

PRELIMINARY: DO NOT CITE

Social Engineering: Evidence from a Suite of Take-up Experiments in Kenya

Presented by:

Michael Kremer
Harvard University

Joint work with:

Edward Miguel, U.C. Berkeley
Sendhil Mullainathan, Harvard University
Clair Null, Emory University
Alix Zwane, The Bill & Melinda Gates Foundation

Social Engineering?

- Understanding, harnessing social norms for health behavior believed important for controlling infectious disease
 - Handwashing in public restrooms
 - CLTS
 - Water?
- Suite of randomized experiments on safe water in rural Kenya
- Iterative research process
- Design and test new delivery system

Spring Protection (Kremer, Miguel, Leino, Zwane)

2/3rds E. coli reduction at source; 1/4 reduction in E. coli at home

- importance of recontamination

25% reported diarrhea reduction

- water quality and health

Low willingness to walk for spring protection ~ 3.5 minutes

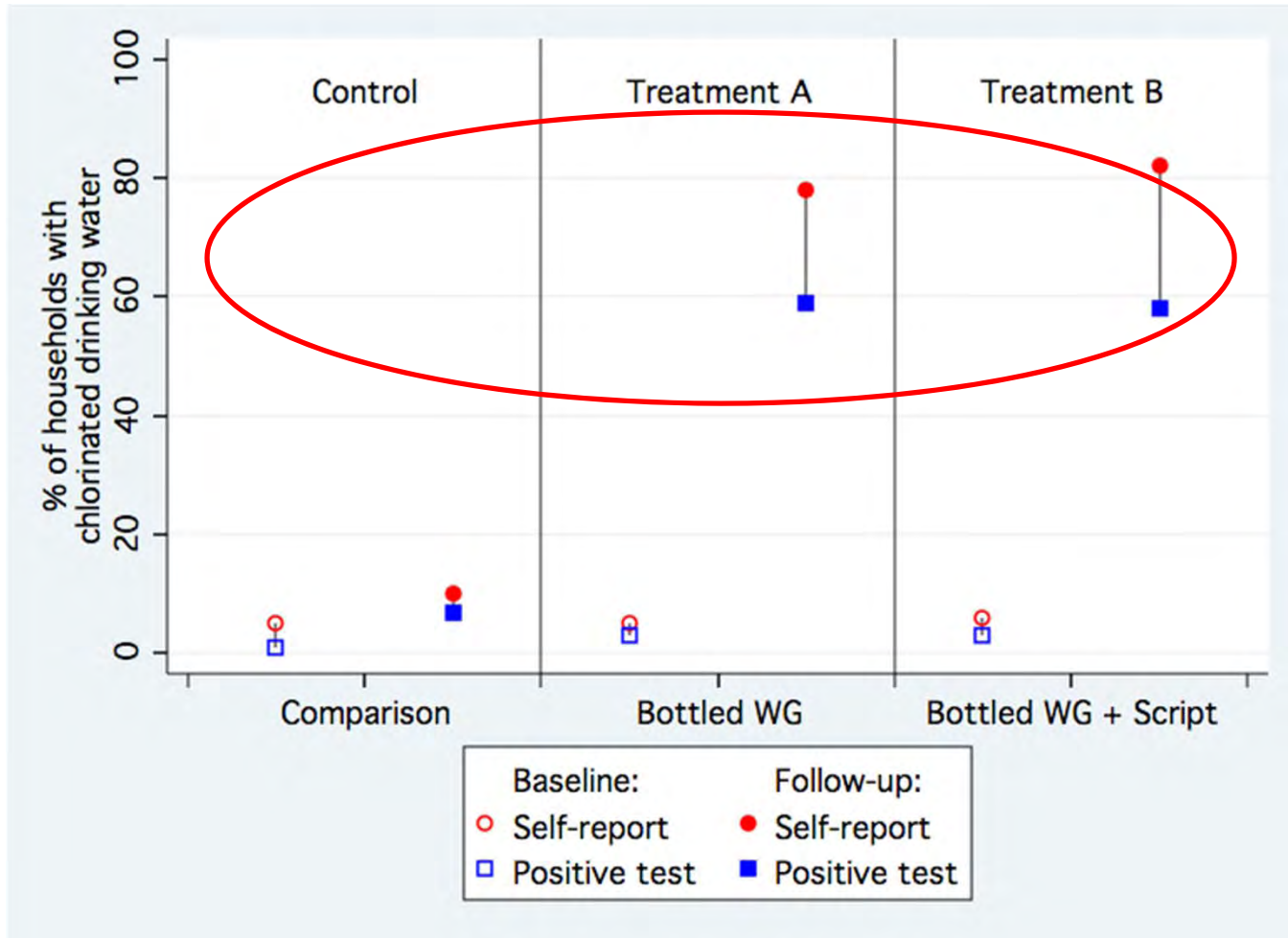
- convenience?

