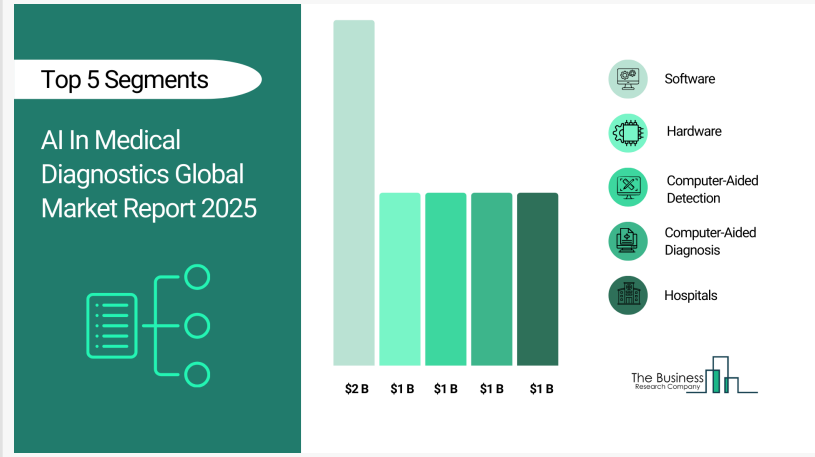
AI In Medical Diagnostics Market In 2029

The Business Research Company's AI In Medical Diagnostics Global Market Report 2025 – Market Size, Trends, And Global Forecast 2025-2034



AI In Medical Diagnostics Market Segments 2025.webp

LONDON, GREATER LONDON, UNITED KINGDOM, December 29, 2025 /EINPresswire.com/ -- "AI In Medical Diagnostics Market to Surpass $11 billion in 2029. In comparison, the Artificial Intelligence market, which is considered as its parent market, is expected to be approximately $250 billion by 2029, with AI In Medical Diagnostics to represent around 4.5% of the parent market. Within the broader Information Technology industry, which is expected to be $12,711 billion by 2029, the AI In Medical Diagnostics market is estimated to account for nearly 0.8% of the total market value.

> The Business Research Company's Latest Report Explores Market Driver, Trends, Regional Insights - Market Sizing & Forecasts Through 2034"
>
> *The Business Research Company*

Which Will Be the Biggest Region in the AI In Medical Diagnostics Market in 2029

North America will be the largest region in the AI in medical diagnostics market in 2029, valued at $3,918 million. The market is expected to grow from $790 million in 2024 at a compound annual growth rate (CAGR) of 38%. The exponential growth is supported by the growth in telemedicine and remote healthcare services and the increasing aging population.

Which Will Be The Largest Country In The Global AI In Medical Diagnostics Market In 2029?

The USA will be the largest country in the AI in medical diagnostics market in 2029, valued at $3,236 million. The market is expected to grow from $721 million in 2024 at a compound annual growth rate (CAGR) of 35%. The exponential growth can be attributed to the increasing demand for personalized medicine and rising and rise in investment in the market.

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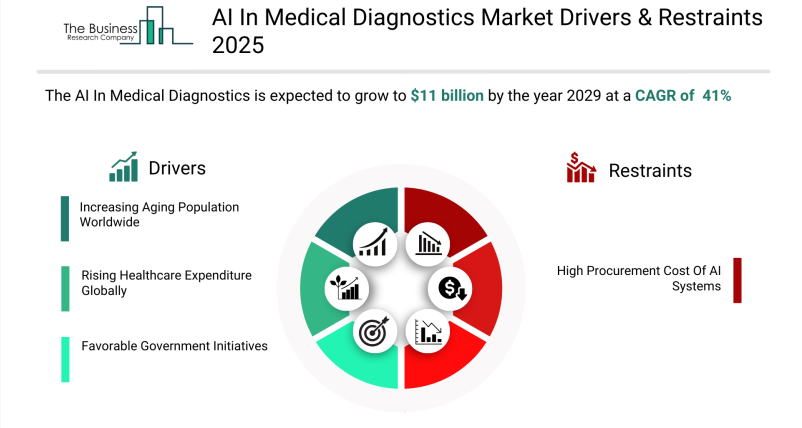
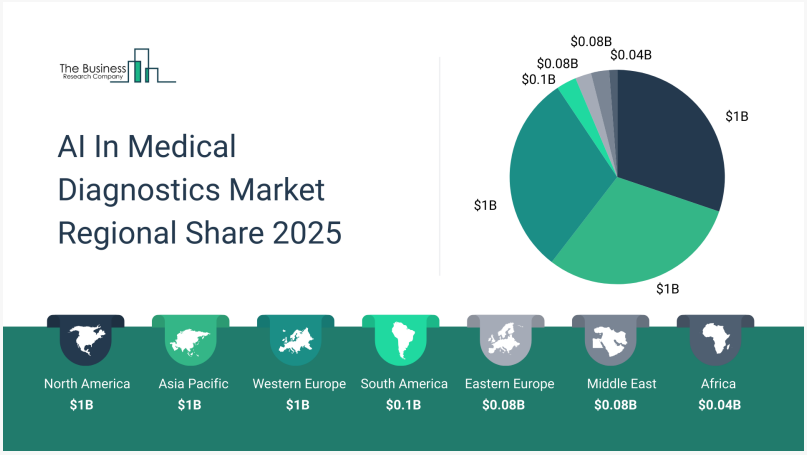
What will be Largest Segment in the AI In Medical Diagnostics Market in 2029?



