Qualitative Study Protocol

Patient Expectations and Experiences of Current and Novel (PECAN) Management of Gout: A Qualitative Study

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CONTENTS

LIST OF ABBREVIATIONS

ACCORD	Academic and Clinical Central Office for Research & Development - Joint office for The University of Edinburgh and Lothian Health Board
CI	Chief Investigator
GCP	Good Clinical Practice

ICH	International Conference on Harmonisation
IGC	Institute of Genetics and Cancer
PI	Principal Investigator
QA	Quality Assurance
REC	Research Ethics Committee
SOP	Standard Operating Procedure
ULT	Urate Lowering Therapy

1 INTRODUCTION

1.1 BACKGROUND

In 2020, the global age-standardised prevalence of gout was estimated to be 659.3 per 100,000, representing an increase of 22.5% between 1990 and 2020 (Cross et al., 2021). The prevalence of gout has increased in England from 3.07% in 2015-16, to 3.21% in 2022-23 (Russell et al., 2023). Additionally, 23.5% of hospital attendances for gout flares in the UK require hospitalisation (Russell et al., 2022). Urate lowering therapy (ULT), such as allopurinol or febuxostat, using a treat-to-target approach is the current recommendation for long-term management of gout (NICE, 2022). Despite this, gout management remains suboptimal (Kuo et al., 2014; Doherty et al., 2012) with less than 40% UK patients receiving ULT (Kuo et al., 2014).

Several barriers contribute to low initiation and adherence rates of ULT. These include limited knowledge of gout among patients (Vaccher et al., 2015; Rai et al., 2018; Spencer

et al., 2012) which impact both health-seeking behaviours (Spencer et al., 2012) and understanding of gout and its management (Vaccher et al., 2015; Rai et al., 2018; Spencer et al., 2012). Patients may have concerns about side effects of medications and may be reluctant to start long-term preventative medication (Spragg et al., 2023). Even once initiated, patients may discontinue ULT due to medication side effects (Elmelegy and Abhishek, 2021) or perceived changes in flare frequency (Spragg et al., 2023).

Innovative self-management strategies involving mobile phone apps and other electronic health (ehealth) tools have shown some promise in improving patient knowledge about gout (Serlachius et al., 2019; Kang and Lee, 2020) and adherence to ULT (Wang et al., 2023; Phutthinart et al., 2022), though it has not necessarily shown improvement in serum urate levels (Emad et al., 2023). However, supported self-management involving both technology and clinician care has been shown to help patients reach serum urate targets (Riches et al., 2022; Howren et al., 2019) and reduce flare burden (Riches et al., 2022).

Remission in gout is possible with treat-to-target strategies (Uhlig et al., 2025), using 2016 preliminary gout remission criteria as a basis for remission (de Latour et al., 2016). However, these criteria have been developed by clinicians, and patient views on remission have been understudied. Though Tabi-Amponsah et al. (2023) have explored patient views on gout remission, they excluded patients with recent gout flares, and their participants were already taking allopurinol. It is unknown what patients who might not yet be in remission think about gout remission.

1.2 RATIONALE FOR STUDY

Current gout management remains suboptimal, and innovative approaches appear crucial to improving gout management and outcomes. We want to explore patient experiences of gout management in relation to their experiences and explore patient views on the use of these novel strategies in gout management.

Furthermore, patient views and experiences of goals of gout management and gout remission is understudied, and more research is warranted in this area.

We aim to administer a short pre-interview questionnaire to participants and conduct qualitative interviews with participants to understand their perceptions and experiences of gout, gout management, and gout remission. Pairing these data will enrich knowledge of patient perceptions and experiences of gout, its management, and gout remission.

2 STUDY OBJECTIVES

2.1 AIMS & OBJECTIVES

2.1.1 Primary Objective

To explore the experiences and expectations of gout management (including potential new strategies for management) of patients with gout in relation to their lived experience of the disease.

2.1.2 Secondary Objectives

To explore whether people with lived experience of gout have views on gout remission that align with clinician views on gout remission.

To compare the experiences and expectations of people with gout who are undergoing a supported self-management strategy for gout versus those who are not on a supported self-management strategy.

To explore the feasibility and acceptibility of a specific supported self-management strategy.

To explore how participant contextual factors may or may not influence views on gout management, including novel strategies.

3 STUDY DESIGN AND METHODS

This is a mixed methods research study whose main component will consist of one semi-structured interview with each participant involved in the study. There will also be a pre-interview questionnaire which will capture baseline information on gout, other clinical history, and quality of life. The quantitative survey data aims to enrich qualitative data and provide context. See section 7 for a flowchart of the recruitment and study processes.

Once enrolment of participants begins, the study aims to last about a year. We aim to recruit 12-30 participants from across the UK and those in the TICOGA trial (IRAS 314061) but this number may vary due to the sampling techniques (see 10.1 for more detail on sampling technique and sample size). Participants will undergo a 2-step consent process for the interview. Participants will give consent prior to formally entering the study, and they will give consent again just before the recording of the interview itself. After initial consent, participants will fill in a pre-interview baseline questionnaire and an interview slot will be organised for a time that is most convenient for both the participant and the researcher. The baseline questionnaire should take ~15 minutes of participant time, whereas the qualitative interview may take between ~30 minutes to ~1.5 hours of participant time, dependant on the detail of the interview.

