

Strengthening strategies to improve adherence in HIV-infected drug users: challenges for IT

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Outline

- Integrated care: a great idea that is rarely actualized
- Behavioral economics: incentivizing reliable targets
- Out-of-care individuals: seeing the invisible

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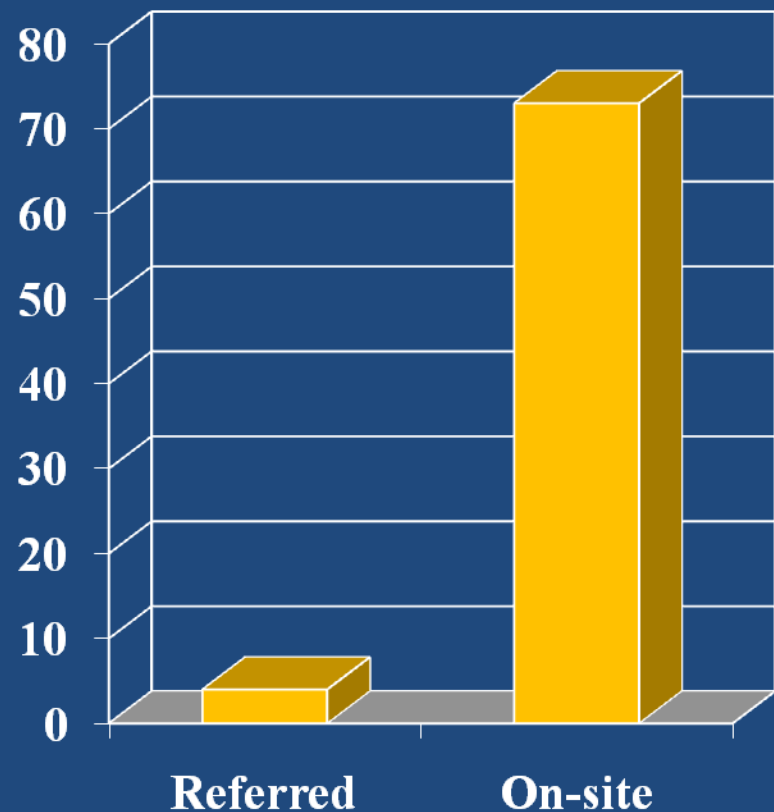
Integrated models of HIV/substance abuse treatment make sense

- One-stop shopping: multiple modalities under one roof
- Patient-focused rather than provider focused
- May foster better communication & collaboration between subspecialties
- Two approaches
 - Bring medical care to substance abuse service programs
 - Bring substance abuse care to HIV clinic

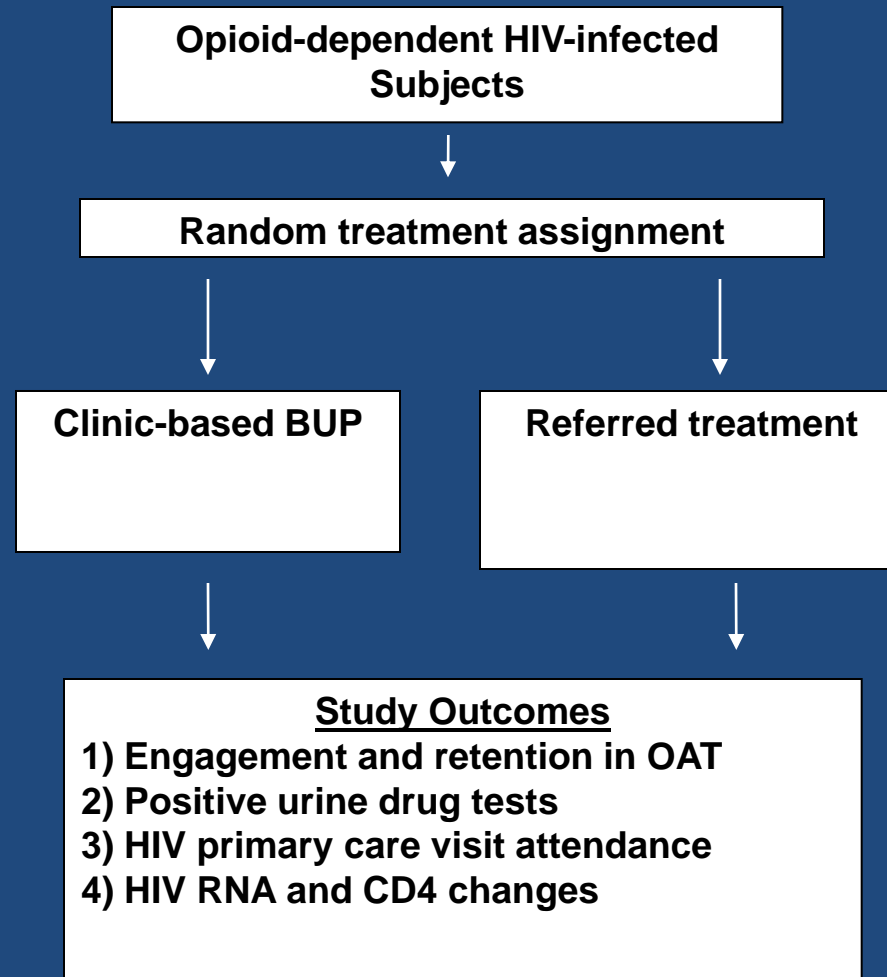
The effect of the integrated care model on engagement to medical treatment

