G-KnowMe

AI-Driven Support to Diagnostics and Healthcare !

G-KnowMe

Genetic knowledge in medicine

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G-KnowMe's prowess in the fields of molecular diagnostics and healthcare informatics, coupled with broad professional alliances, empowers us to bridge the gap between research and clinical application, setting the stage for revolutionary advances in healthcare. The team consists of PhDs in Genomics, Genetics, Assay development, Molecular Oncology and members with vast and varied experience in AI, NLP, Medical Systems

Hands-on experience in building several software solutions and automated workflows for a wide range of applications in diagnostics, healthcare and drug discovery

In-depth understanding of cancer biology, genomics, statistical analysis automation and algorithms for efficient analysis and interpretation of clinical data

Expertise in cutting edge GenAI based techniques for creating custom databases and knowledge graphs to mine meaningful insights from unstructured data

G-KnowMe Offerings & Services

Product Suite

- OncoConnect Suite
- Ctrials.ai

Technology Services

- Clinical Reporting
- Target Reporting
- Custom Databases

Consulting Services

- Workflow Automation
- E2E Sequencing Lab and Workflow
- Data Analysis and Modelling

G-KnowMe Offerings & Services contd...

OncoConnect Suite

A comprehensive informatics solution powered by AI that addresses the challenges in the interpretation and adoption of cancer genome profiling in clinical decision-making

Target Reports

G-KnowMe's Target reports provide a comprehensive and up-to-date analysis of drug targets for aiding drug discovery, biomarker research and clinical trial design

Clinical Reporting

G-KnowMe has put together state-of-the-art semi-automated in-silico workflows that significantly bring down the time taken to put together the high quality reports

Workflow Automation

G-KnowMe specializes in creating custom automated pipelines for multiplex data analysis, streamlining the process for scientists to gain insights from their experiments

Custom databases

Provided the guidance and technology support to develop an integrated oncology database using common data format that could collate diverse patient data from a variety of sources

Team G-KnowMe

Nimisha Gupta
Co-Founder & Informatics Lead

ME CS IISc, BE Chem MNIT, 25+ years
Artificial Intelligence, Informatics
Ex Strand Life Sciences

Dr. Vaijayanti Gupta
Co-Founder & Science Lead

PhD University of Maryland, PostDoc NIH, 20+ years
Genomics, Genetics, Assay Development
Ex Strand Life Sciences

Sandhya Krishnan
Product & Project Mgmt

BE CS CET, 22+ years
Program & Product Management
Ex Philips Healthcare Systems

Dr. Shilpa Patil
Molecular Biologist

PhD IISc Bangalore, PostDoc NIH
Molecular Oncology, Genomics

Sucharitha M V
Architect

BE CS, 20+ years
Natural Language Processing
Ex Strand Life Sciences

This expertise helps G-KnowMe blend emerging areas in biotechnology with cutting edge informatics and molecular assays to build end-to-end solutions for enabling **precision medicine**

Intellectual Property Rights

- **IP Owned By:** G-KnowMe
- **Current Status:** Patent application in development for AI-powered algorithm
- **Core IP Focus:** Automated extraction and structuring of biological/clinical data from unstructured text
- **Key Innovation:** Novel method for transforming unstructured clinical literature into standardized, actionable databases with continuous integration of new research
- **Strategic Approach:** IP protection targets core data transformation methodology rather than software platform
- **Licensing Details:** No current licensing arrangements; full IP ownership maintained by G-KnowMe
- **Commercialization Strategy:** IP will serve as defensible competitive advantage while maintaining flexibility for platform evolution

Primary Market Segments

Hospital Chains and Cancer Centers

- **Target**: Large hospital networks with dedicated oncology departments
- **Key Need**: Streamlined oncology decision support integrated with clinical workflow
- **Value Proposition**: Improved patient outcomes through comprehensive analysis and faster turnaround time
- **Product**: OncoConnect CDS, custom integrations

Diagnostic Laboratories

- **Target**: Independent and hospital-affiliated labs performing NGS testing
- **Key Need**: Cost-effective, scalable interpretation solutions
- **Value Proposition**: Enhanced reporting capabilities and reduced interpretation time
- **Product**: OncoConnect NGS, custom reports

Pharmaceutical Companies

- **Target**: Companies conducting oncology clinical trials
- **Key Need**: Patient stratification and biomarker analysis
- **Value Proposition**: Improved trial participant selection and outcome analysis
- **Product**: OncoConnect CDS (Trials)

