

AI-Powered Diagnostics Market Forecasts to 2034 – Global Analysis By Diagnostic Modality (Imaging Diagnostics, Laboratory Diagnostics, Point-of-Care Diagnostics and Digital & Virtual Diagnostics), Deployment Model, Technology, Application, End User and By Geography

<https://marketpublishers.com/r/AEA6BC7FACC8EN.html>

Date: July 2026

Pages: 200

Price: US\$ 4,150.00 (Single User License)

ID: AEA6BC7FACC8EN

Abstracts

According to Statistics MRC, the Global AI-Powered Diagnostics Market is accounted for \$10.3 billion in 2026 and is expected to reach \$213.2 billion by 2034 growing at a CAGR of 46.1% during the forecast period. Artificial intelligence–driven diagnostic systems leverage advanced algorithms, including machine learning and neural networks, to support healthcare professionals in disease detection and analysis. These tools process vast amounts of clinical information such as imaging scans, electronic health records, and laboratory results to generate precise and timely diagnostic insights. By minimizing diagnostic errors and enhancing pattern recognition capabilities, AI improves the quality of clinical decisions. It is extensively applied in specialties like radiology, pathology, and cardiology. Furthermore, this technology facilitates early identification of diseases, supports customized treatment strategies, and enhances overall healthcare outcomes across global medical systems today with continuous clinical improvement.

According to the Royal College of Radiologists (UK), there was a shortage of 1,939 consultant radiologists in 2021—equivalent to 33% of the workforce—with projections of a 3,600 shortfall by 2025. This workforce gap is a key driver for adopting AI-powered diagnostics to meet rising demand.

Market Dynamics:

Driver:**Rising prevalence of chronic diseases**

The growing burden of long-term illnesses like cancer, heart disease, diabetes, and neurological disorders is strongly driving the demand for AI-powered diagnostic solutions. These health conditions often need early identification and continuous evaluation, which artificial intelligence systems can effectively provide. By processing medical images, patient records, and clinical data, AI tools help detect abnormal patterns at an early stage. With the global rise in chronic disease cases, healthcare providers are increasingly relying on AI technologies to enhance diagnostic precision and speed. This escalating health challenge is fueling the adoption of advanced AI-based diagnostic systems across healthcare facilities globally.

Restraint:**High implementation and integration costs**

The expensive nature of deploying AI-driven diagnostic solutions is a key barrier to market expansion. Hospitals and healthcare facilities need to spend heavily on advanced computing systems, software tools, cloud services, and trained professionals to implement these technologies. Smaller healthcare providers often struggle due to limited financial capacity. Moreover, combining AI platforms with existing clinical systems and workflows demands additional investment and technical effort. Continuous maintenance, updates, and system improvements also increase long-term costs. Consequently, the significant upfront expenditure and operational expenses restrict the faster adoption of AI-powered diagnostic tools across healthcare organizations worldwide.

Opportunity:**Expansion of telemedicine and remote healthcare**

The increasing adoption of telemedicine and remote healthcare services creates strong growth opportunities for AI-based diagnostic technologies. Artificial intelligence tools can be combined with telehealth systems to evaluate patient symptoms, medical images, and health records from a distance. This enables doctors to provide quick and reliable diagnoses without in-person consultations. It is particularly valuable in rural and

underserved areas where healthcare access is limited. With the global rise of digital healthcare solutions, AI diagnostics can improve remote monitoring, expand healthcare reach, and enhance the effectiveness of virtual medical consultations across various healthcare sectors worldwide.

Threat:

Ethical concerns and algorithmic bias

Ethical issues and bias in algorithms represent a major risk to the growth of AI-based diagnostic systems. Artificial intelligence models may generate skewed or incorrect results when trained on limited or unrepresentative datasets, potentially affecting diagnosis accuracy across different patient groups. This creates concerns about fairness, safety, and equality in healthcare services. Moreover, the lack of clear explanation in AI decision-making reduces clinician confidence in these tools. Such problems may also lead to regulatory and legal challenges. Without proper safeguards, data correction, and oversight, these ethical limitations could restrict the widespread adoption of AI diagnostics worldwide.

