Digital Health Solutions to Advance Health and Well-being for Vulnerable Populations:

DIALOGUE4HEALTH WEBINAR

August 18, 2016
AGENDA

- PROJECT BACKGROUND
- COMMUNITY SELECTION
- FOCUS GROUP OVERVIEW
- FOCUS GROUP DEMOGRAPHICS
- GENERAL TECHNOLOGY USE
- TECHNOLOGY USE FOR MANAGING HEALTH AND WELL-BEING
- STRATEGIES FOR ADVANCING RESEARCH AND PROMOTING USE
PROJECT BACKGROUND
VULNERABLE POPULATIONS

Populations that Experience Variations in the Provision and Utilization of Health Services Are At Increased Risk for Health Disparities

Vulnerable Populations Reflect Broad Diversity in terms of Belief Systems, Religious or Cultural Values, Life Experiences, and Group Identity

Impacts Their Receptiveness to and the Effectiveness of Interventions Designed to Reduce Risks for Health Disparities

- Low Income
- Elderly
- Women and Children
- Persons with Disabilities
- Minorities
- Homeless
- Formerly Incarcerated
- Refugees and Immigrants

- Health Status
- Socioeconomic Status
- Geographic Location
- Physical Environment
- Functional or Developmental Status
- Age
- Gender
DIGITAL HEALTH SOLUTIONS

Telehealth
- Platform technologies and services for remote delivery of and access to health care resources
- Novel sensing devices for monitoring activity, physiology, location, and environmental conditions

Sensors & Services
- Technologies and motivational strategies to engage consumers in public and personal health activities

Mobile, Apps & Gaming
- Cell Phone
- eReader
- Game Console
- Desktop PC
- Tablet Computer
- Internet

Data Analytics
- Social Media
- Wearables
- Remote Monitoring
- Videoconferencing
- Apps
- Texting
CORE PROJECT ACTIVITIES

Project involved two core work activities:

- **Community Engagement Listening Sessions** - Develop core understanding of the actual and potential role for digital technology in reducing health disparities as well as user-centered design requirements through targeted focus groups in select geographic communities.

- **Review of Digital Health Best Practices** - Identify meaningful, sustainable digital health solutions applied to the prevention and management of chronic conditions as well as facilitating linkages to community resources and services for vulnerable populations.
COMMUNITY LISTENING SESSION GOALS

- Understand community **access to, use of, and experiences with digital technology** in everyday activities and in accessing and utilizing health resources to manage their health and well-being.

- Identify **specific examples of digital health solutions** that participants use and that promote usability and effectiveness in managing and improving health and well-being.

- Ascertaint fundamental **user-centered design principles** for effective technology use, addressing user security/privacy concerns, interoperability, and promoting program sustainability.
NATIONAL BEST PRACTICE REVIEW GOALS

- Review, identify, and compile digital health solutions benefiting vulnerable populations through a national scan:

Solutions that are:
- user-centered
- appropriate for use by vulnerable populations

Solutions that enable:
- positive behavior change
- patient and provider engagement
- continuity of care
- community capacity building
COMMUNITY SELECTION
COMMUNITY TARGETING AND SELECTION

Primary Criteria: Social and Economic Hardship

CommunityCommons.org
LOUISVILLE METRO

Louisville Health Equity Report 2014

Healthy Louisville 2020
Creating a Healthier City
NEW YORK CITY

Life Expectancy by Community District

- 74.1 - 78.7 years
- 78.8 - 80.9 years
- 81.0 - 82.9 years
- 83.0 - 85.4 years
- Unpopulated areas

FOCUS GROUP
OVERVIEW
FOCUS GROUP DESIGN

Participants
- 8-10 participants aged 18 years and older in each group

Format
- 30-minute consent and pre-focus group surveys
- 90-minute focus group discussion

