Today’s topics
- Eduardo Jezierski
- Behavior Change Communication
- Projecting Health

Readings and Assignments
- Readings
  - Literacy Bridge
  - Village Reach
- Homework 8
  - ODK
- Homework 9
  - TBD

Behavior Change Communication
- Vast improvements in health possible through behavior change

Sanitation

Disease Prevention
Maternal and Child Health

Lifestyle

Theory

• Social cognitive theory
  • Key variables
    – Self-efficacy
    – Outcome expectations
    – Self control
    – Reinforcements
    – Emotional coping
    – Observational learning

• Behavior explained as interaction of personal factors and environment

• Theory of Planned Behavior
  – Behavior is dependent on intention to perform the behavior
  – A person must perceive they have ability to perform behavior

• Stages of change model
  – By default, people will get stuck in early stages
  – Different types of action empirically shown to help progress

Behavior Change for Newborn Survival

• Specific interventions can reduce neo-natal and maternal mortality

• Clean delivery, thermal care, breast feeding, folic acid supplementation, antenatal care, tetanus vaccination, awareness of danger signs, extra warmth for low birthweight babies
Behavior change management

1. Identify epidemiologically targeted key behaviors.
2. Identify suitable target groups for a behavioral intervention.
3. Develop appropriate behavior change transactions for each target group.
4. Leverage the influence of social networks to expedite behavior change.
5. Build mechanisms to sustain and institutionalize new behaviors.

Lifestyle vs Newborn Care Behavior

<table>
<thead>
<tr>
<th></th>
<th>Lifestyle/Addictive</th>
<th>Newborn Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locus of behavioral action</td>
<td>Individual</td>
<td>Family</td>
</tr>
<tr>
<td>Behavioral context</td>
<td>Psychological: rooted in individual experience</td>
<td>Sociocultural: rooted in cultural value system</td>
</tr>
<tr>
<td>Perceived risk</td>
<td>Usually aware of some risk</td>
<td>Not aware of risks</td>
</tr>
<tr>
<td>Perceived barriers</td>
<td>Habit patterns, pleasure/pain choices</td>
<td>Cultural factors enforced by social norms</td>
</tr>
<tr>
<td>Mode of behavioral transmission</td>
<td>Peer-to-peer</td>
<td>Transmitted along generations through familial hierarchy</td>
</tr>
<tr>
<td>Social sanction</td>
<td>Not valued by society as a whole</td>
<td>Usually the norm with universal social sanction</td>
</tr>
</tbody>
</table>

From Digital StudyHall to Digital PublicHealth

Digital StudyHall

- Support weak schools with video content from expert teachers
- Local teacher mediates the video content
  - Based on the TVI model
  - Provide better content and support teacher development
- Important to match content with target audience
- Cost realism

The History of D*

- Digital StudyHall pioneered a technology and methodology for remote education with low cost digital video
- D* designated the use of the DSH platform to multiple domains
  - Digital Green (DG) for agriculture
  - Digital PolyClinic (DPC) for health
  - Digital Self Employment (DSE) for livelihood

DSH History: The Idea

- How can computing systems research be applied to help the very poor?
- Solve the digital content distribution problem to make distance education possible
- Concept paper, Randy Wang et al., Princeton, November 2003
**DSH History: Experimentation**

- Minimize cost of video playback in the classroom
- Attempt to use low cost television sets
- Target rural schools with irregular power
- Low cost video and audio production
- Develop video production tools based on open source software
- Randy Wang joins MSR (TEM Group)

**DSH History: Building the Lucknow hub**

- Developed content creation model with a strong school
- Recorded core content for all grades
- Teacher training workshops
- Range of different types of schools
  - Government, private, informal
- Simplification of the technology
  - DVD players instead of computers
- Randy Wang joins TEM Group at MSR
- Expansion to other HUBs
  - Bangalore, Pune, Dhaka, Calcutta

**DSH History: Independence**

- Relationship with MSR ended in 2008
- Activities in Lucknow continued, but many hubs stopped working
- NSF sponsored study exposed challenges in working with government schools
- Randy Wang moved to Intel, Shanghai in 2010
- New set of projects developed by DSH Lucknow with a new manager

**Digital Green**

- Video based education for farmers
- Community created videos demonstrating agricultural practices
- Facilitated showings of videos in farmer groups
- Digital Green (NGO) providing technology, training, content archive and advocacy

**DG History: The Idea**

- Apply Digital StudyHall to agriculture
- Formative research conducted with Bangalore based NGO (Green)
  - Promote organic farming practices
  - Film extension workers introducing practices
  - Public showings in evenings
- Rikin Gandhi started work at MSRI as a volunteer

**DG History: Experimentation**

- Video creation
  - Wide range of topics and video styles
- Screening methodologies
  - In homes
  - In public square
- Process
  - Hire ‘animators’ responsible for conducting showings and maintaining equipment
  - Follow up from meetings
DG History: Spin Out

- Studies measuring “cost per adoption”
  - Compare DG with extension agent
  - Emphasis on monitoring
- Microsoft identified forming an NGO as a success criteria for the project
- Support from BMGF to form NGO

