Can Mobile Applications Improve Health Outcomes?

April 21, 2016  3:00 pm Eastern

Nick Cain, Google.org
Vineet Singal, CareMessage
Penny Mohr, Patient-Centered Outcomes Research Institute
Google.org
What We Do

Support technologically innovative approaches to the world’s most pressing challenges with the goal of creating lasting global impact.
Investing in Technology

- Bet on Strong Teams
- Innovation + Path to Scale
- Flexibility to Launch, Iterate, and Pivot

Other Programs:
- go/dotorg
- go/refugees
- go/racialjustice
CareMessage

The Opportunity
- Strong early traction
- Product / market fit with clear social impact
- M+E culture

The Grant (2014 Global Impact Award)
- $2.33M over two years
- Milestones related to product development, user research and testing, and hiring.

Google.org
Chronic disease prevention and management is one of the biggest opportunities in healthcare that is ripe for disruption. This is particularly true for patients that are low income and underserved.

CareMessage is a high-growth nonprofit startup using our mobile SaaS platform to improve the health and wellness of tens of millions of underserved patients.

Our mission is to empower healthcare organizations with mobile technologies to improve health outcomes and reduce cost of care.
Massive Market + Uniquely Effective Product = Explosive Growth

- Founded
- Launched Product
- Raised $6M in philanthropic capital
- Growth in Reachable Patients
- 300,000
- 800,000

PEDRO’S STORY

Pedro has been a patient at St. Anthony’s Medical Clinic in San Francisco since 2005

Evicted due to rising price of housing

1 of 12,000 families and individuals that live in rooms without a kitchen in San Francisco*

Pedro recently hurt his arm, and with no transportation, he makes 3 trips to the grocery store to get what he needs

Suffers from multiple chronic conditions including Asthma and Hypertension

Pedro’s cell phone is his only consistent connection to others

*https://www.stanthonyssf.org/medicalclinic/
CareMessage targets a patient population with unique challenges that affect their ability to make healthier choices, and healthcare organizations that are not currently equipped to address those challenges at scale.

**PATIENTS ARE UNABLE TO:**
- Express care needs and preferences
- Receive culturally-appropriate health messages
- Access regular preventive care

**HEALTHCARE PROVIDERS LACK TOOLS TO:**
- Collect data on barriers to care
- Analyze disparities at a population health level
- Deliver actionable and personalized information at scale
Text messaging usage is 2-4x higher in lower income, less educated populations, and has a 99% open rate.

**Why Text Messaging**

**Usage by Income Level**

<table>
<thead>
<tr>
<th>Income Level</th>
<th>Mean # of SMS Sent/Received per Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;$30K</td>
<td>60</td>
</tr>
<tr>
<td>$30K–50K</td>
<td>45</td>
</tr>
<tr>
<td>$50K-75K</td>
<td>30</td>
</tr>
<tr>
<td>$75K+</td>
<td>15</td>
</tr>
</tbody>
</table>

**Usage by Education Level**

<table>
<thead>
<tr>
<th>Education Level</th>
<th>Mean # of SMS Sent/Received per Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than HS</td>
<td>70</td>
</tr>
<tr>
<td>HS Diploma</td>
<td>52.5</td>
</tr>
<tr>
<td>Some College</td>
<td>35</td>
</tr>
<tr>
<td>College+</td>
<td>17.5</td>
</tr>
</tbody>
</table>

CareMessage’s various products help healthcare organizations transform ongoing patient care and achieve demonstrably better outcomes at a lower cost.
CareMessage's health education programs enable providers to engage patients in their health.

FOR PATIENTS

- Designed for underserved populations with a low literacy level
- Targets low-literacy patients with content in English and Spanish, and support for 30+ languages
- Covers a holistic educational model that incorporates actionable steps to overcoming barriers

FOR PROVIDERS

- Delivers personalized content at scale using branching technology
- Triggers notifications to the care team based on key patient responses
- Turns individual and population data into actionable insights
Reduced no-shows by 20% (relative to baseline) after implementing CareMessage

“I like to be able to make a quick personal contact with a patient about an issue or information. I like that they can reply to text and they feel like they have had a personal time with you in only a few seconds.”

- Deborah, Nurse Practitioner

This pilot demonstrates feasibility of text messaging with our target population, the acceptability of the format, the technological capability of our partner, and the value of refining content to facilitate use by the target population.

Citation: King, A et al. Innovative Physical Activity Interventions for Overweight Latinos. Stanford University. Grant #: 1R01DK10201601A1

Appointment recalls have been sent via text message to people that were overdue for a visit leading to 11,943 patients called and scheduled an appointment as a result of the outreach (23%).
I am getting a lot less panic phone calls because people are calling to reorder [medications] when they get the reminder text.

-- Prescription Assistance Staffer, Community Health Clinic (Brenham, TX)

A diabetic patient new to insulin regimen was struggling to remember to check blood sugar and use his insulin on a consistent basis. I offered to set up the text to send him messages three times a day for two weeks, to see if we could get a routine established. He agreed. Today I called him to see how that was going.

