WINTER CANCER SYMPOSIUM

Artificial Intelligence in Cancer 2025

Practical Applications Transforming Oncology Today & Beyond

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Agenda

- The Urgency for AI in Cancer Care
- AI in Business Operations
- AI-Driven Automation Examples
- AI in Cancer Imaging, Early Detection & Patient Identification
- AI-Powered Clinical Trial Identification
- AI in Treatment Planning
- AI in Predictive Models
- The Future of AI in Cancer Care
- Call to Action: How Health Systems Can Leverage AI Today

The Urgency for AI in Cancer Care

Cancer Cases are Expected to Increase by 50% by 2030

The American Cancer Society estimates that there will be 5,500 new cancer cases every day in 2025. Overall, cases are expected to increase by 50% by 2030.

Workforce Shortages Expected to Increase

The Health Resources and Services Administration (HRSA) projects nationwide shortages of approximately 207,980 registered nurses (RNs) and 302,440 licensed practical nurses (LPNs) by 2037.

Oncology Care Teams Still Rely on Manual Processes

Many oncology service lines still conduct manual casefinding, and track patients using sticky notes, binders, and Excel spreadsheets. This creates risk and inefficiencies.

Real-World AI Use Case #1

AI-Driven Business Operations Solutions

Infinx, LeanTaas, Atlas, eHealth,

The Challenge:
Large volume imaging authorization requests, patient scheduling based on visit type, CTU Chair scheduling based on treatment plan, financial assistance identification, medical record collection.

The Solution:
AI auto-submits authorization requests, identifies next available appointment based on visit type, searches databases for patient assistance

The Impact:
Increased reimbursement, ensured right patient, right physician scheduling. Maximized chair utilization.

Why It Matters:
Securing FTE for scheduling is high cost, high turnover. Inappropriate scheduling affects patient satisfaction and physician productivity/availability. Decreased overtime= improved RN satisfaction and decreased CTU costs.

Real-World AI Use Case #2

AI-Driven Tumor Board Automation

Azra AI

The Challenge:

Manual tumor board prep is time-consuming and fragmented.

The Solution:

AI compiles relevant patient histories, treatment data, and imaging insights automatically

The Impact:

Integrated Tumor Board management solution that streamlines case presentation, decision tracking, and follow-ups. Customized agenda and automated reporting that meets CoC Standard 2.5.

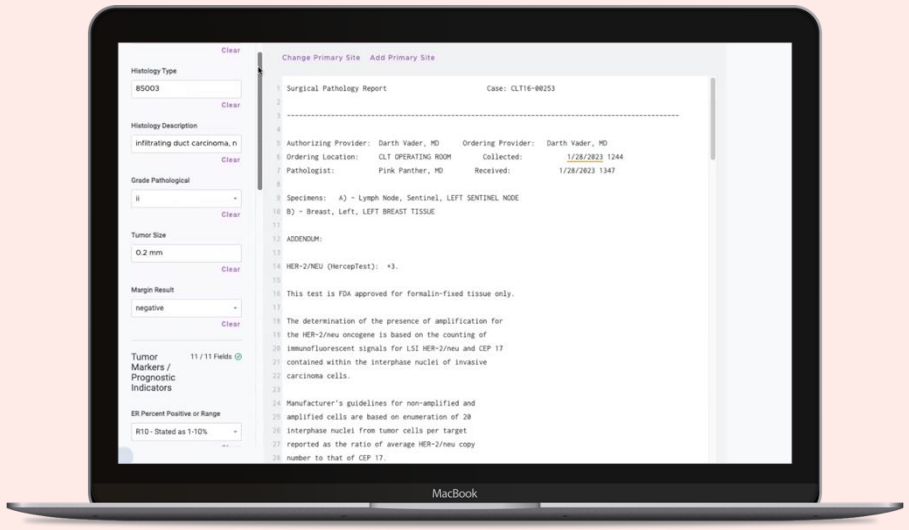
Why It Matters:

Reduces tumor board prep time by 50%. Ensures complete, real-time data for oncologists. Enhances multidisciplinary collaboration

Real-World AI Use Case #3

AI & Cancer Registry Automation

Azra AI



The Challenge:

Manual casefinding and registry abstraction are time-consuming, causing delays in accreditation.

