2023

Global Next-Generation Sequencing (NGS) Market:

Assessment, Trends, and Forecast (2022–2027)

The Deerborne Group

About The Deerborne Group

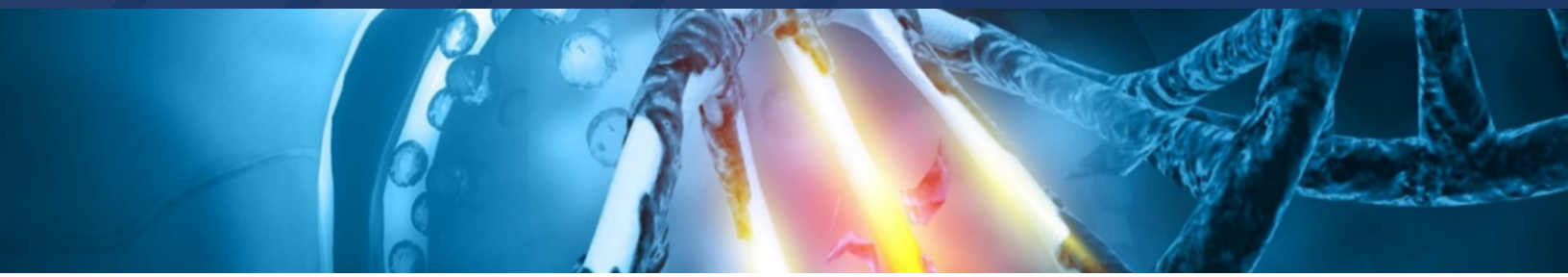
The Deerborne Group is a management consulting firm that focuses exclusively on the global diagnostics and life sciences industries. Founded in 2020, the group advises corporations, venture capital firms, and private equity firms on corporate, commercial, and operational strategies, helping clients to identify business opportunities, minimize risks, and navigate difficult management challenges.

The firm's areas of expertise include advisory boards, branding, business cases, CLIA laboratory operations, clinical trials, due diligence, commercialization, go-to-market strategy, KOL strategy and development, health economics, interim management services, marketing, market access, market analysis, portfolio planning, private equity strategy, product development, publication planning, regulatory strategy and submissions, reimbursement strategy and dossiers, sales operations effectiveness, segmentation and targeting, strategy development, value propositions, and venture capital strategy. Follow The Deerborne Group on **LinkedIn**, **Facebook**, or **Twitter**.

About COMPASS 360°

COMPASS 360° is a proprietary, end-to-end process of collecting, analyzing, and interpreting market insights and competitor intelligence. COMPASS 360° is backed by dedicated, experienced analysts with deep domain expertise. We use our domain expertise to leverage an extensive global network of key opinion leaders (KOLs) to conduct primary qualitative research. The raw data is then analyzed to shed light on the initial insights that are then validated quantitatively. Independently, secondary research is also conducted in parallel resulting in a more thorough and comprehensive analysis.

COMPASS 360° provides key decision-makers with actionable insights as the basis for developing new strategies and making better-informed decisions.



Published: May 2023 | Region: Global | Format: Electronic (PDF) | Number of Pages: 226 | License: Enterprise