Key Area Contact/Prime Organizations
- Miami Dade – partnered with local government agencies and Linda Quick (past President of South Florida Hospital and Healthcare Association) to conduct outreach to local service organizations to host 7 focus groups
- South Bronx – partnered with local government agencies and 10 local service organizations directly to convene and host 14 targeted focus group populations
- West Louisville – partnered with the local government agencies and 9 local service organizations directly to convene and host 14 targeted focus group populations
FOCUS GROUP PARTNER ORGANIZATIONS

**MIAMI DADE**
- Miami Jewish Health System / PACE Program
- Carrfour Supportive Housing
- Camillus House and Camillus Health
- Miami Lighthouse for the Blind
- WIC Florida Department of Health
- Banyan Health
- Jesse Trice Health Center

**SOUTH BRONX**
- United Church of Christ
- Xtreme Care
- Acacia Network
- Fortune Society
- Bronx Independent Living Services
- BronxWorks
- Mary Mitchell Community Center
- WIC Morrisania
- Brightpoint Health
- SE Bronx Neighborhood Center

**WEST LOUISVILLE**
- Bridges of Hope Neighborhood Place
- Americana Community Center
- Family Scholar House
- Greater Friendship Church
- Family Health Centers
- Elderserve
- Seven Counties Services
- Center for Women and Families
- Shawnee Christian Health Care
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<thead>
<tr>
<th>ONE COMMUNITY</th>
<th>TWO COMMUNITIES</th>
<th>THREE COMMUNITIES</th>
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<tr>
<td>Persons Living with HIV/AIDS (NY)</td>
<td>Physically Disabled Persons (Miami, NY)</td>
<td>Residents of Public Housing</td>
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<td>Parents of Children with Behavioral Health Care Needs (Louisville)</td>
<td>Faith-based Organizations (NY, Louisville)</td>
<td>FQHC General Patient Population</td>
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<td>Workforce / Home Health Aides (NY)</td>
<td>Immigrant and Refugee Populations (NY, Louisville)</td>
<td>Pregnant Women and Mothers</td>
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<td>Neighborhood Center Clients (NY, Louisville)</td>
<td>Formerly Homeless in Supportive Housing</td>
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<td>Formerly Incarcerated (NY, Louisville)</td>
<td>Older Adults (including PACE Program)</td>
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<td>Victims of Domestic Violence (NY, Louisville)</td>
<td>Addiction Treatment and Recovery Clients</td>
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DATA COLLECTION METHODS

PRE-FOCUS GROUP

- Baseline Survey (demographics, technology use, health behaviors)
- eHEALS Survey (self-assessment tool for digital health literacy)

FOCUS GROUPS

- Focus Group Discussion (notes and recording)
- Focus Group Worksheets
  - A: Online Activities for Health (have done during the previous 12 months)
  - B: Digital Health Technology Usage (currently use for self-management)
  - C: Future Technology Use for Health Care (potential level of interest)
BASELINE SURVEY DEMOGRAPHICS

- **Gender:**
  - 67% Female
  - 33% Male

- **Age Breakdown:**
  - 18-24 10%
  - 25-34 20%
  - 35-44 16%
  - 45-54 21%
  - 55-64 21%
  - 65+ 11%

- **Relationship Status**
  - 47% Single
  - 19% Married
  - 13% Divorced
EDUCATIONAL ATTAINMENT LEVELS

- Some high school: 17.2%
- High school graduate, no degree: 27.0%
- Trade/technical/vocational: 25.1%
- Associate degree: 6.0%
- Bachelor’s degree or higher: 7.2%
- Other (please specify): 11.6%
HEALTH BEHAVIORS AND ATTITUDES

MAJORITY AGREE

“I am responsible for my own health”
- 62% Strongly Agree and 25% Agree

“I should be in control of who has access to my health data”
- 56% Strongly Agree and 30% Agree

“I am actively taking care of my health”
- 41% Strongly Agree and 45% Agree

“I would share my data so I can have better care from my doctor”
- 39% Strongly Agree and 30% Agree

MAJORITY DISAGREE

“I am willing to pay for my health care expenses out-of-pocket”
- 26% Strongly Disagree and 25% Disagree (22% Neither Agree or Disagree)
Knowledge
- **WHAT** health resources are available online
- **WHERE** to find helpful resources on the Internet.