Covid-19 Impact:

The COVID-19 outbreak greatly influenced the AI-powered diagnostics industry by speeding up the use of digital healthcare technologies. Hospitals and health systems were under extreme pressure, increasing demand for quick and precise diagnostic methods. Artificial intelligence played a key role in analyzing imaging scans, tracking disease transmission, and identifying COVID-19 infections early. The crisis also boosted funding in AI healthcare solutions and strengthened telemedicine adoption. At the same time, interruptions in supply chains and research activities caused temporary delays in development. Overall, the pandemic significantly advanced the long-term expansion of AI-based diagnostic technologies worldwide.

The imaging diagnostics segment is expected to be the largest during the forecast period

The imaging diagnostics segment is expected to account for the largest market share during the forecast period because of its broad application in identifying and assessing various medical conditions. Artificial intelligence is heavily utilized in radiology departments to analyze medical images such as X-rays, CT scans, MRI scans, and ultrasound reports efficiently. The large number of imaging procedures performed in

healthcare facilities significantly supports the adoption of AI-based tools in this area. AI enhances image interpretation through advanced pattern recognition, allowing earlier detection of diseases and better clinical decisions. Its seamless integration into hospital systems makes imaging diagnostics the most dominant segment globally.

The home & remote users segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the home & remote users segment is predicted to witness the highest growth rate because of the rising preference for personalized and home-based healthcare services. The increasing use of telehealth platforms, wearable health trackers, and mobile medical applications allows patients to receive diagnostic support from their homes. AI technologies enable continuous monitoring, symptom evaluation, and early detection of health issues without visiting healthcare facilities. The growing need for convenient and affordable healthcare, along with increasing chronic diseases and aging populations, is driving strong expansion in this segment, making it the fastest-growing category in the AI diagnostics market.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share because of its highly developed healthcare system, rapid adoption of advanced digital technologies, and strong ecosystem of AI and medical technology companies. The region is supported by heavy investments in healthcare innovation, extensive research activities, and widespread integration of electronic health record systems. The United States plays a key role in driving demand through early implementation of AI diagnostic solutions across healthcare facilities. In addition, supportive regulatory frameworks and reimbursement structures encourage adoption. High healthcare expenditure and strong technological capability position North America as the top regional market.

Region with highest CAGR:

Over the forecast period, the Asia-Pacific region is anticipated to exhibit the highest CAGR because of ongoing enhancements in healthcare systems and rapid uptake of digital medical technologies. A large population base, rising cases of chronic illnesses and improving healthcare accessibility are fueling demand for advanced diagnostic tools. Countries like China, India, and Japan are making significant investments in incorporating artificial intelligence into healthcare services. Growing awareness about

early diagnosis and preventive care is also contributing to market expansion. Moreover, affordable AI-based solutions are encouraging widespread adoption across healthcare facilities and diagnostic centers throughout the region.

Key players in the market

Some of the key players in AI-Powered Diagnostics Market include Aidoc, Viz.ai, Zebra Medical Vision, Qure.ai, Arterys, Butterfly Network, Caption Health, DeepMind Health, Paige AI, PathAI, Tempus, Therapixel, Nuance Communications, Siemens Healthineers, GE Healthcare, Philips Healthcare, Canon Medical Systems and Hologic.

Key Developments:

In April 2026, GE HealthCare announced an expanded collaboration with DeepHealth, Inc, to further the innovation, commercialization, and adoption of advanced AI-powered mammography tools. The announcement coincides with the Society of Breast Imaging (SBI) Annual Symposium, where GE HealthCare will showcase its latest advancements in breast imaging and women's health.

In February 2026, Siemens Healthineers and Mayo Clinic are expanding their strategic collaboration to enhance patient care for neurodegenerative disease and the management of prostate cancer and metastatic liver tumors. The two organizations have signed an agreement that will improve care for those disease states and expand access to new imaging and interventional technologies.