The baseline questionnaire will be available for participants to complete either at the Institute of Genetics and Cancer (IGC), University of Edinburgh, or remotely using secure RedCap software. The interview will be conducted by a single individual of the research team, 1-to-1 with a participant, either at the IGC face-to-face, or remote, dependent on participant preference. Remoteinterviews will take place over the telephone in a private room at the IGC. As novel supported self-management strategies in gout is understudied, transcripts will be analysed thematically using a grounded theory approach (Tie, Birks and Francis, 2019). This means developing a theory of why a phenomenon happens, grounded in real-world data that is collected from interviews and questionnaires.

We have met with two people (one male, one female) with lived experience of gout, as well as a representative of the charity Versus Arthritis to speak about their experiences to help develop the interview topic guide for the study. Participants freely spoke about their experiences, before reviewing a preliminary drafted interview topic guide and giving feedback on relevance, tone, and readibility of the questions. It was especially helpful to gain feedback from the female person with gout, as this is a demographic often

underrepresented in gout research. These meetings have directly informed our interview topic guide and the questions we will be asking to participants in the qualitative research. We have also invited these people to review the study prior to publication, to assess the lay language and findings of the study. We have kept eligibility criteria as minimal as possible, to allow as many participants with gout as possible to be able to partake in the study. We aim to recruit participants for the study from across the UK as well as those enrolled in TICOGA (IRAS ID: 314061) to try and get a wide range of experiences with gout and gout management. We aim to recruit in a 1:1 ratio of people enrolled in the TICOGA trial and those outside of the TICOGA trial. This is so we can get views from people who have both experience and inexperience of a specific supported self-management strategy to assess feasibility and acceptibility of a potential new strategy. See 6.1 for more details on methods of recruitment.

People with gout may live with chronic pain and may find it difficult even to travel to the IGC. To facilitate this, we offer the baseline questionnaire and interview part of the study to be undertaken face-to-face or remote. Screening questionnaires will be filled out remotely, to reduce participant burden on coming to the IGC if they are not eligible for the study. Furthermore, we are aware of the socioeconomic inequality in the UK gout population. Participants taking part in the study will be offered reimbursement for travel and/or child/carer costs.

Lay study documents can be provided in a larger font if requested, and RedCap software has a text-to-speech function to facilitate accessibility.

As part of the final publication, we will produce a summary table of the baseline demographic and clinical characteristics of the study population, which will include sex, ethnicity, and may include age group and gender. Full details of what can be produced will depend on the final sample characteristics, as we do not want to risk publishing demographic information which may lead to the identification of a participant.

Prior to publication of the study, participants from the interview guide group will be invited to review by research paper to assess lay accessibility. These members may have prior experience in lay reviewing but training and facilitation can be provided to those who may want a more structured approach to lay reviewing by Versus Arthritis.

4 STUDY SETTING

This study will use two sites:

- The Western General Hospital, Edinburgh, NHS Lothian, Scotland – for the identification of potential participants, storage of audio recordings, storage of paper copies of study data.
- The Institute of Genetics and Cancer, University of Edinburgh, Edinburgh, Scotland – to host all other research activities - in-person completion of questionnaires and interviews. Remote interviews will also be conducted in a private room at this site.

Participants will fill in the screening questionnaire online on RedCap software, using a public survey link.

Participants can either fill out the consent form and baseline questionnaire either in-person at the IGC, or online on RedCap software, which will be used also for data management of the questionnaires in the study.

Participants taking part in a face-to-face interview will come to the Institute of Genetics and Cancer. Interviews will be held in a private room and recorded using an approved audio device that is of AES-256 encryption standard.

Although face-to-face interviews will take place at a single centre, we may be conducting remote interviews with volunteers from across the UK. Interviews over the phone will be conducted with participants that are further away geographically or express a preference to be interviewed remotely.

5 STUDY POPULATION

5.1 NUMBER OF PARTICIPANTS

The final number of participants enrolled in the study will depend on whether the study has reached data sufficiency (see 10.1 for more detail), though we aim to recruit at least 12 participants. Again, the recruitment period may slightly vary due to the sampling technique, however, we aim to finalise recruitment for the study within 8 months. The participant population will be any adult (≥18 years of age) with a diagnosis of gout. Due to the remote nature of the study, a confirmation of the diagnosis of gout using full ACR/EULAR criteria will not be able to occur for all participants (namely those outside of the TICOGA trial), however, clinical questions from these criteria will be asked to determine a likely diagnosis or not.

5.2 INCLUSION CRITERIA

Subjects must meet all the following inclusion criteria to enter the study:

- Evidence of a personally signed and dated informed consent document indicating that the participant has been informed of all aspects of the study
- Adult aged ≥18 years with gout based on full ACR/EULAR gout classification criteria, those with a physician diagnosis of gout, or those with a likely diagnosis of gout based on symptom questions from ACR/EULAR gout classification criteria.

5.3 EXCLUSION CRITERIA

Participants with any of the following criteria will not be accepted into the study:

- Participant is unable to consent
- Participant has limited English language capabilities

5.4 CO-ENROLMENT

With reference to the ACCORD Co-enrolment Policy, co-enrolment in other studies will be allowed as this study is a non-interventional study and will not affect participant health. If the participant is co-enrolled in an interventional study (including TICOGA) whilst taking part in this study, then this will be explicitly noted on participant records, as it may be a contributing factor to their experience of their health and illness.

6 PARTICIPANT SELECTION AND ENROLMENT

6.1 IDENTIFYING PARTICIPANTS

Identification of participants for the study will occur either through self-identification in response to an online poster advert on university and Versus Arthritis websites; the Gout Liaison Service (a pre-established, Caldicott approved health service) by a participant's usual carer; through attendance at the rheumatology outpatient clinic, or co-enrolment in another trial, 'Effect of tight urate control in gouty arthritis compared to usual care (TICOGA), a randomised clinical trial', in which this protocol author is one of the investigators of. Where a potential participant is identified through clinical means, they will be given the study poster, which will have a QR code for the study website where they can self-identify as being interested in taking part in the study. The poster will also have the chief investigator's contact details on it who potential participants can contact to express interest.
Use of NHS organisations will be used for identification purposes and storage of interview data (audio recordings and transcripts).

