Implementation of Smartphone Based BG Monitoring System for Gestational Diabetes

The GDm Health Management System is an innovative approach to managing gestational diabetes mellitus (GDm) using smartphone technology. It was developed by Oxford University Hospitals Trust and the University of Oxford. The system won the Best Digital Initiative trophy at the prestigious Quality in Care Diabetes Awards in October 2014.

The conventional management of diabetes during pregnancy requires women to attend weekly or fortnightly outpatient clinics. In contrast, the GDm Health Management System provides a convenient, reliable and accurate way for women with gestational diabetes to monitor their blood glucose using a glucose meter and a smartphone running a pre-loaded software application. Blood glucose readings are automatically transferred from a bluetooth enabled glucose meter to the phone and, via a 3G/4G network, to a secure purpose-built website hosted within the NHS. The clinical team can review the blood glucose readings and quickly respond to the patient via text with advice on dose titration or a request to call the specialist diabetes midwife if appropriate. Details of the GDm Health Management System are included in this video 'What Does The Digital Revolution Mean For our Health?'

At the time of writing, with the support of the AHSN diabetes network, the system has been successfully implemented in Oxford and two other NHS trusts in the Thames Valley region. An interim assessment of deployment at Royal Berkshire Hospital suggests a 26% reduction in Outpatient Clinic visits over 6 months and clinical staff reported spending significantly less time in correspondence with patients following clinic appointments. Evaluation at other trusts is ongoing.

Benefits

- **Better management of the condition**: health care professionals can respond rapidly and improve glycaemic control without face-to-face contact.
- **Improved patient experience**: feedback from women attending the Royal Berkshire Hospital included comments that the system was ‘very convenient,’ ‘easy to understand’ and that it was ‘encouraging to receive text messages’.
- **Time and cost savings for health care providers and patients**.
- **Reduced risk of errors in data entry**: the use of Bluetooth allows automatic real-time upload of readings, so women don’t need to record readings manually or regularly upload data.
- **Fosters team-based clinical care and better documentation**: feedback from clinicians “The highest standard of note taking and clinical information clearly adds to patient safety and continuity. I can see what my colleagues have been doing.”
- **Patient empowerment**: women with gestational diabetes are actively involved in their medical management and have two way communication with healthcare professionals.

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(3) What does the Digital Revolution mean for our health? The Astellas Innovation Debate published Jan 26 2015 [https://www.youtube.com/watch?v=m-fnsSSFZ4](https://www.youtube.com/watch?v=m-fnsSSFZ4)