(Model impact of alternative property rights systems)



- Dilute chlorine treatment provides residual protection
 - Reduces reported diarrhea across multiple RCTs (Arnold and Colford)
- Chlorine widely used in piped systems, safe, inexpensive
- Less than 10% of people use socially-marketed household product (\$0.30 for one month/six week supply)
- Taste?

Free + Personal Contact + Convenience +
= High Take Up:



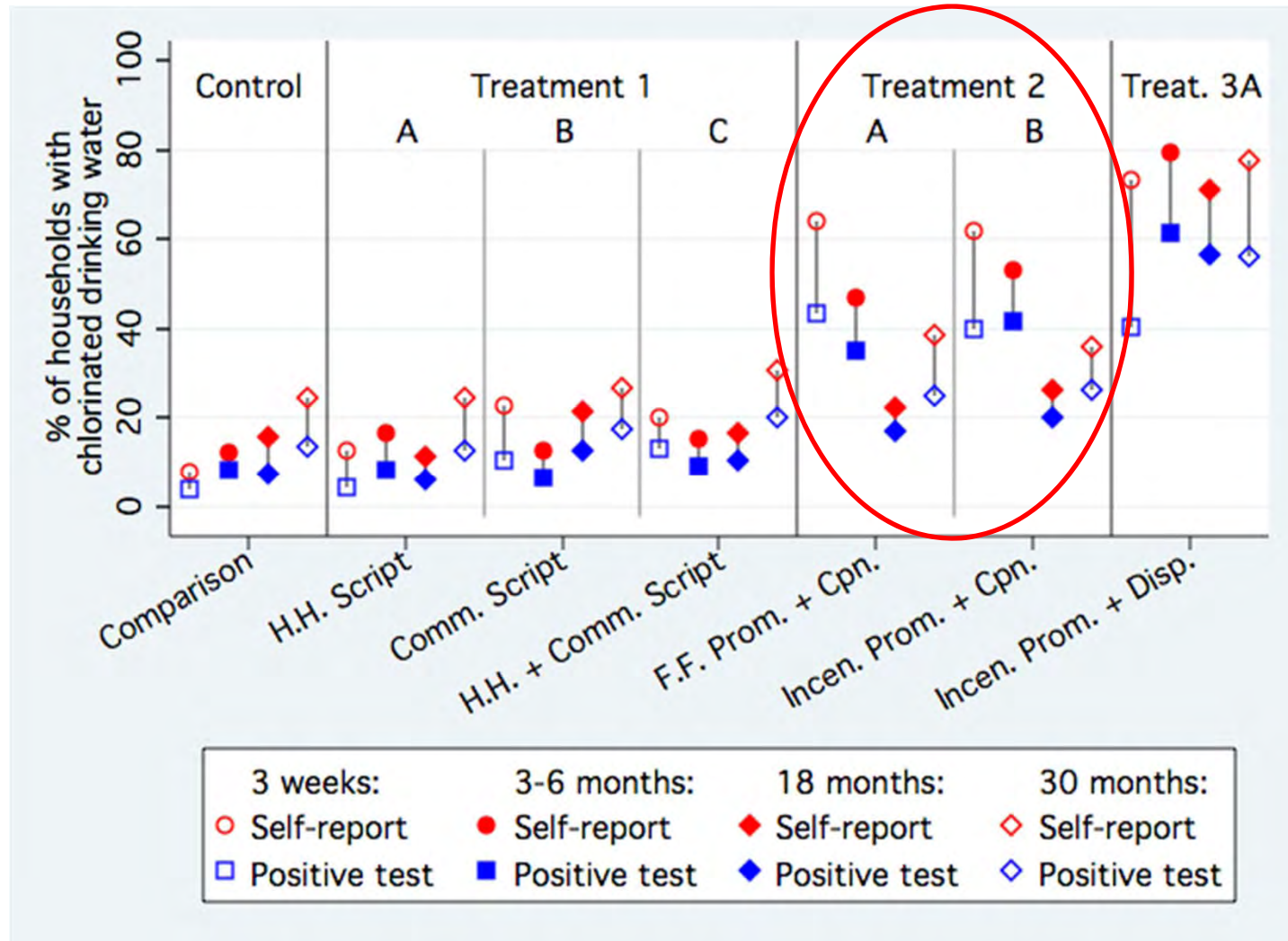
Lessons?