G-KnowMe Partners and Clients

Collaborative Clinical interpretation and reporting for Whole Genome Sequencing(WGS) of Tumor and Normal pair & Clinical Trials Utility for Breast Cancer
Deployment and Training is Ongoing

OncoConnect NGS is being validated against manually created reports 200+ Comprehensive Gene Panel(CGP) reports !
Deployment and Training Ongoing

OncoConnect NGS deployment being considered for a 200 patient clinical study

Knowledge Base creation for a drug target analysis with AI pipeline

Consulted to Develop a framework for clinical data analysis for real world data problems

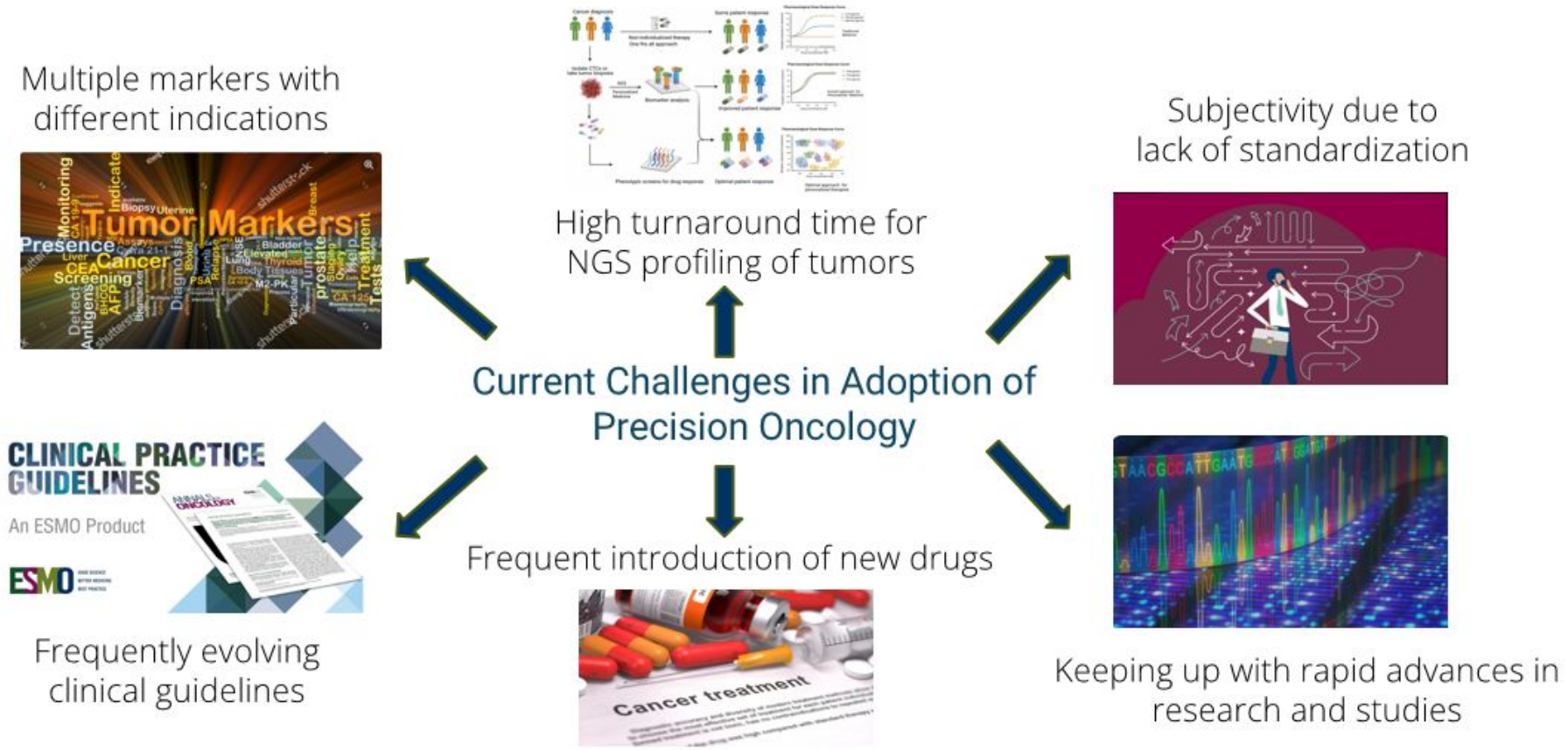
Model building for predicting the risk of recurrence in breast cancer patients

