**Telephone clinic for renal transplant recipients – patient co-designed quality improvement project**

**Background:** Kidney Transplant patients in our regional centre travel long distances to attend routine hospital follow up appointments which incur associated travel costs and productivity losses as well as adverse environmental impacts. A significant proportion of these patients, who have stable kidney function may not require physical examination and could potentially be managed through telephone consultations.

**Methods:** We used a Quality Improvement approach between August 2016 and July 2017, supported by the local Academic Health Sciences Network to test the introduction of a telephone clinic service in our centre. The project was co-designed with patients who contributed to developing the service model, as well as patient information leaflets and a patient satisfaction questionnaire. As not all patients wanted a telephone consultation, we allowed clinically appropriate patients to opt –in for the service. Telephone consultations were alternated with routine face to face clinic appointments. Protocols were developed to facilitate blood tests in primary care and to ensure availability of these tests results for the telephone consultations. We utilised the Institute of Healthcare’s Improvement’ model to lead iterative Plan Do Study Act (PDSA) cycles to test improvement ideas. The focus was initially on co-designing and producing the delivery model in the set up phase, and then subsequent PDSA cycles helped to embed the model in service delivery. In the set up phase, the clinics were conducted once a month by one consultant. During the embedding phase, the clinics were conducted twice a month and rolled out to other consultant colleagues and transplant nurse specialists. Several PDSA cycles were undertaken to establish patient suitability; amendments to instruction to patients and General Practices on undertaking blood tests; regular liaison with local pathology laboratories to ensure correct blood tests are performed and centralising the tele-clinic appointment booking process. Data on outcome, process and balancing measures were collected as part of the project.

**Results:** 19 tele-clinics were held involving 168 kidney transplant patients (202 tele-consultations). Patients who had a functioning kidney transplant for at least 1 year with no rejection episode or change of immunosuppression medication within the previous 6 months and stable graft function were offered tele-clinics. Of those approached, 47.6% agreed to take part in tele-clinics. Reasons for refusal included preference for face to face contact (19.5%) and easy hospital access (12.5%). 2.9% of tele-clinic patients did not attend compared to 6.9 % for face-to-face appointments.

Improving both blood test quality and availability for the tele-clinic was a major focus of activity during the project. Blood test availability and quality for tele-clinics improved from 29 % to 90.9%. This was however lower than that for face-to-face clinics (96.5%). Average consultation time for tele-clinics was 10.3 minutes.97.9% of respondents were satisfied overall with their tele-clinic and 96.9% of the patients would recommend this to other patients. The tele-clinic saved 3,527 miles of motorised travel in total. This equates to a saving of 1,035kgCO2. The average travel time saved by patients by doing tele-clinic was 2 hours/patient. There were no unplanned admissions within 30 days of the tele-clinic appointment. The service provided an immediate saving of £6060 for commissioners due to reduced tele-clinic tariff negotiated locally (£30 less than face to face tariff).

**Conclusions:** The project has shown that tele-clinics for kidney transplant patients are deliverable, safe and well received by patients with a positive environmental impact. The importance of primary care engagement to undertake blood tests is crucial to the sustainability of this service. The project has also delivered modest financial savings and has the potential to be rolled out to other centres if a tele-clinic tariff that is cost neutral to all stakeholders can be negotiated nationally.