# REMORA:

## Remote Monitoring in Rheumatoid Arthritis


REMORA

MANCHESTER 1824
The University of Manchester

A collaboration between:

Arthritis Research UK | centre for epidemiology

Supported by NHS National Institute for Health Research

Salford Royal NHS Foundation Trust
University Teaching Trust
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# Background

## Living with long-term conditions

- More than 15 million people in the UK have a long-term condition (LTC)
- LTCs account for £7 out of every £10 spent by the NHS
- People living with LTCs spend less than 1% of their time in contact with healthcare professionals, meaning:
  - People with LTCs have to manage their own health
  - Doctors have limited sight of how their patients are doing day-to-day, and how this changes over time

## Opportunities from consumer technology

- The NHS recognises the opportunities that technology can bring to LTCs:
  - Supporting self-management
  - Informing clinical decision-making through remote monitoring
  - Transforming care delivery
  - Enabling research through data collection and promoting participation
- Over seven in 10 people own a smartphone, with more than 165,000 health apps available
- However, patient-generated data from apps are not yet integrated into the NHS due to multiple challenges:
  - Patient and healthcare professional concerns
  - Technical issues
  - Privacy and security issues

## Rheumatoid arthritis as an example

- Rheumatoid arthritis (RA) is a LTC affecting about 400,000 people in the UK which leads to joint pain, fatigue and disability
- Treatment decisions are made at short clinic visits every few months, where remembering past symptoms can be difficult

# REMORA

REMORA was a pilot study to collect daily symptoms using a smartphone app to support self-management, clinical care and research in RA. **Uniquely, data from the app was integrated into electronic health records (EHRs) in the NHS to inform consultations**

## REMORA findings

REMORA delivered proof-of-concept that remote monitoring in RA using smartphones was beneficial for patients and clinicians

- A remote monitoring system with EHR integration was developed and tested with 20 patients over three months at Salford Royal
- Graphical summaries of disease trends were available within the EHR
- Data was entered on more than 90% of possible days

## Patient benefit

- Overall: "A brilliant thing, I can't wait until it's out there properly."
- Data collection: "captured the moment", made "fleeting symptoms visible", picked up "changes that would otherwise be missed."
- Symptom graphs in clinic made it easier for a "shared conversation", the data "says it for you", "provides evidence" and "personalises care."

## Benefits for the clinical team

- Pain flares otherwise forgotten became visible
- Gradual but definite changes following treatment response became evident, improving clinical decision making

# Future work

REMORA2 will scale up to RA services at multiple sites. Objectives include:

- Demonstrate the benefits for self-management, clinical care and research in a wider RA population
- Expand the smartphone app to support long-term engagement and to enable future digital interventions
- Design and build a patient data repository and connecting infrastructure as a blueprint for integration of patient generated data into NHS records
- Alignment with user authentication by NHS Digital
- Evaluate requirements for the commissioning of remote monitoring for LTCs and future sustainability
- Pilot a system to improve scheduling of outpatient appointments on the basis of clinical need as indicated by remote monitoring

# Contact us?

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