Research and Evaluation Overview

September 2016

Introduction

Voxiva is committed to putting the best health information and support in the hands of people who need it. Our programs have reached 2.5 million people. In 2015, our member engagement and communications platform delivered more than 44 million health messages to audiences including healthy adults, individuals with diabetes, smokers who are trying to quit, and mothers who are pregnant or caring for a new baby.
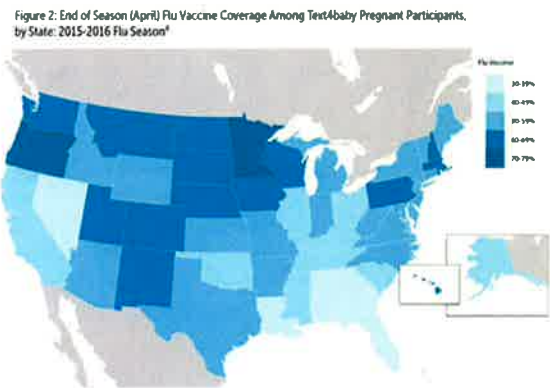
Voxiva's health programs are based on the best available clinical guidelines and current evidence. Our products are designed in partnership with leading health authorities, clinicians and educators. We are also committed to an ongoing research agenda that works with academic institutions, our clients, plans, providers and other partners. We analyze a wide variety of rich program data—enrollment, engagement, adherence and goal setting, results from interactive surveys sent through our communication platform combined with independent data from medical claims, surveys and focus groups — to inform and improve outreach, engagement and product development. It is through these efforts that we strive to always know the following: "Are we reaching our audience?" and "Are we making a difference?"

Below are examples of findings from Voxiva's active research and evaluation program.

Our programs make a difference

- **Text2quit participants are more likely to quit smoking:** Biochemically-confirmed results favored the Text2quit group with 11% abstinent compared to 5% of the control group ($p<0.05$). At 6 months, 32% of the Text2quit group reported not smoking in the past 7 days compared to 21% of the control group (p,0.01). Non-respondents were assumed to have smoked.

- **People with diabetes get support and report lower blood glucose levels:** Through a partnership with the American Diabetes Association, individuals enrolled in the Living with Type 2 Diabetes program can opt in for Care4life. In an analysis of 10,741 participants enrolled in Care4life for at least 6 months, 98% were still receiving educational content by text or email. Among these participants, 89% of respondents to a user survey reported that Care4life improved their knowledge of diabetes, 69% reported that it helped them remember to take medications and attend doctor's appointments, 82% reported that it helped them set health goals and 96% would recommend Care4life to other patients with diabetes. Participants also reported that self-monitored blood glucose levels declined with the length of their enrollment in Care4life.

- **Pregnant participants reported improved glycemic control:** Results from a study conducted by St. Louis University show a significant difference in average glucose values within goal between the Text4baby and the no-text groups (73% vs 20%, N=30).

- **Text messaging supports optimal insulin titration.** A study at Bellevue hospital showed that a daily SMS text message asking for blood glucose and weekly titration phone calls resulted in 88% of diabetic patients reaching optimal insulin doses within 12 weeks, compared to 37% of patients receiving usual care. Patients in the texting groups reported lower costs associated with co-pays, reduced travel and waiting time and higher satisfaction.

- **Improved rates of influenza vaccination:** Since 2012, Text4baby has been working to increase flu vaccination by providing reminders and targeted education. Results from a randomized evaluation show Text4baby mothers who planned to be vaccinated and received a text reminder were 2x more likely to report they were vaccinated. Also, Text4baby mothers who did not plan to be vaccinated because of cost and received a text on how to access free and low-cost influenza vaccines were nearly 2x more likely to report they were vaccinated.

Figure 2: End of Season (April) Flu Vaccine Coverage Among Text4baby Pregnant Participants, by State: 2015-2016 Flu Season

Flu vaccination coverage for pregnant Text4baby participants for the 2014–2015 flu season tracked trends observed in national surveys (See figure, at right). The extensive reach of Text4baby and its ability to collect real-time data position it as a unique tool for broad and timely monitoring and surveillance.

Our program participants report high levels of satisfaction

- 99% of Text4baby participants in a Health Services and Resource Administration (HRSA) funded evaluation said they would recommend the service to a friend or family member, 90% read the messages and found them easy to understand, and 64% thought the messages were useful.

- 82% of Care4life participants reported that the program helped them set health goals and 96% would recommend it to other patients with diabetes (Internal analysis,2015).

Our enrollees are more knowledgeable

- 89% of Care4life participants reported that the program improved their knowledge of diabetes and 69% reported that it helped them remember to take medications and attend doctor's appointments.

- On four critical topics—safe sleep, infant feeding, best time to deliver in a healthy pregnancy, and the meaning of "full-term"—Text4baby participants in an HHS-sponsored evaluation demonstrated a significantly higher level of health knowledge than the comparison groups (81% of Text4baby participants responded correctly vs. 60-62% of other prenatal participants).

- A George Washington University-led randomized study found Text4baby mothers were nearly 3 times more likely to believe they were prepared to be new mothers compared to those in the control group.

Our reminders improve appointment adherence

- **40% improvement in appointment adherence of Medicaid patients.** Montefiore Medical Center's University Behavioral Associates conducted a two-month clinical trial using the Sense Health platform for appointment reminders. The trial included 15 health providers and 67 high-needs Medicaid patients and resulted in a >40% improvement in patients remembering to attend health appointments.

