Mobile Diabetes Management System for Insulin Dose Adjustment in Type 2 Diabetes for Specialist Outreach and Diabetes Telehealth Service (REMODEL-IDA): A Pilot Randomised Controlled Trial

Anish MENON[1], Len GRAY[2], Farhad FATEHI[2], Dominique BIRD[2], Mohan KARUNANITHI[3], Anthony RUSSELL[4]

1. Centre for Online Health, The University of Queensland, Queensland, Australia
2. Centre for Health Services Research, The University of Queensland, Queensland, Australia
3. CSIRO, Queensland, Australia
4. Princess Alexandra Hospital, Metro South Health, Queensland, Australia

Background
Type 2 diabetes (T2DM) is a progressive disease that involves step-wise addition of multiple glucose lowering agents over time to achieve adequate individual glycaemic targets, with insulin being the most potent among them. Insulin initiation and/or titration for type 2 diabetes (T2DM) is a resource intensive process through an insulin dose adjustment (IDA) service led by a credentialed diabetes educator (CDE). There are limited resources in a regional and primary care setting.

Hypothesis and Aim
We hypothesize that eHealth offers an opportunity to transform the current model of IDA service delivery. The new model aims to improve glycaemic management, healthcare service delivery efficiency and the patients' experience.

Method
We have developed a Mobile Diabetes Management System (MDMS) which has a patient front-end capability that enables patients to upload and view monitoring data and provides auto-generated text advice around their glycaemic management. It features a clinician portal to monitor and manage patients' care. A two-arm pilot randomised controlled trial (RCT) will be conducted for 3 months with 44 type 2 diabetes participants, randomised at a 1:1 ratio to receive either the MDMS model of care (intervention) or routine care (control), in diabetes specialist outreach and telehealth clinics. These clinics serve disadvantaged and regional communities. The routine care arm will be followed up via telephone calls. The primary outcome is change in HbA1c, a marker of glycaemic management, at three months. Patient and healthcare provider satisfaction, and time required by health care providers in both arms will be collected.

Conclusion
This pilot study will inform retention, acceptability and glycaemic outcomes from people with T2DM, and clinicians to guide the conduct of a large pragmatic RCT across regional and remote Queensland, Australia. This has the potential to be integrated into routine diabetes care and build capacity for regional Australia.

Correspondence:
Anish Menon
Centre for Online Health, The University of Queensland, Queensland, Australia
anish.menon@uq.net.au