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Does screening with the Galleri test in the NHS reduce the likelihood of a late-stage cancer diagnosis?

Submission date
02/09/2021

Recruitment status
No longer recruiting

Registration date
16/09/2021

Overall study status
Ongoing

Last Edited
13/04/2026

Condition category
Cancer

[_] 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
The Galleri test is a new test that looks for potential signs of cancer in a blood sample. The test can find many different types of cancer but cannot find all cancers. The trial aims to see if using the Galleri test alongside standard cancer testing in the NHS can help to find cancers at an early stage when they are easier to treat.

Who can participate?
Individuals aged 50 - 77 years who meet the eligibility criteria and live in certain parts of England.

What does the study involve?
Participants who meet the criteria for the trial and who decide to take part will attend study visits at mobile clinics. At each visit, participants will give a blood sample and fill in a survey. Participants will be asked to attend study visits a total of three times over two years.
Half the people in the trial will be in the 'test group.' This means that their blood sample will be tested using the Galleri test. The other half will be in a 'control group' and their blood will be safely stored but not immediately tested with the Galleri test. Participants will not be told which group they are in. Only participants who are in the test group and who have a positive test result will be told. Anyone with a positive test result will have follow-up tests at a local hospital to see if they actually have cancer.

What are the possible benefits and risks of participating?
Participants may not benefit directly from taking part in this trial as there is a 50% chance their blood sample will not be tested immediately. The majority of participants will not benefit during the trial, but will be contributing to important research that may benefit people in the future.
Because the Galleri test is a blood test, participants will need to give blood samples. Although giving a blood sample is generally very safe, there are some possible risks including slight bleeding, bruising, discomfort, lightheadedness or, in rare cases, infection and fainting.
There is a potential risk related to a false positive test result. Participants may experience anxiety or distress because the Galleri test may give a wrong result. If the test detects a cancer signal and no cancer is found by the doctor, the participant may have had follow-up tests that

were unnecessary.
There is a potential risk related to an incorrect cancer signal origin (ie. tumour type) on the test result. Participants may have to have additional tests to see if they have cancer.
There is a potential risk of over diagnosis, meaning the diagnosis of a cancer that would not have caused a problem.
There are potential risks associated with the COVID-19 pandemic.

Where is the study run from?
The Cancer Research UK and King's College London Cancer Prevention Trials Unit (UK)

When is the study starting and how long is it expected to run for?
July 2021 to July 2030

Who is funding the study?
GRAIL Bio UK Ltd

Who is the main contact?
Cherry Paice, info@nhs-galleri.org

Contact information

Type(s)
Scientific

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Additional identifiers

Central Portfolio Management System (CPMS)
49043

Integrated Research Application System (IRAS)
293034

ClinicalTrials.gov (NCT)
NCT05611632

Protocol serial number
GRAIL-009

Study information

Scientific Title
A randomised controlled trial to assess the clinical utility of a multi-cancer early detection (MCED) test for population screening in the United Kingdom (UK) when added to standard of care.

Acronym
NHS-Galleri

Study objectives
The study aims to establish whether a multi-cancer early detection test applied before individuals present to a physician with cancer symptoms can meaningfully reduce the stage at which cancers are diagnosed when used alongside NHS standard of care.

Ethics approval required
Old ethics approval format

Ethics approval(s)
Approved 01/07/2021, Wales REC 1 (Health and Care Research Wales Support and Delivery Centre, Castlebridge 4, 15-19 Cowbridge Road East, Cardiff, CF11 9AB, UK; +44 (0)7787 371748; Wales.REC1@wales.nhs.uk), ref: 21/WA/0141

Study design
Pragmatic prospective randomized controlled trial blinded at the time of randomization

Primary study design
Interventional

Study type(s)
Screening

Health condition(s) or problem(s) studied
Multi cancer early detection in people without symptoms

Interventions
A prospective, randomised, controlled trial to assess the performance and clinical utility of a multi-cancer early detection test for population screening in the UK when added to standard of care.

Randomisation will be to the intervention arm, with blood collection and evaluation of the test or to the control arm, where blood samples are collected and will be stored for potential future evaluation but participants do not receive test results. All participants should continue to participate in routine NHS screening.
Unless diagnosed with cancer, participants in both arms will be asked to return for annual visits at approximately 12 and 24 months.
All participants whether test positive, test negative, or not tested will be followed for cancer and associated outcomes via NHS dataset linkages.

Participants in the intervention arm who test positive will be referred for standard of care investigations and treatment in the NHS.