Comfort Using Technology
- **HOW** to find health resources on the Internet
- **HOW** to use the Internet to answer questions about health

Skills and Confidence to Effectively Use
- **LACK** the skills to assess the quality of resources they find
GENERAL TECHNOLOGY USE
DIGITAL TECHNOLOGY ACCESS

Cell Phone Ownership
- Yes 93%
- No 7%

Ownership of more than one phone
- Rise in use of Government Free Phone

Operating Platform
- Android is the predominant smartphone platform
- Visually impaired - Apple users

Other Digital Technology Access
- Lower levels of access to and/or ownership of laptop computers
Common barriers to technology use: financial; lack of awareness; and limited capacity.

The cost of purchasing a device and maintaining regular service is challenging.

Positive attitudes to and comfort with the integral role that technology plays in everyday life.

Fear of being left behind if do not have a phone as well as the inability to effectively use technology.

Phones are perceived as a platform for fun, engaging and relaxing activities.

Technology-enabled solutions should be free, offer convenience, and provide a level of customization.

I can’t live without technology, it makes my life easier.

Texting is impersonal.

If technology is necessary for us, then why can’t they make it affordable?

People are becoming addicted to technology.
Texting

- Texting is a widely used feature
- User Benefits: When calling is not convenient
- User Challenges: Hard to type with small keys; Autocorrect is often incorrect; abbreviations and emojis are confusing; misinterpretation of meaning and tone;

Voice

- All participants mentioned use of voice input as a key technology behavior
  - Speech-to-text dictation for text messages
  - Device input commands and asking questions
  - Searching information (instead of typing difficult to spell words)
ONLINE ACTIVITIES

Accessing the Internet

- 66% of participants primarily go online via their cell phone device
- 77% participants that went online in the past 12 months searched for information on a health-related concern
- Most online activities completed on cell phone vs. other devices

Social Media

- Regarded as fun, entertainment, a way to connect and stay in touch, but growing backlash against online drama
- Image over text preferred as the content medium of choice (i.e. Instagram, Pinterest)
Apps

- Photo and videochat apps predominant as top communication apps
- Mapping and GPS use are high
  - People use Google earth to see their homes and country, especially if living far away.

To Pay or Not to Pay for Apps

- Overwhelming unwillingness to pay for apps
- Although participants report paying for some apps
  - Entertainment (Netflix, Hulu, Pandora)
  - Health and fitness (Nike)
  - Games (Candy Crush; virtual pet games)
  - Education (Tutoring math; LSAT prep)
Technology Usability Challenges:

- Small screens and keys
- Physical dexterity and sensory limitations make typing a frustrating experience
- Literacy level frequently challenges ability to spell correctly
- Data plans can be consumed quickly
- Storage space on phones is often limited
- Underutilization of features on phones
- Limited management know-how of apps
- Remembering username-password combinations
PERSONAL DATA AND SECURITY

- Multiple examples of identity theft and fraud but actual reasons for it are often unknown.
- Potential explanations include:
  - Limited awareness of potential risks and protective measures when using open networks
  - Willingness to provide personal data in exchange for coupons, free merchandise, phone credits
  - Phishing victims as a result of participating in surveys or responding to email scams
  - Limited review and active management of privacy settings on apps

Photo by Don Hankins
Online Activities and Personal Safety

- **Self-management** measures to protect device access and personal data theft
  - passwords
  - biometric thumb scan
- Perception - personal computers can be safer than phones or other devices.
- Online retail commerce using trusted brands like Amazon, eBay, Craigslist are commonly used.
- Use of prepaid Visa cards or PayPal to pay for purchases online help minimize risks to personal financial information.
- High level of comfort using online banking and online bill pay as well as confidence that banks will call if there is any suspicious activity.
TECHNOLOGY AND DATA ATTITUDES