- Combo of price, convenience, personal contact induces high take up
- Messaging less critical

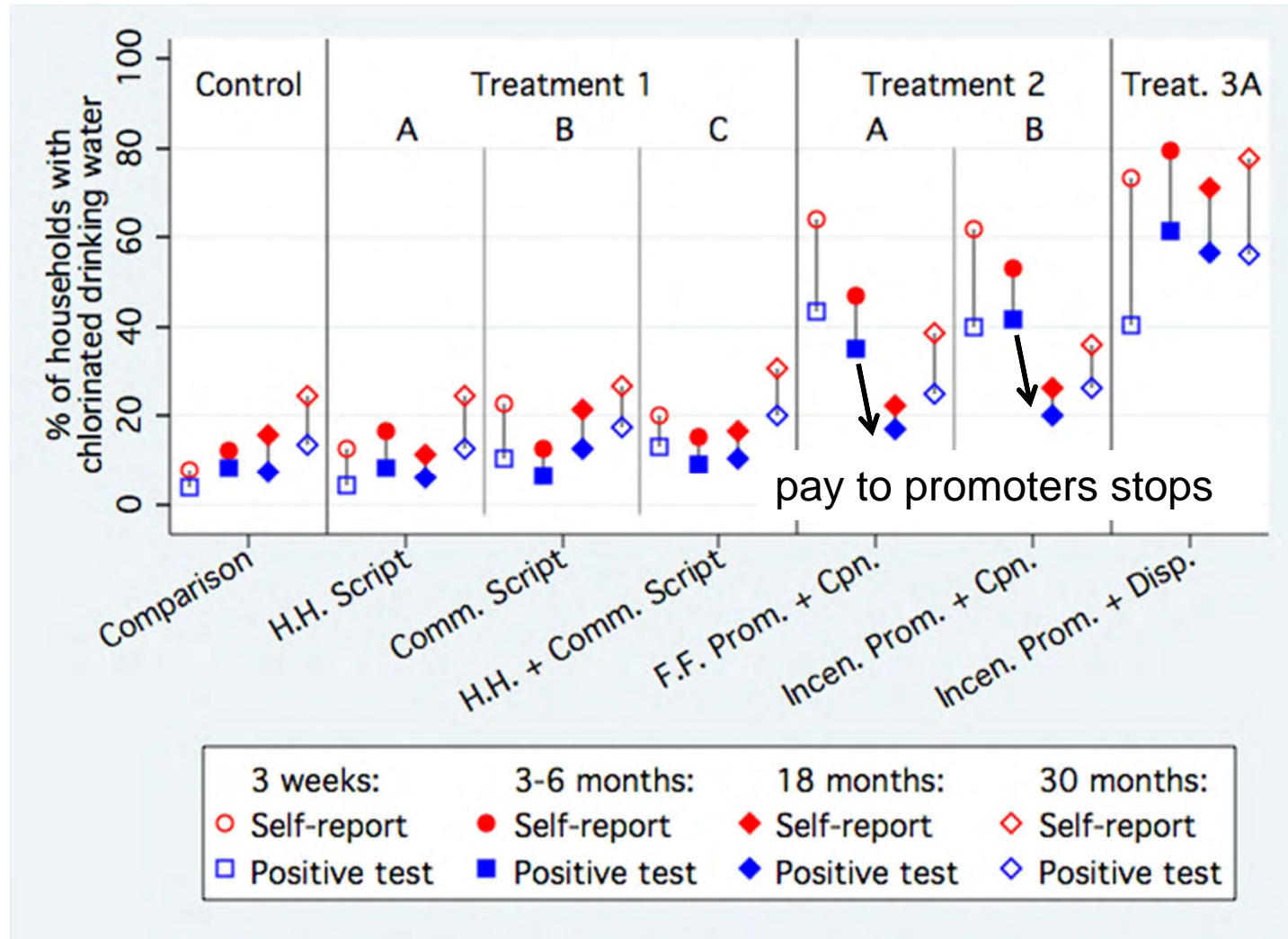
Digging Deeper

- Price results consistent with literature
- Evidence convenience matters?
 - SAWA study with coupons for 12 months of WG
 - Spring Cleaning
- Evidence contact matters?
 - Frequent vs. infrequent monitoring visits (Zwane et al.)
 - Promoter plus free sample

Promoters and Free Sample