6.2 CONSENTING PARTICIPANTS

Written and informed consent will be obtained by the chief investigator or other investigator prior to any study-related procedures being undertaken. Verbal (if applicable) and written participant information will be presented to the participant detailing the nature of the study, the implications and constraints of the protocol; and any risks involved in taking part. It will be clearly stated that the participant is free to withdraw from the study at any time for any reason and without prejudice to future care, and with no obligation to give the reason for withdrawal. The participant will be allowed as much time as wished to consider the information, and the opportunity to question the Investigator, the GP or other independent parties to decide whether they will participate in the study. Written informed consent will then be obtained by means of the participant dated signature and dated signature of the person who presented and obtained the informed consent. Consent will be obtained either during a face-to-face visit, or to minimise COVID-19 exposure, consent may be obtained following a telephone review, or consent may be obtained online through the RedCap software. The participant may sign the participant information sheet at home and send this physically or electronically back to the researcher. A copy of the signed Informed Consent Form will be given to the participants, and the original or scanned copy of the original be retained at the Western General Hospital. Alternatively, the participant will sign a copy of the consent form electronically and a copy of this form will be downloaded for inclusion in the participants study file.

6.2.1 Withdrawal of Study Participants

Participants are free to withdraw from the study at any point or a participant can be withdrawn by the Investigator. If withdrawal occurs, the primary reason for withdrawal will be documented in the participant's case report form if possible. The participant will be able to withdraw from all aspects of the trial but will have continued use of their non-personal data collected up to that point if survey data has been collected. Personal data (name, contact details) will be deleted securely immediately at the point of withdrawal. It will be explicitly noted on the consent form that if participants withdraw after baseline data collection, non-personal data will be retained up to the point that they withdraw.

If a participant decides to withdraw from the study, this will be noted within RedCap software, as well as their reason for withdrawal if possible, and what data is or is not being retained by the research team.

6.3 LONG TERM FOLLOW UP ASSESSMENTS

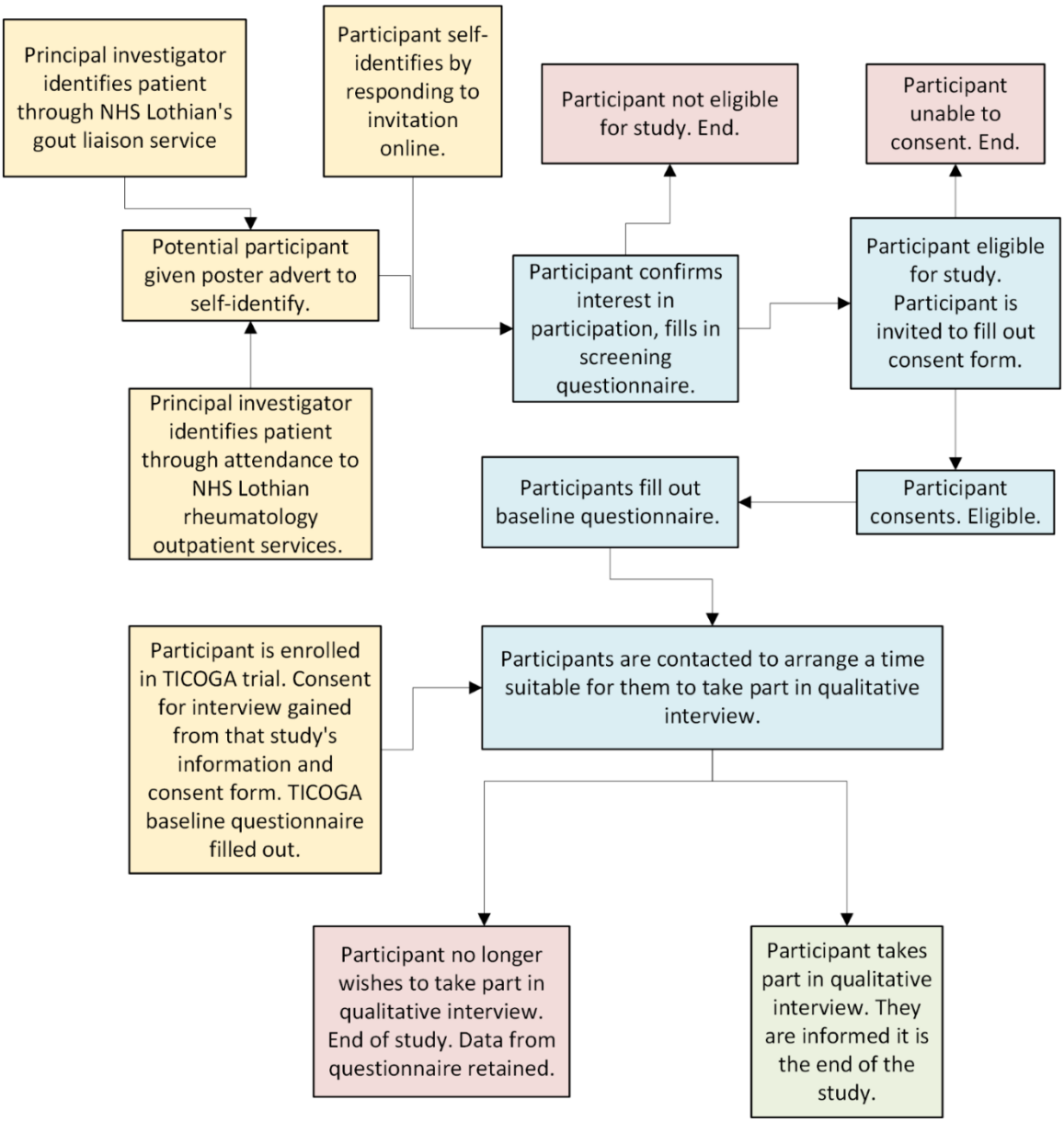
No long-term follow-up is planned for participants in this study. Participants who are co-enrolled in another study (including TICOGA) will follow that study's protocol for any long-term follow-up.

