

NHS-Galleri Trial Briefing for Primary and Secondary Care Clinicians 2022/2023

Purpose

This briefing is to update primary and secondary care clinicians about the NHS-Galleri trial as it moves into its second operational year.

Progress to date

The NHS-Galleri trial is a prospective, Randomised Controlled Trial (RCT) to assess the performance and clinical utility of a multi-cancer early detection test (Galleri®) for population screening in the United Kingdom (UK) when added to standard of care. The trial is designed to establish if screening with the Galleri test reduces the incidence of late stage cancer when used in an asymptomatic population in combination with existing NHS cancer screening programmes.

Between August 2021 and July 2022 the NHS-Galleri trial successfully enrolled over 140,000 volunteers from many different socio-economic and ethnic backgrounds across eight Cancer Alliances in England.

Those taking part were aged 50 to 77 years old at the point of enrolling onto the trial and had not been diagnosed or treated for invasive cancer in the last three years.

In its first year, a small proportion of trial participants who received a 'Cancer Signal Detected' result were referred to NHS urgent suspected cancer referral pathways (two-week wait) to investigate a potential cancer diagnosis.

Continuation of the trial in 2022/2023

Over a one-year period starting in August 2022, participants will be invited to return to a local mobile clinic for their second (12 month) appointment where they will be asked to give another blood sample. Participants who have had a cancer diagnosis since their last visit do not need to return for another blood test but will remain in the study and their data will be followed up.

Participants without a cancer diagnosis will be asked to come back a third time, around one year after their second appointment for their 24 month appointment.

There is very little data on repeat screening with the Galleri test and these next trial appointments will help to establish the optimal screening interval. While the first year of the trial may pick up cancers that have existed for some time, the second and third years provide the best opportunity to explore the expected benefits of picking up new cancers at an early stage when treatment is generally more successful.

Vision for the future

The Galleri blood test, if successful in the context of NHS screening, could play a major part in achieving the NHS Long Term Plan ambition to catch three quarters of cancers at an early stage, when they are generally easier to treat.

If interim data are positive, the NHS in England plans to roll out the test to a further one million people across 2024 and 2025.

About the trial

The NHS-Galleri trial is a prospective, Randomised Controlled Trial (RCT). Following baseline blood collection, participants were randomised (1:1) to either:

- I. **Intervention ('test') arm** - blood is sent for analysis using the Galleri test.
- II. **Control arm** - blood is stored and may be tested in the future.

Participants remain blinded throughout the trial unless they are among the minority of participants in the intervention arm who receive a 'Cancer Signal Detected' result. Participants with a 'Cancer Signal Detected' result are informed by a trial nurse and referred to the NHS for diagnostic investigation as an urgent suspected cancer referral.

All participants are advised to continue with their standard NHS screening appointments and to contact their GP if they notice any new or unusual symptoms.

The NHS-Galleri trial is being run by The Cancer Research UK & King's College London Cancer Prevention Trials Unit in partnership with the NHS and healthcare company, GRAIL, which developed the Galleri test.

The trial is operating with the support of eight NHS Cancer Alliances across England: Cheshire and Merseyside, East Midlands, East of England (North), Greater Manchester, Kent and Medway, Northern, South East London, and West Midlands.

For further information about the trial visit <https://www.nhs-galleri.org>

About the Galleri test

The Galleri test recognises methylation patterns in cell-free DNA (cfDNA; DNA released into the blood by apoptosis or necrosis of noncancerous and tumour cells). The detection of a methylation pattern associated with cancer is returned as a 'Cancer Signal Detected' result, at which point a further analysis is performed to predict the 'Cancer Signal Origin' (CSO). Up to two cancer signals may be reported, with the first signal listed having a higher likelihood of being correct. The CSO can be used to inform the appropriate NHS referral pathway to investigate a potential cancer diagnosis. A 'Cancer Signal Detected' result has previously been reported to have a positive predictive value (PPV) in the region of 40% (Klein et al, 2021). CSO prediction accuracy for the first or second CSO in participants with a 'Cancer Signal Detected' result is reported to be around 88% (Klein et al, 2021).

References

Klein EA, Donald R, Cohn A, Tummala M, Lapham R, Cosgrove D, Chung G, Clement J, Gao J, Hunkapiller N, Jamshidi A, Kurtzman KN, Seiden MV, Swanton C and Liu MC, 2021, Clinical Validation of a Targeted Methylation Based Multi-Cancer Early Detection Test. American Association for Cancer Research (AACR) Annual Meeting, 10-15 April and 17-21 May, virtual conference (https://grail.com/wp-content/uploads/2021/04/CCGA3_Klein_AACR_2021_oral_FINAL.pdf)