Diagnostic Modalities Covered:

Imaging Diagnostics

Laboratory Diagnostics

Point-of-Care Diagnostics

Digital & Virtual Diagnostics

Deployment Models Covered:

Cloud-Based AI Diagnostics

On-Premise AI Diagnostics

Hybrid Deployment

Technologies Covered:

Machine Learning & Deep Learning Models

Natural Language Processing (NLP)

Computer Vision

Predictive Analytics & Decision Support Systems

Applications Covered:

Oncology Diagnostics

Cardiovascular Diagnostics

Neurological Diagnostics

Infectious Disease Diagnostics

Metabolic & Endocrine Diagnostics

Rare Disease & Genetic Diagnostics

End Users Covered:

Hospitals & Clinics

Diagnostic Laboratories

Research & Academic Institutes

Home & Remote Users

Regions Covered:

North America

United States

Canada

Mexico

Europe

United Kingdom

Germany

France

Italy

Spain

Netherlands

Belgium

Sweden

Switzerland

Poland

Rest of Europe

Asia Pacific

China

Japan

India

South Korea

Australia

Indonesia

Thailand

Malaysia

Singapore

Vietnam

Rest of Asia Pacific

South America

Brazil

Argentina

Colombia

Chile

Peru

Rest of South America

Rest of the World (RoW)

Middle East

Saudi Arabia

United Arab Emirates

Qatar

Israel

Rest of Middle East

Africa

South Africa

Egypt

Morocco

Rest of Africa

What our report offers:

Market share assessments for the regional and country-level segments

Strategic recommendations for the new entrants

Covers Market data for the years 2023, 2024, 2025, 2026, 2027, 2028, 2030, 2032 and 2034

Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)

Strategic recommendations in key business segments based on the market estimations

Competitive landscaping mapping the key common trends

Company profiling with detailed strategies, financials, and recent developments

Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

Contents

1 EXECUTIVE SUMMARY

- 1.1 Market Snapshot and Key Highlights
- 1.2 Growth Drivers, Challenges, and Opportunities
- 1.3 Competitive Landscape Overview
- 1.4 Strategic Insights and Recommendations

2 RESEARCH FRAMEWORK

- 2.1 Study Objectives and Scope
- 2.2 Stakeholder Analysis
- 2.3 Research Assumptions and Limitations
- 2.4 Research Methodology
 - 2.4.1 Data Collection (Primary and Secondary)
 - 2.4.2 Data Modeling and Estimation Techniques
 - 2.4.3 Data Validation and Triangulation
 - 2.4.4 Analytical and Forecasting Approach

3 MARKET DYNAMICS AND TREND ANALYSIS

- 3.1 Market Definition and Structure
- 3.2 Key Market Drivers
- 3.3 Market Restraints and Challenges
- 3.4 Growth Opportunities and Investment Hotspots
- 3.5 Industry Threats and Risk Assessment
- 3.6 Technology and Innovation Landscape
- 3.7 Emerging and High-Growth Markets
- 3.8 Regulatory and Policy Environment
- 3.9 Impact of COVID-19 and Recovery Outlook

4 COMPETITIVE AND STRATEGIC ASSESSMENT

- 4.1 Porter's Five Forces Analysis
 - 4.1.1 Supplier Bargaining Power
 - 4.1.2 Buyer Bargaining Power
 - 4.1.3 Threat of Substitutes
 - 4.1.4 Threat of New Entrants

- 4.1.5 Competitive Rivalry
- 4.2 Market Share Analysis of Key Players
- 4.3 Product Benchmarking and Performance Comparison

5 GLOBAL AI-POWERED DIAGNOSTICS MARKET, BY DIAGNOSTIC MODALITY

- 5.1 Imaging Diagnostics
- 5.2 Laboratory Diagnostics
- 5.3 Point-of-Care Diagnostics
- 5.4 Digital & Virtual Diagnostics

6 GLOBAL AI-POWERED DIAGNOSTICS MARKET, BY DEPLOYMENT MODEL

- 6.1 Cloud-Based AI Diagnostics
- 6.2 On-Premise AI Diagnostics
- 6.3 Hybrid Deployment

