IMPACT (Infection Management Plus Addiction Care Together)

Pilot Combined Contingency Management for Substance Use Disorders & Antibiotic Adherence in the Acute Care Setting

ZUCKERBERG SAN FRANCISCO GENERAL Hospital and Trauma Center

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Background

- Contingency management (CM) is an underutilized strategy that may be effective in addressing syndemics of infectious diseases and substance use disorders (SUD).
- CM implementation outside of drug treatment settings is limited, despite its regard as gold-standard treatment for stimulant use disorder and potential use to support infection treatment completion.
- **Objective:** To describe feasibility and preliminary effectiveness of a novel CM program incentivizing both drug use reduction and antibiotic adherence in the acute care setting.

Results

Table 1: Demographic & Baseline Characteristics of IMPACT Participants (n=13)

	N = 13
Median age (IQR), years	39 (35—67)
Female sex, N (%)	6 (46%)
Unstably housed	10 (77%)
Infection: osteomyelitis	7 (54%)
Infection: endocarditis	6 (46%)
Stimulant use disorder	9 (69%)
Opioid use disorder	10 (77%)
Prior knowledge of CM	0 (0%)

Methods

What is contingency management?

More specific than simple incentive use, CM is a behavioral treatment program utilizing operant conditioning, historically used to encourage abstinence from drugs. *Frequent* assessment of *objective* behavior change earns incentives, often escalating if sustained.

INCLUSION CRITERIA
- **Opioid use disorder and/or stimulant use disorder** interested in reducing use
- **Serious infection** needing at least 2 weeks of antimicrobial in SNF or hospital setting

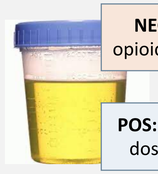
ENROLLMENT
- Baseline interview + urine collection
- Priming draw (draw until monetary prize received)

Twice Weekly Contingency Management based on antimicrobial adherence *and* absence drug use on UDS*

2 draws max → 4 draws max (*Week 1*) → 6 draws max → 8 draws max (*Week 2*)

*Adherence based on medical record review. Draws earned escalate if continued demonstration of target behavior to max of 8 draws (4 per behavior). Reset to 2 draws if lapse in target behavior.

Example Week 1 visit



NEG urine for opioids, stimulants	2 draws
POS: all antibiotic doses received	2 draws

4 draws total

Fishbowl Prizes *(500 slips)*
250 positive affirmations
209 slips x $10
40 slips x $20
1 slip x $100
Probability-weighted cost per draw: $5.98

Table 2: Contingency Management (CM) Outcomes by Participant

	Feasibility		*Effectiveness*				
ID	CM visits attempted: CM visits completed	Value of gift cards earned	Urine drug tests negative for non-prescribed drugs	Infection treatment complete	Discharge type	Participant-reported CM effectiveness for antibiotic completion (1-10)*	Participant-reported CM effectiveness for drug use reduction (1-10)*
1	14:12	$460	12/12 (100%)	Yes	Standard	9	6
2	1:1	$10	1/1 (100%)	Yes	Standard	No exit data	No exit data
3	5:2	$20	2/2 (100%)	Yes	Standard	No exit data	No exit data
4	3:3	$100	3/3 (100%)	Yes	Standard	10	5
5	4:3	$70	3/3 (100%)	Yes	Standard	10	8
6	6:5	$140	5/5 (100%)	Yes	Patient-directed	10	3
7	4:2	$10	0/2 (0%)	No	Patient-directed	No exit data	No exit data
8	6:4	$40	4/4 (100%)	Yes	Standard	7	2
9	10:6	$180	6/6 (100%)	Yes	Standard	9	7
10	8:7	$390	7/7 (100%)	Yes	Standard	10	10
11	10:7	$240	1/7 (14%)	Yes	Standard	7	7
12	12:7	$290	7/7 (100%)	Yes	Standard	8	5
13	8:4	$110	4/4 (100%)	Yes	Standard	10	8

Conclusions

- We performed a **pilot CM program in the hospital and attached skilled nursing facility to support antibiotic completion and reduced substance use** in people with stimulant and/or opioid use disorders hospitalized with osteomyelitis and/or endocarditis.
- **Effectiveness as measured by antibiotic completion was high, 92%.** Most participants (all of whom without prior knowledge of CM) reported program extremely effective in aiding infection treatment with greater inter-participant variability in beliefs re: CM facilitation of reduced drug use.
- Feasibility challenges identified include relatively short duration of program engagement in acute care setting and supporting staff time when multiple attempts needed to complete CM visit.
- As is true for other addiction treatments, offering CM in the acute care setting may represent a reachable moment that both introduces patients to this SUD treatment modality and supports infection treatment completion.

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