Improving Public Health Outcomes with Mobile Devices:
The Health Care Provider’s Guide to Breastfeeding mobile app

Hildreth England, RD LD – Texas DSHS-WIC | hildreth.england@dshs.state.tx.us
Josh Handel – Catapult Systems | josh.handel@catapultsystems.com

Today

- By the end of this session, attendees should be able to...
  - Define “behavior design”
  - Identify at least one challenge in WIC service delivery that could be addressed with mobile technology
  - List two considerations from the planning phase that support a successful mobile initiative.
  - Express confidence and understanding of the mobile development lifecycle.
  - Apply two lessons learned from the HCP’s Guide to BF to your agency’s current or future mobile initiative.

Since we’re talking mobile...

- We’ll be asking you to engage with us with live polls
- You can respond via text message or at a custom URL
  - Text response code to 22333
  - Respond online by going to pollev.com/TXWIC or scan this...

Tips

1. Standard texting rates only (worst case US $0.20)
2. We have no access to your phone number
3. Capitalization doesn’t matter, but spaces and spelling do
How to Respond via Text

**TIPS**

1. Standard texting rates only (worst case U$0.20)
2. We have no access to your phone number
3. Capitalization doesn’t matter, but spaces and spelling do

**EXAMPLE**

1. How do you like my presentation so far?
2. Test a **CODE** e.g. 22333
3. Amazing: 458456
4. Incredibly Amazing: 458471
5. It’s Alright: 458472

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How to Respond via PollEv.com/TXWIC

**TIPS**

- Submit responses at PollEv.com/TXWIC
- Test a **CODE** e.g. 22333
- Amazing: 458456
- Incredibly Amazing: 458471
- It’s Alright: 458472

**EXAMPLE**

1. How do you like my presentation so far?
2. It’s Alright: 458472

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Let’s practice...

This image is a poll’s place holder. Enter slide show mode (FS) to view your live poll.

You can resize this image to realize where your poll will load in slide show mode.

Make sure you’ve installed the PollEv Presenter app (pollEv.com/app) and are connected to the internet.

If you need to duplicate this poll, make sure to copy/paste the entire slide (not just the placeholder image).

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Ask the Audience...

This image is a poll’s place holder. Enter slide show mode (FS) to view your live poll.

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And, while you have your phone out...

Link to
The Health Care Provider’s Guide to Breastfeeding
iPhone app

P.S. We’ll discuss later.
P.P.S. Sorry, Windows/Blackberry/Android owners!

BEHAVIOR DESIGN & THE MISSION OF WIC

WIC is a Behavior Change Program

= Healthy Outcomes
Everyone!

Clients need
the right environment
-and-
the right tools
to change their behavior

Behavior Design – the theory

BJ Fogg, Stanford University

Technology is a behavior change tool that can:
- Automate a target behavior
- Persuade folks to make a particular (healthy!) decision, over and over
- “Trigger” action

Behavior Design – the practice

Behavior Change

ability > motivation + triggers

(Ease of Use)

↑ simplicity = ↑ behavior
Keep It Simple, Small

BJ Fogg’s
Keys to Behavior Design Success

1. Choose a simple behavior to target
2. Learn what is preventing the target behavior
3. Choose the right technology tool

Note: behaviors that require only a trigger are the most likely to succeed

Everything should be made as simple as possible, but not simpler.
Albert Einstein

This image is a poll’s place holder. Enter slide show mode (F5) to view your live poll.

You can resize this image to resize where your poll will load in slide show mode.

Make sure you’ve installed the Pollu Presenter app (pollu.com/app) and are connected to the internet!

If you need to duplicate this poll make sure to copy/paste the entire slide (not just the place holder image).
MOBILE TECHNOLOGY AND BEHAVIOR CHANGE AT WIC

Some context to the “we need a mobile app!” craze

Behavior Design success!

text4baby

Evidence of Knowledge and Behavior Change

- 74% of text4baby participants rated text4baby messages intended to increase likelihood of mandatory visits as “extremely helpful”
- 3X more likely to rate text4baby messages as “very important”

3. Results from a recent randomized controlled trial found that text4baby messages were more effective than text messages and significantly increased engagement in health care, especially for women who reported a mental health challenge. (Hannon et al., 2016)

4. Some context to the “we need a mobile app!” craze:

MOBILE TECHNOLOGY AND BEHAVIOR CHANGE AT WIC

Taking Another Look at WIC

- 67% of text4baby participants who participated in the vs WIC (vs WIC) were more likely to rate text4baby messages as “important” than those who did not
- 40% reported that they texted the number of a person they received from text4baby with a higher percentage of additional interactions involving the texted contact number

