Centers for Medicare & Medicaid Services
MATERNAL & INFANT HEALTH

Pilot Mobile Health Program: Using mobile technology to reach, educate, and connect pregnant and postpartum Medicaid enrollees

Launched in 2014, the three-year Pilot Mobile Health Program is an innovative approach to engaging pregnant and postpartum women enrolled in Medicaid. The program delivers evidence-based health education messages and links these women to needed community-based resources, using a free text messaging service as the core intervention. It is being implemented with Medicaid agencies in California, Louisiana, Ohio, and Oklahoma. In the first year, progress has included a substantial growth in partnerships to support outreach.

Medicaid and Perinatal Health

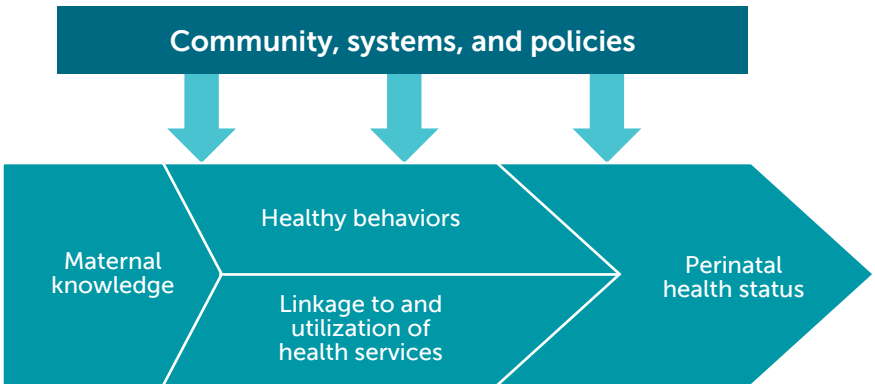
Over the past three decades, the proportion of births covered by Medicaid and the Children's Health Insurance Program (CHIP) has grown from approximately one-fifth to one-half of all births.[1,2] This number will likely continue to grow with the expansion of Medicaid as a result of the Affordable Care Act. As the single largest payer for maternity care, Medicaid plays a large role in perinatal health and health care and has a significant opportunity to improve maternal and infant health outcomes. Moreover, the disadvantaged populations Medicaid serves are among those with a disproportionate burden of poor birth outcomes, such as low birth weight and preterm birth. Such adverse birth outcomes put children at higher risk for serious medical problems in childhood and throughout life.[3,4] For these reasons, Medicaid's efforts to improve perinatal health could have far-reaching effects on reducing health disparities nationwide.

Progress toward improving maternal and infant health outcomes has been slow over the past two decades and the rate of adverse outcomes remains above Healthy People 2020 goals, so there is a growing need for data to identify areas for improvement in maternal and infant health.[5] In particular, the Centers for Medicare & Medicaid Services (CMS) recognizes the importance of addressing areas along the full perinatal health continuum, from maternal knowledge and behaviors, to mothers' access to and utilization of care, to perinatal health status (Figure 1). To this end, CMS has launched several multilevel initiatives, including the Strong Start for Mothers and Newborns initiative, the Quality Improvement 201 Learning Series, and the Maternal and Infant Health Initiative. Under its Center for Medicaid and CHIP Services, one of CMS's recent efforts is a pilot mobile health (mHealth) program in four states: California, Louisiana, Ohio, and Oklahoma.

About the Mobile Health Intervention

With the national rate of cell phone ownership among adults at approximately 90 percent, even among those at the lowest income levels, mobile technology offers a promising vehicle to reach and engage socioeconomically disadvantaged populations such as those served by Medicaid. Members of these populations are more transient and less likely to have access to health information than members of groups with fewer disadvantages.[6,7] However, studies of the effect of mHealth interventions on health knowledge, behavior, and outcomes have been inconclusive. Some have demonstrated positive associations between mHealth and behavior changes (for example, use of oral contraceptives, physical activity, and smoking cessation) but others have shown no effect or inconclusive results.[7,8,9,10]

FIGURE 1. THE CONTINUUM OF MATERNAL AND INFANT HEALTH



Although several of these studies have focused on socioeconomically disadvantaged populations, none have concentrated specifically on the Medicaid population. The limited evidence about Medicaid populations offers CMS an opportunity to further assess the potential of mHealth programs to improve maternal and infant health among Medicaid enrollees. In addition, findings from this study could have further implications for the use of health text-messaging services in the Medicaid population for other health conditions.

