

Commentary: Preconception Health

Breaking New Ground: The Text4baby Program

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On February 4, 2010, White House Chief Technology Officer Aneesh Chopra announced the launch of text4baby, the nation's first free mobile health service, developed in partnership by the National Healthy Mothers, Healthy Babies Coalition (HMHB), Voxiva, CTIA—The Wireless Foundation, the U.S. Department of Health and Human Services (HHS), and Johnson & Johnson, the founding sponsor. Text4baby, which has been implemented through an unprecedented public-private partnership, has reached more than 400,000 people with critical health and safety information about pregnancy and a baby's first year of life. Text4baby aims to reduce barriers to accessing information and resources, increase knowledge around key health topics, improve positive health behaviors, and build a mother's self-efficacy to engage in healthy behaviors that will benefit herself and her baby.

Individuals enroll in text4baby by texting "BABY" for the English service or "BEBE" for the Spanish service to 511411; they can also enroll on the <http://www.text4baby.org> Web site. A user is asked to register her due date or her baby's birth date and provide her zip code. The user receives a message on her cell phone on Monday, Wednesday, and Friday every week timed to her due date or baby's birthday. A user can sign up at any time during pregnancy or the baby's first year of life and can cancel at any time.

The primary target audience for text4baby is women who may be at higher risk for poor health outcomes and may have problems accessing health information: young women (younger than age 25 years), low-income women, and women of color, such as women who identify as African-American or Hispanic/Latina. To ensure that text4baby is accessible to mothers of all income levels, CTIA—The Wireless Foundation worked with the U.S. wireless phone companies to waive all text messaging fees associated with the program.

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Text4baby Content

In the first phase of the program, an interdisciplinary team of clinicians, medical epidemiologists, public health practitioners, and communications experts identified potential topics for inclusion. Key sources included federal government materials (e.g., <http://www.cdc.gov>, <http://www.womenshealth.gov>) and national medical association guidelines (e.g., American College of Obstetricians and Gynecologists [<http://www.acog.org>]), American Academy of Pediatrics (AAP; *Bright Futures Guidelines for Health Supervision of Infants, Children, and Adolescents*, 3rd ed.). The topics were prioritized based on public health importance (e.g., the number of mothers and babies affected), health disparities, and the strength of the supporting evidence.

Text4baby messages are 160 characters in length, and each message includes "Free msg" at the beginning of each text, as required by the Mobile Marketing Association. Messages are available in English and Spanish and are written at a sixth grade reading level. Text4baby messages have action-oriented educational content, and many include phone numbers connecting users to resources for more information or for help. There are 114 messages included in the pregnancy protocol and 159 messages in the infant protocol. As of January 2012, 28 million text messages had been sent to users. The text messages provide information on a variety of topics critical to maternal and child health, such as prenatal care, influenza, immunization, developmental milestones, breastfeeding, safe infant sleep, injury prevention, mental health, and tobacco use. Visit <http://www.text4baby.org> for a comprehensive list of topic areas. Sample prenatal messages include the following.

- Free msg: Even if U feel great, a pregnant woman needs checkups with a Dr./midwife (CNM/CM). For help with costs, call 800-311-2229.
- Free msg: A seat belt protects you & your baby. Shoulder belt goes between your breasts & lap strap goes under your belly (not on or above). Wear it every time.

Sample infant messages include the following.

- Free msg: Babies sleep most safely on their back in a crib. No stuffed animals, blankets or pillows in the crib. They can cause babies to suffocate.
- Free msg: Your baby is developing a sense of humor & enjoys hearing many sounds. Sing, click your tongue, whistle or make animal noises. Your baby will love it!

Subscribers to text4baby also receive ad hoc alerts to raise awareness about critical new issues or policies, such as the

2012 pertussis outbreak, sleep positioners, and crib bumper warnings. In March 2011, text4baby sent an alert with the revised AAP car safety seat guidelines:

- Free msg: Breaking news! The American Academy of Pediatrics announced new car seat guidelines. Kids should now ride in rear-facing car safety seats until AGE 2.

In the fall of 2011, text4baby introduced a new enhancement to the service aimed at reducing barriers to influenza immunization by providing educational messages and appointment reminders to currently enrolled subscribers. On October 27, 2011, 96,070 text4baby users received a message asking if they were planning to get a flu shot this season. A total of 29,316 people responded; of respondents, 40% reported that they had already received the shot and almost 30% said they were planning to get it.

On an ongoing basis, HMHB is responsible for ensuring the medical accuracy of the text4baby content, developing the text-length messages, and coordinating content review by federal agencies, professional organizations, and health care providers. The Office of the Secretary, HHS, is a program partner and has designated a lead scientist (J.S.K.) in the Division of Reproductive Health, Centers for Disease Control and Prevention (CDC), to provide scientific support and content expertise.

It is a program priority that messages be relevant, clear, understandable, and actionable by mothers of all literacy levels. The Health Literacy Team at Emory University School of Medicine in Atlanta, Georgia, tested a subset of the English messages for overall appeal, readability, and understanding of key messages by pregnant and postpartum women at a large, urban public hospital. The Partida Group in Fresno, California, tested the Spanish messages with pregnant and postpartum women, promotoras, medical interpreters, and translators to assess translation quality and vocabulary and evaluate whether messages are typical or consistent with norms and values of Spanish-speaking cultures/regions.

