


Volume 14, 01 November 2014

Publisher: Igitur publishing

URL: <http://www.ijic.org>

Cite this as: Int J Integr Care 2014; Inter Digital Health Suppl; [URN:NBN:NL:UI:10-1-116517](https://nbn-resolving.org/urn:nbn:nl:ui:10-1-116517)

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Poster Abstract

Missing mums-to-be & smartphone technology: Addressing antenatal clinic DNAs with novel uses of a mobile application

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Abstract

Introduction: A student-led initiative has developed a free smartphone application to be piloted at the Women's & Children's Hospital (WCH) within the Hull and East Yorkshire NHS Trust to improve attendance at antenatal clinics following consultation with the patient population and local clinicians. The application interfaces directly with local public transport service resources to aid geographical access to antenatal clinic in addition to providing appointment reminders, a pregnancy tracker and basic healthcare information.

Background & Context: Our review of antenatal clinic at the WCH identified an almost 6% Did Not Attend (DNA) rate costing the trust a direct cost of around £54,000/annum(1). This cost is in addition to the various negative health outcomes observed when women fail to attend regular antenatal clinics. The Saving Mother's Lives report(2) showed that a third (32%) of the women who died in the period 2006-2008 failed to regularly attend antenatal appointments. The top three direct causes of maternal death in the UK are all associated with better health outcomes for the mother who regularly attends antenatal appointments(2). The same can also be said for the top three indirect causes of maternal death(2). Women who fail to attend any antenatal appointments have increased risk of low birth weight children, foetal death & neonatal death (5.46, 12.05 & 10.03, odds ratios compared to control, respectively)(2).

Our team hypothesised that offering a free smartphone application with appointment reminders and public transport data could potentially improve attendance at clinics following extensive consultation with local clinicians and patients. We carried out a survey amongst women attending the antenatal service to assess interest and viability of the project. We determined there was an 89% smartphone adoption rate amongst this population (n= 91), with 84% identifying that use of a smartphone app would be useful. 9% of the population was identified as: having a smartphone, finding the concept useful & also having issues with attending antenatal appointments due to

geographical access. All patients who indicated difficulties in attending clinic were within this category.

Innovation: We developed a smartphone application that will directly interface with NHS systems to help the patient to keep track of their appointments for smartphones running Google Android or Apple's iOS. We have integrated data from Travel South Yorkshire to offer public transport information based on GPS data obtained in real time from the smartphone. The mobile application also offers important health information to the woman regarding her pregnancy. This is all displayed in an intuitive format with a graphical representation of the woman's journey through pregnancy.

Impact: By addressing the needs of the patient sub-population identified through our questionnaire (i.e. geographical access issues) we hope to improve patient outcomes and decrease financial losses by improving attendance rates at antenatal clinic at the WCH. We hope to integrate this application into a suite of mobile applications currently being developed by the Hull & East Yorkshire NHS Trust and upon its deployment we aim to audit its effectiveness in a clinical setting.

Keywords

antenatal; smartphone; pregnancy