7 STUDY FLOWCHART

Assessment	Screening + Consent (Day 0)	Baseline (Day >0)*
Assessment of Eligibility Criteria (as part of screening)	☒	☐
Demographic data, contact details (as part of screening)	☒	☐
Written informed consent	☒	☐
Baseline Questionnaire	☐	☒
Interview	☐	☒

*the exact day of this event after a participant formally enters the study is not certain due to the researcher needing to set-up a date for interview.

The table above shows an approximate schedule of events for the study. However, due to the hybrid nature of the study, their may be real-time delays between assessment of eligibility criteria and written informed consent prior to a participant formally entering the study. Furthermore, in theory, the baseline questionnaire and interview are held on the same day as part of the same event, however, in practice due to the remote structure of the study, the baseline questionnaire may be filled out up to a few weeks prior to interview.



8 DATA COLLECTION

Participants interested in taking part in the study will be able to access the participant information sheet on the study website and on RedCap. If they wish to proceed, they will fill in an initial screening questionnaire that will gather basic information such as full name, date of birth, sex, gender, ethnicity, email address, and phone number. Names, telephone numbers, and email addresses will be the only personal data collected during recruitment. This questionnaire will be available to answer online on RedCap software, using a public survey link or QR code on the University or Versus Arthritis websites. RedCap (Research Electronic Data Capture) is a secure, web-based application designed to support data capture and management for research studies. The RedCap software will also be used for allocating study IDs and data management once the participant has consented to take part in the study. RedCap will be able to be accessed either on NHS or University of Edinburgh managed computers, but access to the study data will be fully restricted to the principal investigator (author of this protocol), and their PhD supervisor.

If a participant is eligible for the study (see 10.1 for details on sampling), they will be asked to fill out consent form. This will outline the purpose of the study and indicate the separate points that the participant will give consent for. These will include their understanding of the patient information sheet, the agreement to the research team contacting the participants directly to take part in recorded interviews, and agreement to take part in the study. This can be filled out online on RedCap or at the research site.

Participants will be contacted via email to then fill out a baseline questionnaire either online, or invited to fill it out at the IGC prior to their interview. This will capture quantitative data about their gout (including flares and medication), other medical history and their quality of life. Information from the baseline questionnaire will be stored securely on RedCap, if filled out online, or locked in a secure room at the Rheumatic Diseases Unit in the Western General Hospital, if filled in by hand. Hard paper copies of data will be digitised at the earliest opportunity and stored on RedCap. Paper copies of data will then be disposed of in confidential waste.

The baseline questionnaire should not take any longer than 15 minutes of participant time. If participants have consented to take part in a recorded interview, the study team will get in contact with the participant to arrange a time and location that is most suitable for the participant. We plan on holding interviews within a 6-month period to allow participant notice and schedule a time most appropriate for them.

As part of the study, participants will take part in **one, one-to-one** recorded, semi-structured interview with a member of the study team. The first part of the interview will consist of the interviewer asking the participant a series of open-ended questions, as guided by the interview topic guide. The interview topic guide has been developed with reference to literature in this area and has been reviewed by two people with lived experience of gout and a Versus Arthritis charity representative prior to the study. They provided feedback and pilot tested the semi-structured interview guide, checking question relevance and straightforwardness. In response to their feedback, subsequent modifications to the interview guide were made to improve the understandability of the questions from a lay perspective. Some additional questions were suggested by the participants, and after talking with the participants about their experiences of gout and taking question suggestions into account, additional questions were added by the research team.

The second part of the interview will involve an exercise in which the participant will be asked to reflect on their gout flares, whether they consider themselves to be currently in remission, and what remission means to them. They will then be shown visual diagram of preliminary gout remission criteria made by clinicians, and explained each individual criterion where relevant. Participants will be asked to reflect on whether their own views of gout remission align with these criteria. This exercise also pilot tested by the aforementioned group, and gained good feedback with no additional changes.

Participants will be briefed about what will happen in the interview, and that it will be audio recorded. Verbal consent will be sought prior to starting the recording. For participants willing to take part in a face-to-face interview, this will take place in a private room at the Institute of Genetics and Cancer, University of Edinburgh. Only audio will be recorded, using a recording device that is of AES-256 encryption standard. This device will remain on the person of the researcher or kept in a locked filing cabinet in the researcher's office on

an NHS site (Western General Hospital). Recordings will be transferred to a secure NHS computer at the study site at the earliest opportunity via USB connection. Recordings will be stored on a specific NHS network drive in a password protected folder. Recordings will then be deleted from the audio recording device. Audio recordings will be kept on the NHS drive until the end of the analysis phase of the study. Each audio recording file name will be pseudonymised using the participant's study ID followed by the suffix '_audio'.

