NEWSLETTER

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EDITORIAL

ARTIFICIAL INTELLIGENCE IN ONCOLOGY: WHERE WE ACTUALLY STAND IN 2026

Last month, a resident presented a CT scan flagged by nodule-detection software. The algorithm identified a 6 mm spiculated lesion in the right upper lobe that three of us had overlooked. The patient was subsequently diagnosed with Stage IA adenocarcinoma. This is not a story about AI replacing radiologists; it illustrates a tool that worked in a specific instance. The central question remains whether such occurrences signal a genuine shift in clinical practice or are isolated anecdotes dressed as transformation.

The reality sits between those extremes. AI in oncology has moved beyond proof-of-concept, with randomised evidence, regulatory frameworks, and deployed tools across imaging, pathology, and treatment planning. Yet implementation remains harder than validation, and a significant gap persists between conference presentations and routine clinical workflows.

Across the Clinical Specialties (Figure 1)

Radiology hosts the largest number of approved AI devices; the FDA lists several hundred.[1] Their primary value is volume management, not superhuman accuracy. The Swedish MASAI mammography trial showed AI-supported screening increased cancer detection by 29%, reduced interval cancers by 12%, and cut radiologist workload by 44%.[2] Extrapolation to different populations, however, requires caution.

In pathology, tools have evolved from cancer detection to treatment-response prediction. The Paige Predict platform infers 123 biomarkers across 16 cancer types from morphology alone — critical when tissue is scarce.[3] Foundation models trained on 20 million whole-slide images (NVIDIA–Mayo Clinic) now detect rare diseases with minimal additional data.[4] The ArteraAI prostate model integrates digitised pathology with clinical variables to guide androgen-deprivation decisions in radiotherapy.[5]

In radiation oncology, auto-contouring reduces contour-creation time substantially, but automation bias — accepting computer-generated contours without sufficient review — has emerged as a new failure mode.[6] Roughly 65% of radiotherapy systems installed in 2025 incorporate AI-based adaptive functionality; MRgRT platforms re-optimise dose daily to account for anatomical changes.[7]

Surgical oncology adoption remains slower. The da Vinci 5 platform integrates AI for image-free robotic palpation, with 2025 data suggesting ~25% reduction in operative time and ~30% fewer intraoperative complications.[8] In medical oncology, AI compresses R&D timelines: AI-discovered molecules now achieve 80–90% Phase I success rates against a historical 40–60% average, with SIGX1094 receiving FDA fast-track designation for gastric cancer in 2025.[9] The CURATE.AI platform has reduced chemotherapy dosages by 20% without compromising efficacy by modelling individual drug-response curves.[10]

