Digital Twins In Healthcare Market Accelerates Toward $27.5 Billion By 2031 | DataM Intelligence

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NEW YORK, NY, UNITED STATES, May 27, 2025 /EINPresswire.com/ -- The Digital Twins in Healthcare Market reached USD 1.55 billion in 2023 and is projected to expand at a CAGR of 18.1%, reaching USD 27.5 billion by 2031. Fueled by rapid advances in artificial intelligence, machine learning, IoT, and cloud computing, digital twin solutions are revolutionizing diagnostics, treatment planning, patient monitoring, and drug development—delivering more efficient care pathways and better outcomes.

Market Overview

> Digital twins in healthcare are revolutionizing patient care by creating living models that predict individual responses, enabling truly personalized and proactive treatment”
>
> *DataM Intelligence*

Digital twins in healthcare create virtual replicas of physical patients, devices, or care environments, using real-time data streams to simulate, predict, and optimize clinical decisions. By integrating sensor data, medical imaging, and electronic health record inputs, digital twins enable proactive risk assessment, personalized treatment regimens, and streamlined facility management across the continuum of care.

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Market Drivers

-> Artificial Intelligence & Machine Learning Integration
-> IoT-Enabled Real-Time Monitoring
-> Cloud Computing Scalability
-> Regulatory Encouragement
-> Growing Demand for Personalized Medicine

Market Dynamics: Drivers & Restraints

Increasing technological advancements in AI, ML, IoT, and cloud computing are propelling digital twins in healthcare forward. AI and ML facilitate the creation of accurate, predictive models that illuminate disease trajectories and optimize treatment outcomes. IoT devices capture real-time biometric data, heart rate, glucose levels, respiratory metrics feeding continuous inputs into dynamic digital replicas.

Simultaneously, cloud infrastructures store and process vast datasets, ensuring that care teams across locations can access and scale these solutions. Augmented reality (AR) and virtual reality (VR) overlay these models onto surgical planning and medical training, offering immersive, high-fidelity simulations. While these innovations enhance efficiency and patient outcomes, challenges such as data privacy regulations and high initial investment costs can slow adoption in resource-constrained settings.

For instance, in May 2024, Twin Health expanded its digital twin AI platform originally designed to achieve remission in type 2 diabetes patients to address obesity and weight management. The new Healthy Weight solution pairs advanced AI algorithms with compassionate virtual coaching, helping members lose weight without reliance on costly medications. By reinvesting savings from reduced GLP-1 usage and fewer clinical interventions, the program underscores how digital twins can deliver both clinical and economic value.

Market Segment Analysis

The Digital Twins in Healthcare market is comprehensively segmented to address diverse industry needs:

In Product Type, software segment is expected to dominate the digital twins in healthcare market share, where as in application diagnostics segment is the fastest-growing segment in digital twins in healthcare market share.

By Product Type
• Software
• Services

• Hardware

By Application
• Diagnostics
• Treatment Planning
• Patient Monitoring
• Drug Discovery & Development
• Healthcare Facility Management

By Technology
• Artificial Intelligence (AI)
• Machine Learning (ML)
• Internet of Things (IoT)
• Augmented Reality (AR)
• Virtual Reality (VR)

By End User
• Hospitals & Clinics
• Pharmaceutical & Biotechnology Companies
• Academic & Research Institutes
• Diagnostic Centers

Market Geographical Share

North America commands a significant share of the digital twins in healthcare market, thanks to its advanced medical infrastructure, high digital maturity, and substantial R&D investment. U.S. hospitals and research institutions lead early adoption of AI-driven simulations, while Canadian healthcare systems pilot interoperable twin platforms for chronic disease management. Robust reimbursement frameworks and government grants further bolster market growth across the region.

Competitive Landscape

Major players driving innovation in digital twin solutions include:

• Siemens Healthineers
• GE Healthcare
• Philips Healthcare
• Dassault Systèmes
• Microsoft Corporation
• IBM Corporation
• Oracle Corporation
• Twin Health

• Medtronic
• Hitachi, Ltd.

Emerging Players

Agile startups are carving out niches with specialized offerings:

• Qure.ai
• BioSymetrics
• Ansys
• Virtonomy

Key Developments

May 2024: Ontrak Inc. launched its Mental Health Digital Twin (MHDT) technology, combining empathetic care with data-driven insights to personalize mental health interventions.

February 2024: Unlearn secured a US$ 50 million Series C led by Altimeter Capital, aiming to eliminate trial-and-error medicine through advanced AI and robust R&D.

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