Executive Summary

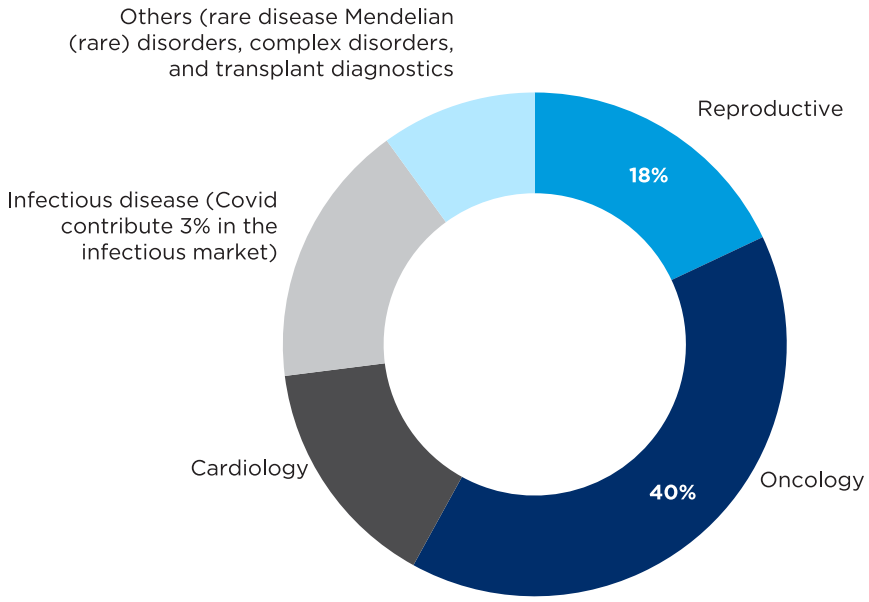
Advances in the fields of genomics and precision diagnostics are quickly converging and driving significant change in the diagnosis, treatment, and monitoring of patients and their diseases. At the core of this transformation is the application of next-generation sequencing (NGS) technologies.

This new report provides an in-depth analysis of the global NGS market, including assessment, trends, and forecasts for 2022–2027. The report estimates the value of the global NGS market in 2022 at $10.9 billion. The market is expected to grow at a 15% CAGR over the forecast period, reaching $21.7 billion in 2027.

NGS is a high-throughput DNA sequencing technology that allows for the rapid and costeffective analysis of large DNA or RNA sequences. It is a revolutionary technology that has enabled researchers to study genetic variation, gene expression, and genome function on an unprecedented scale.

The report covers the major instrument manufacturers and laboratories, market size, segmentation, and the major trends that are driving growth in the global NGS market. The NGS market is poised for significant change in the coming years due primarily to the advancements in NGS technology and platforms, the rising prevalence of cancer and other chronic diseases, and the increasing demand for personalized medicine. NGS tests detect genetic variants associated with various diseases and are increasingly used in clinical settings to guide treatment decisions and monitor disease progression.

Market Overview
Global NGS Market by Diseases



Executive Summary (cont.)

The development of new applications for NGS tests, such as liquid biopsy for early cancer detection and non-invasive prenatal testing, can drive market growth. Oncology and reproductive health testing are the largest clinical specialties accounting for 40% and 18% respectively.

The NGS market is dominated by North America, with a market share of 43% in 2022. Key stakeholders in the NGS market are highlighted providing a clear understanding of the competitive landscape, along with detailed profiles of major companies operating globally. Among manufacturers, Illumina and Thermo Fisher Scientific currently dominate the global marketplace, but numerous market entrants are making significant inroads in both research and clinical segments. However, laboratories like Foundation Medicine and Guardant, both located in the US, are setting a feverish regulatory pace in the clinical market with their multiple Food & Drug Administration (FDA) companion diagnostics (CDx) approvals. With a growing interest in clinical applications of NGS, market access and reimbursement remain the greatest barriers to widespread adoption.

The report features insights gathered from numerous industry key opinion leaders (KOLs). Report sources were aggregated using COMPASS 360°, The Deerborne Group's proprietary end-to-end process for collecting, analyzing, and interpreting market insights and competitive intelligence. The report is intended to provide key decision makers with actionable insights as the basis for developing new strategies and making better informed decisions.

For more insights and information about this report, please feel free to either call us at +1 (949) 303 8198 or email us at **info@thedeerbornegroup.com**. Alternatively, you can get in touch with us on our **website**.

