

Behavioral Economics: Harnessing the Science to Improve the HIV Care Continuum

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How to get to 90-90-90?



- Outcomes often suboptimal even when 'structural' factors resolved
- Traditional, 'structural' interventions are hitting a wall
- Behavioral factors (uptake, loss-to-follow up, adherence...) are taking center-stage
- BE offers a comprehensive view of behavior, and a whole intervention toolbox



- Traditional policies are often based on a very simple model of human behavior:
 - People do what is best for them (i.e. take up latest meds/devices)
 - People follow through on their intentions (i.e. remain in care/adherent)
 - If they show unhealthy behaviors information is missing or prices are wrong (see next slide)
- Limited policy options, focusing on structural factors such as lack of appropriate information...



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... or 'wrong' prices people face when making decisions

Putting taxes on unhealthy products



National Institute of Mental Health



'Paying' for healthy behaviors ...(Contingency Management (CM), Conditional Cash Transfers (CCT))



- Pettifor et al. (2006): 16 studies using cash and financial incentives for HIV prevention
- Galárraga (2013): 4 studies for improving ART adherence; 2 cash, 2 vouchers based
- HPTNo65: cash incentives did not have (fully) desired effect



Traditional, 'structural' view of health behaviors







...what does behavioral economics add?

A BE view of interventions













Focus on behavioral factors



• BE opens up a whole new level of intervention tools

- BE goes beyond the traditional, structural model of behavior, recognizes that
 - We all have good intentions
 - We all struggle with self-control
 - Often we do things we later regret…



- Behavioral economics suggests that if we know a person's decision environment we can infer their behavior and influence it by:
 - Altering the decision environment
 - Designing incentives using decision-making errors ("biases") as entry points for interventions and policy

Turning a behavioral economics lens on interventions to change HIV behaviors



Prevention and Testing



The power of contextual factors



Montoy, Dow, and Kaplan (2016)

Base-rate: 38%

Intervention rate: 65.9%





- The difference is whether people are asked / not asked to get tested
- No change in underlying structural factors (information, access, ...)
- 'Opt-in' versus 'opt-out' of HIV testing, takes human behavior seriously
- Very low cost, endorsed by US guidelines



- Thornton (2008): Vouchers of ~1 USD doubled testing pickup rates
- Thirumurthy et al. (2014): ~8% vs. 2% uptake of male circumcision for food vouchers worth ~10\$
- Nyqvist et al. (2016): >20% reduction in HIV incidence using lottery 5 prizes worth 50\$ in each village three times a year

Ongoing study: MOTIVES [R34 MH109373]





MOTIVES: reminders & small prizes for HIV testing

 Ongoing study in Los Angeles to increase testing among high-risk Latino MSM and TGW

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Approach participants at testing sites

• Objective: keep participants engaged in care and come back for testing at least once every 90 days

Preliminary results



- Prize drawing with increased chance of winning using the rewards points
- Expected prize value per person per year: 10\$
- After ~3 months of intervention, retesting rate in both groups >40%
- Compared to (probably) 10-25% base rate (Ostermann et al. 2007)



Adherence







Rewarding Adherence Program (RAP) Kampala, Uganda





National Institute of Mental Health



• **Treatment group 1:** Timely clinic appointment according to patient booklet

 Treatment group 2: MEMS-caps measured adherence of 90% or higher

 Eligibility was verified by drawing the participant's number out of a bag

Prize value: \$1.50 USD per person/year in kind













Incentives combined with SMS reminders increased mean adherence by

7 percentage points compared to Control

Example of non-monetary incentives: social comparison







 R21 Pilot RCT in two clinics in Kampala and Entebbe, Uganda

Adolescents aged 15-22 years

 Adherence measurement using wisepill device

Disclaimer: data not final

Study Design

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SITA Study: Peer competition as non-monetary incentive:

- Weekly message, sent to 170 adolescents receiving HIV care in Uganda
- If successful, scalable and almost zero running costs

"Congratulations, you took 70% of your meds this week. Your friends took 85%..."





1. Interventions with BE at its core:

- Incentive provision
- Nudging
- Changing default options
- Etc.

Applications

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1. Interventions with BE at its core:

- Incentive provision
- Nudging
- Changing default options
- Etc.

2. BE `light' - supporting other interventions:

- Increasing the effectiveness of information provision & messaging
- Improving recruitment
- Increasing retention

Take-home points



- Structural barriers are important
- But 'on top' sit behavioral factors
- If we want to get to 90-90-90 (and beyond) we need to address behavioral issues
- Behavioral economics offers a comprehensive framework for thinking about HIVrelated behaviors
- Taking people's behavioral drivers into account allows us to effectively change behavior and leverage motivation and resilience, often at low cost

Areas for future research



 We are starting to find out what drives behavior, and manage to change it in the short run, but still have trouble changing them over the long-run

Most interventions focus on separate steps in the cascade, few look at the whole

We are at an early stage re. BE interventions, and many details still to be worked out



Thank you!

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