

Health IT improves engagement in preconception health to reduce racial disparities

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New research from Boston Medical Center highlights the benefits of using health technology to engage African American and Black women earlier in preconception care in an effort to close the gap on racial disparities in birth outcomes and maternal mortality. Published in *The Lancet Digital Health*, findings showed that using Gabby, an online health technology system that delivers simulated care, increased the rate of maintaining and acting on identified preconception care risks by 16 percent after six months, compared to patients receiving a letter listing risks and suggesting a follow-up with a clinician. The results were maintained after 12 months.

In the United States, Black women have more than two times the [increased risk](#) of delivering a low birth weight infant, and four times the risk of maternal mortality as compared to [white women](#). To address these racial disparities, researchers used the [health information technology](#), Gabby, to help communicate key [health](#) messages to overcome barriers to providing [health education](#) and counseling. Gabby, an embodied

conversational agent with computer-generated characters, simulates face-to-face conversation, allowing women to select the risks they want to discuss, learn about the importance of preconception health and listen to advice on how to take action.

"There is an overarching need to test new interventions in this high-risk population of women," said Brian Jack, MD, a family medicine physician at Boston Medical Center and director of the Boston University Center for Health System Design & Implementation. "It is now well established that mitigating a wide array of health risks at the time of conception can have profound and enduring effects not only on the health of the woman and her newborn, but also on the long-term health of children into adulthood. It is an important finding that a health information technology system can help to reduce these risks during the preconception period."

Prenatal care comes too late to impact the most critical time of embryonic development, especially for women who enter pregnancy with pre-existing conditions that could impact the health of both mother and baby. These conditions include physical and behavioral health conditions, exposure to risky medications or environmental conditions, genetic disorders, [substance use disorder](#), unhealthy diet or weight, domestic abuse, or other concerns. By interacting with women to identify progress, give feedback and assess readiness, Gabby creates a customizable list of identified preconception care risks to assist in tracking progress.

The randomized trial included 528 women aged 18-34 who self-identified as African-American and/or Black and not pregnant, from 35 states around the United States. The women who

received the intervention were provided with access to Gabby, that assessed 102 preconception risks and delivered 12 months of tailored dialogue using synthesized speech, nonverbal behavior, visual aids, and health behavior change techniques. The women who were a part of the control group received a letter listing their preconception risks and encouraged them to talk with a clinician.

"We wanted to create a way for patients to take control of their health outside of the doctor's office," said Jack, also a professor of family medicine at Boston University School of Medicine. "A digital conversation agent like Gabby allows for 24/7 access to accurate health information delivered through interactive dialogue based on best clinical practices."

Scalable health information technology like Gabby could be used as a population health tool to assist health systems to deliver preconception care to eligible women. It could also be used to assist clinicians by collecting data ahead of visits, informing patients of risks, improving patient-centered discussions, and directly addressing clinician time restraints.

More information: Brian W Jack et al, Improving the health of young African American women in the preconception period using health information technology: a randomised controlled trial, *The Lancet Digital Health* (2020). DOI: [10.1016/S2589-7500\(20\)30189-8](https://doi.org/10.1016/S2589-7500(20)30189-8)

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