For remote participants, interviews will take place over the phone, in a private room at the IGC. Audio from the meetings will be recorded using an approved AES-256 encrypted handheld device. Transcription will occur as above. The processes for transferring and storing the audio recording are the same as above.

Audio recording of in-person and remote interviews will ONLY be made using an NHS Lothian AES-256 encrypted audio recorder.

Recordings will be given a study ID (e.g. PT001), linked to the same participants' baseline questionnaire study ID. Going forward, any further information about a participant will be linked to their study ID so that they are de-identified. Recordings not already transcribed will be transcribed into text using G2 transcription software. Transcript files will be stored electronically as a password protected Microsoft word '.docx' file, with the suffix '_transcript' after the study ID. These files will be stored in a separate folder to the audio recordings.

Raw transcripts will be fully checked and processes to remove identifiable information from transcripts are as follows:

- Name of participants changed to pseudonyms,
- All other names, locations, workplaces, and other identifiable information will be replaced with pseudonyms or generalised descriptions making it impossible to trace information back to the individual.

Once fully anonymised, digital transcripts will be coded by the chief investigator with themes for the thematic analysis will be done using NVIVO software and manually by hand. This is so that initial coding is efficient, but then themes can be refined and interpreted by the researcher for a deeper understanding of participant perspectives and nuances in the complexity of the data.

Once all recordings are fully transcribed and analysed, original recordings from the participants of the study will be permanently deleted in a secure way. The study ID will only be able to be traced back to the baseline data that is stored securely on RedCap – which is only accessible by members of the study team.

Anonymised and de-identified transcripts will be shared by the chief investigator with their academic supervisor via NHS email. The academic supervisor will store these transcripts in their personal research network drive on their NHS drive. The academic supervisor will securely delete these transcripts at the end of the study.

8.1 SOURCE DATA DOCUMENTATION

Consent Form: Consent forms will either be filled in at the IGC or online on RedCap. A copy of the signed Informed Consent Form will be given to the participants, and the original or scanned copy of the original be retained at the Western General Hospital. Alternatively,

the participant will sign a copy of the consent form electronically and a copy of this form will be downloaded from RedCap for inclusion in the participants study file on the secure NHS drive.

Questionnaires:

- Screening Questionnaire (Online on RedCap software)
- Baseline Questionnaire (Online on RedCap software or filled out on a physical copy. Physical data will be digitised to a copy on RedCap at the earliest opportunity)

Questionnaire data from RedCap can be downloaded as a csv file onto a secure NHS computer drive and imported as an Excel file. A txt file will accompany the survey data from RedCap, explaining what each variable means, as well as what the values within those variables mean. For example, 'gender_sex asks whether a participant's gender is the same as the sex assigned at birth. '1' = Yes, '0' = No'.

Interview Recordings: Recorded using a device of encryption standard AES-256, and uploaded onto secure NHS computer at earliest opportunity onto restricted drive.

Interview Transcripts: Recordings from interviews will be transcribed using G2 software. Transcriptions will be checked against the original audio recording. Transcription text will be copied into a word document, named with the study ID of the participant, and stored securely and password protected on a restricted drive on a computer at the study site. Original audio recording files will be deleted, once they are fully transcribed and analysed, and consequent documents have the appropriate file naming.

8.2 CASE REPORT FORMS

For electronic case report forms, RedCap will be used. RedCap provides user-friendly web-based case report forms, real-time data entry validation (e.g. for data types and range checks), and audit trails. Also, designated users (usually the data manager) can assign different levels of access for each member of the research team. RedCap has secure web authentication, data logging, and can be encrypted with Secure Sockets Layer (SSL) encryption.

For baseline questionnaires that are collected in-person prior to interview, they will be digitised onto RedCap at the earliest opportunity. They will follow the same layout as those collected on RedCap, and will have extra procedures in place to ensure data entry validation and audit trails.

