

## Telemedicine system for improving maternal and neonatal health: an interventional trial in Tanzania

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### Background:

In Tanzania, maternal and neonatal mortality is still high, mainly due to poor quality of Antenatal Care (ANC) and Post Natal Care (PNC) services. PANDA (Pregnancy And Newborn Diagnostic Assessment) is a telemedicine system that uses mobile technology to perform adequate ANC/PNC visits according to WHO recommendations. Two pilot studies showed that PANDA is efficient in providing high-quality ANC and facilitating the continuity of care for underserved communities.

This project aims at testing the impact of PANDA in Tanzania for improving the adherence to both ANC and PNC WHO protocols.

### Methods:

This case-control study is conducted in two different areas of the Mufindi district, Tanzania. The PANDA system includes: - solar backpack containing instrumentation for communicable and non-communicable diseases screening;

- smartphone with an icon-based application, including 5 modules: socio-demographic information, medical history, clinical screening, health education and birth plan, postnatal care;
- hospital database with the data collected during the visits.

**Results:**

At present, 405 women (1,066 ANC visits) were recruited in the implementation site and 200 in the control site. The preliminary results show that 60% of women attended  $\geq 2$  ANC visits in the implementation site. In this area, 52 women were found positive for HIV and 4 for syphilis. Data collection in both the sites is ongoing.

**Conclusions:**

PANDA system allows the creation of electronic patient records and the identification of the high-risk pregnancies. The collection of population data is useful for health planning policies. The easy-to-use and easy-to-understand graphic interface overcomes language and literacy barriers and facilitates comprehension of women and compliance to visits. This can improve the quality of ANC/PNC services with an expected reduction in maternal and neonatal mortality.

**Key messages:**

- PANDA system increases access to high-quality ANC for pregnant women in low-income countries, improving the adherence to WHO recommendations.
- The telemedicine system PANDA is a useful tool for public health policy-makers, as it allows the collection of previously unavailable population data.