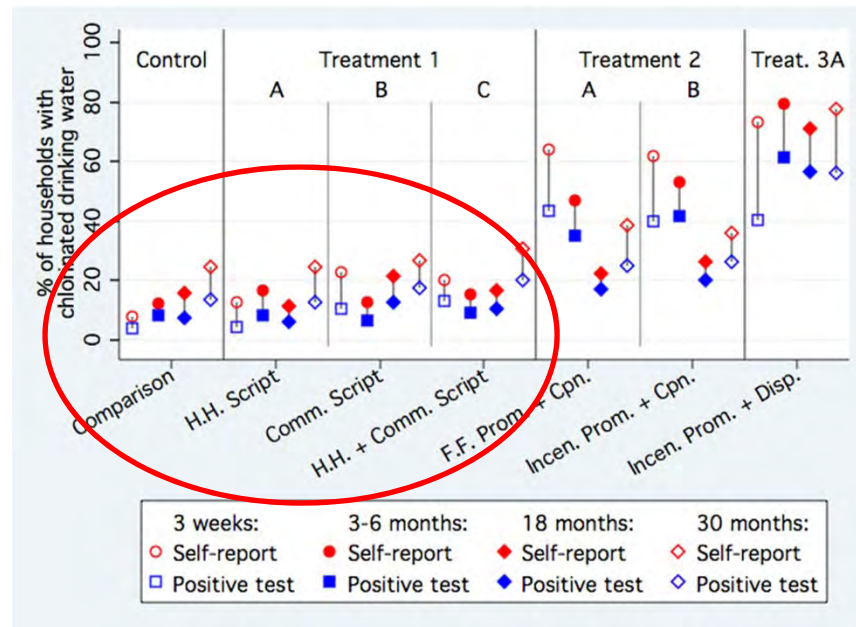
Partial Fade Out of Promoter Effect



How Harness Social Effects to Affordably Generate Sustained Chlorine Use?

- Limited evidence for peer effects in waterguard use based on
 - Inducing variation in waterguard adoption, looking at social contacts
 - Peers affect reported conversation, reported use, not validated chlorine
 - High vs low intensity treatment with free WG
 - Individual vs. community script