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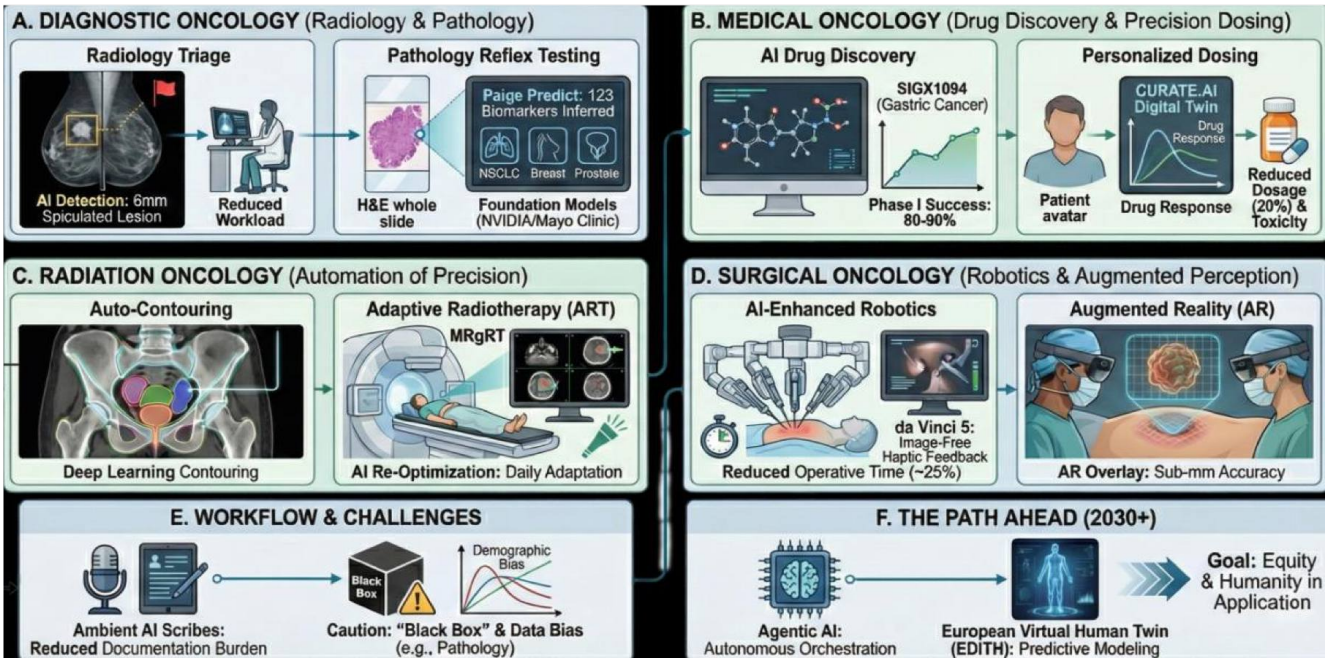

Figure 1: AI in Oncology 2026 — Integration Across Clinical Specialties & Future Directions

The Clinician's Daily Work (Figure 2)

Large language models draft clinic letters, summarise case histories for tumour boards, and extract structured data for registries. The WHO has issued guidance emphasising the need for mandatory human verification to prevent fabricated information from entering medical records.[11] AI tools can summarise recent publications, identify relevant trials, and help navigate unfamiliar subspecialties — the equivalent of a well-read colleague available at any hour. AI assistants that contextualise genomic or radiomic findings also help bridge expertise gaps in multidisciplinary teams, particularly for trainees and referring general practitioners.