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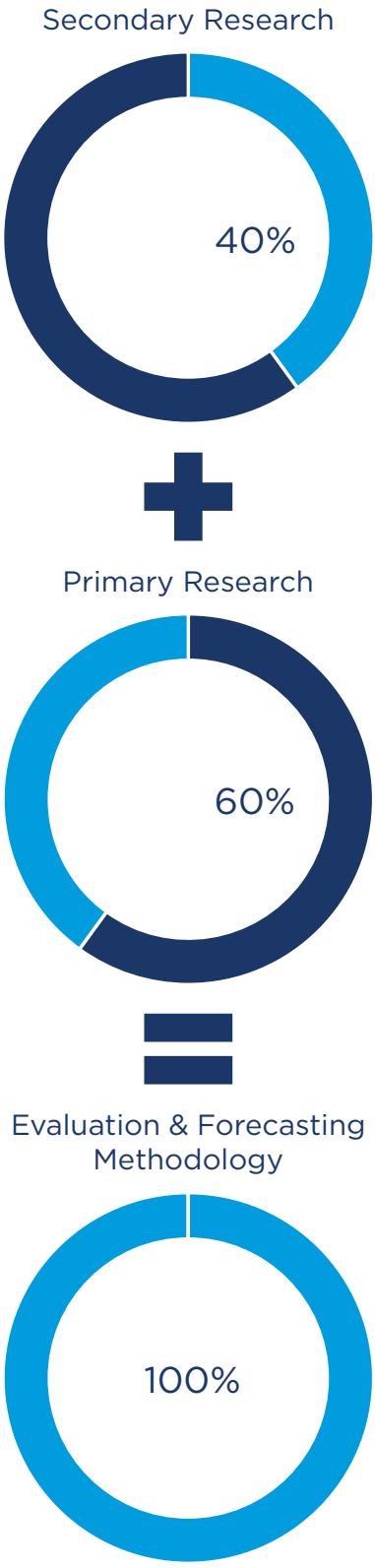
Research Methodology

The findings and conclusions of this report are based on information gathered from both primary and secondary research sources.



What is Our Research Methodology?

Primary Research

Conducting primary interviews on an ongoing basis with industry participants and commentators to validate data and analysis. A typical research interview fulfills the following functions:

- It provides first-hand information on the market size, growth trends, competitive landscape, outlook, etc.
- Helps in validating and strengthening the secondary research findings.
- Primary research involves e-mail interactions, telephonic, and face-to-face interviews for each market, category, segment, and sub-segment across geographics.

Secondary Research

The secondary research sources that are typically referred to include, but are not limited to:

- Company websites, annual reports, financial reports, broker reports, and investor presentations.
- Internal and external proprietary databases, relevant patent, and regulatory databases.
- National government documents, statistical databases, and market reports.
- News articles, press releases, and webcasts specific to the companies available in the market.

The participants who typically take part in such a process include, but are not limited to:

- Industry participants: CEOs, VPs, market intelligence managers, and national sales managers.
- Outside experts: Valuation experts and research analysts specializing in specific markets.
- Key opinion leaders specializing in different areas corresponding to different industry verticals.

Global Clinical Next-Generation Sequencing Market Definition

- Next-generation sequencing (NGS) has opened new doors to solving complex genomics problems. It is a general term used to describe various distinct advanced sequencing technologies. These technologies have made DNA and RNA sequencing faster and cheaper than the previously used Sanger sequencing, thus revolutionizing the research of genomics and molecular biology. The major NGS technologies are sequencing by synthesis (SBS) and Ion Torrent. In previous years, testing for mutations was done by keeping specific targets and running various individual tests. Increasing demand for personalized medicine has led to next-generation sequencing, allowing clinicians to test multiple genes together. The basic sequencing workflow is designed for sample collection and preparation, library preparation, sequencing, bioinformatic analysis, and data sharing.
- NGS is a powerful technology used in clinical research to study diseases' genetic and molecular basis. NGS allows researchers to sequence millions of DNA molecules simultaneously, enabling the analysis of multiple genes and genetic mutations in a single experiment.
- NGS has revolutionized clinical research by enabling the identification of disease-causing genes and genetic variations at a much faster and more affordable rate than traditional sequencing methods. NGS is used in various clinical applications, including diagnosing and treating genetic disorders, cancer genomics, and surveillance of infectious diseases.
- NGS can provide valuable insights into the genetic basis of diseases, allowing for the identification of novel therapeutic targets and the development of personalized treatment options. NGS can also be used to track the evolution of infectious diseases and to monitor the spread of drug-resistant strains of pathogens.