Software & Business Development Partner

Products and Services

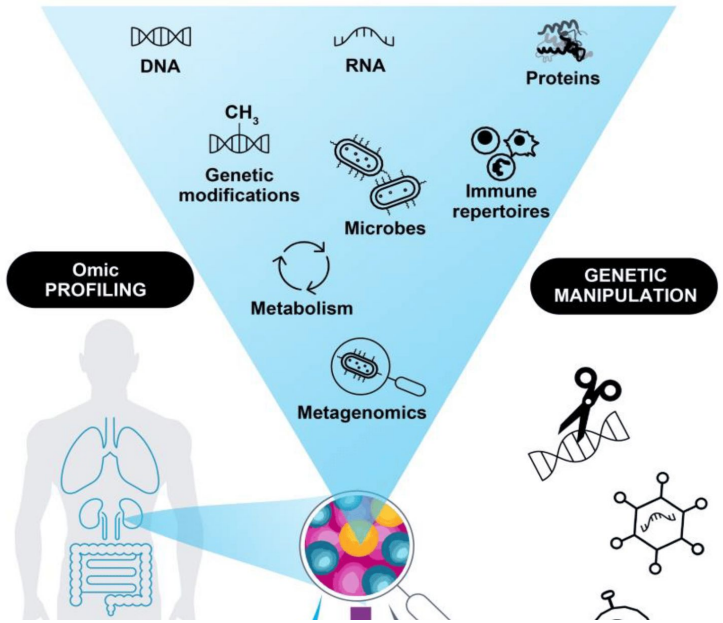
Challenges to the adoption of Precision Medicine in Oncology

Precision or personalized medicine is the future in Oncology, the goal of which is to target the right treatment(s) to the right cancer patient at the right time, taking into account their differences in their individual disease, genes, general health, environment and lifestyle. Currently, the main factor influencing precision oncology is Genomics.



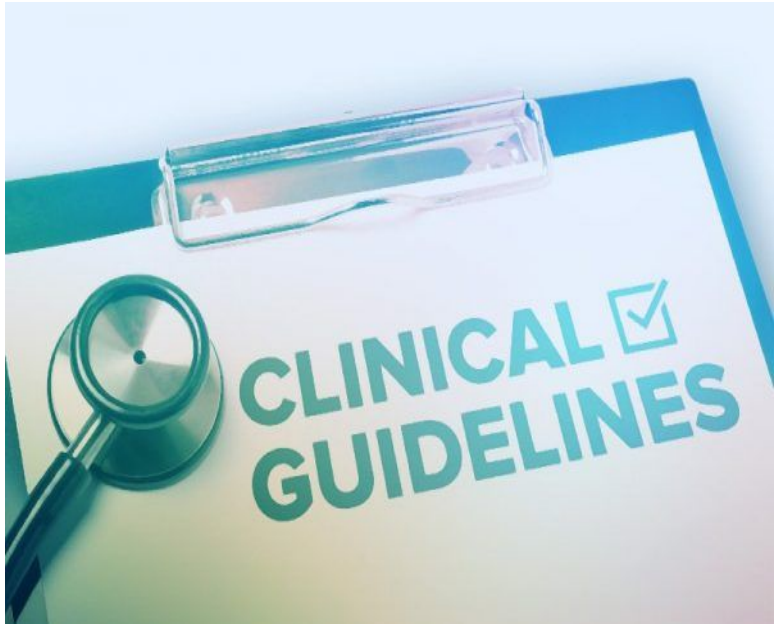
Keeping pace with the everchanging landscape amidst the growing number of cancer patients is a huge challenge for oncologists