- General level **awareness of the risks** from sharing personal information when online
- General sense of **mistrust** and reluctance to provide personal information when asked
- **Low level** of active management of privacy settings when online or using apps
- The **security of personal information** is a common concern especially when it involves health information
- Willingness to **share personal information** and experiences related to health if it can benefit others
- Perception that filling out **paper forms** with health data is safer than doing so online and submitting electronically

*It is like a second brain. If I don’t know something, I Google it.*

*I don’t use Wikipedia. Anyone can add information to it.*

*You lose your phone, you lose your life.*

*Cell phones try to control people and I just want to be free*
TECHNOLOGY USE FOR MANAGING HEALTH AND WELL-BEING
### Top Health Topics Searched Online

1. A specific disease or medical problem - 66%
2. A certain medical treatment or procedure - 52%
3. How to lose weight or how to control your weight - 44%
4. Depression - 36%
5. Food safety or recalls - 36%
6. Drug safety or recalls - 35%
7. Health insurance - 35%
8. A drug you saw advertised - 33%
9. Mental Health - 33%
10. Caring for a family member or friend - 31%
HEALTH INFORMATION SEARCH

**Search Strategy**

- Popular approach is to use Google
  - enter key words
  - search bar helps with spelling and prompts additional terms to consider
- Refer to social networks to ask questions, find information, or share resources
- YouTube for video demonstrations

**Discerning Search Results**

- Review top search results for consistency
- Search results are often shared with providers or serve as a second opinion
- Share online information with a close family member who works in a healthcare-related capacity

**Trusted Sources of Information**

- Domain names to verify trusted online sources
  - (.org, .edu)
  - (.gov or .com less so).
- Participants mentioned WebMD, AskMD
**Interaction with Healthcare Providers**

- **Technology** → *administrative support* mechanism

- **High-touch**, personal connection with providers and care team

- **Texting** (and to a lesser degree email) is the predominant interaction mechanism (i.e., reminders)
  - Medical
  - Pediatric
  - Dental providers

- **Pharmacies** offer user benefits through electronic prescriptions and text reminders for refills and pick ups

- **Low level of use of patient portals** due to limited awareness and perception of benefits
CURRENT USE OF DIGITAL TECHNOLOGY

1. Wearables for physical fitness, then apps and social networks
2. Apps for diet/food/nutrition, then social networks
3. Health devices for blood glucose and blood pressure monitoring
4. Health websites for information on depression, stress, and pain
5. Health websites for information on medication management
Self-Management Practices Using Technology

- Low level of use of dedicated health technologies
- Greater use of bundled apps with smartphones for activity monitoring
- Standard medical devices used include blood pressure monitors, glucometers, and sleep apnea devices
- Medication management relies on a blend of conventional strategies (pill box) and smartphone features (calendar, alarm, camera)

Photos by Samsung and Journal of Public Health Research
TECHNOLOGY AND HEALTH ATTITUDES

The fact people search for health information online suggests they are not at a place to find it.

When discussing my health I want to talk to a human and have a personal interaction.

My hospital has a patient portal. I never use it. Nobody has showed me how to.

They have this [wearable monitoring] technology. It’s just for rich people.

I don’t tell my doctor that I was searching online because that will make her mad.
Self-Rated as Very - or Extremely Interested

1. Text reminders; Online scheduling; Online access to repository of all health-related data

2. Listings of relevant-to-you local activities, support groups and services

3. Online reviews of healthcare providers & Online reviews of medical treatments

4. Local community resource mapping service & Behavior change apps (diet, exercise, addictions)

5. Keeping track of the health and care plan of someone for whom you are caring for

6. Online social health and well-being network to connect local people
PARTNERING OPPORTUNITIES FOR ADVANCING DIGITAL HEALTH SOLUTIONS

- Expanded Research on Digital Health Solutions for Vulnerable Populations
  - Geography
  - Sub-Population
  - Thematic

- Technology Training and Education
  - Online Privacy and Safety
  - Patient Portals
  - Health Literacy

- Co-Development of Interventions for Managing Health and Well-being
STRATEGIES FOR ADVANCING RESEARCH AND PROMOTING USE
There are lots of e-health products that are about connecting to health records, social networks and other services that do not require mobile, but **mobile is the common denominator**
Lots of exploration

**Simple**

- **Single use mHealth**
  - Focuses on a single purpose for a single user, typically consumer initiated:
    - smartphone apps and wearable tech products that support the user to record data which may be communicated to others
    - consumer driven, focus on wellness, diet and exercise.