Community script didn't increase take up much



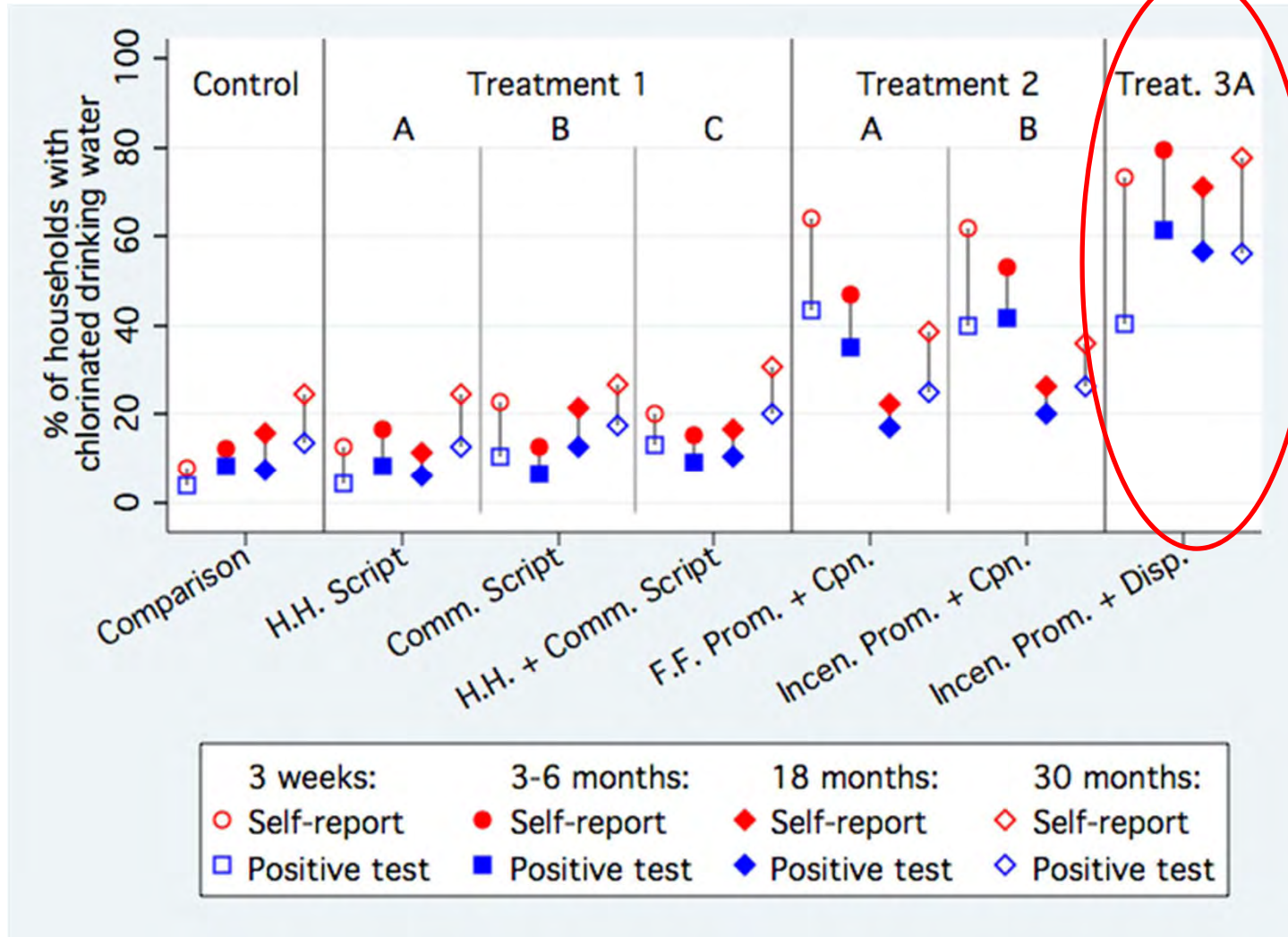
Social Engineering Approach: Point-of-Collection Chlorine Dispenser