Data Integration: The foundation of Precision Oncology



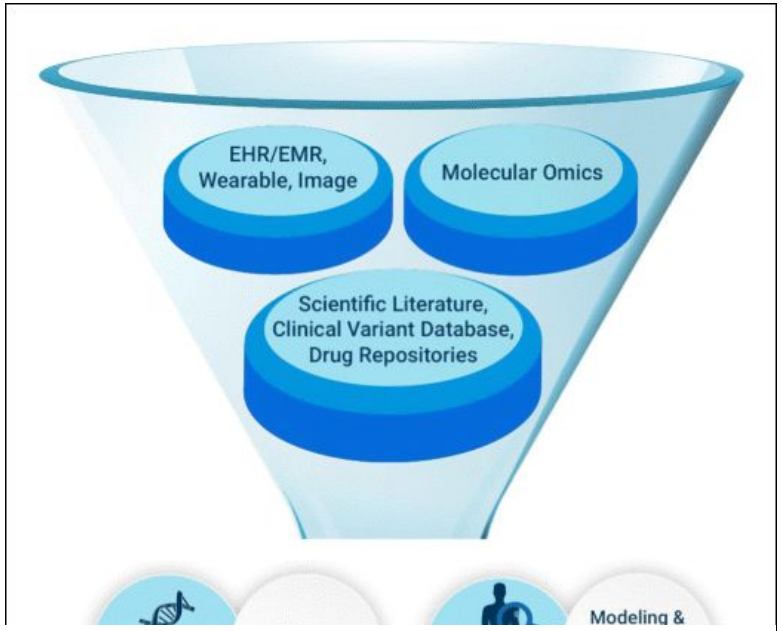
Patient Parameters

Comprehensive patient data is gathered from a wide array of sources, including Genetic markers, IHC, Histopathology, Radiology, Discharge Summaries, and Biochemistry reports



Clinical Guidelines

Leading guidelines like NCCN, ASCO, AMP and ESCAT provide evidence-based recommendations to guide treatment decisions