DG History: Building an NGO

- Business model
  - Partner with NGOs implementing agricultural programs
  - Become trainers and managers of content and technology
- Shift focus to low income states in India
- Strengthen process model
- Process innovation:
  - Shift video creation to the community
- Technology innovation:
  - Pico-projector

DG History: Expansion

- Substantial growth
- Partnership with NRLM in India
- Expansion to projects in Africa
- Identification of other domains
  - Health, Sanitation, Nutrition, Livelihood

Digital Public Health

- Digital Green model applied to community health education
- Community created video content for externally defined health messages
- Video showings in community to promote behavior change

* Now known as Projecting Health

DPH History: Building a Partnership

- PATH/DG partnership established
- DG Video Training workshop for PATH staff
- Identification of possible differences between Health and Agriculture
  - Message review
  - Evaluation of impact
  - Dissemination models
- Funding for pilot
- Identification of implementation partner

Applying the Digital Green model to health

- Digital Green model
  - Participatory process for content production
  - Locally generated digital video database
  - Human-mediated instruction for dissemination and training
  - Regimented sequencing to initiate a new community
  - Integrated performance monitoring
Surestart project

• PATH led project in UP and Maharashtra
• 2006-2011, BMGF Funded
• Community engagement to support maternal and newborn health
  – Governance and public health interventions
  – Mentoring ASHAs
• Maternal health messaging
  – Danger signs
  – Birth preparedness
  – Thermal care
  – Breast feeding
• Mothers’ group
  – ASHA led group of expecting mothers
  – Monthly meeting with activities

Bacchrawan, Raebareli, UP

• Gran Vikas Sanstham
  – Well established local NGO
  – Active since 1977
  – Demonstration site for SureStart
• High performing district
• Project initially covered 20 villages with 54 mothers’ groups
• Direct continuation of SureStart
• Supervisory structure already in place
• Expansion to another 80 MGs’ in 2013

Surestart project

• Health messaging developed by experts
  – Standard messaging that has been adopted by health organizations
• List of messages for a topic given to video team
  – Messages must appear in the video

Message creation

• Health messaging developed by experts
  – Standard messaging that has been adopted by health organizations
• List of messages for a topic given to video team
  – Messages must appear in the video

Video creation

• GVS employees trained in video production and editing
  – No previous background
• Training includes basics of film
  – Different types of shots
• Video team had creative control on videos
• Developed story lines for videos
• Initial videos produced were of high quality

Review

• Critical to ensure accuracy of messaging
• Community advisory board created
  – Health system and community membership
• Approvals
  – Storyboards
  – Final videos
    • Community and PATH review
• Recommendations from CAB have been included in videos
• Errors in videos have been detected

Dissemination

• ASHAs trained to use videos
  – Technical training on Pico projector
  – Training in facilitation
• Videos shown in existing mothers groups
  – Substitute videos for learning activities
  – Attempt to keep format the same
Technology

- Video creation with Kodak playtouch camera
- Edit with Microsoft Movie Maker – (sound problems)
- Video sharing for review
- Post to YouTube
- Load on Pico projector for showings

The Projecting Health Process

- Identify topic
- Develop key messages
- Create storyboard and approve
- Produce short video
- Identify local actors
- Women discuss and share their knowledge with others
- Women adopt healthier behaviors and practices

Overall Project Achievements - India

<table>
<thead>
<tr>
<th></th>
<th>Partner 1: GVS</th>
<th>Partner 2: NYST</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Villages implemented in</td>
<td>27</td>
<td>57</td>
<td>84</td>
</tr>
<tr>
<td>Community health workers</td>
<td>55</td>
<td>81</td>
<td>136</td>
</tr>
<tr>
<td>trained</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of people in</td>
<td>8</td>
<td>6</td>
<td>14</td>
</tr>
<tr>
<td>video production teams trained</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother’s Groups</td>
<td>55</td>
<td>81</td>
<td>136</td>
</tr>
<tr>
<td>Videos Produced</td>
<td>21</td>
<td>13</td>
<td>34</td>
</tr>
<tr>
<td>Screenings</td>
<td>2,139</td>
<td>2,100</td>
<td>4,239</td>
</tr>
<tr>
<td>Women reached by groups</td>
<td>10,871</td>
<td>13,938</td>
<td>24,809</td>
</tr>
</tbody>
</table>

Projecting Health Videos

- Breastfeeding
  - Optimal breastfeeding practices
  - Exclusive breastfeeding
  - LAM
- Thermal care
  - Thermal care overview
  - Delay bathing
- Family planning
  - Permanent methods
  - Temporary methods
  - NSV-No scapul-vasectomy
  - SCS-Copper I
- Cord care
  - Cord care overview
  - Myths and misconceptions
- Birth preparedness
  - Birth preparedness overview
  - Maternal danger signs
  - Maternal nutrition
  - Newborn danger signs
- Other
  - Immunizations
  - Community-based emergency transportation systems