Some context to the “we need a mobile app!” craze

MOBILE TECHNOLOGY AND BEHAVIOR CHANGE AT WIC

Taking Another Look at WIC

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Improving Public Health Outcomes with Mobile Devices

Texas WIC Clients & Mobile Tech

- Number of Texas WIC participants who...
  - Use a cell phone to access the internet
  - Use a cell phone to send or receive email

WIC Client Behavior Change & Mobile Solutions

- Number of participants who use phones for internet access want to...
  - Use an app to find WIC-approved foods
  - Take a class on a smartphone
  - Receive NEBF info or appointment reminders via text
  - Connect with other WIC participants & staff on Facebook

Supporting WIC Clients on All Sides

Mobile Technology as the Tool

- THINKING BEYOND WIC CLIENTS:
  - What challenges does WIC face?
  - Who faces them?
  - Is mobile technology the right tool to support behavior change?
    - Inside the clinic
    - Outside clinic
Some Broad Challenges

<table>
<thead>
<tr>
<th>References, Documentation</th>
<th>Processing in the Field</th>
<th>WIC Approved Foods</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Hard to manage</td>
<td>* Lots of paperwork</td>
<td>* List of approved items changes</td>
</tr>
<tr>
<td>* Paper isn’t “searchable”* Out of date quickly and expensive to reprint</td>
<td>* Forms have to be entered into the system later (twice the data input)</td>
<td>* Different locations can have different WIC-approved brands</td>
</tr>
<tr>
<td>* Need the documents anywhere at any time</td>
<td>* Should work with phones and tablets</td>
<td>* Thousands of retailers each with varying technology, IT policies</td>
</tr>
</tbody>
</table>

Native Mobile App

Hybrid HTML 5 App

HTML5 Online/Offline App

GOING MOBILE TO HELP IMPROVE TEXAS BREASTFEEDING RATES

Remember!
Changing Behaviors in Hospitals

for WIC Clients...and Health Care Providers

The HCP Guide to BF app:

KISS

“The Physician’s Pocket Guide to Breastfeeding”

The HCP Guide to BF app:

The target behavior

- The public health outcome:
  - Improving Texas’ breastfeeding rates – both initiation and duration

- The WIC-relevant behavior:
  - Increase HCP access to and use of Texas WIC’s evidence-based clinical lactation reference manual with new moms right after delivery

The HCP Guide to BF app:

The barrier to the behavior
The HCP Guide to BF app: The right technology

- Health care provider behavior and mobile devices
  - 56% of doctors who use apps say they expedite decision-making
  - 40% of doctors say healthcare technologies like apps can reduce patient visits

- Health care industry and mobile
  - Federal funds to promote the adoption and meaningful use of health information technology, including integration of mobile tech
  - The Health Information Technology for Economic and Clinical Health (HITECH) Act (Feb 2009, part of ARRA)
  - Affordable Care Act

Source: Manhattan Research, Taking the Pulse 2012®

- Apple leads over all competing platforms,
- Medical schools now hand out iPads to incoming students
- Differences in mobile-device use between practitioners in various medical specialties.
Behavior Design in Action

- **Motivated, able users**
  > 80% physicians use mobile devices to help make point-of-care decisions

- **Identified major barrier to behavior**
  Mobile app addresses major barrier to WIC client breastfeeding success - HCP knowledge & BF support in hospital after birth

- **The right technology tool**
  The right tech tool to help HCP’s use app easily, learn/share knowledge, and build credibility for WIC program

Managing the Mobile Project: Explore partnerships

- **Leverage existing assets and/or partnerships**
  - Content already complete**
  - Design draft available to visualize possibility

- **Existing partnership with ACC**
  - Ongoing contract with Austin Community College project design class
  - Help management and developers get a bird’s eye view of program goals

Managing the Mobile Project: Getting Approval

- **Defining the ROI for mobile**
  - Tangible cost savings
  - Intangibles benefits

- **Other considerations before ‘making the ask’**
  - Staff investment
  - Content strategy
  - Process timeline
  - Project management
Managing the Mobile Project: What should you know?

Managing the Mobile Project: Getting Approval

- **Building the Case**
  - Target behavior, audience, barrier research
  - Technology research
  - Clear vision for process and project plan
- **Researching contract and funding**
  - State cooperative contracts program for IT
    - “Application Development” category
  - “Best Value Justification”
  - Created SOW, released and awarded
- **Talk with your contracts, legal, & financial folks about what’s required at your agency**

The Pitch

The Software Development Lifecycle

DEVELOPING THE MOBILE APP
How we built it

- **Pure Native** – Written in the devices SDK, so one codebase per platform and no code reuse between platforms.