AI In Medical Diagnostics Market Drivers & Restraints 2025.webp



AI In Medical Diagnostics Market Regional 2025.webp

The AI in medical diagnostics market is segmented by component into software, hardware and services. The software market will be the largest segment of the AI in medical diagnostics market segmented by component, accounting for 63% or $6,882 million of the total in 2029. The software market will be supported by factors such as the increasing adoption of advanced AI algorithms for accurate diagnosis, rising demand for automated workflows to enhance efficiency, growing investments in the development of user-friendly diagnostic interfaces, increasing integration of AI-powered software with electronic health records (EHRs), advancements in data analytics for predictive diagnostics and growing focus on real-time monitoring through AI-enabled solutions. As AI technology advances, software solutions have become essential in medical diagnostics. AI-driven diagnostic tools are increasingly being adopted across various medical specialties, such as radiology, cardiology, oncology, and pathology. These software solutions facilitate more accurate, efficient, and cost-effective diagnoses.

The AI in medical diagnostics market is segmented by application into computer-aided detection, computer-aided diagnosis, quantitative analysis tools and clinical decision. The computer-aided detection market will be the largest segment of the AI in medical diagnostics market segmented by application, accounting for 36% or $3,959 million of the total in 2029. The computer-aided detection market will be supported by advancements in imaging technologies for early disease detection, rising demand for automated systems to improve diagnostic efficiency, increasing prevalence of cancers requiring early intervention, growing adoption of AI for detecting abnormalities in radiology, integration of CAD tools in routine screening programs, advancements in multi-modal imaging techniques and increasing investment in AI-driven detection systems.

The AI in medical diagnostics market is segmented by end user into hospitals, diagnostics

imaging centers, diagnostics laboratories and other end users. The hospitals market will be the largest segment of the AI in medical diagnostics market segmented by end user, accounting for 51% or $5,659 million of the total in 2029. The hospitals market will be supported by the rising adoption of AI for hospital-wide diagnostic processes, increasing investments in AI-based healthcare infrastructure, growing need for faster diagnostic turnaround times in emergency departments, advancements in AI for improving hospital workflows, increasing focus on reducing healthcare costs through AI adoption, integration of AI systems for managing patient data and rising government support for AI in healthcare institutions.

The AI in medical diagnostics market is segmented by technology into technology into natural language processing, computer vision, machine learning and context-aware computing. The machine learning market will be the largest segment of the AI in medical diagnostics market segmented by technology, accounting for 48% or $5,318 million of the total in 2029. The machine learning market will be supported by factors such as the increasing development of predictive models for personalized medicine, rising adoption in identifying hidden patterns in large datasets, advancements in supervised and unsupervised learning techniques for medical imaging, growing role in reducing diagnostic turnaround times, increasing focus on enhancing accuracy in diagnostic predictions and the integration of machine learning with robotics for automated diagnostics.