9 DATA MANAGEMENT

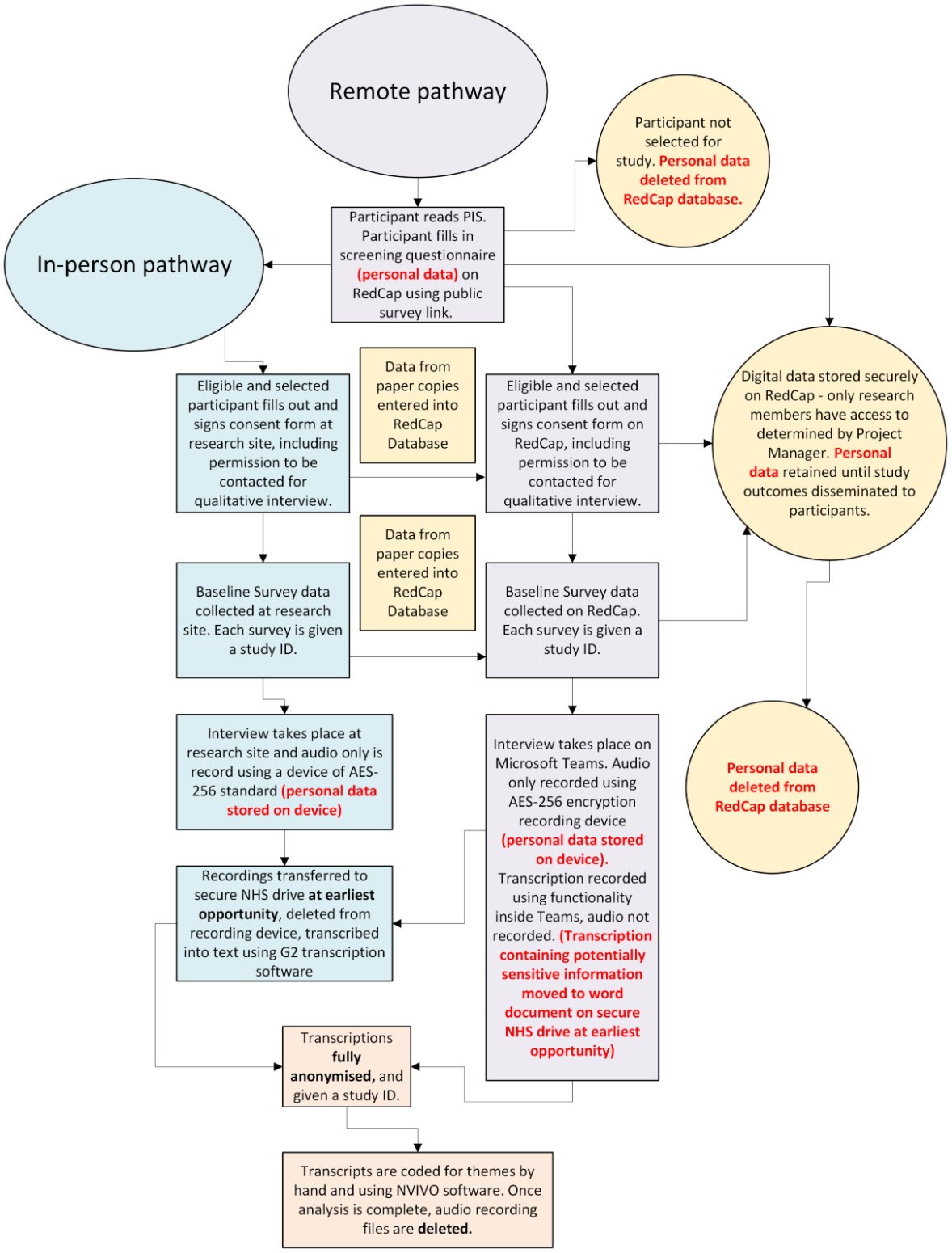
9.1 PERSONAL DATA

Personal data will be collected as part of the research only during the recruitment process. This will include a participant's full name, date of birth, phone number, and a contact email address. Other sensitive data includes gender, sex, ethnicity, and a self-description of whether a participant lives in an urban or rural area. All personal data will be stored online,

within the secure RedCap database. The RedCap database is only accessible to members of the research team, and user rights to the data determined by the data manager (the chief investigator).

The RedCap data manager will inform the study sponsor of any data loss event regarding this project. The Study Sponsor must notify NHS Lothian of any Data Loss Event relating to this project of which it becomes aware within twenty-four (24) hours.

9.1.1 Data Information Flow



9.1.2 Data Storage

Only personal data from any physically signed consent forms will be stored physically. Where this is the case, physical consent forms will be stored in a locked room in the Rheumatic

Diseases Unit at the Western General Hospital, Edinburgh, United Kingdom, and will be stored separately to any physical trial questionnaire data.

Personal data will be digitally stored by the research team using RedCap. Input of participant records, transfer, and storage is determined by the RedCap data manager, and user rights of who has access to these records (read-only, editing, no access) at each stage is also determined by the data manager. The data manager is responsible for all data relating to RedCap and should be contacted if any issues arise. The data manager of this project is also the protocol author, and as they are a PhD student, the student's supervisor will have full access to the database also. This is to ensure the correct disposal of personal data, and the safety of the retention of remaining data after the student has finished their PhD. Personal data from audio recordings of each participant will be stored on the audio recording device until transfer of the data to the secure NHS drive is complete. This will be via USB connection, and data will be transferred to a restricted drive only accessible to those in the Rheumatic Diseases Unit, in a password protected folder set-up by the chief investigator. Audio recording files will be stored in this folder until the transcription and analysis of the respective interview recording is complete. Transcriptions from interviews will be de-identified at the earliest opportunity after audio recording and kept in a separate password protected folder.

Electronic copies of personal data will be disposed of by the RedCap data manager when the overall study has ended, and study outcomes are disseminated to participants.

9.1.3 Data Retention

Personal identifiable data will be stored until study outcomes are ready to be disseminated participants who took part in the study. Once outcomes are communicated, this will be disposed of.

All non-personal identifiable data will be kept for a minimum of 10 years from the protocol defined end of study point. This is to consider the defined end of 'Effect of tight urate control in gouty arthritis compared to usual care (TICOGA), a randomised clinical trial', as the results of these studies will be analysed adjacently. When the minimum retention period has elapsed, study documentation will not be destroyed without permission from the sponsor.

The retention period is projected to end after the point of data collection has ended. All personal data will be disposed of or deleted by the time the retention period has ended. Therefore, the final dataset will be anonymous once the retention period is over.

9.1.4 Disposal of Data

All personally identifiable data will be deleted once study results are disseminated to participants in the trial. This is planned to occur before the end of the projected retention point. Therefore, final datasets will be anonymous once the retention period is over.

9.1.5 External Transfer of Data

Data collected or generated by the study (including personal data) will not be transferred to any external individuals or organisations outside of the Sponsoring organisation(s).

Transcription of interview recordings will be done at the study site, by the research team. NVIVO software will be used to code for themes from the transcripts, however, this will only be used once the transcripts are fully anonymised.

Data collected or generated by the study (including personal data) will not be transferred to any external individuals or organisations outside the sponsoring organisation(s) without participant consent, appropriate approvals (where applicable) and a data sharing agreement.

9.1.6 Data Controller

A data controller is an organisation that determines the purposes for which, and the manner in which, any personal data are processed.

