Incentives In Health Care: Taking The Concept To Scale

Maxine Stitzer, Ph.D.
AHSR Annual Meeting
October 4, 2011
Lecture Outline

Review how Incentives have been used in health care

1. Increase services utilization
2. Improve care delivery
3. Improve medical regimen compliance

4. Designing Incentive programs and research agendas for the future
People are expected to take good care of their health

• Large health care delivery network
• Low or no cost (insurance)
• Lots of information about what to do for health

• So everyone takes advantage and is healthy, right?
Wrong

• Despite a booming health care industry
  – Access issues
    • disparities by ethnicity and socioeconomic status
    • Interference by substance abuse & mental health
  – Care quality issues
  – Patient adherence issues
Traditional Sources of Behavior Control Don’t Apply

• Rules backed up by punishers aren’t especially applicable to health care

NO FISHING      NO TRESPASING      NO DUMPING

• If you don’t take care of your health, you will be ticketed and fined? Sent to jail?
“It’s the only way I can get myself out of bed in the morning.”
Is There A Role For Positive Incentives?

• Recognized by behavioral psychology as a powerful force for behavior change

• Demonstrated efficacy in substance abuse

• Upsurge of interest for use in promoting health-related behaviors
Innovative Schemes In Developing Nations

• Bangladesh
  – Food, cash, baby gifts for pre and post-natal care and delivery in a health clinic

• Uganda
  – Motorcyclists paid to transport pregnant women to maternity clinic

• Rowanda
  – Health teams paid for deliveries, family planning and vaccinations
Conditional Cash Transfer

• Started in Brazil (1995) and Mexico (1997)
• Goal is to alleviate poverty and build human capital by channeling money to poor families who keep kids in school and access preventive health care services
• Outcomes of 6 RCT’s reviewed by Cochrane Collaboration *(Legarde et al., 2009)* found promising results for health services utilization
1. Incentives For Health Care Utilization: Getting People To The Door

Positive incentives have been useful for incentivizing people to take advantage of available services they aren’t using.
Rates increased when WIC food vouchers were given to those who had their children immunized

(Hoekstra et al., 1998)
Receipt of HIV Test Results
(Thornton R, Am. Econ Rev, 2008)

Rural Malawi residents (N = 2812) offered free HIV testing. All participated in a drawing where there could earn from $0 to $3 if they returned for HIV test results.
Vouchers for Free Methadone Treatment (Sorensen et al., 2005)

![Six-Month Outcomes Bar Chart]

- Usual Care
- Case Mgt
- Vouchers
- Combined Tx

Percent in Treatment
Vouchers for Treatment Entry
(Kidorf et al., Addiction, 2009)

• Incentives offered to syringe exchangers (N = 188) for attending “treatment readiness” groups
  – $10 cash; $10 MacDonald; $3 bus pass per group attended

• If they entered Tx, $50 was paid to the program to cover initial fees
Vouchers for Treatment Entry

*(Kidorf et al., Addiction, 2009)*

**SECTIONS ATTENDED**

**ENTERED TREATMENT**
Incentives for Health Care Utilization

• Incentives can get people to the door of available services and could be more widely used for this purpose
  – primary care; specialty care; pre-natal care; mental health and substance abuse

• But this is only a start
  – Are services provided optimal?
  – Do people follow through afterward?
2. Incentives for Improved Health Care Delivery

• Pay for Performance programs
  – Offer incentives to agency (e.g. hospital) or provider directly for improved quality of care

• Has been applied in both medical and substance abuse arenas
Pay For Performance in Medical Health Care

• Wide-spread interest and pilot projects
  – Health Departments
  – HMO’s
  – Medicare/Medicaid (CMMS)

• Focused on management of common chronic diseases (diabetes, asthma, cardiovascular)

• Goal = ensure high delivery of procedures associated with good outcomes
USA: CMMS Hospital Quality Incentive Demonstration (HQID)

- Hospital performance judged across 33 quality care benchmarks in 5 clinical conditions

- Top 20% of performers received a 2% bonus (plus regular medicare/medicaid payments)
- Second 20% received 1% bonus
- Bottom 20% risked penalties
P4P Evaluation

• Small effects
  – P4P hospitals had 2-4 percentage point greater improvement than controls on clinical process measures

• Ceiling effects
  – Most procedures were already being done at high rates

• Upward trends
  – Improvement was already on-going prior to P4P due to public reporting and other initiatives
Violates Several Behavioral Principles

• Too many target outcomes
• Use of benchmarks rather than improvements
• Only top performers can earn- again, no incentive for improvement
• Small incentive payments
P4P application in substance abuse treatment has been more focused on goal of improved client engagement & retention
Pay for performance In Substance Abuse Tx: Delaware Project
McLellan et al., 2008