- **Social mHealth**
  - Draws upon the support and encouragement provided through social networks:
    - gamification and competition based apps which encourage users to meet goals
    - consumers likely to pursue activities independently.

**Complex**

- **Integrated mHealth**
  - Links apps and devices with the formal healthcare system:
    - mobile technology linking patients and HCPs
    - tailored to multiple end users: consumers, physicians and administrators.

- **Complex mHealth**
  - Leverages advanced, integrated analytics for decision support:
    - predictive analytics applied to complex data generated through mHealth applications
    - focus on achieving optimal management of a specific disease.

*Source: Four Dimensions of Effective mHealth, Deloitte US Center for Health Solutions, 2014*
Significant app development

- "The number of mHealth apps available to consumers now exceeds 165,000"
- "300 mHealth clinical trials are underway, of which 53% target the senior population."
- "Pharmaceutical companies are among the most active group of health app publishers, but compared to the importance they have in the traditional healthcare market, their impact in this mHealth market is low. The industry is therefore looking to identify its ‘best fit’ role in the health app ecosystem. 12 of the leading pharmaceutical companies have published more than 700 apps over the last 5 years but only four companies have attracted a user base of more than 100,000"

“Recent industry reported retention rates for mHealth apps is lacking, but for health and fitness apps the 30-day retention rate was last reported as 47% in 2012. The 30-day retention rate for prescribed mHealth apps, as determined by the AppScript provider selection, prescribing and tracking platform, results in 30-day retention rates of 59% across all prescribed mHealth apps and 76% for fitness apps.”

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Little clarity on how to best provide solutions

- "In April, Ginger.io pivoted, dropping its old health care clients, and became a provider in its own right. AI still plays a role, for areas like tracking a patient's sleep patterns, but it's receded into the background as the company beefs up the human component. "Tech by itself only goes so far," Madan says. "We believe that access to high quality emotional and mental health care should be a human right. We didn't feel we could achieve that simply by being a technology vendor."

"A core premise of the apps is that tracking data digitally confers advantages over recording with pen and paper because of the ability of the app to synthesize data. **However, current apps’ data retrieval interfaces simply did not work for participants.**"

"Our results demonstrate the unmet need for participatory design, extensive testing, and training with diverse patients."

Most patients just end up repurposing default apps
But there are some success stories for purpose-built tech
Reflection: Why default apps?

- **Inertia**: It’s what folks already have, there are no additional costs, trust has been resolved and there is little new feature discovery that needs to happen.

- **Critical Mass**: There is a large user base, and often, a pre-existing community.

- **Primarily Positive Associations and Incentives**: When using a fun consumer app for a serious purpose, one mostly associates with the fun and the health/wellness improvement is along for the ride; with purpose-built apps, selection and purpose are constant reminders of seriousness, illness and/or otherness – even when incentives and encouragement are high quality, there is no shirking the reality of why you are using the app.

- **Getting into the Habit of Using a New App is Difficult**: It takes a lot for an app to become habit, especially if there isn’t a lot of pleasure connected to its use.
Immediate solutions

- Connect to the tools patients are already using
  - Ease of use
  - Everything in one place
  - Easier integration across services (the phone is the integrator)
- Take examples from other industries to find best practices
- Get creative with subsidies: App-specific data subsidies, perhaps tablets instead of phones
- Let tech play a supporting role
Start with simple solutions imagined by the community

- Develop community-based pilot programs
- Explore codesign methods that involve all stakeholders
- Share what you learn

http://povertytruthcommission.blogspot.com/2015/04/nothing-about-us-without-us-is-for-us.html
Questions?
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