forum Infect. Dis.*, vol. 2, no. 1, 2015, doi: 10.1093/ofid/ofu114.
4. O. Galárraga, B. L. Genberg, R. A. Martin, M. B. Laws, and I. B. Wilson, "Conditional economic incentives to improve HIV treatment adherence: literature review and theoretical considerations," *AIDS Behav.*, vol. 17, no. 7, pp. 2283–2292, 2013, doi: 10.1007/s10461-013-0415-2.
5. C. J. Reback, K. A. Kisler, and J. B. Fletcher, "A Novel Adaptation of Peer Health Navigation and Contingency Management for Advancement Along the HIV Care Continuum Among Transgender Women of Color," *AIDS Behav.*, pp. 1–12, Jun. 2019, doi: 10.1007/s10461-019-02554-0.
6. N. M. Petry and M. J. Bohn, "Fishbowls and Candy Bars: Using Low-Cost Incentives To Increase Treatment Retention," *Sci. Pract. Perspect.*, 2003.
7. B. F. Skinner, *The behavior of organisms: an experimental analysis*. Appleton-Century, 1938.
8. D. Laibson, "Golden Eggs and Hyperbolic Discounting," *Q. J. Econ.*, vol. 112, no. 2, pp. 443–477, 1997, doi: 10.1162/003355397555253.
9. S. Frederick, G. Loewenstein, and T. O 'donoghue, "Time Discounting and Time Preference: A Critical Review," *Journal of Economic Lit.*, 2002, Accessed: May 28, 2018. [Online]. Available: [https://www.uibk.ac.at/economics/bbl/lit\\_se/lit\\_se\\_ss06\\_papierre/time\\_discounting.pdf](https://www.uibk.ac.at/economics/bbl/lit_se/lit_se_ss06_papierre/time_discounting.pdf).
10. W. M. El-Sadr *et al.*, "Financial Incentives for Linkage to Care and Viral Suppression Among HIV-Positive Patients," *JAMA Intern. Med.*, vol. 12, no. 2, p. e0170686, 2017, doi: 10.1001/jamainternmed.2017.2158.
11. S. S. Solomon *et al.*, "Voucher Incentives Improve Linkage to and Retention in Care Among HIV-Infected Drug Users in Chennai, India," *Clin. Infect. Dis.*, vol. 59, no. 4, pp. 589–595, Aug. 2014, doi: 10.1093/cid/ciu324.
12. M. Javanbakht, P. Prosser, T. Grimes, M. Weinstein, and C. Farthing, "Efficacy of an individualized adherence support program with contingent reinforcement among nonadherent HIV-positive patients: results from a randomized trial," *J. Int. Assoc. Physicians AIDS Care (Chic.)*, vol. 5, no. 4, pp. 143–50, Dec. 2006, doi: 10.1177/1545109706291706.
13. S. I. McCoy *et al.*, "Cash vs. food assistance to improve adherence to antiretroviral therapy among HIV-infected adults in Tanzania," *Aids*, vol. 31, no. 6, pp. 815–825, 2017, doi: 10.1097/QAD.0000000000001406.
14. M. Yotebieng *et al.*, "Conditional Cash Transfers to Increase Retention in PMTCT Care, Antiretroviral Adherence, and Postpartum Virological Suppression," *JAIDS J. Acquir. Immune Defic. Syndr.*, 2016, doi: 10.1097/QAI.0000000000001062.
15. N. M. Petry, C. J. Rash, S. Byrne, S. Ashraf, and W. B. White, "Financial reinforcers for improving medication adherence: findings from a meta-analysis," *Am. J. Med.*, vol. 125, no. 9, pp. 888–96, Sep. 2012, doi: 10.1016/j.amjmed.2012.01.003.
16. M. I. Rosen *et al.*, "Improved Adherence with Contingency Management," *AIDS Patient Care STDS*, vol. 21, no. 1, pp. 30–40, Jan. 2007, doi: 10.1089/apc.2006.0028.
17. J. L. Sorensen *et al.*, "Voucher reinforcement improves medication adherence in HIV-positive methadone patients: a randomized trial," *Drug Alcohol Depend.*, vol. 88, no. 1, pp. 54–63, Apr. 2007, doi: 10.1016/j.drugalcdep.2006.09.019.
18. M. O. Rigsby *et al.*, "Cue-dose training with monetary reinforcement: pilot study of an antiretroviral adherence intervention," *J. Gen. Intern. Med.*, vol. 15, no. 12, pp. 841–7, Dec. 2000, Accessed: Aug. 07, 2017. [Online]. Available: <http://www.ncbi.nlm.nih.gov/pubmed/11119180>.
19. C. J. Reback, D. Runger, and J. B. Fletcher, "Drug Use is Associated with Delayed Advancement Along the HIV Care Continuum Among Transgender Women of Color," *AIDS Behav.*, Jun. 2019, doi: 10.1007/s10461-019-02555-z.
20. A. W. Carrico *et al.*, "Randomized controlled trial of a positive affect intervention to reduce HIV viral load among sexual minority men who use methamphetamine," *J. Int. AIDS Soc.*, vol. 22, no. 12, Dec. 2019, doi: 10.1002/jia2.25436.
21. B. McNeal, "Six individuals indicted in \$48 million health care fraud conspiracy at drug rehabilitation centers in Northern Ohio," *US Drug Enforcement Administration*, Feb. 07, 2019. <https://www.dea.gov/press-releases/2019/02/07/six-individuals-indicted-48-million-health-care-fraud-conspiracy-drug> (accessed Mar. 24, 2020).
22. C. Vestal, "Opioid Treatment Scam May Be Coming to Your State | The Pew Charitable Trusts," *PEW*, Oct. 07, 2017. <https://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2019/10/07/opioid-treatment-scam-may-be-coming-to-your-state> (accessed Mar. 24, 2020).
23. E. Symon, "Meth Addicts Would Get Cash Rewards for Treatment Under SB 888 - California Globe," *California Globe*, Feb. 28, 2020. <https://californiaglobe.com/section-2/meth-addicts-would-get-cash-rewards-for-treatment-under-sb-888/> (accessed Mar. 24, 2020).
24. "Bill Text - SB-888 Substance use disorder services: contingency management services," *California Legislative Information: Bill Information*. [http://leginfo.ca.gov/faces/billNavClient.xhtml?bill\\_id=20190200SB888](http://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=20190200SB888) (accessed Mar. 24, 2020).
25. "PROP Program - San Francisco AIDS Foundation." <https://www.sfaf.org/programs/stonewall-project/positive-reinforcement-opportunity-project-prop/> (accessed Mar. 24, 2020).