

# Home monitoring of kidney function in cancer patients: assessing acceptability and clinical benefit

<b>Submission date</b> 18/06/2019	<b>Recruitment status</b> No longer recruiting	<input type="checkbox"/> Prospectively registered <input checked="" type="checkbox"/> Protocol
<b>Registration date</b> 30/07/2019	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
<b>Last Edited</b> 17/01/2025	<b>Condition category</b> Cancer	<input type="checkbox"/> Individual participant data <input type="checkbox"/> Record updated in last year

## Plain English summary of protocol

### Background and study aims

Current research suggests that people with reduced kidney function may have an increased risk of cancer, for reasons that are not totally clear. When patients with reduced kidney function develop cancer, the treatment options can be limited due to concerns over causing more damage to already damaged kidneys and because the cancer drugs haven't been tested in this type of people. Currently cancer clinical trials exclude people with reduced kidney function from taking part and receiving experimental drugs. This can lead to further reduction in treatment options for people with reduced kidney function and cancer. This study aims to see if monitoring kidney function more frequently in people receiving anti-cancer treatments (that can affect the kidneys) picks up problems with the kidneys quicker and whether it's acceptable to patients to monitor their kidney function in this way at home.

### Who can participate?

Patients aged 18 and over receiving anti-cancer treatment

### What does the study involve?

The study is split into 2 parts. Part A aims to enrol 12 patients to use the device at home when they are receiving their treatment. Participants take a small sample of blood and use a small device to check their kidney function. Using an app on their smartphone they send their result to the researchers who look for evidence of kidney damage. In Part B of the study 30 patients are recruited to use the device and the researchers compare them with 30 patients who are receiving standard kidney monitoring.

### What are the possible benefits and risks of participating?

There are no benefits to participants in taking part in the study. The blood sampling will cause some localised tenderness or a small bruise but otherwise, there are no risks to taking part in this study.

### Where is the study run from?

The Christie NHS Trust (UK)

When is the study starting and how long is it expected to run for?  
May 2019 to June 2025

Who is funding the study?  
University of Manchester (UK)

Who is the main contact?  
Dr Leanne Ogden  
Leanne.ogden@digitalecmt.org

## Contact information

### Type(s)

Public

### Contact name

Dr Leanne Phillips

### Contact details

Manchester Royal Infirmary  
Manchester  
United Kingdom  
M13 9WL  
+44 (0)7875012051  
Leanne.phillips@mft.nhs.uk

## Additional identifiers

Integrated Research Application System (IRAS)  
255751

### Protocol serial number

R119106

## Study information

### Scientific Title

Home monitoring of creatinine in cancer patients: assessing acceptability and clinical benefit

### Acronym

In-Home

### Study objectives

Intensive monitoring of kidney function in patients receiving anti-cancer treatments will lead to earlier detection of acute kidney injury.

### Ethics approval required

Old ethics approval format

## **Ethics approval(s)**

Approved 09/05/2019, NHS REC Greater Manchester East (3rd Floor Barlow House, Minshull Street, Manchester, M1 3DZ, UK; Tel: +44 (0)207 104 8009; Email: a.ecclestone@nhs.net), IRAS: 255751, REC ref: 19/NW/0164

## **Study design**

Single-centre interventional randomised controlled trial with a feasibility run-in

## **Primary study design**

Interventional

## **Study type(s)**

Prevention

## **Health condition(s) or problem(s) studied**

Nephro-oncology

## **Interventions**

Intensive, home-monitoring of creatinine compared to standard renal function monitoring in patients receiving anti-cancer treatments. Randomisation will be 1:1 using an online randomisation tool.

Part A aims to enrol 12 patients to use the device at home when they are receiving their treatment, 3 times per week for 4 weeks, this is in addition to their standard of care monitoring. There is no change to the treatment they are receiving. Participants will take a small sample of blood and use a small device to check their kidney function. Using an app on their smartphone they will send their result to the researchers who will look for evidence of kidney damage.