- 51 Patients in methadone therapy randomized:
 - On-site medical care
 - Referred care at nearby clinic
- Study funds used to pay medical expenses at either location

% Attending ≥ 2 clinic visits

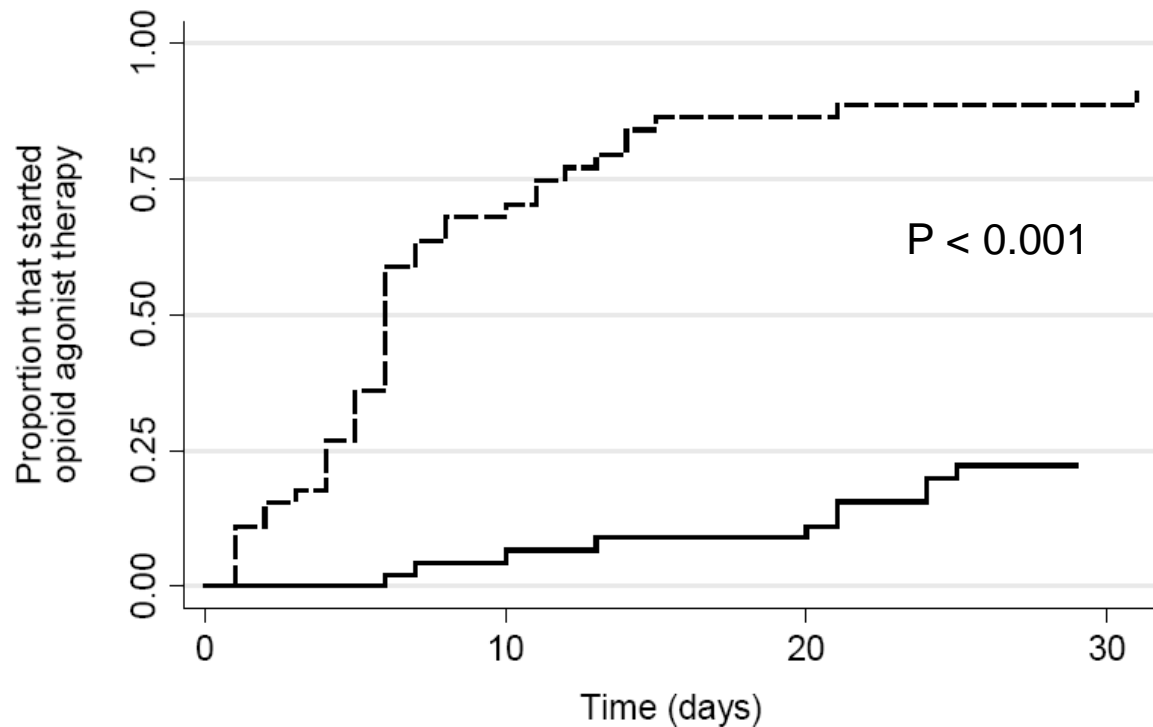


BEEHIVE study design



BEEHIVE: time to first dose of opioid agonist therapy (OAT)

