inspirata | ☀Trial Navigator®

Guy's Cancer Center and Trial Navigator Case Study

Trial Navigator recently passed a robust clinical validation process designed by researchers at Guy's and St. Thomas' NHS Foundation Trust in the United Kingdom, a global leader in cancer research.

Evaluation Brief

Trial Navigator to identify up to 5 early-phase open ECMC clinical trial matches for 40 patients within a 100-mile radius of Guy's and St. Thomas' cancer center.

QI Score

- Tumor and biomarker match: 4
- Biomarker match: 3
- Tumor match: 2
- Generic match: 1
- Ineligible: 0

Key Takeaways

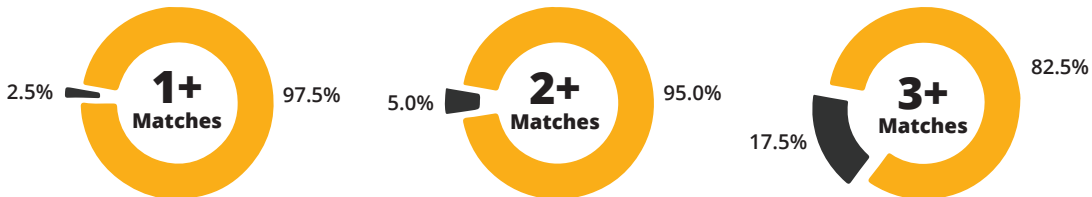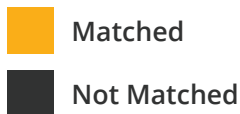|	Yes	No
Was each patient successfully matched to a clinically relevant trial?	✅	☐
Were multiple clinically relevant trials matched to each patient?	✅	☐
Were patients matched with clinically relevant trials outside of Guy's Cancer Center?	✅	☐
Did Trial Navigator achieve comparable or better performance against historical matches?	✅	☐

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When tasked with matching cancer patients to early-phase clinical trials, Trial Navigator found at least one correct match out of a set of 5 trials for nearly 98% of patients.

N=40 Patients | 95% CI

- ■ Matched (orange)
- ■ Not Matched (black)

2.5% | **1+ Matches** | 97.5%

5.0% | **2+ Matches** | 95.0%

17.5% | **3+ Matches** | 82.5%

Abstract Title:
Evaluation of an automated artificial intelligence (AI)/natural language processing (NLP) engine to match patients (pts) with advanced solid cancer to biomarker-driven early phase (EP) clinical trials.

Track:
Care Delivery and Regulatory Policy

In Collaboration With:

NHS Guy's and St Thomas' NHS Foundation Trust | CANCER RESEARCH UK | KING'S College LONDON | KING'S HEALTH PARTNERS | ecmc

Citation:
J Clin Oncol 40, 2022 (suppl 16; abstr e13513)
https://meetings.asco.org/abstracts-presentations/212806

Title: Evaluation of an automated Artificial Intelligence (AI)/ Natural Language Processing (NLP) engine to match patients (pts) with advanced solid cancers to biomarker-driven early phase (EP) clinical trials

Morton C¹, Riza D¹, Stavraka C¹, Arooj K¹, Spicer J¹ ², Regan A¹, Sanguí S¹, Carida G¹, Borecki Y³, Schwertag T³, Rai H¹, Brierley P³, Durcan G³, Quartermain A³, Sarker D¹ ²

¹ Guy's and St Thomas' NHS Foundation Trust 2, Comprehensive Cancer Centre, King's College London 3, Experimental Cancer Medicine Centre, ECMC Programme Office 4, Inspirata Inc, North York, Canada 5, Inspirata Europe, Hampshire, United Kingdom, 6, Kings College London

Abstract

Background

Only 10% of cancer patients in the UK are currently enrolled in clinical trials, and it is estimated that over 50% of medical research is delayed because of lack of patient participation. Failing to enrol sufficient numbers of patients and deliver the trials in a timely manner also means that potential new therapies are significantly delayed in their journey to the patients. The pressure to enrol more patients in active early and late phase clinical trials is projected to increase in the next five years as a greater number of new drugs are developed and evaluated. The need for an effective and efficient partnership of genomic analysis laboratories is increased to accommodate many more patients. Also, with introduction of a National Genomic Test Directory for patients with cancer across the UK, the scope for more widespread and equitable genomic testing across the UK is likely to lead to more patients identified with potentially actionable genomic aberrations.

The UK Experimental Cancer Medicine Centre (ECMC) Network (18 adult and 11 paediatric centres) currently recruits approximately 3000 patients per year to 600 academic and commercial phase I and II trials. At the heart of the ECMC Network are over 150 feasibility exercises per year. Clinicians and the ECMC Network identified the lack of national visibility of open oncology trials as one of the main hurdles for efficient patient referral to early phase oncology trials. Whilst several publicly available trial registries exist (e.g., Clinicaltrials.gov), they are not fit for the purpose of matching patients to trials due to incomplete, unstructured and out of date trial information, but also the lack of functionality such as the ability to search using molecular markers. To address this, the ECMC Programme Office (PO) in collaboration with Cancer Research UK's Technology team and the ECMC network built and piloted a scalable digital trial finding tool tailored to the clinicians to help identify and match patients to early phase trials. The EC's Trial Navigator™ (TN) is able to create 100% clinical trial information to early phase oncology trials taking place in the ECMC Network. Clinicians can search for and quickly identify relevant clinical trial options for their patients using criteria such as age, location and molecular markers.

Whilst the project has managed to tackle one of the key challenges of creating a complete, up-to-date and accurate database, ECTF also addresses 'half' the enrolment problem: it still leaves the challenge of identifying and matching eligible patients. The manual task of matching patients to clinical trials requires detailed knowledge of patient characteristics, access and interpretation of several fragmented medical documents followed by manual review of trials, each with numerous eligibility and exclusion criteria. This manual process takes significant time and therefore there is a pressing need for artificial intelligence (AI) and natural language processing (NLP) tools to aid the process of matching.

Inspirata's Trial Navigator™ (TN) solution uses AI and NLP to automatically extract relevant information from both patient medical records and trial protocols to identify appropriate trials. We conducted a retrospective study to evaluate the ability of TN to match patients referred to the Guy's Hospital early phase trials unit.