Using a Multi Matrix Telehealth Model in Gestational Diabetes Care

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Introduction:

Incorporating modern telecommunications within the clinical setting is advantageous in addressing the balance between increasing prevalence of disease, patient safety, self-care and health economics. The Quality Function Deployment tool was adapted and identified the 'Simple Telehealth' Florence system, a free mobile phone based text messaging secure support system offering prompt encouragement and assistance as a suitable adjunct to the antenatal service.

Aims:

(1) Test the feasibility of 'Simple Telehealth' in women with gestational diabetes (GDM) and mild pregnancy induced hypertension (PIH).
(2) Assess patients' treatment satisfaction with this novel method of monitoring, using the Diabetes Treatment Satisfaction Questionnaire * DTSQ.
(3) Evaluate the potential economic benefit of enrolling patients onto this system in conjunction with routine antenatal diabetes care.

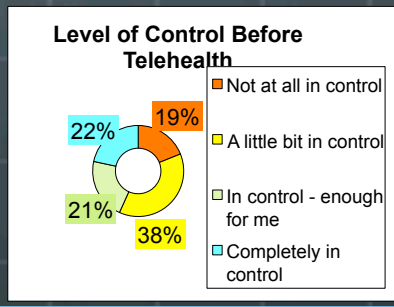
Methods:

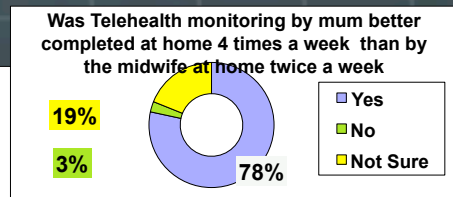
A prospective pilot into the effectiveness of incorporating "Simple Telehealth" technology within a busy hospital antenatal clinic was undertaken. Consecutive patients fulfilling NICE criteria diagnosis for GDM and/or mild PIH were offered enrolment along with usual antenatal diabetes care. Outcomes were evaluated with DTSQ*, (*Clare Bradley 1.12.93: Diabetes Research Group, Department of Psychology, Royal Holloway, University of London, Egham, Surrey, TW20 0EX), attainment of physiological treatment targets, and the potential economic benefit from a reduction in frequency of out patient attendance whilst maintaining a high degree of safety.

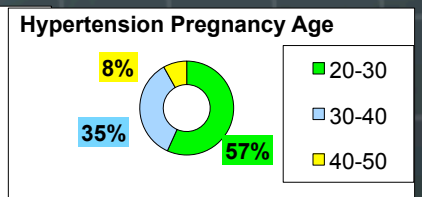
Results: GDM

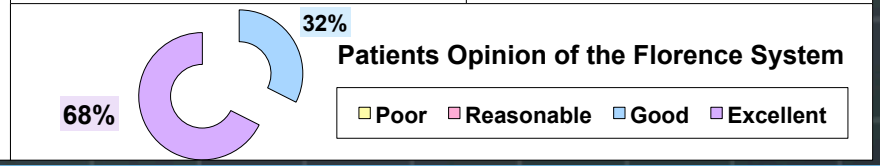
Average recruitment 8 patients/month, for GDM mean duration of 'Telehealth' use was 14 weeks (range 6 – 24). Patient Treatment Groups included 40% Lifestyle + Dietary Modification only, 30% Lifestyle + Metformin and 30% Lifestyle + Metformin + Insulin. Diabetes Treatment Satisfaction Questionnaire showed high figures for satisfaction, convenience, flexibility with treatment and enhanced understanding of diabetes. One patient withdrew. There were no adverse outcomes reported, the system was robust enough to alert clinicians to emergency situations. Significant cost saving were attained. The total cost of 'Simple Telehealth' was £80/patient/yr. Average number of hospital visits prevented per patient was 3 during a single pregnancy assuming a single £80/visit giving total annual saving of over £1000.

Results: PIH









"The introduction of a simple everyday method of communication such as mobile phone text messaging into the management process for women with diabetes of pregnancy has already demonstrated many advantages to both "mother to be" and healthcare professionals at City Hospitals Sunderland alike".

"The key to successful Telehealth is to work with clinicians to develop a pathway that delivers benefits for patients and clinicians. The Gestational Diabetes Pathway uses Simple Telehealth which is affordable, sustainable and fits well with patients lifestyle, giving them more control of their condition. The interim results have shown that using Telehealth with the right patients brings financial savings to organisations and frees up clinic time to deal with the most severe cases".

Conclusion: In conclusion patient delivered home monitoring for mild PIH and GDM using telehealth technology is deliverable, pregnant women find the technology easy to use and the concept is highly acceptable, initial data suggests the approach is safe and there maybe economic benefits for the National Health Service. **Future:** Our work has been presented at both national & international meetings. It has been incorporated within a Government White Paper on Safe and Sustainable Healthcare & the future integration of technology within the NHS – Presented by Baroness Julia Cumberlege and Michael Dixon May 2014. **Contact:** Rahul.nayar@chsft.nhs.uk