- **Common Language Frameworks** – All code is written in the same language. There can be 50% or more reusable code between platforms; but not a single codebase.

- **Hybrid** – Written in special frameworks that host the Mobile application on the device but inside a Web Control. There is a high level of code reuse between platforms usually with only one codebase.

- **Web** – A website that has been optimized for touch devices and use on smaller screens like mobile devices. Like any web-application there is usually only one codebase.

Process Blueprint

- **Design**
  - User Personas
  - Screen Map
  - Flow Diagrams
  - Documentation

- **Prototype**
  - User Stories
  - Wireframes
  - User Art
  - Technical Brief
  - Clickable Prototype

- **Build**
  - Mobile Website
  - iOS Application
  - Android Application
  - HTML5 Application
  - Whitepaper Application
User Experience

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Performance

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Mobile Programming Languages

- **Pure Native**
  - Apple iOS – Objective C
  - Google Android – Java
  - Microsoft Windows 8 - C# or HTML5

- **Common Language Frameworks**
  - C# and others

- **Hybrid**
  - JavaScript and some Pure Native SDK experience

- **Web**
  - HTML5, CSS3, JavaScript

Access to Phone’s Data and Hardware

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### Development Investment

- **Pure Native**
  - 1N per platform

- **Common Language Frameworks**
  - 1N for the first platform, .5N per additional platform

- **Hybrid**
  - 1.25N for Apple, Google and Windows Phone

- **Web**
  - 1N for Apple, Google and Windows Phone

### Business Considerations

- **Pure Native**
  - Field Workforce and Line of Business Applications
  - Game Development

- **Common Language Frameworks**
  - Must go native but still need a broad reach
  - Leverage existing development language skill sets

- **Hybrid**
  - Smartphone Applications
  - Augmenting an existing web experience

- **Web**
  - Broad reach consumer solutions
  - Infrequent or impulse use cases
  - Non-committed consumers, citizens or employees

### Offline Support

- **Pure Native**
  - Apple iOS – Objective C
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### Maintenance and Support

- **Pure Native**
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  - Google Android – Java
  - Microsoft Windows 8 - C# or HTML5

- **Common Language Frameworks**
  - C# and others

- **Hybrid**
  - JavaScript and some Pure Native SDK experience

- **Web**
  - HTML5, CSS3, JavaScript
Deployed to a Marketplace

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**Marketplace Considerations**

- **Question:** What value does a public marketplace provide the Enterprise?

- **Considerations**
  - Who is your audience
  - Marketplaces are barriers
  - Marketplaces limit reach
  - Lose control of the deployment process
  - Shelf space and discoverability are low
  - A recent estimate stated 70 – 80% of apps are “zombie apps”
  - Apps must be compelling enough to keep users coming back
  - Payment processing benefit
  - Application Availability

- **Marketplace Sentiment** is oftentimes a key driver

**Understanding the software development cycle**

- **Start with short term goals**
- **Ground your mobile solution conversations with Who?**
  - Requirements
  - Platform Support
  - Smartphone vs. Tablet
  - Solution Strategy
  - Marketplace Considerations

- **Multiple mobile solutions might be the answer**
- **Keep all four (4) Solution Strategies on the table**
- **Balance the Great Compromise:**
  - User Experience vs. Supportability

- **Design, Prototype, Build**
THE HEALTH CARE PROVIDER’S GUIDE TO BREASTFEEDING

LESSONS LEARNED
How not to reinvent the wheel
Challenge: You Don’t Know… What You Don’t Know

? 

Challenge: Going to Market

Success!

- Impressive usage, download numbers
- Downloaded all over the country
- Core mobile solution could apply to other WIC challenges
- Helping establish a mobile development business process and mobile strategy at DSHS-WIC

CONCLUSION

What Can You Take Away?
Wrap-Up

WIC On a Mobile Path

Resources

- BJ Fogg & Persuasive Technology Lab
  • http://captology.stanford.edu/
- Howto.gov
  • mobile best practices, practice group, definitions, gov experiences, gov terms of service, mobile dev webinars
- Apple & Google Android Resources
  • http://www.apple.com/business/accelerator/
  • Android: Core App Quality Guidelines
- CONTENT-MANAGERS-L@LISTSERV.GSA.GOV

Tips
Questions?

Thank You!

hildreth.england@dshs.state.tx.us
johs.handel@catapultsystems.com