Projecting Health Theory of Change

Endline Evaluation: Objectives

Primary objective:
To assess the effectiveness of the PH intervention in increasing knowledge and changing practices of the women between ages 18 and 45 exposed to the video messages on key maternal and neonatal health (MNH) areas.
Endline Evaluation: Key Outcomes
Maternal and neonatal health (MNH) areas and focus outcome indicators

<table>
<thead>
<tr>
<th>Birth Preparedness</th>
<th>Breastfeeding</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Identify a place to deliver</td>
<td>• Gave colostrum</td>
</tr>
<tr>
<td>• Institutional delivery</td>
<td>• Early initiation of breastfeeding within 1 hour of birth</td>
</tr>
<tr>
<td>• Saving money for an emergency</td>
<td>• Exclusively breastfed for 6 months</td>
</tr>
<tr>
<td>• Planning for emergency transport</td>
<td></td>
</tr>
<tr>
<td>• Preparing blade, thread for cord</td>
<td></td>
</tr>
<tr>
<td>cutting</td>
<td></td>
</tr>
<tr>
<td>• Prepare a clean cloth for wrapping</td>
<td></td>
</tr>
<tr>
<td>baby after birth</td>
<td></td>
</tr>
</tbody>
</table>

Endline Evaluation: Key Outcomes

<table>
<thead>
<tr>
<th>Thermal Care</th>
<th>Cord Care</th>
<th>Family Planning</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Bathed baby between 3-7 days after birth</td>
<td>• Cord was cut using a clean blade and tied with a clean cord</td>
<td>• Using a family planning method (temporary or permanent)</td>
</tr>
<tr>
<td>• Held baby skin to skin or wrapped in a clean cloth after birth</td>
<td>• Nothing was applied to the cord</td>
<td></td>
</tr>
</tbody>
</table>

Evaluation design
• Comprehensive evaluation (July 2013-July 2014)
• Post-only study design with 3 arms:

Methods
• Household survey with structured questionnaire among women between 18-45 years
  — Participants selected using set criteria, intervention arms recruited from participant list, and comparison arm from a household listing exercise
• Semi-structured interviews with community healthcare workers (ASHA)
• Ethical approval from REC and the local UP-based IRB
• Data collected by external organization, June-July 2014

Sample villages

Findings overview
• Practices of women
• Knowledge of women (spontaneous response)
• Source of knowledge
• Sharing of messages with others
### Respondents

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Projecting Health</th>
<th>Standard MG</th>
<th>Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total (n)</td>
<td>309</td>
<td>321</td>
<td>327</td>
</tr>
<tr>
<td>Mean age of respondents (years)</td>
<td>26</td>
<td>26</td>
<td>26</td>
</tr>
<tr>
<td>Mean number of live births (n)</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Literacy : Illiterate (%)</td>
<td>33</td>
<td>30</td>
<td>29</td>
</tr>
<tr>
<td>Occupation: Housewife (%)</td>
<td>90</td>
<td>93</td>
<td>88</td>
</tr>
<tr>
<td>Religion : Hindu (%)</td>
<td>94</td>
<td>92</td>
<td>95</td>
</tr>
<tr>
<td>Religion: Muslim (%)</td>
<td>6</td>
<td>8</td>
<td>5</td>
</tr>
</tbody>
</table>

### Self reported practices

- **Birth preparedness**
  - Projecting Health (309)
  - Standard MG (321)
  - Comparison (327)

- **Breastfeeding**
  - Projecting Health (309)
  - Standard MG (321)
  - Comparison (327)

- **Family planning**
  - Projecting Health (309)
  - Standard MG (321)
  - Comparison (327)

### Birth Practices: Women Who Delivered at Home

<table>
<thead>
<tr>
<th>Practice</th>
<th>Projecting Health</th>
<th>Standard MG</th>
<th>Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cord care</td>
<td>82*</td>
<td>46.9</td>
<td>63*</td>
</tr>
<tr>
<td>Thermal care</td>
<td>45.8</td>
<td>32.7</td>
<td>29.2</td>
</tr>
</tbody>
</table>

### Breastfeeding: Uptake of Optimal Practices

- **Started breastfeeding within one hour**
  - Projecting Health (309)
  - Standard MG (321)
  - Comparison (327)

- **Fed colostrum**
  - Projecting Health (309)
  - Standard MG (321)
  - Comparison (327)

### Birth Preparedness: Change in Knowledge

- **Identified a place for delivery**
  - Projecting Health (309)
  - Standard MG (321)
  - Comparison (327)

- **Identify and arrange for skilled birth attendant**
  - Projecting Health (309)
  - Standard MG (321)
  - Comparison (327)

- **Save money for birth and emergencies**
  - Projecting Health (309)
  - Standard MG (321)
  - Comparison (327)

- **Prepare thread, Arrange a clean cloth for drying and wrapping baby**
  - Projecting Health (309)
  - Standard MG (321)
  - Comparison (327)

### Current work
Next week

- Panel discussion, CSE 691
  - Cliff Schmidt, Literacy Bridge
  - Emily Bancroft, Village Reach
  - Brian Taliesin, PATH