7 GLOBAL AI-POWERED DIAGNOSTICS MARKET, BY TECHNOLOGY

- 7.1 Machine Learning & Deep Learning Models
- 7.2 Natural Language Processing (NLP)
- 7.3 Computer Vision
- 7.4 Predictive Analytics & Decision Support Systems

8 GLOBAL AI-POWERED DIAGNOSTICS MARKET, BY APPLICATION

- 8.1 Oncology Diagnostics
- 8.2 Cardiovascular Diagnostics
- 8.3 Neurological Diagnostics
- 8.4 Infectious Disease Diagnostics
- 8.5 Metabolic & Endocrine Diagnostics
- 8.6 Rare Disease & Genetic Diagnostics

9 GLOBAL AI-POWERED DIAGNOSTICS MARKET, BY END USER

- 9.1 Hospitals & Clinics
- 9.2 Diagnostic Laboratories
- 9.3 Research & Academic Institutes
- 9.4 Home & Remote Users

10 GLOBAL AI-POWERED DIAGNOSTICS MARKET, BY GEOGRAPHY

10.1 North America

10.1.1 United States

10.1.2 Canada

10.1.3 Mexico

10.2 Europe

10.2.1 United Kingdom

10.2.2 Germany

10.2.3 France

10.2.4 Italy

10.2.5 Spain

10.2.6 Netherlands

10.2.7 Belgium

10.2.8 Sweden

10.2.9 Switzerland

10.2.10 Poland

10.2.11 Rest of Europe

10.3 Asia Pacific

10.3.1 China

10.3.2 Japan

10.3.3 India

10.3.4 South Korea

10.3.5 Australia

10.3.6 Indonesia

10.3.7 Thailand

10.3.8 Malaysia

10.3.9 Singapore

10.3.10 Vietnam

10.3.11 Rest of Asia Pacific

10.4 South America

10.4.1 Brazil

10.4.2 Argentina

10.4.3 Colombia

10.4.4 Chile

10.4.5 Peru

10.4.6 Rest of South America

10.5 Rest of the World (RoW)

- 10.5.1 Middle East
 - 10.5.1.1 Saudi Arabia
 - 10.5.1.2 United Arab Emirates
 - 10.5.1.3 Qatar
 - 10.5.1.4 Israel
 - 10.5.1.5 Rest of Middle East
- 10.5.2 Africa
 - 10.5.2.1 South Africa
 - 10.5.2.2 Egypt
 - 10.5.2.3 Morocco
 - 10.5.2.4 Rest of Africa

11 STRATEGIC MARKET INTELLIGENCE

- 11.1 Industry Value Network and Supply Chain Assessment
- 11.2 White-Space and Opportunity Mapping
- 11.3 Product Evolution and Market Life Cycle Analysis
- 11.4 Channel, Distributor, and Go-to-Market Assessment

12 INDUSTRY DEVELOPMENTS AND STRATEGIC INITIATIVES

- 12.1 Mergers and Acquisitions
- 12.2 Partnerships, Alliances, and Joint Ventures
- 12.3 New Product Launches and Certifications
- 12.4 Capacity Expansion and Investments
- 12.5 Other Strategic Initiatives

13 COMPANY PROFILES

- 13.1 Aidoc
- 13.2 Viz.ai
- 13.3 Zebra Medical Vision
- 13.4 Qure.ai
- 13.5 Arterys
- 13.6 Butterfly Network
- 13.7 Caption Health
- 13.8 DeepMind Health
- 13.9 Paige AI
- 13.10 PathAI

- 13.11 Tempus
- 13.12 Therapixel
- 13.13 Nuance Communications
- 13.14 Siemens Healthineers
- 13.15 GE Healthcare
- 13.16 Philips Healthcare
- 13.17 Canon Medical Systems
- 13.18 Hologic

List Of Tables

LIST OF TABLES

Table 1 Global AI-Powered Diagnostics Market Outlook, By Region (2023-2034) (\$MN)