The University of Edinburgh and Lothian Health Board are joint data controllers along with any other entities involved in delivering the study that may be a data controller in accordance with applicable laws (e.g. the site)

9.1.7 Data Breaches

Any data breaches will be reported to the University of Edinburgh (dpo@ed.ac.uk) and NHS Lothian Data Protection Officers (Lothian.DPO@nhs.scot) who will onward report to the relevant authority according to the appropriate timelines if required.

10 STATISTICS AND DATA ANALYSIS

10.1 DETERMINING SAMPLE SIZE

Sample size for this study is not definite due to the concept of data sufficiency. Unlike data saturation, where theoretical saturation is achieved when no new themes emerge from the data (Glaser and Strauss, 1967), data sufficiency takes a more pragmatic approach. Data is considered sufficient if the analytical process is rigorous, and that the data it generates is rich (LaDonna, Artino and Balmer, 2021) and can answer the research question. It has been suggested in research literature that data saturation can be achieved in as little as 9 interviews, however, this tends to be in homogeneous groups, where the research aim is narrowly defined (Hennink and Kaiser, 2022). The breadth of topics that will be covered in these interviews and the heterogeneity of the group aiming to be sampled therefore demands that the research should aim for a higher number than this, even if we are aiming for data sufficiency rather than saturation. We aim to recruit at least 12 participants for interview, even if data sufficiency is reached before then, to make sure we have enough participant data to make a judgement call regarding sufficiency. Analysis of transcriptions will occur as data collection is ongoing to check for themes or codes within the data.

Because our primary research objective is exploratory in nature, we want to sample a population that is representative of the gout population demographically. The experiences and expectations of supported self-management in gout is still relatively understudied and we will be exploring the feasibility and acceptability of one strategy in particular. Therefore, we will analyse transcripts thematically using a grounded theory approach rather than having a pre-conceived theory prior to the study. We will recruit 1:1 of people involved in TICOGA and have experience of supported self-management, and people who have not experienced

this particular strategy. As this is a foundational study for this area, purposive sampling to target specific groups will not be used.

As our recruitment period is projected to be 8 months long, we believe that recruiting up to 20 participants (2-3 per month) is a feasible number of participants. The main rate-limiting factor will be organising timings that is suitable for both the participant and the research team. However, because the principal investigator is a full-time PhD student, it is believed that the flexibility of the investigator will facilitate the organisation of interview arrangements.

11 OVERSIGHT ARRANGEMENTS

11.1 INSPECTION OF RECORDS

Investigators and institutions involved in the study will permit study related monitoring and audits on behalf of the Sponsor, REC review, and regulatory inspection(s). In the event of audit or monitoring, the Investigator agrees to allow the representatives of the Sponsor direct access to all study records and source documentation. In the event of regulatory inspection, the Investigator agrees to allow inspectors direct access to all study records and source documentation.

12 GOOD CLINICAL PRACTICE

12.1 ETHICAL CONDUCT

The study will be conducted in accordance with the principles of the International Conference on Harmonisation Tripartite Guideline for Good Clinical Practice (ICH GCP).

Before the study can commence, all required approvals will be obtained and any conditions of approvals will be met.

12.2 INVESTIGATOR RESPONSIBILITIES

The Investigator is responsible for the overall conduct of the study at the site and compliance with the protocol and any protocol amendments. In accordance with the principles of ICH GCP, the following areas listed in this section are also the responsibility of the Investigator. Responsibilities may be delegated to an appropriate member of study site staff.

named on the list prior to undertaking applicable study-related procedures.

12.2.1 Informed Consent

The Investigator is responsible for ensuring informed consent is obtained before any protocol specific procedures are carried out. The decision of a participant to participate in clinical research is voluntary and should be based on a clear understanding of what is involved.

Participants must receive adequate oral and written information – appropriate Participant Information and Informed Consent Forms will be provided. The oral explanation to the

participant will be performed by the Investigator or qualified delegated person, and must cover all the elements specified in the Participant Information Sheet and Consent Form.

The participant must be given every opportunity to clarify any points they do not understand and, if necessary, ask for more information. The participant must be given sufficient time to consider the information provided. It should be emphasised that the participant may withdraw their consent to participate at any time without loss of benefits to which they otherwise would be entitled.

The participant will be informed (if relevant) and agree to their medical records being inspected by representatives of the Sponsor (s), if applicable.

The Investigator or delegated member of the trial team and the participant will sign and date the Informed Consent Form(s) to confirm that consent has been obtained. The participant will receive a copy of this document and a copy filed in the Investigator Site File (ISF) and participant's medical notes (if applicable).

12.2.2 Study Site Staff

The Investigator must be familiar with the protocol and the study requirements. It is the Investigator's responsibility to ensure that all staff assisting with the study are adequately informed about the protocol and their trial related duties.

12.2.3 Data Recording

The Principal Investigator is responsible for the quality of the data recorded at each Investigator Site.

12.2.4 Investigator Documentation

The Principal Investigator will ensure that the required documentation is available in local Investigator Site files ISFs.

12.2.5 GCP Training

For non-CTIMP (i.e. non-drug) studies all researchers are encouraged to undertake GCP training in order to understand the principles of GCP. However, this is not a mandatory requirement unless deemed so by the Sponsor. GCP training status for all investigators should be indicated in their respective CVs.

12.2.6 Data Protection Training

All University of Edinburgh employed researchers and study staff will complete the Data Protection Training through Learn.

NHS Lothian employed researchers and study staff will comply with NHS Lothian mandatory Information Governance Data Protection training.