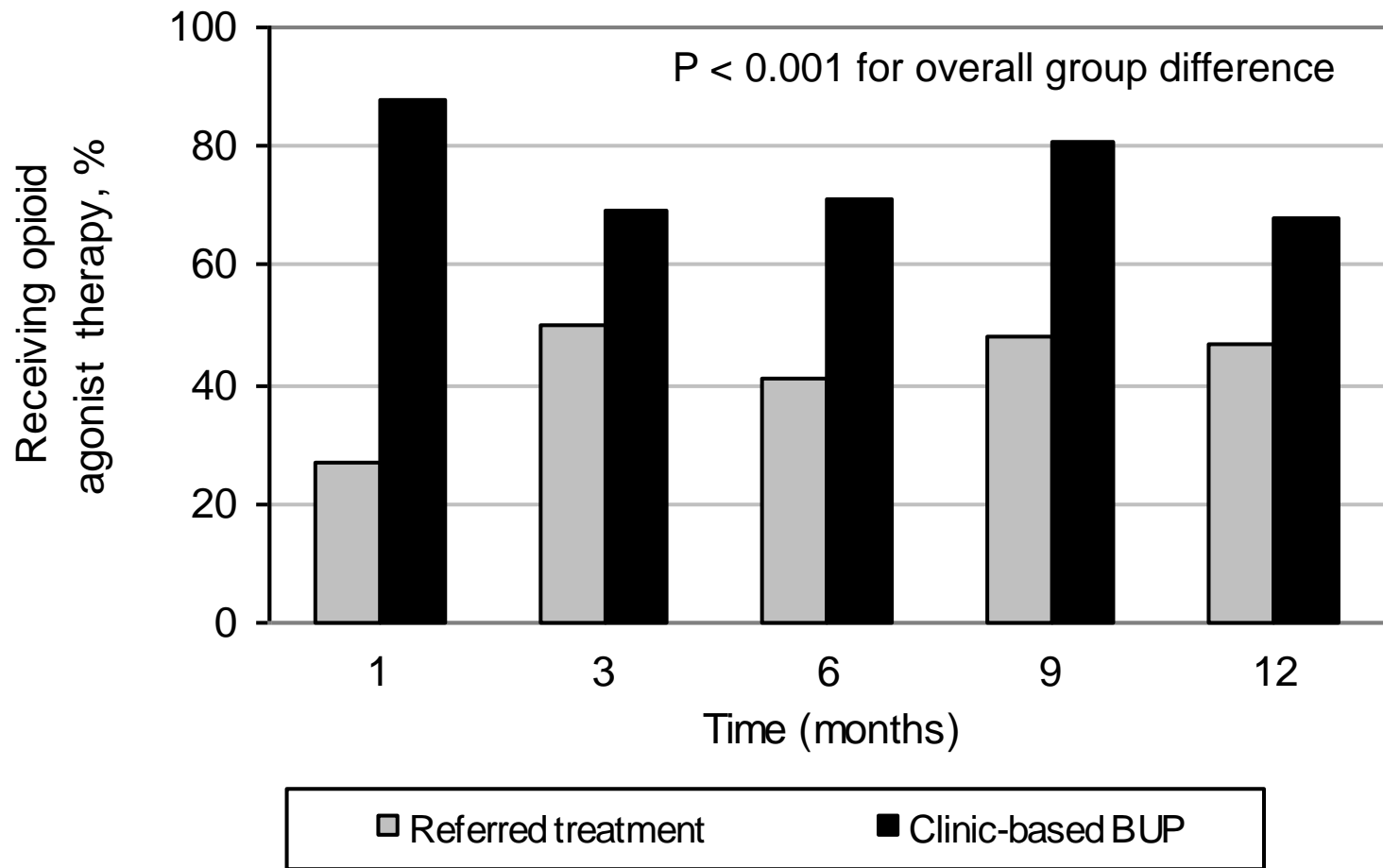
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