Intervention Type
Device

Phase
Not Applicable

Drug/device/biological/vaccine name(s)
-

Primary outcome(s)
Current primary outcome(s) as of 13/04/2026:

1. Incidence of stage III and IV cancers diagnosed in the intervention arm as compared with the control arm, using a fixed-sequence statistical strategy as below:
- first, evaluate for a statistically significant difference in a prespecified group of primary cancer types: lung, head & neck, colorectal, pancreas, myeloma/plasma cell neoplasm, liver/bile duct, stomach, oesophagus, anus, lymphoma, ovary, and
bladder.
- if a statistically significant reduction in absolute numbers is found, continue by evaluating for a difference in all cancer types excluding prostate cancer.
- If the above evaluations are both significant, evaluate for a difference in all cancer types.
Time frame: 3-4 years after randomization

Previous primary outcome(s):

1. Incidence and stage at diagnosis for cancer types that are stageable (e.g., with available staging systems) measured using patient records.
Cancer is defined as any of the following cancers:
Invasive solid cancer, excluding basal cell carcinoma and squamous cell carcinoma of the skin

Haematologic malignancies, including lymphoma, lymphoid leukemia, myeloma/plasma cell neoplasm, myeloid neoplasms (including myelodysplastic and myeloproliferative neoplasms with behaviour code 3 based on ICD-O-3.2).
The following cancer types are not routinely staged and will therefore be excluded from the analysis of this primary objective: brain cancers, leukemias, cancers of unknown primary.

Key secondary outcome(s))

Current key secondary outcome(s) as of 13/04/2026:

1. Incidence of advanced cancers (stage III and IV cancers or one that results in a cancer-specific death) diagnosed in the intervention arm as compared with the control arm.
Time frame: 3-4 years after randomization
2. Incidence of stage IV cancers diagnosed in the intervention arm as compared with the control arm, sequentially:
- for a prespecified group of 12 cancer types: lung, head & neck, colorectal, pancreas, myeloma /plasma cell neoplasm, liver/bile duct, stomach, esophagus, anus, lymphoma, ovary, and bladder.
- for all cancer types excluding prostate cancer.
- for all cancer types.
Time frame: 1 year after randomization
3. Incidence of all cancers diagnosed in the intervention arm as compared with the control arm
Time frame: 1 year after randomization
4. Incidence of stage IV cancers following the second blood draw and 12 months of follow-up, with prevalent cases excluded
Time frame: 2 year after randomization
5. Incidence of stage IV cancers diagnosed in the intervention arm as compared with the control arm, sequentially:
- for a prespecified group of 12 cancer types: lung, head & neck, colorectal, pancreas, myeloma /plasma cell neoplasm, liver/bile duct, stomach, esophagus, anus, lymphoma, ovary, and bladder.
- for all cancer types excluding prostate cancer.
- for all cancer types.
Time frame: 3-4 years after randomization
6. Modelled cancer mortality at 7 years post-randomization based on cancers diagnosed within 3-4 years after randomization in the intervention arm as compared with the control arm.
Time frame: 3-4 years after randomization
7. Stage distribution by cancer type for the two arms.
Time frame: 3-4 years after randomization
8. Incidence of stage III and IV cancers excluding breast, cervical, and colorectal diagnosed in the intervention arm as compared with the control arm.
Time frame: 3-4 years after randomization
9. Incidence of stage III/ IV cancers following the third blood draw.
Time frame: 3-4 year after randomization
10. Overdiagnosis by comparing the cumulative number of cancers diagnosed within 3-4 years of randomisation in individuals with a positive baseline test (evaluated retrospectively in the control arm) between arms.
Time frame: 3-4 year after randomization
11. Cancer-specific mortality in the intervention arm as compared with the control arm, specifically:
- Nested cancer-specific mortality up to 5 years after randomization.
- Cancer-specific mortality (up to 5 years and) up to 8 years after randomization.
Time frame: up to 8 years after randomization
12. Proportion of stage I and II cancers in the intervention arm as compared with the control arm

in the third screening round.
Time frame: 3-4 years after randomization
13. Test performance (sensitivity, specificity, positive predictive value, negative predictive value) and cancer signal origin accuracy) in the intervention arm.
Time frame: Up to 3 years after randomization
14. Participant-reported psychological impact including anxiety, at various timepoints in all test positive cases.
Time frame: Up to 1 years after randomization
15. Number and type of invasive procedures performed, and complications and deaths associated with follow-up diagnostic procedures in all test positive cases.
Time frame: Up to 3 years after randomization
16. Radiation exposure by participants associated with follow-up diagnostic procedures following a positive MCED test result.
Time frame: Up to 3 years after randomization
17. Use of the MCED test across three annual timepoints on healthcare resource utilization for cancer diagnosis and treatment.
Time frame: Up to 3 years after randomization

Previous secondary outcome measures as of 13/02/2025:

Measured using patient records:
1. Incidence and stage at diagnosis for cancer types that are stageable (e.g., with available staging systems) at other timepoints.
2. Cancer-specific mortality up to 8 years after randomization

