



CLAHRCBITE

Brokering Innovation Through Evidence

May 2019

Patient-reported information collected electronically in between rheumatology outpatient clinic visits: development of e-infrastructure to support clinical care and research (REMORA)



The National Institute for Health Research Collaboration for Leadership in Applied Health Research and Care (NIHR CLAHRC) Greater Manchester is a partnership between providers and commissioners from the NHS, industry, the third sector and the University of Manchester.

We aim to improve the health of people in Greater Manchester and beyond through carrying out research and putting it into practice.

What was the aim of the project?

This study involved the development, testing and evaluation of a smartphone app for remote monitoring of symptoms in people living with rheumatoid arthritis (RA). Co-designed in partnership with patients, clinicians, managers, IT staff and researchers, this app allowed patients to log daily symptoms and the impact of their RA between clinic appointments. The data was sent:

- Directly to the patients' electronic health records for use during real clinical consultations
- To a research database as anonymised data to help investigate the app usage and its benefits

What did we do?

The REMORA study consisted of three rounds:

- *Round 1: Recruitment and development*

26 patients were recruited to co-design the REMORA app. We also consulted with clinical staff, researchers, IT staff, and relevant experts within the UK to design a tailor-made app that could best capture and monitor the experience of living with RA.

- *Round 2: Concept testing*

The first stage of testing consisted of 8 patients with RA using the REMORA app to complete daily, weekly, and monthly questionnaires about their disease activity over the course of one month, followed by a consultation with a rheumatologist. The feedback from this testing allowed us to monitor how successful the app was and make improvements to its design for the next round.

- *Round 3: Extended testing*

Following the updates to the app from the initial testing phase, round 3 consisted of an extended testing phase, which was designed to more closely mimic real-world settings. 20 patients each tested REMORA over three months to reflect a realistic gap between potential outpatient appointment dates, with

clinic appointments held again before and after the testing phase, allowing for real-life treatment decisions to be made based on the app data.

We also held regular meetings with a PPI group, consisting of 6 members who live with RA, throughout the study. The group were consulted to contribute to study design, app development, dissemination of findings, and other key elements.

Why was it important?

This study meant that patients and their clinician could discuss how the patient's RA had changed since the last appointment, based on the patient's own data collected via the app, and presented as a graph within the electronic patient record. Remote monitoring may enable treatment decisions and appointment frequency to be more closely linked to patient needs.

Who did we work with?

Versus Arthritis (previously Arthritis Research UK)

Health eResearch Centre (HeRC)
Salford Royal NHS Foundation Trust

What next?

Following the completion of the REMORA study, the findings were published in *Annals of Rheumatic Diseases* in June 2018. The project also received the AbbVie "Patients as Partners" award for Enabling Patients with Technology.

Further funding is now being pursued for a second REMORA study that will further develop the smartphone app, explore new areas for remote monitoring of long-term conditions, and develop new ways to manage patient data and outpatients appointments.

What is NIHR CLAHRC GM?

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Find out more

www.clahrc-gm.nihr.ac.uk/projects/remote-monitoring-rheumatoid-arthritis-remora

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