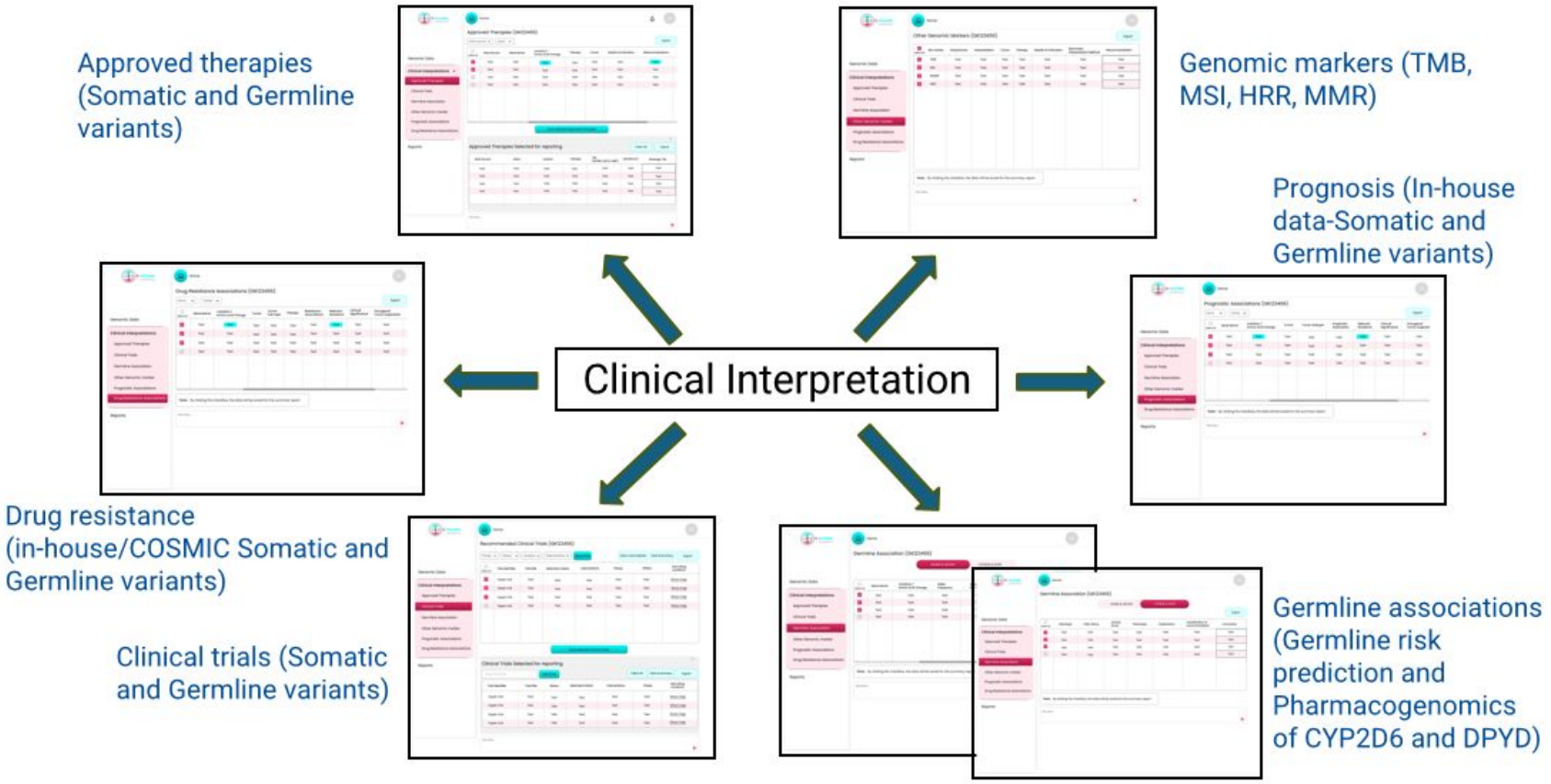


Data Sources

Access to valuable external data resources is essential, including FDA Approvals, Clinical Trials, PubMed, ClinVar, and OncoKB

OncoConnect: Enabling Precision Oncology

OncoConnect generates personalized holistic treatment plan considering genomics data, prior conditions and treatment history of the patient, and is currently deployed for key clients in UK and India



Key Benefits

- ✔ *Rapid*- Variant annotations, pathogenicity determination, filtering and matching with patient-associated clinical data within 2-3 hours as opposed to the current 72 hours
- ✔ *Up-to-date*- Most recent SOPs, Professional guidelines, Literature
- ✔ *Standardized*- Adoption of standard guidelines like ASCO/AMP/CAP, ESCAT, ACMG, UKCGG, ClinGen etc.
- ✔ *Cost efficient*- Allows to scale up, Minimal training period
- ✔ *Customizable*- Multiple sequencing platforms, small/large panels/WES/WGS, Tumor only or tumor-normal paired data, lab specific cutoffs, lab specific report formats

OncoConnect CDS: AI Powered Clinical Decision Support

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OncoConnect CDS, a clinical decision support tool which is a suite of four products, empowers clinicians with real-time insights to personalize cancer treatment strategies

Patient Profiler

Longitudinal Patient Profile created from patient's diagnostic reports, discharge summaries and doctor notes

cTrials.ai

A prioritized list of trials based on patient's clinical profile, preferences and most up-to-date registries

Onco SoC

Standard of Care recommendations based on geography specific guidelines and most up-to-date information from FDA & NCCN databases

OncoChat

An interactive interface for clinicians to query the patient reports, clinical guidelines and data sources for better decision making

cTrials.ai : Smarter trial matching with GenAI

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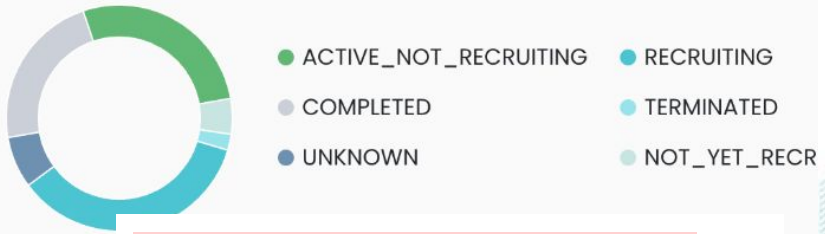
Showing Results

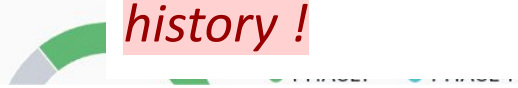
NSCLC patient with EGFR mutation progressed on osimertinib