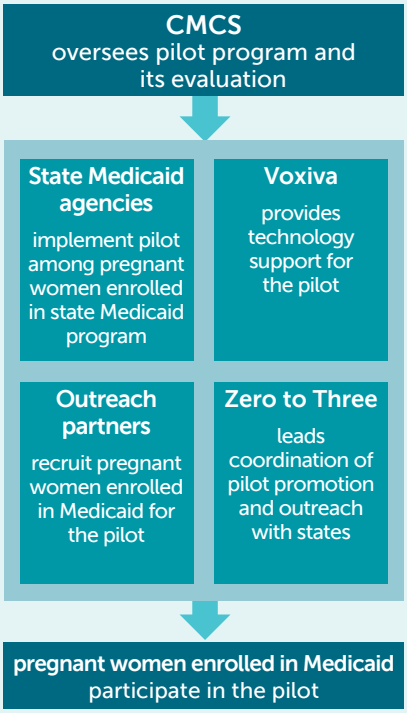
To assess the potential of mobile technology as a tool to engage and improve health outcomes for pregnant women enrolled in Medicaid, CMS announced that it would partner with Text4baby in February 2012. Text4baby is a free service that delivers educational text messages in English or Spanish timed to a woman's stage of pregnancy or the age of her infant. A woman or caregiver can subscribe by texting "baby" (or "*bebe*" for Spanish-language subscribers) to 511411 and providing a zip code and due date or the baby's date of birth. Subscribers can also register on the internet.

Women who subscribe during their pregnancy or first year postpartum receive messages from Text4baby about critical health topics such as prenatal care, smoking cessation, alcohol and substance abuse, emotional well-being, nutrition and physical activity, labor and delivery, breastfeeding, developmental milestones, immunizations, and safe sleep. The text messages also provide toll-free numbers or web page links to connect subscribers to resources in the community such as Medicaid, the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), and medical home providers; about half of the messages include such links. Women may also use the service to set appointment reminders and respond to survey questions about their pregnancy and postpartum experiences. Subscribers may discontinue the service at any time by texting "stop" in response to any Text4baby message.

Implementation of the Pilot Mobile Health Program

CMS contracted with Voxiva, the wireless technology service, to include Text4baby as part of the pilot in August 2013 (Figure 2). The nonprofit organization Zero to Three works as an integrated team with Voxiva to support the technology, coordinate outreach activities, and provide technical assistance to participating state Medicaid agencies. Medicaid agencies in California, Louisiana, and Oklahoma joined the pilot program in January 2014 and Ohio joined in March 2014. These Medicaid agencies work to integrate Text4baby into their processes to complement their states' maternal and infant health activities. Partnerships with outreach organizations in each state were then established to conduct on-the-ground recruitment of pregnant Medicaid enrollees into Text4baby. The key implementation activities have included customizing Text4baby for the pilot, identifying outreach partners, creating technical assistance and support processes, and executing monitoring and evaluation activities.

FIGURE 2. STRUCTURE OF THE PILOT MOBILE HEALTH PROGRAM



Customizing Text4baby. To address CMS's maternal and infant health priorities, Voxiva tailored several modules of the Text4baby messaging service, including those related to smoking cessation, reducing early elective delivery, ensuring appropriate postpartum visits, pregnancy risk assessment, and 17P/progesterone treatment to delay preterm birth. In addition, a health insurance coverage module asks subscribers their insurance type (response options include no health insurance, employer or union, Medicaid, veteran, military, or other). Text4baby sends the telephone number for the state Medicaid agency to subscribers who have no insurance. This module serves to (1) identify Medicaid enrollees among subscribers and (2) link eligible but uninsured subscribers to Medicaid coverage. States and outreach partners also provide state contact information for local community resources, create messages about specific services offered as part of Medicaid health plans, and coordinate messages with other state efforts and priorities.

Identifying outreach partners. States engaged in several activities to develop partnerships for the pilot, including delivering presentations at trainings or conferences, disseminating information about the pilot through newsletters from state agencies to local agencies, leveraging Text4baby county-level coalitions to incorporate the pilot into their activities, and developing pilot promotional materials for partners. Partners included a wide variety of state agencies and organizations, such as state and local health departments, state maternal and child health agencies, Medicaid managed care organizations, Perinatal Quality Collaboratives, state Strong Start projects, WIC, and Healthy Start (Table 1).

Providing technical assistance and support. Voxiva and Zero to Three have provided various types of technical assistance and support to state Medicaid agencies including individual monthly implementation strategy meetings, site visits, and a quarterly presentation to all states on the pilot's progress using Text4baby service data. Voxiva also assigns an outreach manager to work with each state and coordinate with its outreach partners and providers on the implementation of the program.

