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# Study to assess the rollout of a genetic-guided prescribing service in UK General Practice

**Submission date**
14/02/2023

**Recruitment status**
Recruiting

**Registration date**
19/04/2023

**Overall study status**
Ongoing

**Last Edited**
18/10/2024

**Condition category**
Other

[X] Prospectively registered
[X] Protocol
[_] Statistical analysis plan
[_] Results
[_] Individual participant data
[X] Record updated in last year

**Plain English summary of protocol**
Background and study aims
There is a growing understanding that the effectiveness and safety of many regularly prescribed medications can be influenced by common genetic changes. This is a concept known as pharmacogenetics. Although there are guidelines in place for genotype-guided prescribing for many gene-drug pairs, very few are used in practice as previously, genetic testing could not be turned around in a clinically relevant timeframe.

The PROGRESS trial is part of a programme of work to introduce pharmacogenetic testing in general practice and to assess the implementation of this new service. A panel of genes with known implications for a range of commonly prescribed medicines has been selected and an informatic solution to help guide prescribing has been developed called the Genomic Prescribing Advisory System (GPAS). This pharmacogenetic testing and advisory system will be implemented at a number of GP practices to establish whether genetic testing can be delivered to support genotype-guided prescribing in a clinically relevant timeframe.

Who can participate?
The study is recruiting over two phases. In phase one (months 1-6), five “early-adopter” sites will invite patients who are being considered for 4 classes of medicine as part of their routine appointment. These medicines include Statins, Proton Pump Inhibitors, Selective Serotonin Reuptake Inhibitors, and Tricyclic Antidepressants.

What does the study involve?
Participants would be required to donate a blood or saliva sample for genetic testing, with the aim to return results to the GP within 7-10 days. Patients will be alerted by their GP once results are available and a prescription can be issued. In the second phase (months 7-18), additional sites across the country will be included. The study is designed to identify any challenges in implementing this service as well as collect information on patient and health care professional’s attitudes to using the service.

What are the possible benefits and risks of participating?
Participants will benefit from having access to a new clinical service which is under consideration by the NHS, which allows medicines to be optimized for an individual based on their unique

genetic information. By taking part, information will be generated which may inform safer, more effective prescribing for the current problem but also remain in the participant's health record to inform any future prescribing decisions. The intervention is low risk, with a single blood or saliva sample required for DNA testing.

Where is the study run from?
The study is run by Clinical Geneticists based at Manchester University NHS Foundation Trust, in partnership with the North West Genomic Medicine Service Alliance (GMSA). Recruiting sites will be a selection of GP practices, initially in the North West of England (Phase I) and later rolled out to GP practices across the UK (Phase II).

When is the study starting and how long is it expected to run for?
April 2022 to April 2026

Who is funding the study?
The study is funded by NHS England with support from the National Institute for Health Research (NIHR) (UK)

Who is the main contact?
Professor William Newman (Chief Investigator)
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# Contact information

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## Additional identifiers

### EudraCT/CTIS number
Nil known

### IRAS number

319800

### ClinicalTrials.gov number
Nil known

### Secondary identifying numbers
CPMS 55532, IRAS 319800

# Study information

### Scientific Title
Pharmacogenetics Roll Out – Gauging Response to Service

### Acronym
PROGRESS

### Study objectives
To assess the implementation of a pharmacogenetic guided prescribing service in UK primary care.

### Ethics approval required
Old ethics approval format

### Ethics approval(s)
Approved 20/03/2023, London - Surrey Research Ethics Committee (Level 3, Block B, Whitefriars, Lewins Mead, Bristol, BS1 2NT, UK; +44 2071048388; surrey.rec@hra.nhs.uk), ref: 23/LO/0201

### Study design
Pragmatic interventional implementation study

### Primary study design
Interventional

### Secondary study design
Non randomised study

### Study setting(s)
GP practice

### Study type(s)
Other

### Participant information sheet
Not available in web format, please use contact details to request a participant information sheet.

### Health condition(s) or problem(s) studied
Assessment of pharmacogenetic guided prescribing across a range of commonly prescribed medicine classes, initiated in primary care.

## Interventions
The PROGRESS trial is designed to assess the viability and utility of a pharmacogenetic-guided prescribing service in Primary Care. Potential participants attending their GP practice for a routine appointment, who are being considered for a pre-defined list of commonly prescribed agents, will be offered testing for a panel of genes with known implications for this range of medicines. Genetic results will be fed back to the referring clinician via a novel informatic solution developed as part of this programme, known as the Genomic Prescribing Advisory System (GPAS). Data will be collected around the proportion of participants with actionable pharmacogenetic information and service performance-related outcomes such as turnaround times for testing and metrics related to how results were used.