- **Participants remember appointments.** 63% of participants in a national survey reported that Text4baby helped them remember a doctor's appointment. Similarly, in an analysis of 10,741 Care4life participants, 69% reported that it helped them remember to take medications and attend doctor's appointments.

- **82% Medicaid moms report attending well-baby visits.** Text4baby moms enrolled through Oklahoma's SoonerCare responded to surveys reporting on attendance at 2,4,6 or 12-month well-baby visits (n=3772, 82%). 83% of SoonerCare moms who responded to a survey at nine weeks postpartum reported that they had attended their postpartum visit.

- **Amerigroup finds that text reminders increase physical exam compliance:** An analysis of Amerigroup members with a TracFone Lifeline phone who are enrolled in our digital health messaging service were three times more likely to attend their annual physical exam within 90 days of receiving interactive text messages. Nationally:
  - 71% of Amerigroup users said Connect4health messages helped them remember to go to their doctor.
  - 52% of Amerigroup users said they learned about Amerigroup plan benefits from Connect4health.

- **MDWise claims data show that Txt4health participants more likely to have physical exam:** 63% of respondents to a Txt4health survey said that text messages helped them remember to go to a doctor's visit. An analysis of claims data confirmed that Txt4health participants had a 57% higher odds that they would have a physical exam than non-participants (Internal analysis).

- **Mobile phone text messaging doubles the odds of medication adherence.** In a meta-analysis of sixteen randomized clinical trials, text messages significantly improved medication adherence (odds ratio, 2.11; 95% CI, 1.52-2.93; P < .001).

- **Text message reminders can improve appointment attendance at a lower cost** than telephone call reminders according to a Cochrane review of four randomized controlled trials involving 3,547 participants. Another review of 18 studies concluded that patients were one and a half times more likely to attend an appointment after receiving a text reminder.

Our participants use recommended online resources and call centers

- **Health plan participants were 11 times more likely to call the plan's Member Services phone line:** Txt4health users who received a text message that included a resource from the health plan were much more likely to call the resource seeking health information within 10 days than plan members who did not receive the text reminder (Internal analysis).

- **Participants utilize hotlines and websites:** 77% of Text4baby users in a national survey reported that they opened a Text4baby link. 46% reported they called a resource number they received from Text4baby. More than half (53%) of Text4baby participants reported they saved resource numbers for future use.

We engage and serve at risk populations

Across our programs:

- 44 million health messages delivered in 2015
- 2.5 million enrollees
- 30-75% of users are pro-active: responding to surveys, etc.
- 82-95% stay enrolled for more than 30 days (Internal analysis)

- **Medicaid recipients opt-in:** Text4baby is collaborating with CMS, Medicaid agencies and MCOs to optimize enrollment of Medicaid beneficiaries in Text4baby. 24% of targeted Medicaid beneficiaries statewide in Oklahoma signed up for Text4baby after being sent text message invitations to enroll in the program. This model is currently being extended to California and Louisiana in collaboration with state Medicaid.

- **Pregnancy support is sought early:** Over 38% of participants who sign up to receive pregnancy messages from Text4baby enrolled during the first trimester, reaching women when they most need information and support (Internal analysis).

Ongoing Voxiva research and evaluation

We regularly collaborate with academic institutions, health plans and other external experts on research and evaluations. Current activities include:

- **Integrating mHealth with community health workers.** George Washington University is leading a randomized trial to assess a new chronic care model for diabetes that combines Care4life with community health workers to support diabetic patients to improve blood glucose levels, increase medication adherence, reduce hospitalization and achieve a variety of other health goals. The trial was completed as of August 2016 (n=166) and results are expected shortly.

- **Supporting pregnant smokers who want to quit smoking:** Under a National Institutes of Health grant, we are assessing the feasibility and efficacy of a smoking cessation text messaging program (Quit4baby) for pregnant smokers. Results from the feasibility study found participants reported that the program was helpful in quitting and gave good ideas on quitting. Users said that they would recommend Quit4baby to a friend. A randomized trial to test the efficacy of Quit4baby has now been completed in a population of Text4baby pregnant smokers (n=500). Results expected shortly.

- **Encouraging influenza vaccination:** Since the flu season of 2012, Text4baby has implemented and evaluated an interactive module of messages to encourage influenza vaccination to understand how appointment reminders and tailored education improve self-reported vaccination coverage among participants. As a result, flu messages and reminders in Text4baby and Connect4health messages have evolved to reflect these learnings. Text4baby is also currently collaborating with the Centers for Disease Control and Prevention to compare influenza vaccination coverage for pregnant Text4baby participants to non-participants nationally (Publication in preparation).

- **Feasibility of text-based developmental screening:** Text4baby collaborated with the Maryland's Department of Health and Mental Health, and Prince George's County Infant and Toddlers and WIC programs to assess the feasibility of text-based developmental screening and inform a scalable model. Results in preparation.

- **Text4baby receptivity and theory evaluation:** Text4baby is collaborating with the University of Maryland School of Public Health, Herschel S. Horowitz Center for Health Literacy on two separate evaluation efforts, including (1) a small pilot to assess receptivity to Text4baby messages and knowledge, awareness, and behavioral

outcomes among Text4baby participants and non-participants; and (2) an assessment of Text4baby messages based on health communication and health behavior theory (in progress).

- **Informing future physical activity messaging:** Text4baby is collaborating with Arizona State University on a study to inform the development of effective physical activity messaging during pregnancy. The study tracked physical activity (using a Fitbit) among pregnant women randomized to four text interventions, including standard Text4baby messages. Results will be shared soon.

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