Table 2 Global AI-Powered Diagnostics Market Outlook, By Diagnostic Modality (2023-2034) (\$MN)

Table 3 Global AI-Powered Diagnostics Market Outlook, By Imaging Diagnostics (2023-2034) (\$MN)

Table 4 Global AI-Powered Diagnostics Market Outlook, By Laboratory Diagnostics (2023-2034) (\$MN)

Table 5 Global AI-Powered Diagnostics Market Outlook, By Point-of-Care Diagnostics (2023-2034) (\$MN)

Table 6 Global AI-Powered Diagnostics Market Outlook, By Digital & Virtual Diagnostics (2023-2034) (\$MN)

Table 7 Global AI-Powered Diagnostics Market Outlook, By Deployment Model (2023-2034) (\$MN)

Table 8 Global AI-Powered Diagnostics Market Outlook, By Cloud-Based AI Diagnostics (2023-2034) (\$MN)

Table 9 Global AI-Powered Diagnostics Market Outlook, By On-Premise AI Diagnostics (2023-2034) (\$MN)

Table 10 Global AI-Powered Diagnostics Market Outlook, By Hybrid Deployment (2023-2034) (\$MN)

Table 11 Global AI-Powered Diagnostics Market Outlook, By Technology (2023-2034) (\$MN)

Table 12 Global AI-Powered Diagnostics Market Outlook, By Machine Learning & Deep Learning Models (2023-2034) (\$MN)

Table 13 Global AI-Powered Diagnostics Market Outlook, By Natural Language Processing (NLP) (2023-2034) (\$MN)

Table 14 Global AI-Powered Diagnostics Market Outlook, By Computer Vision (2023-2034) (\$MN)

Table 15 Global AI-Powered Diagnostics Market Outlook, By Predictive Analytics & Decision Support Systems (2023-2034) (\$MN)

Table 16 Global AI-Powered Diagnostics Market Outlook, By Application (2023-2034) (\$MN)

Table 17 Global AI-Powered Diagnostics Market Outlook, By Oncology Diagnostics (2023-2034) (\$MN)

Table 18 Global AI-Powered Diagnostics Market Outlook, By Cardiovascular Diagnostics (2023-2034) (\$MN)

Table 19 Global AI-Powered Diagnostics Market Outlook, By Neurological Diagnostics (2023-2034) (\$MN)

Table 20 Global AI-Powered Diagnostics Market Outlook, By Infectious Disease Diagnostics (2023-2034) (\$MN)

Table 21 Global AI-Powered Diagnostics Market Outlook, By Metabolic & Endocrine Diagnostics (2023-2034) (\$MN)

Table 22 Global AI-Powered Diagnostics Market Outlook, By Rare Disease & Genetic Diagnostics (2023-2034) (\$MN)

Table 23 Global AI-Powered Diagnostics Market Outlook, By End User (2023-2034) (\$MN)

Table 24 Global AI-Powered Diagnostics Market Outlook, By Hospitals & Clinics (2023-2034) (\$MN)

Table 25 Global AI-Powered Diagnostics Market Outlook, By Diagnostic Laboratories (2023-2034) (\$MN)

Table 26 Global AI-Powered Diagnostics Market Outlook, By Research & Academic Institutes (2023-2034) (\$MN)

Table 27 Global AI-Powered Diagnostics Market Outlook, By Home & Remote Users (2023-2034) (\$MN)

Note: Tables for North America, Europe, APAC, South America, and Rest of the World (RoW) Regions are also represented in the same manner as above.

I would like to order

Product name: AI-Powered Diagnostics Market Forecasts to 2034 – Global Analysis By Diagnostic Modality (Imaging Diagnostics, Laboratory Diagnostics, Point-of-Care Diagnostics and Digital & Virtual Diagnostics), Deployment Model, Technology, Application, End User and By Geography

Product link: <https://marketpublishers.com/r/AEA6BC7FACC8EN.html>

Price: US\$ 4,150.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/AEA6BC7FACC8EN.html>