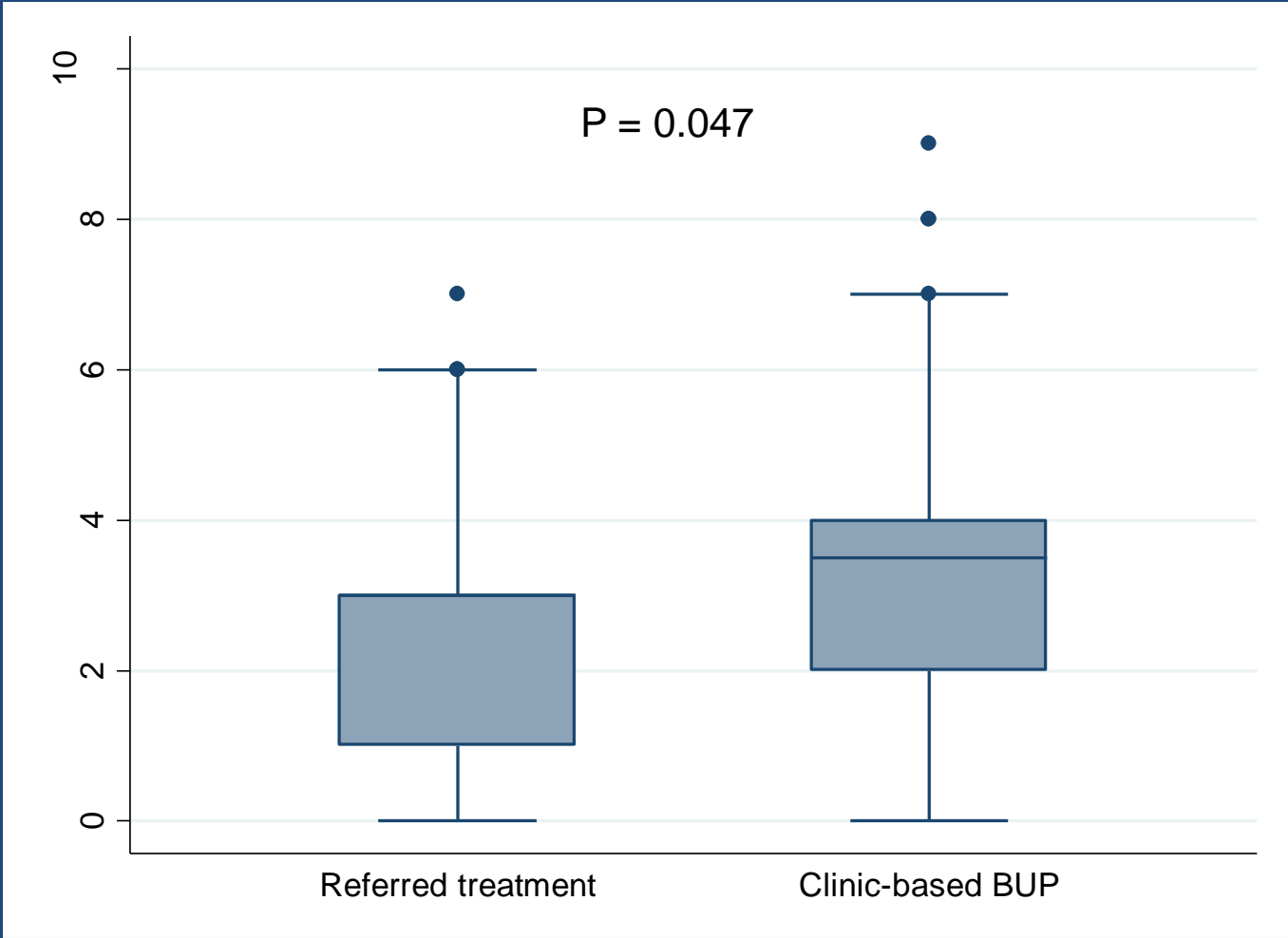
<u>Number at risk</u>					
OTP referral	47	43	41	33	
Clinic-based BUP	46	14	6	5	