The Solution:

AI automates casefinding, extracts structured data, pre-populates required fields in NAACCR format for state and national registries, and ensures compliance with CoC accreditation standards.

The Impact:

A 260-bed hospital in Central Pennsylvania saw an 80% Reduction in manual abstraction workload. They accelerated case reporting for compliance, reduced their contractor spending, and freed up registry staff for higher-value tasks.

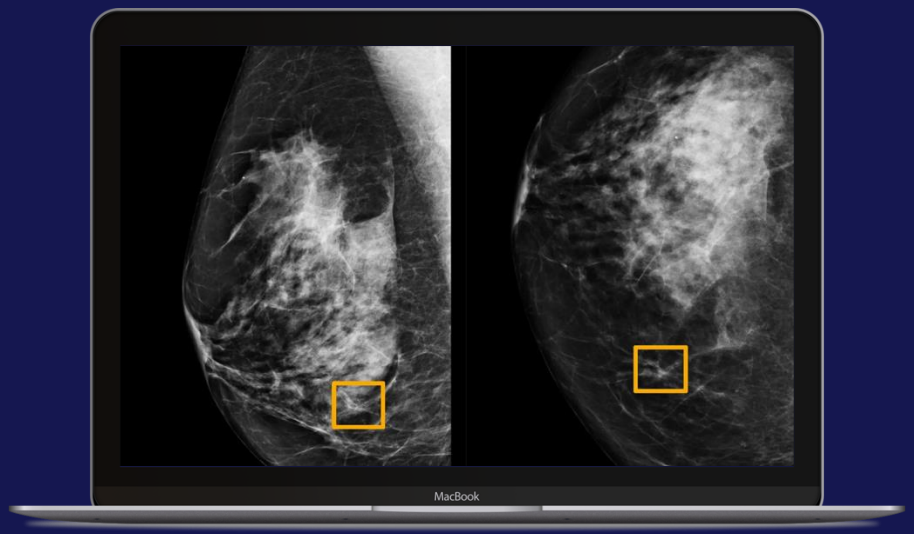
Why It Matters:

Oncology Data Specialists are able to eliminate registry backlogs and stay in compliance with CoC standards.

Real-World AI Use Case #4

AI in Cancer Imaging & Early Detection

Google DeepMind



The Challenge:

Radiologists face high workloads and potential for missed early-stage cancers.

The Solution:

AI-powered imaging analysis detects cancerous lesions with higher accuracy.

The Impact:

AI has been shown to reduce false negatives by 9-15% in lung and breast cancer screenings. Enhances early-stage detection rates, leading to better patient outcomes. Improves workflow efficiency for radiologists.

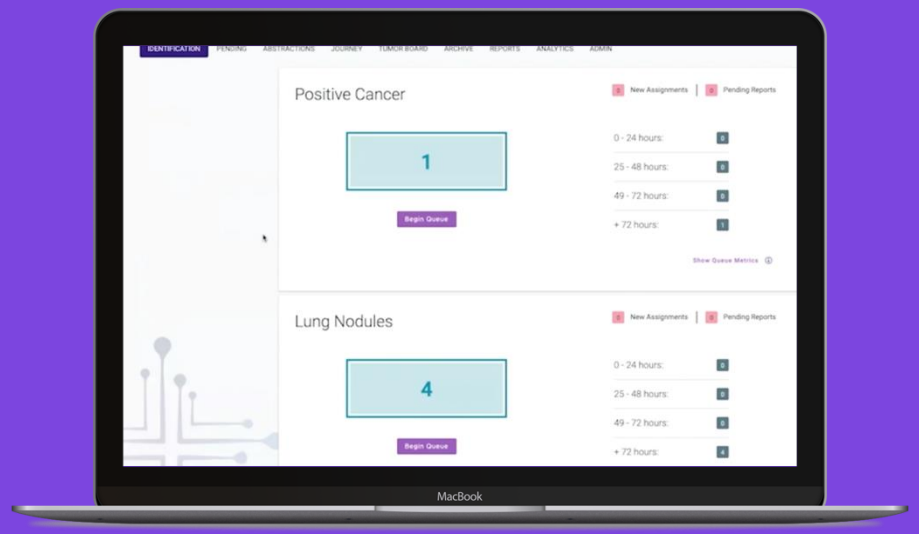
Why It Matters:

With rising workloads, radiologists are at risk of burnout, which can impact their performance and the quality of care. AI streamlines their workflow by automating repetitive tasks, allowing them to focus on complex cases and patient interactions.

Real-World AI Use Case #5

AI-Powered Patient Identification

Azra AI



The Challenge:

Cancer diagnoses and incidental findings often get lost in the system, delaying treatment.

The Solution:

Azra AI's transformer models analyze the unstructured data in radiology and pathology reports in real-time. Navigators can see a prioritized queue of confirmed cancer patients, suspicious incidental findings, and high-risk screenings.

The Impact:

Hospitals have seen a 53.8% Increase in identified cancer patients, an increase in patient retention, shorter time to treatment for patients, and 20%+ increase in net patient revenue.

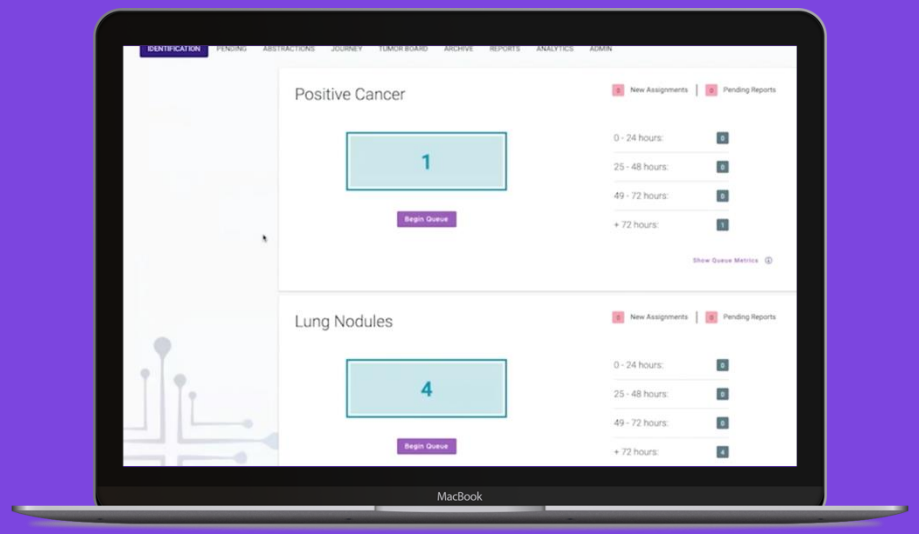
Why It Matters:

Earlier identification leads to faster treatment, improved survival rates, better health equity, and lower risks.

Real-World AI Use Case #6

AI-Powered Clinical Trial Candidate Identification

Inspirata, OncoLens



The Challenge:

Cumbersome, time consuming, manual process to identify potential clinical trial candidates.