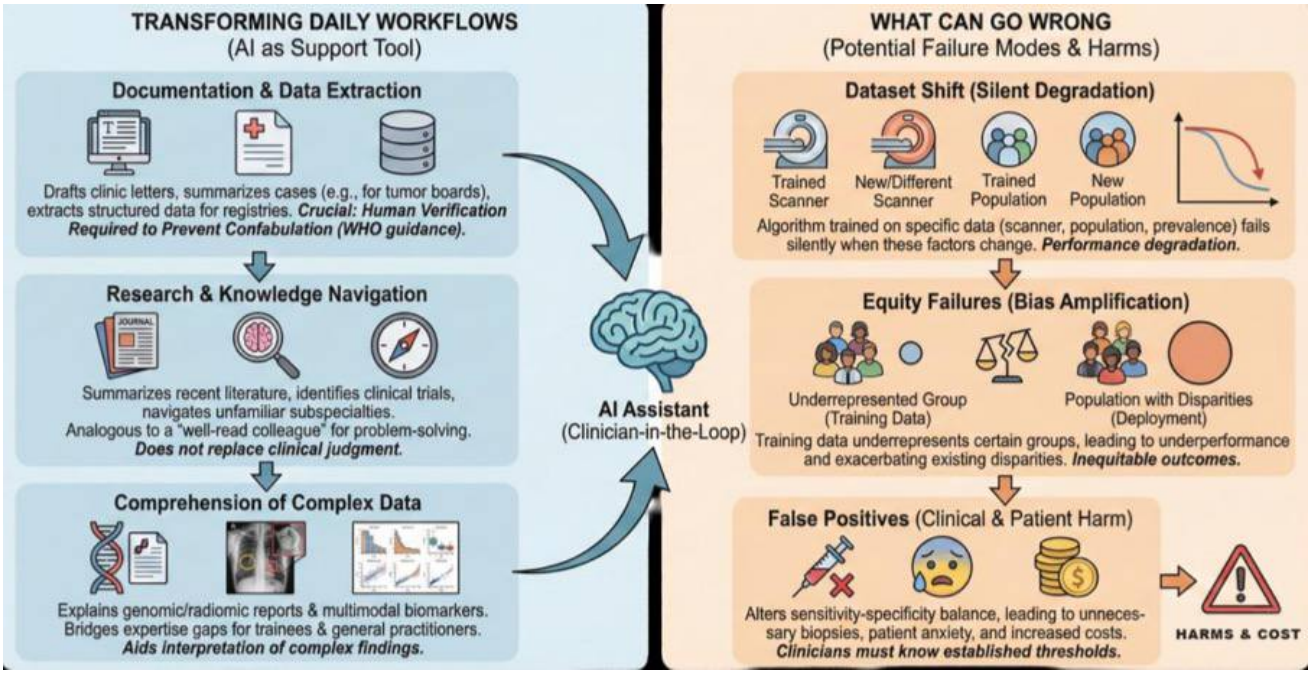

Figure 2: AI in the Clinician's Daily Work — Transforming Workflows, Research, and Comprehension, with Potential Failure Modes

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What Can Go Wrong (Figure 2)

Dataset shift is among the most insidious failure modes: an algorithm trained on one scanner or population may silently degrade when those factors change. If training data under represent certain groups, performance disparities follow.[12] False positives generate unnecessary biopsies, patient anxiety, and cost. Clinicians must understand the sensitivity–specificity trade-offs built into every AI threshold.

The Indian Context

India's high cancer burden, limited specialist availability, and infrastructure heterogeneity make AI both promising and potentially problematic. The IndiaAI mission and National Cancer Grid have launched the Cancer AI and Technology Challenge (CATCH) to pilot solutions within NCG hospitals under structured governance — not ad hoc adoption of imported tools.[13] The Digital Personal Data Protection Act, 2023 establishes legal requirements for any deployment.[14]

Practical Advice

When evaluating AI tools, request external validation data, understand failure modes, and plan monitoring from the outset. Responsibility stays with the clinician — AI is not a co-defendant. For trainees, critical appraisal of algorithmic claims is now as essential as appraising clinical trial results, alongside the clinical reasoning needed to recognise when the algorithm is wrong.

This transition is ongoing. AI tools are already embedded in many clinical workflows, often without explicit recognition. The imperative today is active governance: knowing which tools are in use, what they do, and how they affect patient care. The 6 mm nodule was real — as was the clinical judgement required to decide what to do next.

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ANNUAL CONFERENCE 2026 OF IMA ROHINI

RGCIRC participated in the Annual Conference 2026 of IMA Rohini on Sunday, 1st February 2026 at Hotel Crowne Plaza, Rohini, New Delhi.

Dr. D. S. Gangwar, Interim CEO delivered an insightful lecture on **Integrated Care in Oncology (Importance of Primary Care Provider)**, and Dr. I. C. Premsagar, Chief of Neuro & Spine Oncology Services spoke on **Recent Advances in Neuro Oncology** and Dr. Dinesh Bhurani, Director – Hemato-Oncology & Bone Marrow Transplant share his knowledge on **Newer Advances in Haematological Malignancies.**

In recognition of his contributions, Dr. D. S. Gangwar was honoured as the **Guest of Honour** at the conference. Dr. Archana Atreja, Medical Superintendent, was also felicitated for her valuable contributions to IMA Rohini.

Mr. D. S. Negi (Chief Executive Officer)
Dr. D. S. Gangwar
Dr. S. K. Rawal (Medical Director)
Dr. D. C. Doval
Dr. Gauri Kapoor
Dr. Anurag Mehta
Dr. Rajiv Chawla
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