• Verifiable targets
  – 1) Utilization (goal = 80-90%)
  – 2) Patient participation (2-8 sessions per mo)

• Incentives implemented monthly
  – Bonus payment (up to 5% of monthly income) for meeting client participation targets
  – Penalty for low utilization
Delaware Outcomes: Utilization

Average Daily Census

- 2001
- 2002
- 2003
- 2004
- 2005
Counselor Incentives

*Shepard et al., 2006*

- Fee for service outpatient aftercare program
  - 5 sessions was “minimal treatment”
  - 12 sessions was program completion
- Client incentives had not brought desired improvements
- Retention incentive intervention:
  - $100 bonus for each client completing 5 sessions
  - $50 bonus for each client completing 12 sessions
Counselor Incentives

Shepard et al., 2006

PERCENT OF CLIENTS

SESSIONS ATTENDED

One or more

Five or more

Twelve or more

Control

Incentive
Counselor Incentive Study
(Vandrey et al., JSAT, 2011)

• S’s were community Tx program counselors (N = 11) who treated 426 clients during the study
• offered incentives based on therapy attendance of their newly admitted clients with bonuses for meeting 90-day retention benchmarks
  – 5-6 sessions attended in month earned $10
  – 7 or more sessions attended earned $25
Sessions Attended First 30 days

Client Retention to 90 days

Mean sessions attended increased from 4.6 to 5.5
90-day retention increased from 40% to 53%
Early Tx Attendance Mediated 90-day Retention

% of Clients Retained

<table>
<thead>
<tr>
<th>Sessions Attended First 30 Days</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 3</td>
<td>160</td>
</tr>
<tr>
<td>4 to 6</td>
<td>154</td>
</tr>
<tr>
<td>≥ 7</td>
<td>156</td>
</tr>
</tbody>
</table>
Pay For Performance Summary

• Pay for Performance can work to improve clinical outcomes in substance abuse Tx

• Need to keep schemes simple and focused
• Staff incentives could be cost-effective
  – Fewer individuals to pay ---> lower cost per tx episode
• Staff incentives could have positive side-effects
  – Morale boosting; turnover reduction
  – Promote adoption of EBP’s
  – Provide expenditure justification
Pay for Performance Research Agenda

• Target of P4P?
  – Client engagement; retention; drug use; RP coping skills; social reintegration
  – Does improved engagement/retention translate into better long-term outcomes?

• Types & amount of incentive?

• Positive and adverse consequences
  – Staff morale, productivity and turn-over
  – Client cherry picking

• Client vs staff incentives:
  – Relative cost-effectiveness
  – Impact of combination
3. Incentives for Promoting Health Care Adherence

- So people can be incentivized to access health care services and services can be incentivized to provide better quality care and/or improve outcomes

- Individuals then have to do their part to follow medically prescribed regimens
  - Medication adherence, Life style changes
Incentives for Promoting Health Care Adherence

Health care reform has brought incentives back into focus as a potential tool for lowering health care costs via improved adherence.
Medication Adherence

• Unreliable dosing or stopping meds early is very common and in many diseases can lead to poor outcomes
  – Reasons can be dislike of taking meds, unwanted side effects, response or monetary cost to patient
• Incentives can be used to counteract
Warfarin Adherence

(Volpp et al., BMC Health Serv Res, 2008)

• S’s = 20 anticoagulant therapy patients with history of adherence problems
• All received an electronic daily pill reminder device for 3 months
• Appropriate openings qualified them for a daily lottery
  – 1 in 5 chance of $10
  – 1 in 100 chance of winning $100
Warfarin Adherence

(Volpp et al., BMC Health Serv Res, 2008)
Warfarin Adherence

(Volpp et al., BMC Health Serv Res, 2008)
HIV Medication Adherence: Coaching With and Without Voucher Incentives (Sorensen et al., DAD, 2006)

% On-time pill box openings

% Adherent by pill count

![Graphs showing adherence rates over time with and without voucher incentives.](image-url)
Naltrexone Adherence

*Preston et al., 1999*

- Opiate users (N = 57) randomly assigned to
  - Prescribed naltrexone (50 mg/day)
  - Contingent reinforcement for naltrexone ingestion
  - Non-contingent yoked control

- Followed for 12 weeks: retention, med ingestion and drug use
  - Those retained took meds
  - Those who took meds stopped drug use
Mean doses taken were 21, 11 and 4 out of 36 possible
Herion use was inversely related to naltrexone ingestion
The Promise of Long-Acting Medications

Vivitrol
Probuphene
Adherence In A Monthly Injection Regimen

(Stitzer et al., 2010)