Part B of the study will have 2 arms. The intervention arm will use the device at home to check their kidney function 3 times per week for 6 weeks. This is in addition to the standard of care monitoring and treatment. The standard of care arm will have standard monitoring during their treatment. Neither arm will have a change to their planned treatment. There is no follow-up period.

## **Intervention Type**

Device

## **Phase**

Not Applicable

## **Drug/device/biological/vaccine name(s)**

StatSensor Xpress creatinine monitoring system

## **Primary outcome(s)**

Part A: Patient acceptance of intensive home-monitoring of whole-blood creatinine, assessed using:

1. Questionnaire and interview
  2. Absolute number of creatinine readings received - expected vs actual
  3. Time sample taken vs. time expected to take
  4. Value sent/received vs. value on device (when downloaded at the end of the study period)
- Assessed at Week 4

Part B: Potential for earlier diagnosis of AKI/change in renal function with intensive home-monitoring of whole-blood creatinine, assessed using:

1. Time from beginning of current cycle treatment to detection of AKI by amended algorithm or clinician/laboratory reading
  2. Severity of AKI at detection (as per Kidney Disease Improving Global Outcomes AKI Work Group staging)
  3. Overall change in renal function from beginning to end of study period
- Assessed throughout study period

### **Key secondary outcome(s)**

Part B:

1. Kidney function assessed at the beginning and end of the study (Weeks 1 and 6)
  2. Quality of life assessed using medical outcomes study short form 36 (SF-36) questionnaire at Week 6
  3. Adherence of patients to intensive home monitoring regimen, assessed using:
    - 3.1. Absolute number of creatinine readings received
    - 3.2. Time sample taken vs. time expected to take
    - 3.3. Value sent/received vs. value on device (when downloaded at the end of the study period)
- Assessed at Week 6

### **Completion date**

30/06/2025

## **Eligibility**

### **Key inclusion criteria**

1. Provision of signed and dated, written informed consent prior to participation in the study
2. Aged at least 18 years
3. Receiving treatment for cancer with potentially nephrotoxic anti-cancer therapies (according to the judgement of the CI)
4. Individuals whose medical team consider to be medically stable and able enough to take part or designated carer who would be able to perform the tasks required
5. Willingness and ability to self-monitor creatinine using device at home or have a designated carer who would be able to perform the tasks required. Part A device will be the NovaBiomedical StatSensor®
6. Access to smartphone and willingness to use, without reimbursement of any potential additional costs incurred, their iOS/Android device for the collection and transmission of information

### **Participant type(s)**

Patient

### **Healthy volunteers allowed**

No

### **Age group**

Adult

### **Lower age limit**

18 years

**Sex**

All

**Key exclusion criteria**

1. Being an employee, or closely linked with an employee, of the device company
2. Judgment by the Investigator that the individual should not participate if they are unlikely to comply with study procedures and requirements
3. WHO performance status > 2
4. Pregnancy

**Date of first enrolment**

01/06/2019

**Date of final enrolment**

30/06/2025

**Locations****Countries of recruitment**

United Kingdom

England

**Study participating centre**

The Christie NHS Foundation Trust

Wilmslow Road

Manchester

United Kingdom

M20 4BX

**Sponsor information****Organisation**

University of Manchester

**ROR**

<https://ror.org/027m9bs27>

**Funder(s)****Funder type**

University/education

**Funder Name**

University of Manchester

**Alternative Name(s)**

University of Manchester in United Kingdom, University of Manchester UK, The University of Manchester, UoM

**Funding Body Type**

Government organisation

**Funding Body Subtype**

Universities (academic only)

**Location**

United Kingdom

## Results and Publications

**Individual participant data (IPD) sharing plan**

The datasets generated during and/or analysed during the current study are/will be available upon request from Dr Leanne Phillips (Leanne.phillips@mft.nhs.uk).