Monitoring and evaluation activities. Priority outcomes for measurement include those related to enrollment in Medicaid among pregnant women, frequency and timeliness of prenatal care, pregnancy risk assessment, smoking during pregnancy, early elective delivery, cesarean section, low birth weight, postpartum care, well-child visits, breastfeeding, family planning, and subscription to and use of Text4baby. To generate these measures, the program will use several types of primary and secondary data, including Medicaid enrollment and claims files, vital records, Text4baby administrative data, and qualitative data from

Table 1. Key outreach partners for the pilot mobile health program, by state

	California	Louisiana	Ohio	Oklahoma
State and local agencies	• State Department of Public Health • Local health jurisdictions (counties) • Maternal, Child, and Adolescent Health	• State Department of Health and Hospitals • Maternal and Child Health coordinators, Region 1 (New Orleans) and Region 2 (Baton Rouge) • Office of Public Health, Bureau of Family Health	• State Department of Health	• State Department of Health • Maternal and Child Health • Immunization Service • Oklahoma City County Health Department • Tulsa County Health Department
State and local programs and initiatives	• Comprehensive Perinatal Services Program • Black Infant Health • Covered California • First 5 California (counties) • Home visiting • Smokers' Helpline • State WIC • WIC local programs	• Centering Louisiana • Reproductive health units • WIC	• Help Me Grow Home Visiting Program • Ohio Collaborative to Prevent Infant Mortality • Ohio Infant Mortality Reduction Initiative • Ohio Perinatal Quality Collaborative • WIC	• Central Oklahoma Healthy Start • Family Expectations • George Kaiser Family Foundation • Infant Crisis Services Center • March of Dimes, Oklahoma Chapter • Strong Start Oklahoma • Smart Start Oklahoma • The Office of Perinatal Quality Improvement • WIC
Medicaid managed care plans	• HealthNet • CalViva • LA Care • CalOptima • Molina • Partnership Healthplan	• Aetna Better Health • Amerigroup Louisiana • AmeriHealth Caritas Louisiana • Louisiana Healthcare Connections • UnitedHealthcare	• CareSource • Buckeye • Molina • Paramount • UnitedHealthcare	*No Medicaid managed care in the state*

Source: Mathematica's summary of presentations on the pilot mHealth program provided by Voxiva.

Notes: Agencies and organizations in these tables represent core implementing partners. Programs are listed even if they are included under listed agencies to denote all key unique relationships. For example, a state's Medicaid agency might partner with its state department of health on department-wide activities and separately partner with the WIC program, although WIC is part of the state department of health.

interviews with key stakeholders (CMS, Voxiva, Zero to Three, state Medicaid agencies, outreach partners, providers, and Medicaid new mothers). To evaluate the pilot, CMS will use a mixed-methods approach that involves formative and summative components. The formative evaluation includes descriptive quantitative and qualitative analyses to assess implementation. The summative evaluation employs time series and comparison group designs to triangulate the program's effects.

Progress in the First Year

During the first year, the pilot has focused on identifying and engaging outreach partners. Analysis of data provided by Voxiva showed the number of outreach partnerships across the four states increased from 16 in the year before the pilot to 76 in the year after the pilot began.

Along with the rise in the outreach partnerships, the estimated percentage of pregnant women actively subscribed to Text4baby in the pilot states rose from 1.2 percent in December 2013 to 1.4 percent in January 2015—an increase from 7,497 pregnant active subscribers in December 2013 to 9,023 active pregnant subscribers in January 2015 across the four states. A large influx in Oklahoma in October 2014 accounted for the observed increase in subscription; the influx corresponded to batch enrollment following broadcast messages to pregnant women enrolled in Medicaid by Oklahoma's Medicaid agency. In contrast, the Text4baby subscription rates in the other three pilot states—California, Ohio, and Louisiana—changed little after the launch of the pilot.

About 41 percent of all pregnant Text4baby participants subscribed during their first trimester, 34 percent in their second trimester, and 25 percent in their third trimester. Women who subscribed received a little more than 50 percent of the core messages that they could receive and about two-thirds of them stayed subscribed through their due date.

During the pilot's subsequent years, states will continue to increase coordination with outreach partners to enhance the strategies for recruiting and engaging pregnant women enrolled in Medicaid in the pilot. The evaluation will involve linkage of Medicaid, vital records, and Text4baby administrative data to facilitate further analysis of outcome measures.

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"It was prepared by So O'Neil, Keith Kranker, George Kafkas, and Margo Rosenbach, Mathematica Policy Research.

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For questions about the Pilot Mobile Health Program, please email Lekisha.Daniel-Robinson@cms.hhs.gov. For more information about the Center for Medicaid and CHIP Services' maternal and infant health initiative, please go to http://www.medicaid.gov/medicaid-chip-program-information/by-topics/quality-of-care/downloads/mih-initiative-fact-sheet.pdf.