• Hepatitis B vaccine used as a model
• Participants were cocaine users (N= 26) invited to come several times per week to a clinic for urine testing and counseling
• Offered course of monthly Hep B vaccinations
• Half could earn up to $750 for attending vaccination sessions
Incentives Improve Compliance with Long-Acting Meds

- **Received Injections**
  - Incentive: Black circles
  - Control: White circles

- **On-Time Injections**
  - Incentive: Black circles
  - Control: White circles

Graphs show the percentage of subjects over study weeks.
Incentives For Health Care Adherence

- Research shows efficacy in short-term studies
- Challenges remaining constitute a broad research agenda:
  - How to sustain effectiveness over time
  - How to tailor for different medical conditions and subpopulations
  - When, where and for whom are incentive plans cost-effective?
  - How to fund and build into health care systems
4. Taking Incentives To Scale

• Local governments
  – NYC Family Rewards
• Employment sites
  – Employee Wellness programs
• Criminal justice settings
  – JSTEPS
Opportunity NYC: Family Rewards

• Based on successful Contingent Cash Transfer programs in Mexico, Brazil and other Latin American Countries

• NYC 3-year program launched in 2007 to see whether Contingent Cash Transfer would work in urban low-income families
Intervention Offered 22 Incentive Opportunities

• Education-focused
  – Child attends high school ($50/mo)
  – Child passes Regents Exam ($600 per exam)

• Health-focused
  – Annual medical checkup ($200 per person/yr)
  – Preventive dental care ($100 per person twice/yr)

• Workforce-focused
  – Employment supplement ($150/mo)
Family Rewards Evaluation

- Participants = 4800 low income ethnic minority single parent households randomized to Family Rewards vs control

- Small increase in health care uptake noted
  - both saw doctor and had a dental visit increased from 82% to 86%
Evaluation Conclusions

• Societal-level programs targeted on health care behaviors might be beneficial at least for getting people to the door or services

• Program suffers from complexity and ceiling effects

• Those who benefited tended to be more educated and socially stable
Taking Incentives To Scale: Employment-Based Wellness Programs

• Employers want to reduce their health care costs by promoting healthy behaviors
• Has become a large consulting “industry”
• Some offer health surveys that yield scores meant to heighten awareness with no contingencies operating
  – How much do you exercise?
  – How many fruits and vegetables do you eat?
Employment-Based Wellness Programs

• Best programs offer annual physical exam with incentives for biomarkers in normal range
  – Blood pressure
  – Cholesterol
  – Blood sugar
  – BMI
  – Smoking

• Incentives are generally health care premium reductions
Employment-Based Wellness Programs

• Such programs offer promise and agenda for health services research
  – Can biological markers (vs mediating behaviors) be effectively used as a target for incentives?
  – How to deal with multiple potential targets (e.g. prioritize and sequence?)
  – Could approach be useful for those who most need intervention including drug & alcohol users?
Research Agenda: CTN HOPE

• HIV positive out-of-treatment drug users identified in hospital settings

• Introduced to a Patient Navigator who will encourage active engagement in HIV care and drug abuse Tx over next 6 months
CTN HOPE Study: 3-group design

Usual Care Referral

Patient Navigator

With Incentives

No Incentives
HOPE: Behaviorally Mediated Viral Load Suppression

• Primary outcome = viral load suppression
• Target behaviors mediate outcome
  – Go to HIV care; pick up and take prescribed meds
  – Stopping drug use facilitates this process

• Patient Navigator coordinates care plan and delivers incentives
HOPE: Incentive Scheme

- Patient Navigator visits: $220
- HIV Care: $480
- Drug Use: $310
- Viral Load Suppression: $150 bonus
“I’ll pause for a moment so you can let this information sink in.”
Research Agenda Summary

• Many areas of opportunity for health care incentives implementation & evaluation
  – health care systems; local communities; insurance providers including employers

• Many questions to answer
  – How to incorporate multiple and mediated behaviors?
  – Incentivizing process vs outcome?
  – Interaction with health coaching/case management?
  – Where does cost-benefit reside?
Need to Apply Behavioral Principles to Systems Level Interventions

• Clarify goals and priorities
• Reduce complexity
• Shape new behaviors rather than rewarding behaviors already on-going
• Provide sufficient reward magnitude
• Reduce response burden to participants:
  – Make program simple, easy to understand and easy to access
Summary and Conclusions

• Positive incentives have gained in acceptance and popularity for a number of applications
• Incentives can help connect people to services, improve services quality and promote adherence with medical regimens
• Systems and societal level applications should be developed that adhere to good behavior change principles
• Opportunities for health services research appear abundant