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# Cellulitis optimal antibiotic treatment

| Submission date | Recruitment status | [X] Prospectively registered |
|---|---|---|
| 21/09/2022 | Recruiting | [X] Protocol |
| **Registration date** | **Overall study status** | [_] Statistical analysis plan |
| 01/06/2023 | Ongoing | [_] Results |
| **Last Edited** | **Condition category** | [_] Individual participant data |
| 08/04/2025 | Infections and Infestations | [X] Record updated in last year |

## Plain English summary of protocol

Background and study aims
Cellulitis is a deep infection of the skin and subcutaneous tissues and most often occurs in the legs. It is a painful condition that is associated with inflammation and swelling of the site, and often systemic symptoms such as fever, headache, muscle aches, malaise, and fatigue. Patients report feeling unwell and that it has a significant impact on their mobility and ability to carry out their usual activities. NICE guidelines recommend oral flucloxacillin 500–1000 mg four times daily for 5-7 days as first-line treatment for most patients with cellulitis in the community, but most prescriptions are dispensed for a 7-day course. We will be assessing the effectiveness and safety of a 5-day treatment versus the standard 7-day treatment. We also aim to evaluate the cost-consequences of a shorter course from an NHS and personal perspective.

Who can participate?
Adults presenting in primary care with unilateral cellulitis of the leg

What does the study involve?
Participants will be randomly allocated to one of two groups. In addition to usual care, participants will either be assigned to a 5-day oral flucloxacillin course or the standard 7-day flucloxacillin course. Participants prescribed a 5-day course of oral flucloxacillin, will be posted two additional days' worth of medication (8 capsules in total for two days), which will either be the antibiotic or placebo capsules. Participants will be asked to fill out daily questionnaires and express their experiences with their cellulitis and taking part in the trial.

What are the possible benefits and risks of participating?
Benefits include that participants may see an improvement in their cellulitis and avoid needing to use antibiotics or for longer than is necessary. participants will be helping to further our knowledge of how to treat patients with cellulitis and this will benefit others with the same condition in the future. However, possible risks include the listed side effects of oral flucloxacillin, risks to the participant's child if they were to become pregnant at any point during the trial, and the need to attend a clinic visit and fill out questionnaires that would not normally be asked of them if they were not part of the trial.

Where is the study run from?
University of Southampton (UK)

When is the study starting and how long is it expected to run?
June 2022 to May 2026

Who is funding the study?
Health Technology Assessment Programme (HTA) (UK)

Who is the main contact?
Mrs Sophie Varkonyi-Clifford, coat@soton.ac.uk

### Study website
http://www.coatstudy.org.uk/

## Contact information

### Type(s)
Scientific

### Contact name
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Public

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# Additional identifiers

### EudraCT/CTIS number
Nil known

### IRAS number
1006161

### ClinicalTrials.gov number
NCT05584007

### Secondary identifying numbers
ERGO 67073, NIHR 134867, IRAS 1006161, CPMS 54167

# Study information

### Scientific Title
A blinded, non-inferiority phase III trial of 5 versus 7 days of oral flucloxacillin in primary care patients with lower limb cellulitis

### Acronym
COAT

### Study objectives
To determine whether a short course of oral flucloxacillin (5 days) is non-inferior to a standard course (7 days) in terms of pain over days 6-14 (indicative of persistence or recurrence associated with the symptoms of most importance to patients) in adults with cellulitis of the leg presenting in primary care.

### Ethics approval required
Ethics approval required

### Ethics approval(s)
Approved 19/06/2023, North East - Tyne & Wear South Research Ethics Committee (NHSBT Newcastle Blood Donor Centre, Holland Drive, Newcastle upon Tyne, NE2 4NQ, United Kingdom; -; tyneandwearsouth.rec@hra.nhs.uk), ref: 23/NE/0021

### Study design
Randomized two-arm blinded multicentre Phase III non-inferiority study with a 6-month internal pilot

### Primary study design
Interventional

### Secondary study design
Randomised controlled trial

## Study setting(s)
GP practice, Other

## Study type(s)
Treatment, Safety, Efficacy

## 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
Cellulitis

## Interventions
Intervention: Oral Flucloxacillin 500 mg capsules four times a day (QDS) for 5 days (unblinded NHS prescription) followed by blinded oral placebo capsules QDS for 2 days (5 days of antibiotic)
Control: Oral Flucloxacillin 500 mg capsules QDS for 5 days (unblinded NHS prescription) followed by oral flucloxacillin 500 mg capsules QDS (blinded) for 2 days (7 days of antibiotic)

Randomisation will be handled via an online system. Participants will be individually randomised between the arms, using a 1:1 allocation ratio, and using block randomisation, stratified by obesity (BMI≥30) and prior history of leg cellulitis.

