Medical Oncology Software Market to Reach US$7.34 Bn by 2032, Says Persistence Market Research

The medical oncology software market is expanding, fueled by rising cancer incidence, AI-driven precision care, digital adoption, and integrated systems.

BRENTFORD, ENGLAND, UNITED KINGDOM, October 7, 2025 /EINPresswire.com/ -- The global medical oncology software market is poised for significant growth, with projections indicating a rise from US$4.26 billion in 2025 to US$7.34 billion by 2032. This represents a

Medical Oncology Software Market

compound annual growth rate (CAGR) of 8.1% over the forecast period from 2025 to 2032. This market expansion is driven by the increasing prevalence of cancer, the growing complexity of treatment regimens, and the demand for more integrated, data-driven solutions to streamline oncology care across hospitals, clinics, and research centers. Medical oncology software encompasses a range of solutions, including oncology information systems (OIS), chemotherapy management platforms, cancer registry solutions, and decision-support tools—all designed to improve efficiency, safety, and outcomes in cancer treatment.

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Key Industry Highlights

Leading Region: North America is expected to dominate the medical oncology software market, accounting for approximately 42% of the market share by 2025. This dominance is attributed to the region's advanced healthcare IT infrastructure, high adoption of oncology electronic health records (EHR), and the presence of major industry players like Elekta, Varian, and Flatiron Health.

Fastest-Growing Region: Asia Pacific is anticipated to see the highest growth rate in the coming

years, driven by large-scale cancer screening initiatives, national precision oncology programs in countries such as China and India, and the adoption of cloud-based oncology information systems (OIS).

Dominant Solution Type: Oncology Information Systems (OIS) are projected to capture approximately 50% of the market share in 2025. These systems are integral in unifying patient records, treatment planning, and coordination among multidisciplinary teams in cancer centers.

Leading Application Area: Medical oncology is expected to account for 60% of the market share, with a primary focus on chemotherapy management, infusion documentation, and survivorship care, areas not typically addressed by generic electronic medical records (EMRs).

Market Dynamics

Driver: The rising complexity of oncology care is a major driver of market growth. With increasing cancer incidence and longer patient survivorship, oncology caseloads are expanding rapidly. Hospitals are adopting chemotherapy order-entry systems to minimize dosing errors, and infusion centers are incorporating automation to optimize workflow. Additionally, the rise of precision medicine—integrating genomic data into clinical workflows—is driving demand for software solutions that can process next-generation sequencing (NGS) data to guide targeted therapies. The growing adoption of tele-oncology and home infusion models further increases the need for integrated, remote monitoring solutions.

Restraint: Despite advances, the market faces significant challenges, notably in the form of data fragmentation and interoperability issues. For example, the inconsistent normalization of genomic data from NGS reports makes it difficult to integrate this data into EHR systems, hindering the delivery of real-time decision-support alerts. Similarly, the lack of seamless reconciliation between OIS and EHRs often forces clinicians to rely on manual processes, which can lead to inefficiencies and an increased risk of errors. Additionally, cyber threats like ransomware attacks are a growing concern, as healthcare data breaches continue to escalate, potentially disrupting oncology operations and eroding trust in digital solutions.

Opportunity: The integration of artificial intelligence (AI) in oncology software presents a promising growth opportunity. AI-powered tools are improving predictive models for chemotherapy toxicity, assisting in the interpretation of genomic data, and supporting clinical decision-making. Real-world evidence (RWE) platforms powered by AI are streamlining clinical trial processes, enhancing drug development, and improving outcomes for patients through personalized treatment plans. Additionally, the shift toward decentralized and home-based oncology care is driving demand for remote monitoring, smart infusion pumps, and digital documentation tools.

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Category-Wise Analysis

Solution Type Insights: Oncology Information Systems (OIS) are projected to maintain the largest market share, estimated at 50% in 2025. These systems are highly valued for their ability to consolidate patient records, scheduling, treatment planning, and coordination into a single platform. OIS platforms offer a comprehensive solution that connects with pharmacy systems, infusion pumps, and radiation oncology equipment, thus reducing operational complexity and improving patient safety. Oncology Clinical Decision Support Systems (AI-CDS) are the fastest-growing segment, driven by the integration of AI into oncology workflows, including toxicity prediction models, biomarker-based therapy recommendations, and NGS data analysis.