— OTP referral - - - - Clinic-based BUP

BEEHIVE: retention to OAT over time



Visits with HIV primary care providers during follow-up



Real-world challenges to integration of HIV and substance abuse care

- Insurance
- Regulatory requirements (e.g., OTPs)
- Inadequate space for outside providers
- Inefficiencies
 - Healthcare staff travel
 - Transport of specialized instruments, forms, etc.
 - Small pockets of patients

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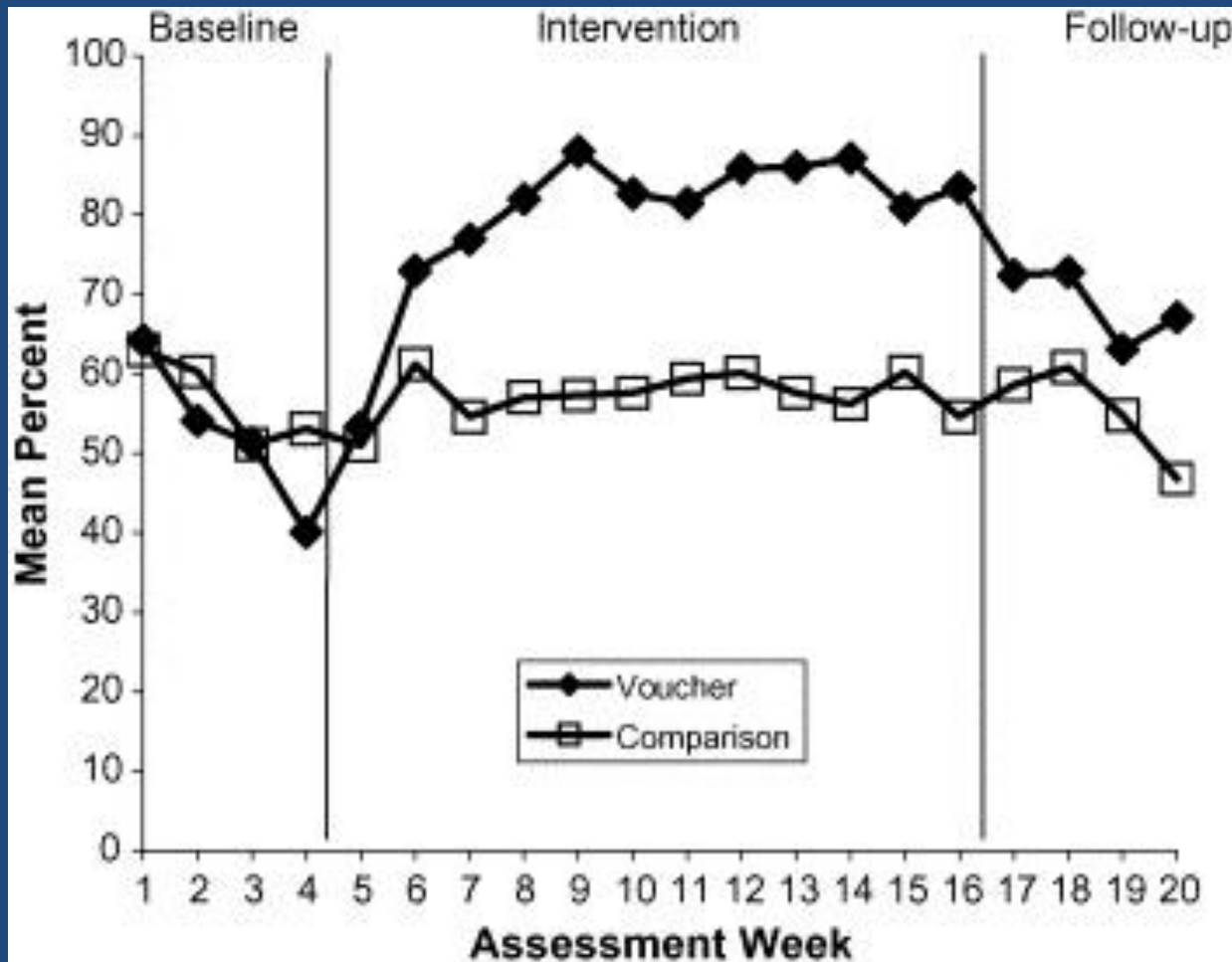
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Behavioral economics & incentives

- Myopia: tendency to overvalue immediate reward vs. delayed reward
- Incentivized behaviors
 - Unobtrusively measurable
 - Correlate with outcome
 - Resistant to chicanery