## Intervention Type
Drug

## Pharmaceutical study type(s)
Pharmacoeconomic

## Phase
Phase III

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

## Primary outcome measure
Self-reported pain measured using the Pain Numeric Rating Scale (0-10)) via an electronic patient-reported outcome (ePRO) system over days 6-14.

## Secondary outcome measures
The effectiveness and safety of 5 days versus standard 7 days of oral flucloxacillin for lower leg cellulitis by assessing:
1. Total number of days of antibiotics taken between days 0 and 28 measured using the ePRO system at days 7, 12, 21 and 28
2. Use of additional antibiotics measured using the ePRO system at days 7, 12, 21 and 28
3. Patient-reported assessment of how unwell they are feeling measured using the ePRO system over days 6-14
4. Health-related quality of life measured using the participant-reported EQ5D5L and individual dimension (mobility, self-care, usual activities, pain/discomfort, anxiety/depression) over days 6-14

5. Leg swelling measured using the ePRO system on days 7, 14, 21 and 28
6. Time until self-reported recovery measured using the ePRO system on days 7, 14, 21 and 28
Time until the self-assessed extent of cellulitis starts to reduce (with no subsequent increase) measured using the ePRO system on days 7, 14, 21 and 28

Evaluate the cost-consequences of a shorter course from an NHS and personal perspective by assessing:
1. Hospital admissions measured using occurrences reported in the participant's primary care record at 12 months
2. Episodes of recurrent cellulitis over 12 months measured using occurrences reported in the participant's primary care record at 12 months
3. Incidence of complications over 12 months which include lymphedema, leg ulceration, venous insufficiency, sepsis, and death measured using occurrences reported in the participant's primary care record at 12 months

### Overall study start date
01/06/2022

### Completion date
01/05/2026

## Eligibility

### Key inclusion criteria
1. Aged 18 years and over
2. Currently showing symptoms of cellulitis (such as pain, tenderness, redness, other change in skin colour, warmth to touch) in one leg for 10 days or less
3. Pain rated as 3/10 or higher on a numerical rating scale (0-10) at baseline assessment
4. Be willing to be randomised to either trial arm (5-day or 7-day treatment)
5. Able to complete trial procedures in the English language.

### Participant type(s)
Patient

### Age group
Adult

### Lower age limit
18 Years

### Sex
Both

### Target number of participants
356

### Key exclusion criteria
1. Penicillin allergy
2. Bilateral cellulitis
3. Antibiotics for cellulitis within the past month

4. Post-operative cellulitis (within 30 days of operative procedures on the same leg)
5. Cellulitis resulting from human/animal bite injury
6. Cellulitis associated with chronic (>6 weeks) leg ulceration
7. Require immediate hospital admission or out-patient intravenous antibiotic therapy

### Date of first enrolment
18/08/2023

### Date of final enrolment
30/10/2025

## Locations

### Countries of recruitment
England

United Kingdom

Wales

### Study participating centre
**CRN Wessex**
Berrywood Business Village
Hedge End
Southampton
United Kingdom
SO30 2UN

### Study participating centre
**CRN East of England**
20 Rouen Road
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NR1 1QQ

### Study participating centre
**CRN NWC**
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### Study participating centre

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**Study participating centre**
**CRN Thames Valley and South Midlands**
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# Sponsor information

**Organisation**

University of Southampton

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### Sponsor type
University/education

### Website
http://www.southampton.ac.uk/

### ROR
https://ror.org/01ryk1543

## Funder(s)

### Funder type
Government

### Funder Name
Health Technology Assessment Programme

### Alternative Name(s)
NIHR Health Technology Assessment Programme, HTA

### Funding Body Type
Government organisation

### Funding Body Subtype
National government

### Location
United Kingdom

## Results and Publications

## Publication and dissemination plan

1. Planned publication in a high-impact peer-reviewed journal
2. Data from all centres will be analysed together and published as soon as possible
3. Planned publication of protocol in a peer-review journal

## Intention to publish date

01/05/2027

## Individual participant data (IPD) sharing plan

The datasets generated and/or analysed during the current study will be published as a supplement to the results publication. Individual investigators may not publish data concerning their patients that are directly relevant to questions posed by the trial until the Trial Management Group (TMG) has published its report. The TMG will form the basis of the Writing Committee and advise on the nature of publications.

## IPD sharing plan summary

Published as a supplement to the results publication

## Study outputs

| Output type | Details | Date created | Date added | Peer reviewed? | Patient-facing? |
|---|---|---|---|---|---|
| Protocol file | version 1 | 06/12/2022 | 11/07/2023 | No | No |
| Protocol file | version 3 | 19/07/2024 | 09/09/2024 | No | No |
| Protocol file | version 4 | 16/12/2024 | 08/04/2025 | No | No |