Application Area Insights: The medical oncology segment is anticipated to capture 60% of the market share by 2025. This segment is driven by the need for specialized software that can manage chemotherapy orders, monitor treatment toxicities, and ensure coordinated care for patients undergoing systemic therapies. As cancer treatment becomes more personalized and complex, the demand for specialized oncology software solutions continues to grow, particularly in outpatient and home infusion settings.

Regional Insights

North America: North America is expected to dominate the global medical oncology software market, driven by the region's strong healthcare infrastructure, advanced EMR adoption, and the increasing demand for integrated oncology solutions. Key developments, such as Flatiron Health's partnerships with cancer research centers and the adoption of AI tools for chemotherapy toxicity prediction, are accelerating the uptake of oncology software solutions.

Europe: Europe's market is characterized by national digital health initiatives and growing demand for integrated oncology solutions. Countries like the U.K. and Germany are focusing on centralized procurements for cancer treatment pathways, including chemotherapy order management and cancer registries. Vendors offering robust, compliant solutions that integrate medical and radiation oncology workflows are expected to thrive.

Asia Pacific: The Asia Pacific region is expected to experience the highest growth rate in the coming years, with China and India leading the charge. In China, AI adoption in oncology diagnostics and treatment workflows is gaining momentum, while India's tele-oncology and hub-and-spoke care delivery models are driving demand for cost-effective, cloud-based oncology solutions.

Competitive Landscape

The global medical oncology software market is moderately consolidated, with a combination of

established players and emerging innovators competing for market share. Major players include Varian Medical Systems (Siemens Healthineers), Elekta AB, Cerner Corporation (Oracle Health), and Flatiron Health (Roche), who dominate the market with comprehensive oncology information systems, strong interoperability, and advanced clinical decision support. These companies are expanding their presence by bundling oncology solutions with broader EMR and imaging platforms. Emerging players like RaySearch Laboratories, Tempus, and Syapse are gaining traction with a focus on precision oncology, cloud-native solutions, and AI-driven decision support. These companies are forming strategic partnerships with pharmaceutical companies, cancer research centers, and genomic labs to offer specialized capabilities in NGS data integration and biomarker-driven treatment recommendations.

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Key Players:

Varian Medical Systems, Inc. (Siemens Healthineers)
Elekta AB
Philips Healthcare
Cerner Corporation (Oracle)
McKesson Corporation
Flatiron Health, Inc. (Roche)
RaySearch Laboratories AB
IBM Watson Health (Merative)
F. Hoffmann-La Roche Ltd.
Epic Systems Corporation
OncoEMR (Altos Solutions)
CureMD Healthcare
Koninklijke Philips N.V.
MEDITECH (Medical Information Technology, Inc.)
OncoHealth
NeoGenomics Laboratories
Intelerad Medical Systems
Cota, Inc.
Tempus, Inc.
Syapse, Inc.

Key Industry Developments:

In May 2025, Flatiron Health announced the acceptance of 14 abstracts at the ASCO 2025 annual meeting, showcasing real-world data and AI-driven research in early-stage breast cancer. This development further underscores the growing role of AI in transforming oncology workflows.

Varian Medical Systems, in May 2025, introduced an enhanced version of its ARIA Oncology

Information System, featuring AI-driven workflow automation to streamline chemotherapy order verification and provide real-time toxicity alerts. This innovation is expected to improve patient safety and operational efficiency in oncology care settings.

Market Segmentation

By Solution Type

Oncology Information Systems (OIS)
Chemotherapy Management Software
Cancer Registry Software
Oncology Clinical Decision Support Systems
Trial Management & EHR-EDC Integration Tools

By Application Area

Medical Oncology
Radiation Oncology Integration
Surgical Oncology Support
Precision Oncology & Genomics

By End-user

Hospitals & Cancer Centers
Specialty Oncology Clinics & Infusion Centers
Research Institutes & Academic Medical Centers
Pharmaceutical & Life Sciences Companies

By Region

North America
Europe
Asia Pacific
Latin America
Middle East & Africa

Future Outlook

The medical oncology software market is expected to continue its upward trajectory as cancer care becomes increasingly personalized, data-driven, and integrated. The growth of AI and machine learning in oncology, along with the expansion of tele-oncology and home infusion care, presents significant opportunities for software providers to innovate and expand their offerings. While challenges related to data fragmentation and interoperability persist, technological

advancements and regulatory initiatives aimed at enhancing data connectivity will likely mitigate these barriers over time. As the demand for precision oncology solutions increases, companies that can leverage real-world evidence and AI-driven analytics will be best positioned for long-term success in the evolving oncology landscape.

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