The AI in medical diagnostics market is segmented by specialty into cardiology, oncology, pathology, radiology, chest and lung, neurology and other specialties. The neurology market will be the largest segment of the AI in medical diagnostics market segmented by specialty, accounting for 28% or $3,057 million of the total in 2029. The neurology market will be supported by the rising prevalence of neurological disorders like Alzheimer's and Parkinson's, advancements in AI for brain imaging and lesion detection, growing focus on early diagnosis of neurodegenerative diseases, increasing use of AI in monitoring brain injuries, the integration of AI with neuroinformatics tools, advancements in personalized neurological treatment planning and growing investment in AI for epilepsy and stroke management.

What is the expected CAGR for the AI In Medical Diagnostics Market leading up to 2029?
The expected CAGR for the AI in medical diagnostics market leading up to 2029 is 41%.

What Will Be The Growth Driving Factors In The Global AI In Medical Diagnostics Market In The Forecast Period?
The rapid growth of the global AI in medical diagnostics market leading up to 2029 will be driven by the following key factors that are expected to reshape healthcare diagnostics and patient care processes worldwide.

Increasing Aging Population Worldwide - The increasing aging population worldwide will become a key driver of growth in the AI in medical diagnostics market by 2029. AI in medical diagnostics reduces healthcare costs by minimizing invasive procedures and lengthy processes. Early, accurate diagnoses decrease hospital stays and facility burdens, making healthcare more

affordable and accessible for the elderly. Advances in AI, including machine learning and big data, enhance diagnostic tool capabilities, integrating seamlessly into healthcare systems. Continuous monitoring features in AI tools provide real-time data, enabling timely interventions for better chronic disease management. As a result, the increasing aging population worldwide is anticipated to contributing to annual growth in the market.

Rising Healthcare Expenditure Globally - The rising healthcare expenditure globally will emerge as a major factor driving the expansion of the AI in medical diagnostics market by 2029. Demand for affordable solutions is rising in tandem with rising healthcare expenses. Artificial intelligence (AI) simplifies procedures, minimizes pointless testing and maximizes resource utilization in medical diagnostics and improves decision-making and automating processes for effective healthcare delivery. Consequently, the rising healthcare expenditure globally is projected to contributing to annual growth in the market.

Favorable Government Initiatives - The favorable government initiatives within digital manufacturing processes will serve as a key growth catalyst for the AI in medical diagnostics market by 2029. Governments globally are developing policies to enhance AI integration in healthcare, positively impacting AI in medical diagnostics industry. Additionally, countries are streamlining regulatory processes and fostering public-private partnerships to promote innovation. Therefore, this favorable government initiatives is projected to supporting to annual growth in the market.

Shortage Of Skilled Healthcare Professionals - The shortage of skilled healthcare professionals will become a significant driver contributing to the growth of the AI in medical diagnostics market by 2029. AI-driven diagnostic tools automate routine tasks, allowing healthcare professionals to focus on complex cases and provide timely care. Artificial intelligence (AI) algorithms aid clinical decision-making by interpreting complex data and enhancing efficiency and accuracy. Leveraging machine learning, AI improves diagnostic accuracy, reducing errors and unnecessary follow-ups, especially in resource-scarce settings. Consequently, the shortage of skilled healthcare professionals is projected to contributing to annual growth in the market.

Access the detailed AI In Medical Diagnostics Market report here:
https://www.thebusinessresearchcompany.com/report/ai-in-medical-diagnostics-global-market-report

What Are The Key Growth Opportunities In The AI In Medical Diagnostics Market in 2029?
The most significant growth opportunities are anticipated in the AI in medical diagnostics for neurology market, the AI in medical diagnostics software market, the AI in medical diagnostics for hospital market, the machine learning based AI in medical diagnostics market and the AI in medical diagnostics for computer-aided detection market. Collectively, these segments are projected to contribute over $27 billion in market value by 2029, driven by advances in AI algorithms, enhanced diagnostic accuracy, improved clinical workflow efficiency, and expanding applications across hospitals, clinics, and telemedicine services. This growth reflects the

accelerating adoption of AI technologies that enable early disease detection, personalized patient care, and data-driven clinical decision-making, fueling transformative growth within the broader AI in medical diagnostics industry.

The AI in medical diagnostics for neurology market is projected to grow by $8,975 million, the AI in medical diagnostics software market by $5,735 million, the AI in medical diagnostics for hospital market by $4,720 million, the machine learning based AI in medical diagnostics market by $4,397 million and the AI in medical diagnostics for computer-aided detection market by $3,262 million over the next five years from 2024 to 2029.

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