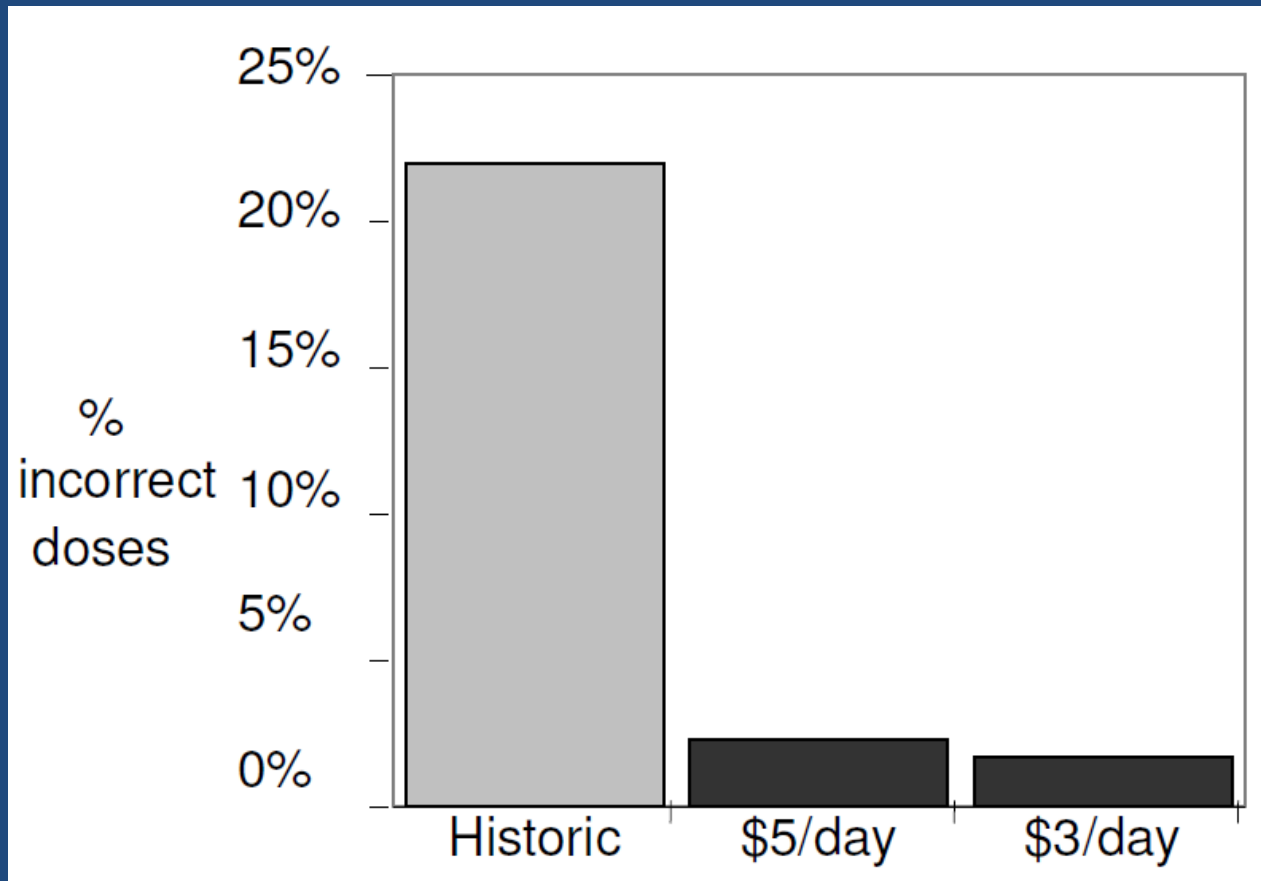
Voucher incentives to improve HAART adherence using MEMS caps