The Solution:

Automation built into EMR to scan through medical records and identify candidates based on inclusion/exclusion criteria for each specific trial

The Impact:

With only 3-5% of eligible cancer patients being offered clinical trials, identification of potential candidates will increase screening and accrual to trials

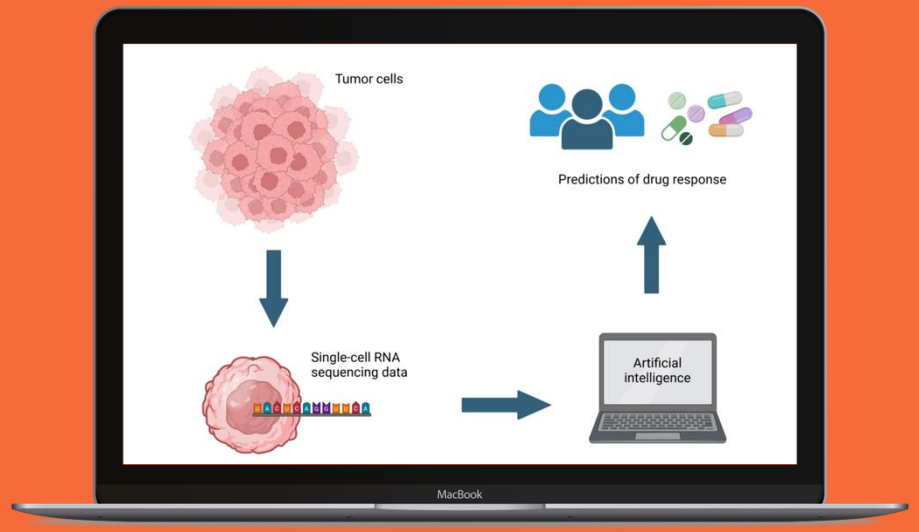
Why It Matters:

Successful enrollment of diverse, equitable and inclusive trials will advance cancer treatment options

Real-World AI Use Case #7

AI for Personalized Treatment Recommendations

PERCEPTION, CARIS GPS



The Challenge:

Traditional methods of drug selection for cancer treatment often fail to consider the diversity of individual tumor cells, leading to suboptimal therapies and drug resistance.

The Solution:

PERCEPTION by NCI uses AI to analyze single-cell RNA sequencing data, providing detailed insights into cellular diversity and predicting patient responses to specific cancer drugs.

The Impact:

Accurately predicts responses to FDA-approved cancer drugs and drug combinations. Identifies clones within tumors that drive resistance or response. Enables more precise, personalized oncology treatments and optimizes drug selection to improve patient outcomes.

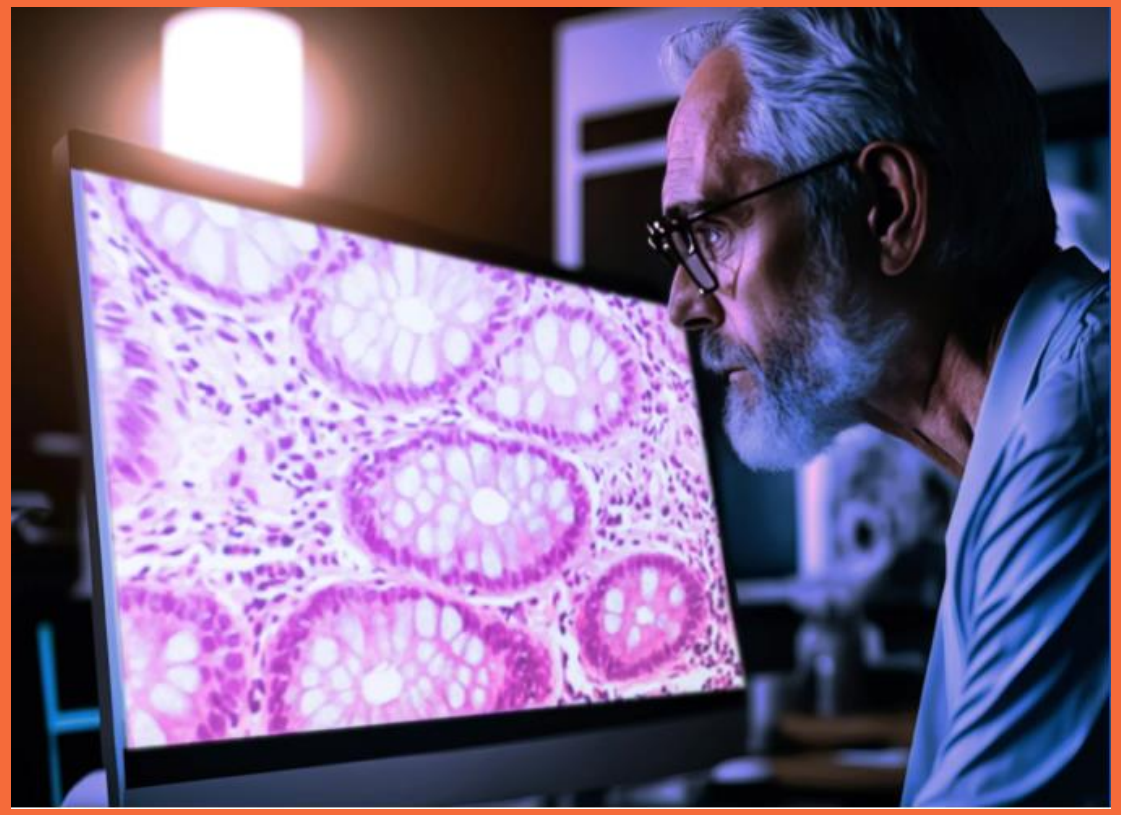
Why It Matters:

By tailoring therapies based on a patient's unique tumor profile, it reduces trial-and-error approaches, improves survival rates, and helps patients access the right treatments faster.

Real-World AI Use Case #8

AI Utilizing Predictive Models

CARIS, Artera AI



The Challenge:
Not knowing if a certain therapy will benefit a patient

The Solution:

Utilizing blood or tissue AI can sort through data to predict treatment response based on sequencing. Currently being used for modalities such as colorectal and prostate cancers. In the pipeline is platinum sensitivity in ovarian, pancreatic and brain cancers

The Impact:
Clinical trials often do not represent minority populations thus treatment efficacy can vary, utilizing AI to sort through large volume data will personalize and optimize treatment decision-making.

Why It Matters:
By tailoring therapies based on a patient's unique tumor profile, it reduces trial-and-error approaches, improves survival rates, and helps patients access the right treatments faster.

The Future of AI in Cancer Care

Beyond 2025

AI in Genomics

Predictive analytics are being used to identify hereditary cancer risks.

CancerIQ, MultiplAI

AI & Robotics

Enhancing precision in cancer surgeries.

DaVinci, STAR, GI Genius

AI in Drug Discovery

Exscientia, Certis and other companies are speeding up new cancer therapies.

AI & Radiation Dosing

Automate the process of identifying critical areas on medical images, allowing for more precise radiation delivery while minimizing damage to healthy tissues

Call to Action: How Health Systems Can Leverage AI Today

- **Involve Your Staff:** Engage your team early to address misconceptions about AI and ensure solutions enhance workflows, freeing staff to focus on their expertise.
- **Start Small:** Implement AI with manageable, high-impact projects that improve patient care and streamline clinician workflows.
- **Embrace Data Insights:** Leverage AI to analyze new data and use it to guide decisions and identify opportunities for improvement.
- **Stay Open-Minded:** Explore diverse AI applications beyond clinical decision support, and trust in the expertise of your AI partners.
- **Partner with AI Experts:** Collaborate with trusted AI providers like Azra AI to ensure tailored, effective solutions that drive long-term success.

“Artificial intelligence will help us be more human, not less. By handling complexity and automation, AI frees us to focus on what matters most —caring for people.”

“The best way to predict the future of healthcare is to create it—and with AI, we have the tools to shape a smarter, more compassionate future together.”

Kristina Rua