Interventions

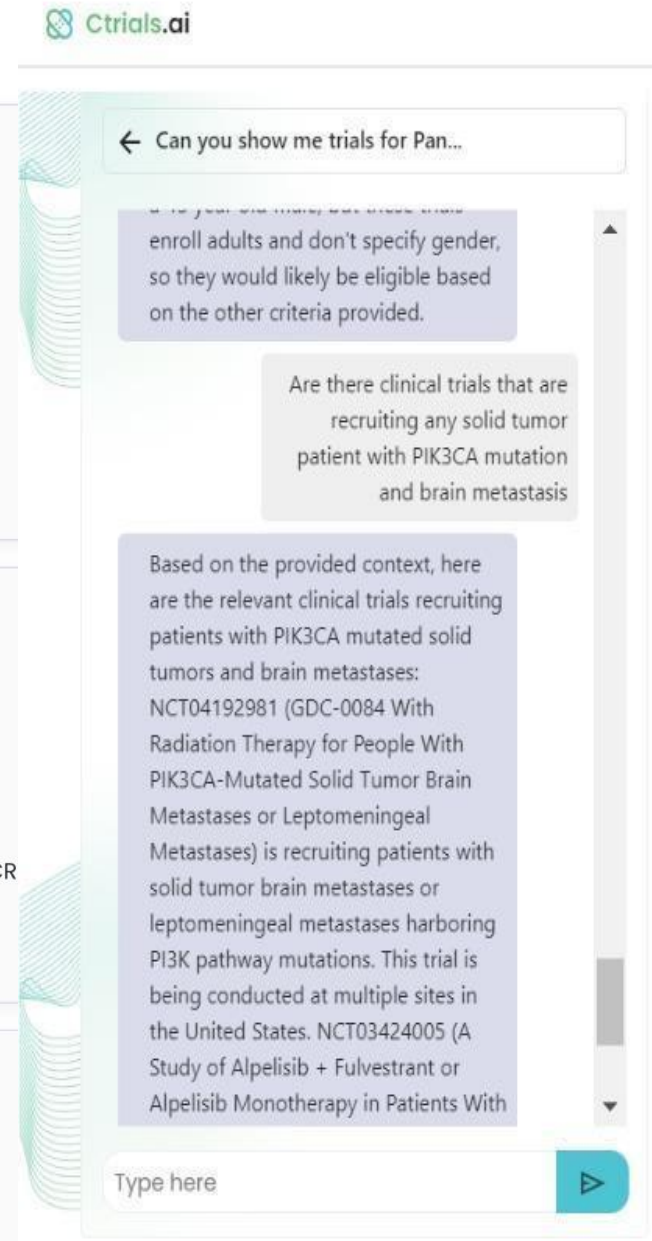
Recruiting Status



Phase



Fast and accurate search using patient diagnosis, biomarkers and treatment history !



Clinical Trials

NCT01802632 - AZD9291 First Time In Patients Ascending Dose Study

This study will treat patients with advanced NSCLC who have already received at least one course of **Read More**

Advanced Non Small Cell Lung Cancer

Advanced (Inoperable) Non Small Cell Lung Cancer

NCT02143466 - AZD9291 in Combination With Ascending Doses of Novel Therapeutics

The purpose of this study is to determine the safety, tolerability and preliminary anti-tumour activ **Read More**