## Intervention Type
Genetic

## Primary outcome measure
The Pharmacogenetic Clinical Utility Metric (Defined as the proportion of patients across the study cohort with a CPIC Level 1A variant related to the medicine which triggered recruitment to the study) – determined through genetic testing as part of study

## Secondary outcome measures
1. The proportion of patients recruited to the study who had their pharmacogenetic results returned within 10 working days (Monday – Friday) of enrolment. The day of enrolment represents day 0. Collected from patient records.
2. Average turnaround time from enrolment to PGx results being available on GPAS. Collected from patient records.
3. The proportion of enrolled patients whose GPAS system record was accessed by a member of the clinical team. Collected from patient records.
4. The proportion of participants who had a prescription issued before the pharmacogenetic results were available. Collected from patient records.
5. Average time from recruitment to prescription. Collected from patient records.
6. The proportion of patients who had at least one prescription amended over the course of the study based on the pharmacogenetic data. Collected from patient records.
7. Average turnaround time from enrolment to results being integrated into the Electronic Health Record (EHR). Collected from patient records.
8. Proportion of participants who have a delay (more than 10 working days) in results being integrated into the EHR. Collected from patient records.
9. The proportion of enrolled participants for whom a clinical decision support notification was triggered. Collected from patient records.
10. The average number of clinical decision support notifications which triggered over the course of the study (expressed as per month/visit/prescription). Collected from patient records.
11. The proportion of participants who had a prescription issued before the pharmacogenetic results were available. Collected from patient records.
12. The proportion of patients on a given class of medicine who had their index medicine (i.e., the medicine which precipitated recruitment) changed at 1 and 6 months following prescription. This outcome will be compared against anonymized historical (non-genotyped) comparators, matched for demographics, from the Greater Manchester Care Record (GMCR). Collected from patient records.

## Overall study start date
01/04/2022

### Completion date
01/04/2026

## Eligibility

### Key inclusion criteria
1. Participants must be a registered patient at one of the recruiting GP practices.
2. Participants must have capacity to independently consent.
3. Participants must be 18 years of age or over.
4. Participants must be being considered for a new prescription of one of four medicines classes, or participants being considered for an agent change within one of the four medicine classes. The eligible medicine classes (and specific medicines) are:
4.1. Selective Serotonin Reuptake Inhibitors [citalopram, escitalopram, fluvoxamine, paroxetine, sertraline]
4.2. Tricyclic Antidepressants (prescribed for pain or depression) [amitriptyline, clomipramine, doxepin, imipramine, nortriptyline, trimipramine]
4.3. Statin Therapy [atorvastatin, fluvastatin, pravastatin, rosuvastatin, simvastatin]
4.4. Proton Pump Inhibitors [esomeprazole, lansoprazole, omeprazole, pantoprazole, rabeprazole]

### Participant type(s)
Patient

### Age group
Adult

### Lower age limit
18 Years

### Sex
Both

### Target number of participants
1,450

### Key exclusion criteria
1. Patients unable to independently consent.
2. Patients under the age of 18 years.

### Date of first enrolment
19/06/2023

### Date of final enrolment
31/12/2025

## Locations

### Countries of recruitment
England

United Kingdom

**Study participating centre**
**Manchester University NHS Foundation Trust**
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**Sponsor type**
Hospital/treatment centre

**Website**
https://mft.nhs.uk/

**ROR**
https://ror.org/00he80998

# Funder(s)

**Funder type**
Government

**Funder Name**
National Institute for Health and Care Research

### Alternative Name(s)
National Institute for Health Research, NIHR Research, NIHRresearch, NIHR - National Institute for Health Research, NIHR (The National Institute for Health and Care Research), NIHR

### Funding Body Type
Government organisation

### Funding Body Subtype
National government

### Location
United Kingdom

### Funder Name
NHS England

## Results and Publications

### Publication and dissemination plan
Planned publication in a high-impact peer-reviewed journal

### Intention to publish date
01/04/2026

### Individual participant data (IPD) sharing plan
The data sharing plans for the current study are unknown and will be made available at a later date.

### IPD sharing plan summary
Data sharing statement to be made available at a later date

### Study outputs

| Output type | Details | Date created | Date added | Peer reviewed? | Patient-facing? |
|---|---|---|---|---|---|
| HRA research summary | | | 26/07/2023 | No | No |
| Protocol file | version 6.0 | 25/07/2024 | 18/10/2024 | No | No |