

NHS England - TECS CASE STUDY 003: Telehealth monitoring for early signs of urinary tract infection in vulnerable people

Location and commissioners: Kernow CCG (Cornwall)

Provider: Tunstall / Myclinic

Ambition level: 1,2

Background

Kernow CCG wanted to improve the diagnosis and management of urinary tract infections (UTI) in patients, by closer monitoring of answers to questions relating to classic and atypical symptoms. Both patients and clinicians are better able to understand the symptoms enabling better informed decision making in the management of this condition – leading to reduced GP and out of hours appointments and unplanned admissions to hospital as well as a better experience of care for patients in their own homes.

How does it work?

The *Myclinic* multiuser system provides the opportunity for patients residing in residential or nursing homes to be included in the trial – using one urine analyser and one Myclinic for several patients, promoting a cost effective and supportive approach to UTI management within the care home setting. The *Mymedic* monitor prompts specific, symptom-related questions, tailored to each patient. They are also provided with a urine analyser. They and/or their carer(s) are educated on using the equipment and then provided with on-going support by the Telehealth Service Team throughout the monitoring period.

The patient is asked questions daily; after they have answered, the information is anonymously transmitted to the secure Freephone server via the patients' telephone landline. The data is observed and monitored by the Telehealth Nurses, who discuss any anomalies with the patient and, where indicated, request that they test their urine using the analyser in the home; this is performed with or without carer assistance as required. The *mymedic* unit is also programmed to independently advise the patient to test their urine if symptomatic, over weekends and Bank holidays.

The analyser provides a print out and if it shows positive to nitrites the patients are advised to follow their agreed management plan, which may include contacting the GP, Nurse, Out of

Hours GP, their local pharmacy or taking their prescribed antibiotics (where previous recurring sensitivities have been identified).

What was achieved? (Also see appendix A)

Over a 2 ½ year period, 104 patients were referred to the Telehealth service and 100 patients received installation of the equipment.

The key findings from the project, which was a QIPP initiative, are: [see appendix A]

- UTI is identified earlier and treatment is started promptly;
- An estimated £155,705.69 has been saved by avoiding 57 admissions from a cohort of 100 patients (accounting for overall telehealth costs), showing a 6:1 investment return.
- The potential for further savings from avoidable admissions can be realised as more patients enter telehealth monitoring.

In order to capture the patient and carer experience, a postal survey was implemented, for the 100 currently active patients – results TBC

Patients have a better experience of care outside hospital and in the community. There is reduced demand for emergency GPs and out of hours services and A&E. Crucially, patients and/or their carers to be supported in better understanding the advised management of the condition.

Encouraging the Keyworkers/GP's to provide a management plan and rescue antibiotics at point of referral/install has helped to cut down time on prescribing to taking antibiotics for confirmed UTI.

Commissioning, procurement, information governance and practical challenges.

Recruiting patients onto the project was challenging, often due to incorrect HRG coding and not enough referrals. However with targeted efforts at GP's, Keyworkers and hospital discharges, referrals increased.

Currently there are 100 urine analysers available to the service and there may come a point where referrals exceed this availability.

It was important to identify patients with formal carers who required assistance to use the equipment. Carers need training in the correct use for the equipment and cleaning process to prevent false positives and to pick up on true infection in a timely manner.

The incidence of false positive results showing on the urine analysers and incorrect use of the equipment has been reduced by several measures. Furthermore, the patient's ability to use the urine analyser has been influenced by factors such as level of understanding, dexterity and mobility.

The team's experiences throughout the pilot have informed changes that need to be made and improved efficiencies. For example, they have provided patients with elasticated covers for their urine analysers to maximise ease of use and optimum cleaning of the analyser.

To date, not all of the 100 patients will have received 12 months of service as yet.

Costings are calculated on provisional data, governed by the national data restrictions following changes to the commissioning bodies. This will be reviewed when the restrictions are lifted.

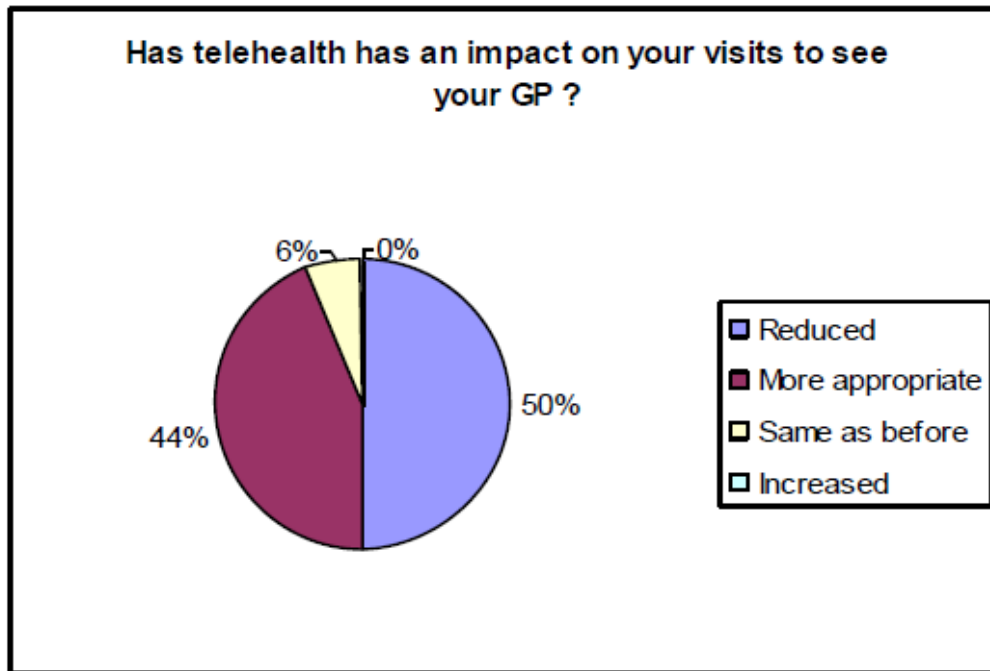
Variables include:

- frequent turnover of care staff in the Community.
- level of previous healthcare training
- effective communication between carer shift changes

Appendix A

Results:

Figure 2

**Financial:**

Cost of Telehealth per patient per year

The average cost of delivery of the Telehealth Service for the UTI pilot, per patient per year is £594 (this equates to £1.62 per patient per day).

This includes:

- the equipment
- processing the referral
- booking the appointment for install, informing the referrer of the date of install.
- installing the equipment/ educating the patient and/or their carer(s)
- delivering the monitoring and support services
- in addition, where applicable following the discharging process and equipment pick up.

In relative terms, a shorter period of monitoring will show a reduced cost, monitoring longer than 12 months would show a greater cost.

The estimated cost saving for the cohort of 100 patients is £179,016.44, which is minus the post-telehealth installation hospital admissions (n=2 at £31,145.67).

The overall cost for the 100 patients for the entire service they received is £23,310.75. Therefore the overall saving is £155,705.69, showing a 6:1 investment return.

The future / recommendations:

- Continue to support UTI management within telehealth
- Embed referral form onto Maxims
- Develop localised UTI clinical pathway informed by best practice
- Explore ways to improve diagnostic accuracy and clinical coding
- Build a patient profile for UTI risk utilising the findings from this project and subsequent primary care data.

Future aspirations include connecting the urine analyser to the Mymedic monitor via wireless technology. Also to have access to single-packaged urine sticks

Relation to other transformational programmes:

QIPP

Links to related information on the programme:

http://www.tunstallwsd.co.uk/Mrs-Llewellyn-Case-Study-v2_FINAL.pdf