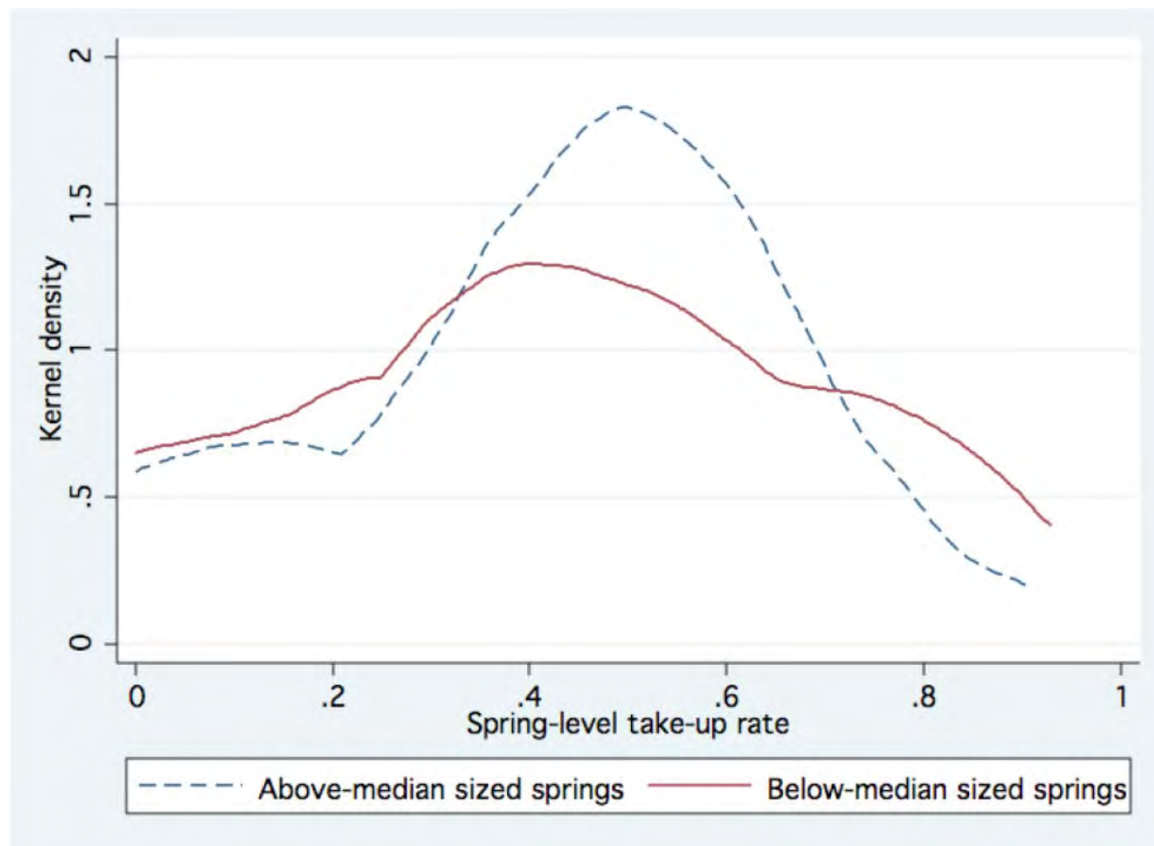
Chlorine Dispenser System

- Dispenser + free chlorine + promoter paid for 6 months
- Technical advantages
 - Approximately $\frac{1}{3}$ current individually-packaged retail cost
 - Walk home provides agitation, reduces wait time
 - Dose is more precise; doesn't get on hands
- Social advantages
 - Convenience
 - Salience – visual reminder
 - Habit formation – combining water collection, treatment
 - Public, potentially harnessing social effects

Dispenser Generates Sustained Take Up



Estimating Social Effects Excess Variance (Graham, 2008)



Testing for Social Effects in Dispenser Use

- Results of Excess Variance Test
 - No significant excess variance at community level for waterguard bottles
 - Excess variance for dispensers
 - Looking at trends in excess variance
- Glaeser et al approach
- Mas-Moretti approach

Interest in Scaling Up

- Pilots funded by Kenyan government
 - Local governments
 - Ministry of Education
 - Water Services Board
 - Ministry of Public Health and Sanitation
- Pilots elsewhere: Bangladesh, Swaziland, Haiti
- Donor support
- Carbon credits

- Evaluation as part of iterative process of learning and innovation
 - Hardware and software
- USAID's Development Innovation Ventures
 - Across spectrum of USAID's work
 - Grants to develop, test, transition to scale innovations (www.grants.gov)
 - Introductions

