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A smartphone app to improve engagement in HIV care for peripartum women – new trial

With more than seven million HIV-infected citizens, South Africa has one of the largest and arguably most successful antiretroviral therapy (ART) programmes in the world. Continuous involvement in this programme has the potential to increase the life expectancy of those living with HIV by more than a decade. However, sustaining engagement along the HIV care continuum has proven challenging and there is the risk that many may disengage and be lost to follow-up care.

Postpartum women and their infants in South Africa are known to be at high risk of dropping out of HIV care after delivery and are frequently mobile. A new randomised controlled trial involving a smartphone app – CareConekta – aims to investigate and address this risk during the peripartum period (the time shortly before, during, and after giving birth) by investigating the feasibility, acceptability and initial efficacy of using CareConekta to improve this engagement.

The app was initially devised by University of Cape Town academics Dr Tamsin Phillips and Professor Landon Myer, and Assistant Professor Kate Clouse from Vanderbilt University. It sends regular “heartbeat” signals from the phone’s GPS system to provide the participant’s current location (randomly selected within one kilometre to protect privacy) to facilitate engagement with HIV care for women who move out of the area.

Knowledge of traveling participants allows the investigators to intervene in real time; thus, if the participant in the intervention arm travels more than 50 km outside the study area for more than seven days, the app will automatically notify the participant of available care facilities near her new location.

As lead investigator in South Africa, Phillips shared why this research is important. “There is urgent need for interventions to support ongoing engagement in care during and after pregnancy to prevent transmission of HIV to the baby and ensure the health of the mother. This project uniquely allows us to explore the impact of mobility on engagement in HIV care and the ability for real-time intervention to support continuity of care during times of mobility.”

“Although not everyone owns a smartphone now, the use of smartphones is growing even in low-resource settings with great potential for health interventions. The lessons

we're learning about developing and implementing smartphone-based interventions in this setting will be incredibly valuable for future work in this area," she said.

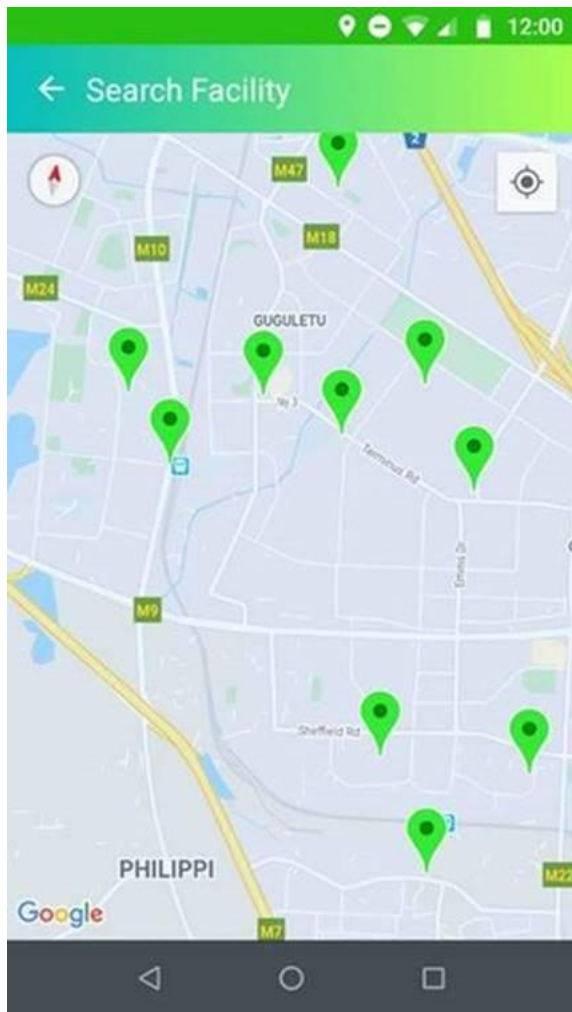
While many mHealth interventions use SMS technology for scheduled one- or two-way messaging, smartphone apps have the advantage of being able to respond to or trigger interventions based on changes in indicators such as location. The CareConekta app thus allows for real-time intervention if needed and study staff may contact the traveling participants through phone calls and/or WhatsApp to assist in linkage to care.

During the three-year randomised controlled trial, two hundred women who receive care at the Gugulethu Midwife Obstetric Unit (MOU) will be enrolled in the study. And investigators will use GPS location (mobility) data collected through the CareConekta app; participant responses to questionnaires at the enrolment and follow-up visits, and during a brief postpartum interim phone call; and post-study reviews of participant electronic and paper medical records to assess their results.

As with all research, informed consent is of utmost importance to the researchers. Phillips added: "We're very aware of the privacy concerns around the data we are collecting, in particular the GPS data. We don't need to know exactly where a woman is so we're collecting "fuzzy" location, a randomly selected point within 1 km of the actual location. All participants provide written informed consent before enrolment to ensure they understand the purpose of the study, what is expected from them if they decide to take part, the data we're collecting, who can access it and what we're using it for, and all the potential risks and benefits of participating.

"On completion of this study we'll have a good understanding of the feasibility and the acceptability of the CareConekta app. Next steps will be to refine the app based on these findings and to conduct a larger trial of the intervention across different geographic regions. We've started piloting the app among pregnant and postpartum women living with HIV, but we expect the app will have applications in other populations and for other health conditions," said Phillips.

[Read the study protocol.](#)



Screenshot from the CareConekta app

Photo: Supplied

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From left to right: Kate Clouse, Sindiswa Madwayi (research assistant), Megan Mrubata (research assistant), Sandisiwe Noholoza (study coordinator) and Tamsin Phillips

Photo: Assistant Professor Kate Clouse

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