Safety endpoints (measured throughout the study):
3. Among all test positive cases, number of follow-up procedures and number of invasive procedures (including all biopsies, surgical interventions, bronchoscopy, thoracoscopy and endoscopy) to achieve diagnostic resolution (i.e. cancer diagnosis, non-cancer diagnosis, or no diagnosis and discharge from the diagnostic follow-up)
4. Number and type of invasive procedures performed in false positive cases;
5. Number of complications and deaths resulting from diagnostic procedures;
6. Radiation exposure measured in mSv per participant due to test result-directed evaluations;
7. Among all test positive cases, psychological impact, including anxiety, measured after Galleri test, after diagnostic resolution and at 12 months post testing using the short-form State Trait Anxiety Index-6 (STAI), a six-item validated measure of state anxiety.

Healthcare resource utilisation endpoints:
8. The data collected may be used to conduct future exploratory economic analyses, and will include: Number and types of medical encounters and cancer-specific diagnostic and treatment procedures, including clinical lab visits, imaging tests, invasive tests, and clinic visits.

Previous secondary outcome measures:

Measured using patient records:
1. Incidence and stage at diagnosis for cancer types that are stageable (e.g., with available staging systems) at other timepoints.
2. Mortality at 16-18 months of follow-up for a pre-specified group of cancer types, at years 3

and 6 after the last study visit, and at 7-years post-randomisation based on cancers diagnosed within an average of 40-42 months of randomisation.

Safety endpoints (measured throughout the study):
3. Among all test positive cases, number of follow-up procedures and number of invasive procedures (including all biopsies, surgical interventions, bronchoscopy, thoracoscopy and endoscopy) to achieve diagnostic resolution (i.e. cancer diagnosis, non-cancer diagnosis, or no diagnosis and discharge from the diagnostic follow-up)
4. Number and type of invasive procedures performed in false positive cases;
5. Number of complications and deaths resulting from diagnostic procedures;
6. Radiation exposure measured in mSv per participant due to test result-directed evaluations;
7. Among all test positive cases, psychological impact, including anxiety, measured after Galleri test, after diagnostic resolution and at 12 months post testing using the short-form State Trait Anxiety Index-6 (STAI), a six-item validated measure of state anxiety.

Healthcare resource utilisation endpoints:
8. The data collected may be used to conduct future exploratory economic analyses, and will include: Number and types of medical encounters and cancer-specific diagnostic and treatment procedures, including clinical lab visits, imaging tests, invasive tests, and clinic visits.

Completion date
12/07/2030

Eligibility

Key inclusion criteria
1. Participants must be at 50-77 years of age, inclusive, at the time of data extraction from NHS datasets or GP records used to identify potential participants; and
2. Capable of giving signed and legally effective informed consent, which includes compliance with the requirements and restrictions listed in the Informed Consent Form (ICF) and in this protocol. Consent provided by a legally authorised representative is not permitted in this protocol.

Participant type(s)
Healthy volunteer

Healthy volunteers allowed
No

Age group
Mixed

Lower age limit
50 years

Upper age limit
77 years

Sex
All

Total final enrolment
142318

Key exclusion criteria
1. Previous or current participation in another GRAIL-sponsored study.
2. Personal history of invasive cancer or haematologic malignancy, diagnosed within the three years prior to expected enrolment date. Note: Individuals with a diagnosis of non-melanoma skin cancer and prostate cancer patients whose only treatment is active surveillance are NOT excluded
3. Definitive treatment for invasive cancer or haematologic malignancy within the 3 years prior to expected enrolment date, including adjuvant hormone therapy for cancer (e.g. for breast or prostate cancer).
4. Currently taking demethylating or cytotoxic agents for any condition.
5. Undergoing current investigation for suspected cancer, defined as having been referred to a two week wait clinic or undergoing investigations at an RDC or other clinic with a stated suspicion of cancer.
6. Currently on a palliative care pathway.

Date of first enrolment
31/08/2021

Date of final enrolment
30/06/2022

Locations

Countries of recruitment
United Kingdom

England

Study participating centre
EMS Healthcare
Glasshouse,
Alderley Park,
Congleton Road,
Macclesfield,
Nether Alderley,
Alderley Park
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SK10 4TF

Sponsor information

Organisation

GRAIL Bio UK Ltd.

Funder(s)

Funder type
Industry

Funder Name
GRAIL Bio UK Ltd

Results and Publications

Individual participant data (IPD) sharing plan

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?
Protocol article		01/10/2022	17/10/2022	Yes	No
HRA research summary			28/06/2023	No	No
Other publications	The National Health Service-Galleri multi-cancer screening trial: explanation and justification of unique and important design issues	09/08/2025	13/08/2025	Yes	No
Participant information sheet	Participant information sheet	11/11/2025	11/11/2025	No	Yes
Study website	Study website	11/11/2025	11/11/2025	No	Yes