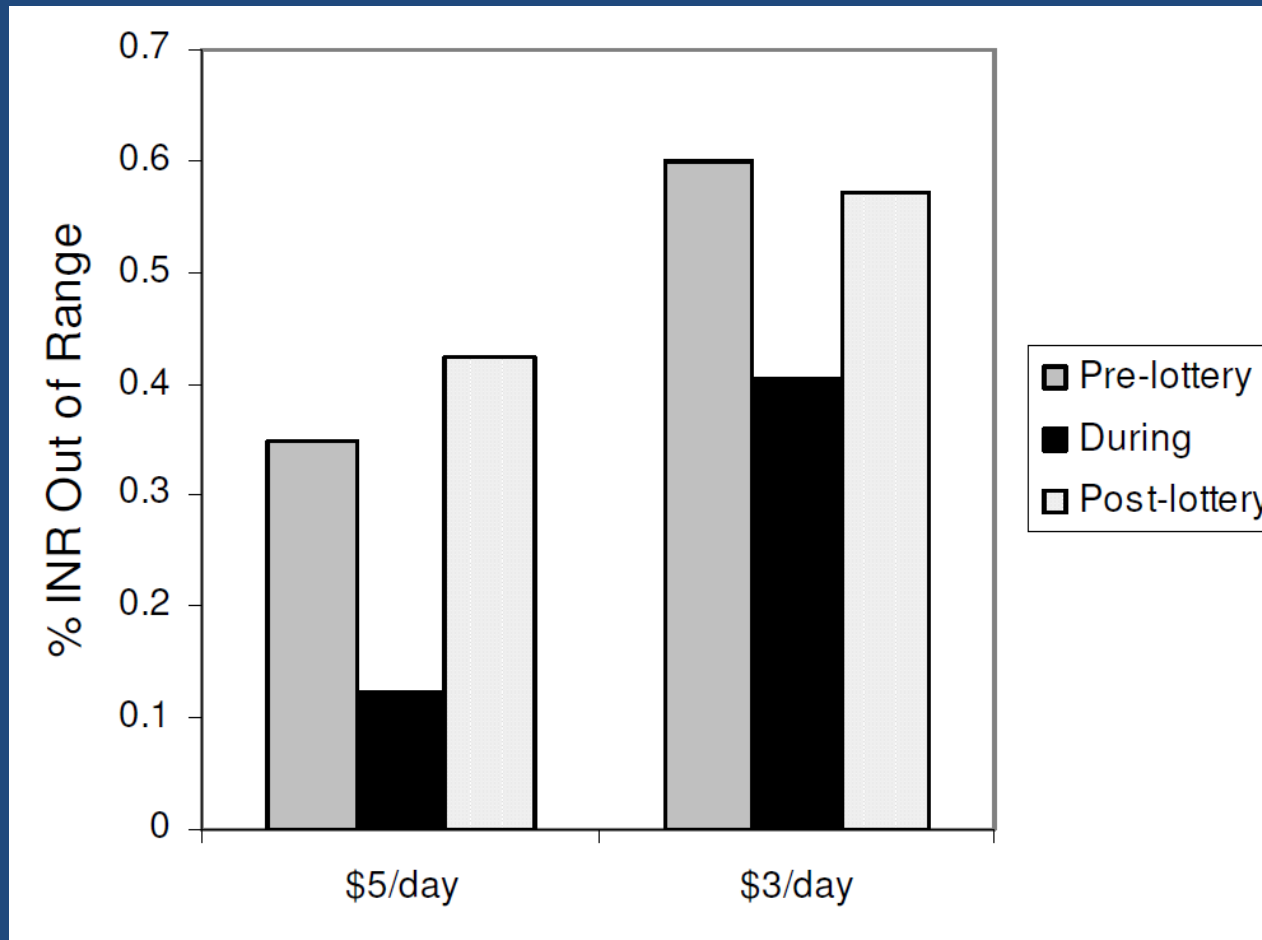
2nd generation: adherence incentive intervention

- Participants receiving warfarin anti-coagulation
- Electronic pill-box
 - Connected to phone line
 - Sends message to central site when box opened
- Incentive lottery
 - Subjects entered in lottery each day (\$3 or \$5 expected value per day)
 - Lottery wins only given if box opened that day

Adherence improved with lottery incentive compare to baseline



Biologic outcome (INR in range) also improved



IT challenge for incentive strategies: confirming the target behavior

- Track true medication adherence
- Flexible to patients needs
- Mechanically rugged
- Unobtrusive
- Inexpensive

Features of interventions to improve adherence with chronic medical therapy

- Modest effect sizes (adherence > biomarker)
- Multifaceted (educational, cognitive-behavioral, social)
- Time-intensive
- Ongoing

Simoni JM et al. JAIDS 2006;43:S23

Haynes RB et al. Cochrane Database of Systematic Reviews 2008

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Engagement in care among HIV-infected persons in South Carolina

- SC-HARS
 - Name-based reporting
 - Mandatory CD4 / HIV RNA reporting
- Patients (n=13,042)
 - HIV-infected adults
 - Alive '04 – '06
- Engagement patterns
 - In care – 35%
 - Transitional care – 25%
 - Out of care – 40%
- Injection drug users
 - 29% increased odds of transitional care
 - 65% increased odds of being out of care

Can IT keep the “unseen” on the radar?

- Centralized ownership of patients
 - Public health model
 - Tracking – smart card, etc.
 - Respect privacy and individual rights
- Outreach to engage or re-engage individuals in care
- Coordinated management of patients in different venues
 - Health care access (outpatient, ER, hospital)
 - Substance abuse services
 - Criminal justice system

Conclusions

- Integrated care
 - Effective
 - Can IT improve feasibility
- Behavioral economic approaches
 - Target behavior monitoring that is accurate, inexpensive, and unobtrusive
- Engaging the disengaged
 - Centralized ownership
 - Tracking & communication