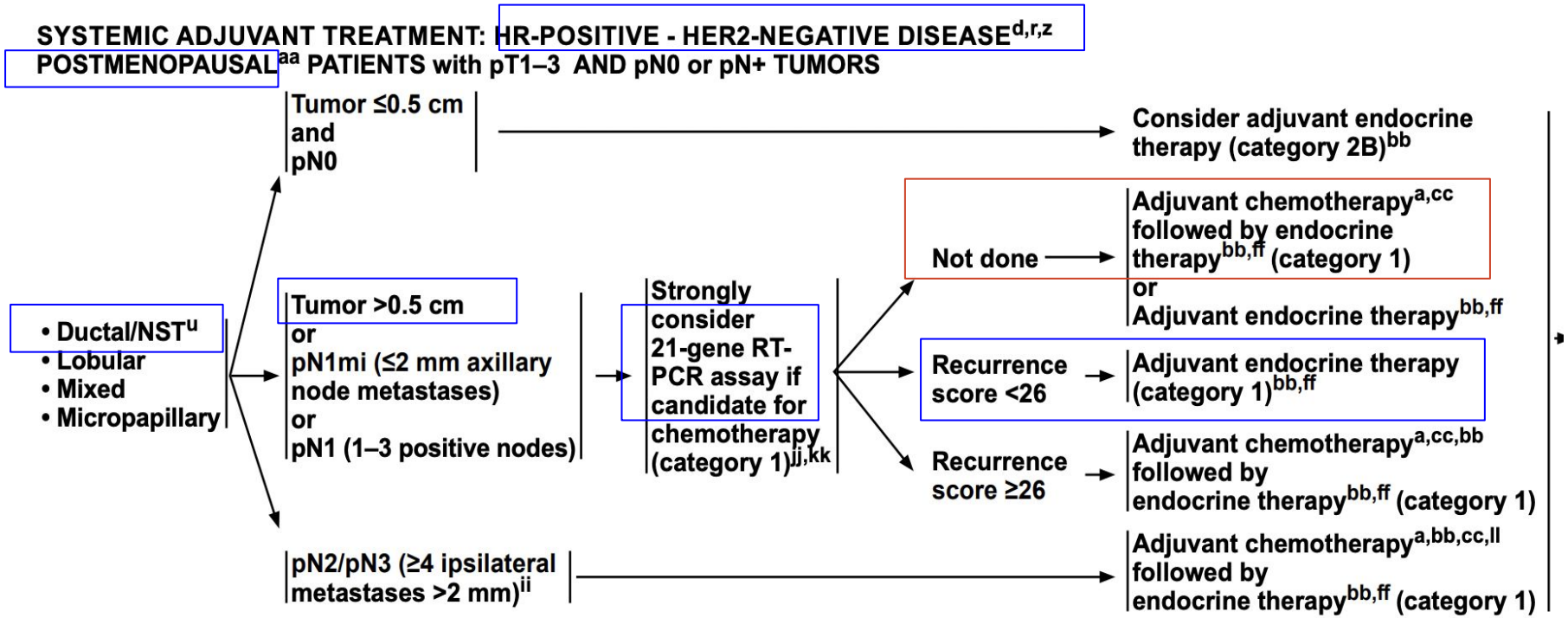
Advanced Non Small Cell Lung Cancer

NCT02151981 - AZD9291 (Osimertinib) Versus Platinum-Based Doublet-Chemotherapy in Locally Advanced or Metastatic Non-Small Cell Lung Cancer

A Phase III, Open Label, Randomized Study of Osimertinib versus Platinum-Based Doublet Chemotherapy **Read More**

Anticancer Treatment

Onco SoC: Standard of Care Recommender



Patient constraints overlayed over the guidelines

Question: Should Invasive Ductal Carcinoma, ER+, PR+, Her2-, pT1N0, Postmenopausal, Tumor>0.5cm consider further genomics testing ?

Answer: Gene Test Recommended

A low risk score on the genetic test will be a strong evidence to remove Chemotherapy from the treatment plan.

Guidelines are cryptic, frequently changing and difficult to consume in digital workflows

→ OncoConnect AI simplifies guidelines as flow charts and maps them to schema similar to the patient profile

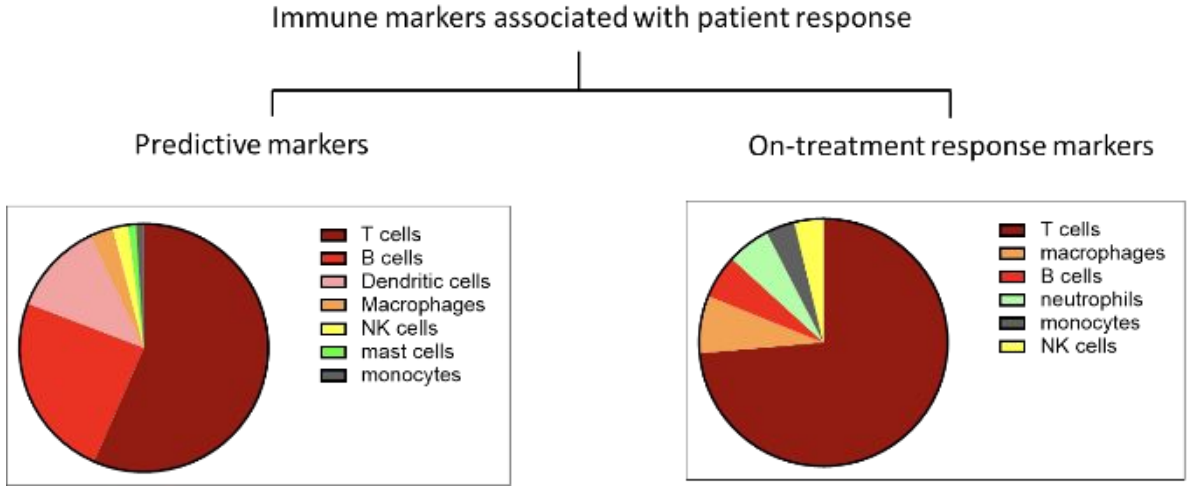
The Onco SoC provides guidelines based and data driven Standard of Care management options that are personalized for each patient!

Interactive Target Reports

G-KnowMe's target reports are comprehensive target reports with visualizations for effective insights. G-KnowMe uses expertise in both domain and GenAI to compile these reports with accuracy in a short period of time. Interactive dashboard and chatbot interface provides easy navigation and quick insights.