**1.1 Type of study**

Single centre, randomised clinical trial to assess the acceptability and clinical benefit of home monitoring of creatinine by cancer patients

**1.2 Types of data**

Quantitative data - creatinine results from home-based device and laboratory results; urine dipstick and protein creatinine ratio; blood pressure; weight; medications.

Qualitative data – Participant and clinician questionnaire and interview

**1.3 Format and scale of the data**

Approximately 20 creatinine readings per study participant captured in encrypted electronic form.

Baseline data capture in paper workbook and consolidated into excel workbook

Participant feedback from paper-based questionnaires.

Approximately 72 participants to be recruited (30 will be randomised in to the non-device group therefore will not be sending in creatinine readings)

**2. Data collection / generation****2.1 Methodologies for data collection / generation**

Creatinine measurements will be collected by study participants using a point of care creatinine device in their home. These measurements will be transferred to a secure Microsoft Azure environment.

Other data capture in paper workbook and consolidated into excel workbook

**2.2 Data quality and standards**

Participant measured creatinine readings will be compared with the data downloaded directly from the point of care analyser to assess the accuracy of reporting. Each device will be calibrated by the study participant prior to use and has been calibrated with the hospital laboratory.

**3. Data management, documentation and curation****3.1 Managing, storing and curating data.**

A mobile application will be used to capture creatinine readings from a point of care device to

storage in Microsoft Azure environment. These data files are backed up and data is retained or the duration of the study.

### 3.2 Metadata standards and data documentation

The aim of the study is to publish the results of the study, this would include summary data

### 3.3 Data preservation strategy and standards

Anonymised data will be archived with associated meta data

## 4. Data security and confidentiality of potentially disclosive information

### 4.1 Formal information/data security standards

The Digital Experimental Cancer Medicines Team have an information security policy that will be followed.

### 4.2 Main risks to data security

#### • Data Collection:

Participant identification from collected data - the unique participant ID used in the study is pseudonymised and no identifiable data is collected. Likelihood of risk occurring is low

Participant identification by the creatinine images sent in if they contain personal identifiable information in error - all images will be reviewed by the study team and any image that is at risk of identify the patient will be deleted. Patients will receive training on how to use the app and specifically how to take an image of the creatine device. Likelihood of risk occurring is low

#### • Data Access:

MRC Template for a Data Management Plan, v01-1, 10 March 2017 2

Data is transmitted and stored in encrypted form. Access to the data is controlled and can only be authorised by the study data manager.

## 5. Data sharing and access

### 5.1 Suitability for sharing

The purpose of this research and the consent obtained extends only to establishing that the device can be used effectively for home-based creatine readings. Data will be pseudonymised during the study. At the end of the study the data will be anonymised to enable data sharing and protection of patient privacy.

### 5.2 Discovery by potential users of the research data

The results of the work will be published in Open Access journals

### 5.3 Governance of access

The Sponsor is the Data Controller and makes all decisions on data sharing

### 5.4 The study team's exclusive use of the data

There is no exclusivity by the study team over this data. Requests for sharing within the participant consent agreement will be considered by the Sponsor

### 5.5 Restrictions or delays to sharing, with planned actions to limit such restrictions

Requests for sharing within the patient consent agreement will be considered by the Sponsor

### 5.6 Regulation of responsibilities of users

Access will be considered for external users to anonymized data under a data agreement that ensures compliance with the original patient consent agreements

## 6. Responsibilities

The Sponsor is accountable for the information in this study. The Sponsor may delegate information control responsibility to the Chief Investigator

## 7. Relevant institutional, departmental or study policies on data sharing and data security

### Policy URL or Reference

The University of Manchester Data Protection Policy

## 8. Author of this Data Management Plan (Name) and, if different to that of the Principal Investigator, their telephone & email contact details

Paul Fitzpatrick

Paul.fitzpatrick@digitalecmt.org

## **IPD sharing plan summary**

Available on request

## Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">HRA research summary</a>			28/06/2023	No	No
<a href="#">Protocol file</a>			16/08/2019	No	No