Public-Private Partnership Model

Text4baby's public-private partnership, which began with the founding partners, has expanded to more than 800 partners from all 50 states and the District of Columbia. Public partners include federal, state, and local government agencies. Private partners include nonprofit and for-profit organizations, such as health plans, corporations, national and local nonprofit organizations, hospitals, universities, media companies, and major medical associations. Details on all text4baby partners can be found at <http://www.text4baby.org>.

Partners have dedicated their time and energy to spreading the word about text4baby through their newsletters and mailings, hosting community events, designing and printing materials, incorporating information into patient care, posting information on Web sites, advertising, and other creative strategies. For example, since 2010, the New York City Department of Health and Mental Hygiene includes a text4baby informational insert with all birth certificates mailed to new mothers in all five boroughs. Immunize Nevada brought together pregnant women and

new mothers for a text4baby dance during a Reno Aces baseball game in June 2011. In January 2012, AAP distributed co-branded text4baby tear pads to 40,000 practicing pediatricians. Hudson Health Plan in Tarrytown, New York, has included information about text4baby in their member and provider newsletters and patient welcome packets and distributes posters and flyers to their network clinics.

The HHS has played a key role in content development, outreach, and evaluation. In August 2010, HHS Secretary Kathleen Sebelius named text4baby as one of three winners of the first HHS *Innovates* award. The award exemplified the essence of the public-private partnership model and was presented to representatives from HMHB, Voxiva, CDC, Health Resources and Services Administration, and the HHS Office on Women's Health. In addition to HHS, other government text4baby partners include the White House Office of Science and Technology Policy, Department of Defense Military Health System, Department of Agriculture, Consumer Product Safety Commission, and Social Security Administration.

Videos about text4baby and our partners' activities can be watched at <http://www.youtube.com/user/text4babyOfficial>.

Evaluation

Process Evaluation. Text4baby collects a user's zip code and due date or baby's birthday. From February 2010 through January 20, 2012, the text4baby service enrolled 279,995 people: 147,558 (52.7%) people signed up to receive pregnancy-focused messages and 132,437 (47.3%) to receive messages focused on baby's first year. Of the users who signed up during pregnancy, 46.9% signed up during the first trimester of pregnancy, based on the due date they entered during registration.

Text4baby has taken a number of steps to gather anecdotal evidence from partners and users. In April and May 2011, an ad hoc text message was sent to more than 69,000 program users in 26 states asking them to call with feedback about text4baby. More than 200 mothers responded; many reported that they learned new information, called help lines, or talked to their doctor as a result of the text messages. Examples of helpful messages were reminders about doctor's visits, immunization, mental health, breastfeeding, developmental milestones, car seat safety, feeding, and safe sleep. Some users also reported that they saved messages with helpline phone numbers for future use.

In discussions with users, one mom said, "Prior to being pregnant, I was a smoker. They actually sent me a text with a phone number to quit smoking. I called the number, and they actually helped me quit. ...If it wasn't for the text, I'd probably be smoking now." Another mom said, "All the messages are right on the dot and reminded me to ask my doctor questions." Other testimonials include:

- "I write down every number that I get texted because I know I'm going to need it."
- "Love that it texts reminders. I have a 5-year-old, so it's been a while and a lot of stuff I've forgotten. I made sure

to ask my doctor for more info after getting the whooping cough message.”

Feedback from partners is positive; text4baby is viewed as a tool to help mothers of all backgrounds. One partner said, “Text4baby gives expectant and new mothers critical information they need so they can take charge of their health and the health of their babies in partnership with their care provider during pregnancy and the critical first year of life.” A breastfeeding expert commented, “Breastfeeding is vitally important for baby’s health but may not be easy for a new mother. Text4baby provides important breastfeeding information and encouragement during important milestones in the first year of a baby’s life.” Another partner said, “Reaching patients via mobile is a great way to encourage healthy behavior. Text4baby hit a home run with this one, getting short, crisp messages to new moms who need/want all the info they can get.”

Outcome Evaluation. The first study findings of the text4baby service were released by the National Latino Research Center at California State University, San Marcos, and the University of California, San Diego, Department of Obstetrics and Gynecology with support from the Alliance Health-care Foundation. This study of text4baby users in San Diego County, California, included in-depth interviews with 38 women and a phone survey with 122 users. The initial (phase 1) evaluation findings indicated that text4baby is increasing users’ health knowledge, facilitating interaction with their health providers, improving their adherence to appoint-

ments and immunizations, and improving their access to health services (Y. LaCoursiere, American Public Health Association poster presentation, 2011).

External evaluations are underway conducted by a variety of public and private partners using different methodologies and populations.

Conclusion

Text4baby delivers health information using an innovative strategy and offers a replicable model for public health action for those with interests in other health issues, such as preconception care. The program’s unique promotional strategy combines grassroots efforts and broad public-private partnerships at local, state, and national levels. Through these extensive efforts by the many dedicated partners, the program has greatly extended its reach. Additionally, the carefully developed, accurate content, which is frequently reviewed and updated by experts, is a key component in its success. The text4baby program continues to demonstrate the power of mobile technology in health care and most importantly reaches mothers with critical and timely health information. . .one text at a time.

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