Extracting, Inferencing and Organizing

Domain Expertise in Oncology



Example: Target = Nivolumab (Immunotherapy drug)

Find all potential response and resistance biomarkers and rank them by priority. Markers can be single genes, pathways or cell types

Comprehensive target reports with visualizations for effective insights

Target Reports - Sample Insights

Preclinical: We have designed a novel drug against a target molecule. We need to comb literature prior to pre-clinical experimental designs on cell lines and models organisms.

- Target report provides preclinical model (Cell lines, transgenic mouse models etc.) best suited for analyzing the efficacy and target specificity of the drug molecule, experimental readouts and assays to be considered

Translational: When we enter a clinical trial with our targeted therapy, we need biomarkers for the treatment response, resistance and adverse effect prediction reported in the literature

- Target report provides biomarkers for *Responders vs Non-responders*, *On treatment response*, *Adverse effect prediction* and *Resistance*.

Clinical Trials Design: We are designing a clinical trial for studying a new drug or new indication and we need help with a comprehensive analysis of completed and ongoing clinical trials.

- Target report provides target expression in specific tumor types/indications, new indications and new drug combinations that are being studied against the target, ideal study sizes and expected patient response rates

Clinical trials: We plan to run a clinical trial in country X. Do we anticipate any issues with drug response due to the underlying genetic diversity in the population?

- Target report provides detailed SNP analysis

GKnoMiner - Information Extraction and Analysis

Industry	Location	Target Geographies	Engagement Model	Project Duration	Status
Healthcare	India	India	Development, Consulting	6 Months	Completed

Problem Statement	Solution
Extract relevant information from published literature for a specific endpoint e.g. get all the biomarkers to predict responders vs non-responders for a drug of interest; requires a lot of manual curation effort	Built an AI powered medical information extraction pipeline for the MeSH and UMLS concepts; with API based access to ClinicalTrials.gov and Pubmed Abstracts; and ability to support prioritization and provide quick summary of relevant concepts in the corpus of interest

Provided API based access to Pubmed & Clinical Trials to dynamically search and prioritize a subset to explore further.

Annotated the abstracts and trials with the UMLS, MeSH and custom dictionaries of interest.

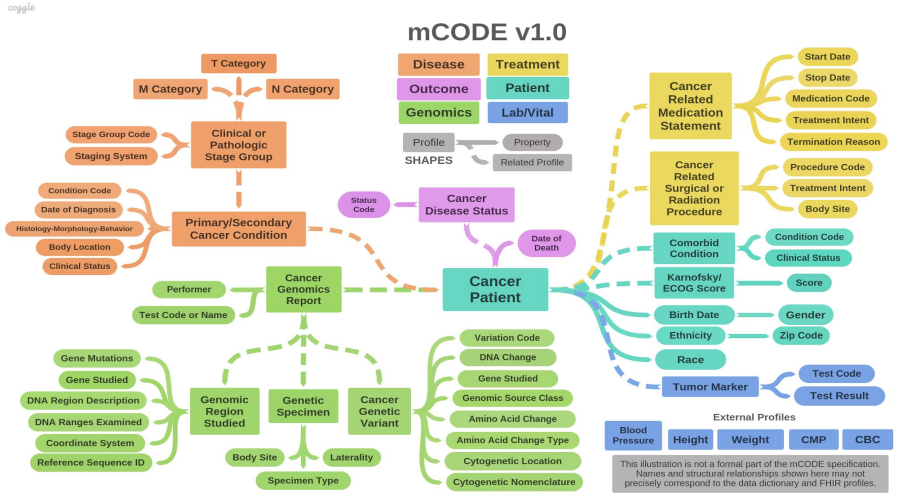
Supported curation of the marked up text to extract and export the information of interest.

Built custom dashboards and charts to summarize the annotated and curated information to gather insights..

Patient Profiler - Clinical Data Management

Industry	Location	Target Geographies	Engagement Model	Project Duration	Status
Healthcare	India	India	Consulting	2 Months	Completed

Problem Statement	Solution
Define a format to save the patient parameters from multiple test reports and doctor notes to enable the real-world data analysis.	We defined an FHIR (mCODE) based clinical data management format for the oncology data and helped the client define workflows to extract and encode relevant information from patient records.



Impact	
	• **Unstructured to Structured:** Unstructured data in from of reports was converted to FHIR compliant structured data • **Improved Efficiency:** Fast conversion and clinical coding made possible with AI driven pipelines • **Enabled Model Building:** Real World Data Analysis for insights generation was made possible with this conversion

Thank You!

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Important Links:

G-KnowMe Website

G-KnowMe & University of Cambridge Press Release