Advantages of NGS in Clinical Research

Next-Generation Sequencing (NGS) has several advantages in clinical research, including:

Cost-effectiveness: NGS has significantly reduced the cost of sequencing, making it more accessible and affordable for clinical research.

Speed and throughput: NGS can sequence billions of DNA molecules in a single experiment, enabling the analysis of multiple genes and genetic mutations at a much faster rate than traditional sequencing methods.

High accuracy: NGS has a high degree of accuracy and can detect rare genetic mutations that traditional sequencing methods may miss.

Personalized medicine: NGS can identify specific genetic variations that may impact an individual's response to a particular drug or treatment, enabling the development of personalized treatment plans.

Comprehensive analysis: NGS can analyse large sections of the genome or the entire genome, providing a comprehensive view of an individual's genetic makeup.

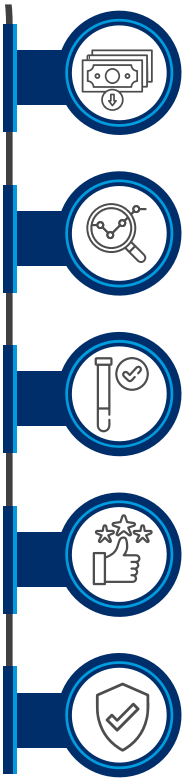
Early detection and diagnosis: NGS can detect genetic mutations and variations associated with diseases at an early stage, enabling early diagnosis and treatment.

Study of complex diseases: NGS can be used to study the genetic basis of complex diseases, such as cancer, which involve multiple genetic mutations and pathways.

Overall, NGS is a powerful tool in clinical research that has the potential to transform the way diseases are diagnosed and treated, It is leading to better patient outcomes.

Disadvantages of NGS in Clinical Research

Next-generation sequencing (NGS) technologies have revolutionized genomics and personalized medicine, allowing for the sequencing of large amounts of DNA in a relatively short period. However, there are several disadvantages of NGS in clinical research, including:



Cost: NGS technologies are still relatively expensive, especially for clinical research, which may limit their widespread use.

Data Analysis: The vast amount of data generated by NGS requires sophisticated bioinformatics tools and expertise to analyze, which can be challenging for many clinical researchers who may not have the necessary computational skills or resources.

Quality Control: NGS data can be prone to errors, such as false positives and negatives, which can result in misinterpretation of results if quality control measures are not in place.

Sample Quality: The quality of the DNA sample used for sequencing can affect the accuracy and reliability of the results. Samples that are degraded, contaminated, or have low DNA concentrations may not yield accurate results, leading to incorrect conclusions.

Ethical Concerns: The use of NGS in clinical research raises ethical concerns about privacy, confidentiality, and informed consent, as the technology can reveal sensitive information about a person's genetic makeup and predisposition to certain diseases.

Overall, while NGS technologies offer many benefits in clinical research, there are still several challenges and limitations that need to be addressed before they can be widely adopted for routine clinical use.

Increasing research and development in genetic screening, personalized drugs, and diagnostics primarily drives the next-generation sequencing market. The growing prevalence of chronic ailments like cancer, the advancement of the next-generation sequencing platform, and the reduction in the cost of genome sequencing are key factors supporting market growth. Extensive research and development activities in molecular science will further drive the global next-generation sequencing market. The declaration of COVID-19 as a pandemic pushed up the next-generation sequencing market as its methods have quickly adapted to the SARSCoV2 paradigm and have been proven to apply to various related biological problems. Many biopharma companies have taken a step forward and contributed to global test development research, thus boosting the growth of the Next-generation sequencing market.

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