He said "I have not missed one time with your texts. I even hurried up to get it done last night so I could beat the text. Thanks for helping me with this, I feel better and my sugar is better”

-- Community Health Clinic (Brenham, TX)

First, let me say how much we like the product. CareMessage is easy to use, efficient and well received by the patient...we remain excited about the opportunities that CareMessage affords us for collecting data, conducting surveys and, best of all, communicating directly with our patients.

-- Susan White Wood, Program Director, Ventura County Ambulatory Care (Ventura, CA)
CareMessage operates on a software as a service (SaaS) revenue model. Larger customers pay a small fee to pilot the system and then convert to signing multi-year recurring revenue contracts.

**MARKET OPPORTUNITY**
- mHealth is one of the fastest growing markets - expected to grow to $49 billion by 2020 globally
- 1,287 FQHCs serving 22+ million patients (175%)
- 1,200+ Free & Charitable clinics serving 1.8+ million patients

**TRENDS**
- Patient centered care
- Burden of chronic diseases
- Focus on prevention
CareMessage grew from working with 3 customers at the end of 2013 to working with 171 customers across 33 states nationwide by early 2016.
ACCELERATING OUR IMPACT IN LOS ANGELES

Grants from three leading LA-based foundations accelerated CareMessage’s growth. CareMessage currently works with 1/3 of the FQHCs in LA-county, with several customers signing multi-year contracts.
CareMessage helped Pedro better manage his Asthma and Hypertension.

Join us in our journey to transform healthcare for Pedro and millions of underserved patients

CareMessage doesn’t need anyone to be [tech savvy]. It’s a very simple system. The messages were easy to read, easy to understand and they were informative.

It’s informative, it’s educational, and it’s free of charge, what better can they have?
Patient-Centered mHealth Research

Penny Mohr, MA

Senior Program Officer, Improving Healthcare Systems, Patient-Centered Outcomes Research Institute

Grantmakers in Health Webinar

April 21, 2016
Our Mission and Strategic Goals

PCORI helps people make informed healthcare decisions, and improves healthcare delivery and outcomes, by producing and promoting high-integrity, evidence-based information that comes from research guided by patients, caregivers, and the broader healthcare community.

Our Strategic Goals:

- Increase quantity, quality, and timeliness of useful, trustworthy research information available to support health decisions
- Speed the implementation and use of patient-centered outcomes research evidence
- Influence research funded by others to be more patient-centered
How is Our Work Different?

PCOR is a relatively new form of CER that....

• Considers patients’ needs and preferences, and the outcomes most important to them
• Investigates what works, for whom, under what circumstances
• Helps patients and other healthcare stakeholders make better-informed decisions about health and healthcare options
A Focus on Patients

“Nobody ever asks ‘How’s Waldo?’”
A Focus on Patients

What we mean by...

“Patient-centeredness”

• The project aims to answer questions or examine outcomes that matter to patients within the context of patient preferences
• Research questions and outcomes should reflect what is important to patients and caregivers

“Patient and stakeholder engagement”

• Patients are partners in research, not just “subjects”
• Active and meaningful engagement between scientists, patients, and other stakeholders
• Community, patient, and caregiver involvement already in existence or a well-thought-out plan
Aspects of PCORI-funded research that complement other investors/funders

- PCORI discourages extensive development/adaptation by the investigator within the context of the study

- mHealth applications evaluated in PCORI contracts need to have demonstrated efficacy or be in widespread use

- In general, PCORI does not pay for the cost of the mHealth intervention
  - Encourage co-funding by health system or payers
Across PCORI, more than a dozen studies incorporate mHealth into their interventions:

**Mechanism of communication**
- Through phone calls
- Use of mobile smartphone or tablet apps
- Use of text messaging platforms
- Incorporate Fitbit or other mobile monitoring device

**Purpose**
- Remote monitoring
- Promote self-management
- Provide consumer or family education
- Improve access to specialty care
Improving Self-Care Decisions of Medically Underserved African-American Patients with Uncontrolled Diabetes: Effectiveness of Patient-Driven Text Messaging versus Health Coaching

Engagement

- Two patients and another stakeholder will serve as members of the research team. Additionally, three advisory groups representing patients, providers, community leaders and local public and private insurers will be involved throughout the study.

Potential Impact

- Evidence of differential effectiveness between increasingly commonplace interventions will help to more fully understand their effectiveness to support underserved urban and rural patient communities in disease self-management.

Methods

- Three-arm random control trial; sample size 1,000 participants.

This study compares the effectiveness of patient-driven text messaging versus health coaching versus treatment as usual in supporting medically underserved African-American patients with uncontrolled diabetes and multiple chronic conditions in managing their self care.

James Bailey, MD, MPH
University of Tennessee Health Science Center
Memphis, TN

Early lessons

“You can’t list your iPhone as your primary-care physician.”
Early lessons

• Lack of access to smart phones poses a barrier to some populations
• Interface with existing research databases (e.g., RedCAP) is needed
• Provision of data may not be enough
• Staff support may provide a synergistic effect to enhance patient outcomes
• Confidentiality of personally-identifiable health information is a concern to patients
• Sustainability and adoption remain an issue
Questions?

Penny Mohr
Senior Program Officer
Improving Healthcare Systems

pmohr@pcori.org
• More webinars on this topic?
• New topics you want to tackle or learn more about?
• Innovative work that you want to share?
• A question you want to pose to your colleagues?

Contact us at quality@gih.org