Non-NHS Lothian staff that have access to NHS Lothian systems will familiarise themselves and abide by all NHS Lothian IT policies, as well as employer policies

12.2.7 Information Security Training

All University of Edinburgh employed researchers, students and study staff will complete the Information Security Essentials modules and will have read the minimum and required reading setting out ground rules to be complied with.

NHS Lothian employed researchers and study staff will comply with NHS Lothian mandatory Information Governance IT Security training.

Non-NHS Lothian staff that have access to NHS Lothian systems will familiarise themselves and abide by all NHS Lothian IT policies, as well as employer policies.

12.2.8 Confidentiality

All, evaluation forms, reports, and other records must be identified in a manner designed to maintain participant confidentiality. All records must be kept in a secure storage area with limited access. Clinical information will not be released without the written permission of the participant. The Investigator and study site staff involved with this study may not disclose or use for any purpose other than performance of the study, any data, record, or other unpublished information, which is confidential or identifiable, and has been disclosed to those individuals for the purpose of the study.. Prior written agreement from the Sponsor or its designee must be obtained for the disclosure of any said confidential information to other parties.

12.2.9 Data Protection

All Investigators and study site staff involved with this study must comply with the requirements of the appropriate data protection legislation (including the UK General Data Protection Regulation legislation and Data Protection Act) with regard to the collection, storage, processing and disclosure of personal information.

Computers used to collate the data will have limited access measures via user names and passwords.

Published results will not contain any personal data that could allow identification of individual participants.

13 STUDY CONDUCT RESPONSIBILITIES

13.1 PROTOCOL AMENDMENTS

Any changes in research activity, except those necessary to remove an apparent, immediate hazard to the participant in the case of an urgent safety measure, must be reviewed and approved by the Chief Investigator.

Proposed amendments will be submitted to a Sponsor representative for review and authorisation before being submitted in writing to the appropriate REC, and local R&D for approval prior to participants being enrolled into an amended protocol.

13.2 MANAGEMENT OF PROTOCOL NON-COMPLIANCE

Prospective protocol deviations, i.e. protocol waivers, will not be approved by the Sponsor and therefore will not be implemented, except where necessary to eliminate an immediate hazard to study participants. If this necessitates a subsequent protocol amendment, this should be submitted to the REC, and local R&D for review and approval if appropriate.

Definitions

Deviation - Any change, divergence, or departure from the study design, procedures defined in the protocol or GCP that does not significantly affect a subjects rights, safety, or well-being, or study outcomes.

Violation - A deviation that may potentially significantly impact the completeness, accuracy, and/or reliability of the study data or that may significantly affect a subject's rights, safety, or well-being

Protocol deviations will be recorded in a protocol deviation log and logs will be submitted to the Sponsor every 3 months. Each protocol violation will be reported to the Sponsor within 3 days of becoming aware of the violation. All protocol deviation logs and violation forms should be emailed to QA@accord.scot.

Deviations and violations are non-compliance events discovered after the event has occurred. Deviation logs will be maintained for each site in multi-centre studies.

12.5 SERIOUS BREACH REQUIREMENTS

A serious breach is a breach which is likely to affect to a significant degree:

(a) the safety or physical or mental integrity of the participants of the trial; or

(b) the scientific value of the trial.

If a potential serious breach is identified by the Chief investigator, Principal Investigator or delegates, the Sponsor (qa@accord.scot) must be notified within 24 hours. It is the responsibility of the Sponsor to assess the impact of the breach on the scientific value of the trial, to determine whether the incident constitutes a serious breach and report to research ethics committees as necessary.

13.3 END OF STUDY

The end of study is defined as the last participant's last visit. This is projected to be around March 2026.

The Investigators or the Sponsor have the right at any time to terminate the study for clinical or administrative reasons.

The end of the study will be reported to the REC, and R&D Office(s) and Sponsor within 90 days, or 15 days if the study is terminated prematurely. The Investigators will inform participants of the premature study closure and ensure that the appropriate follow up is

arranged for all participants involved. End of study notification will be reported to the Sponsor via email to resgov@accord.scot.

A summary report of the study will be provided to the REC within 1 year of the end of the study.

13.4 INSURANCE AND INDEMNITY

The Sponsor is responsible for ensuring proper provision has been made for insurance or indemnity to cover their liability and the liability of the Chief Investigator and staff.

The following arrangements are in place to fulfil the Sponsor responsibilities:

The Protocol has been designed by the Chief Investigator and researchers employed by the University and collaborators. The University has insurance in place (which includes no-fault compensation) for negligent harm caused by poor protocol design by the Chief Investigator and researchers employed by the University.

Sites participating in the study will be liable for clinical negligence and other negligent harm to individuals taking part in the study and covered by the duty of care owed to them by the sites concerned. The Sponsor requires individual sites participating in the study to arrange for their own insurance or indemnity in respect of these liabilities.

Sites which are part of the United Kingdom's National Health Service will have the benefit of NHS Indemnity.

Sites out with the United Kingdom will be responsible for arranging their own indemnity or insurance for their participation in the study, as well as for compliance with local law applicable to their participation in the study.

14 REPORTING, PUBLICATIONS AND NOTIFICATION OF RESULTS

14.1 AUTHORSHIP POLICY

Ownership of the data arising from this study resides with the study team.

14.2 Data Sharing

Interested parties in any data will need to outline reasonable purposes for what they wish to use the data for, prior to a data sharing agreement being set-up by both the data holder and the interested party. Data will be fully anonymised and encrypted prior to transfer and will follow University of Edinburgh Research and Data policies and guidance for data sharing.

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