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Canada Next-Generation Sequencing (NGS) Market - A Canada and Regional Analysis: Focus on Application, Technology, Offering, End User, and Regional Analysis - Analysis and Forecast, 2025-2035

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Abstracts

The Canada next-generation sequencing (NGS) market is projected to reach $2,776.2 million in 2035 and was estimated to be $381.6 million in 2023, growing at a CAGR of 19.40% during the forecast period 2025-2035. This growth is driven by several key factors. The increasing adoption of NGS-based testing in the treatment of cancer is particularly significant, as precision medicine continues to gain prominence in oncology, offering personalized treatment based on genetic profiles. Additionally, rising government initiatives, including funding and research programs, are fostering an environment conducive to the advancement of genomic technologies.

Furthermore, NGS is finding growing applications in healthcare and research, particularly in genetic testing and infectious disease monitoring, which has been highlighted by its role in tracking the spread and mutations of pathogens, such as during the COVID-19 pandemic. As these trends continue, the NGS market is set for substantial growth, fuelled by both technological advancements and a shift toward more personalized, data-driven healthcare.

Market Introduction

The Canada next-generation sequencing (NGS) market is poised for substantial growth, driven by advancements in technology, increasing demand across various applications, and the diverse end-user landscape. This market has been segmented into four key areas, namely, technology, application, end user, and offering, each playing a pivotal role in the market’s expansion and development.

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In the technology segment, the market has been characterized by several advanced methods, including Sequencing by Synthesis (SBS), Ion Torrent Semiconductor Sequencing, Single Molecule Real-Time (SMRT) Sequencing, and Nanopore Sequencing Technology. Each of these platforms offers distinct advantages in terms of accuracy, speed, scalability, and the ability to handle complex genomic data, which are essential for both clinical and research applications. Technological advancements in sequencing platforms, such as Illumina, Ion Torrent, and PacBio, continue to drive the market by offering more efficient and cost-effective solutions for sequencing needs.

The application segment underscores NGS's critical role in clinical diagnostics and research. NGS is increasingly used for diagnosing genetic disorders, cancers, and rare diseases, enabling personalized treatment plans and improving patient outcomes. It also accelerates research in genomic exploration, biomarker discovery, and drug development, driving scientific innovation in genetics and personalized medicine. Additionally, NGS plays a crucial role in infectious disease monitoring, contributing to global health efforts through genomic surveillance of emerging pathogens.

The end user landscape is diverse, consisting of academic and research institutes, clinical laboratories, and pharmaceutical and biotechnology companies. Academic and research institutes leverage NGS for basic genomics research and exploration of genetic diseases. Clinical laboratories utilize NGS for diagnostics, genetic testing, and precision medicine, while pharmaceutical and biotechnology companies rely on NGS for drug discovery, clinical trials, and the development of targeted therapies. The increasing adoption of NGS by these end users is driving growth in the market.

Finally, the offering segment includes equipment, consumables, and services, each playing a vital role in the NGS workflow. Equipment encompasses the sequencing machines and hardware required for genomic analysis, consumables include reagents and kits used during sequencing, and services provide essential support through data analysis, bioinformatics, and sample preparation.

As the demand for precision medicine, genomic research, and advanced diagnostics grows, the Canada next-generation sequencing market continues to expand rapidly. The segmentation of the market provides a clear framework for stakeholders to identify opportunities for innovation and investment across various sectors, ensuring that NGS remains at the forefront of advancements in both clinical and research.

Impact Analysis

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The Canada next-generation sequencing (NGS) market has made an impact in the following ways:

Personalized Medicine: NGS has enabled more tailored treatments based on individual genetic profiles, improving outcomes, especially in oncology and rare disease management.

Clinical Diagnostics: NGS has revolutionized genetic disorder, cancer, and infectious disease detection, leading to earlier diagnoses and more accurate treatment plans.

Research and Drug Development: NGS accelerates genomic research, biomarker discovery, and drug development, enhancing one's understanding of genetic diseases and treatment options.

Infectious Disease Monitoring: NGS aids in tracking pathogens and monitoring outbreaks, playing a critical role in global health responses, such as during the COVID-19 pandemic.

Market Segmentation:

Segmentation 1: by Offering

Equipment

Consumables

Services

Equipment Segment to Continue Dominating the Canada Next-Generation Sequencing (NGS) Market (by Offering)

Based on offering, the Canada next-generation sequencing (NGS) market is led by equipment, which held a 45.39% share in 2023.

Segmentation 2: by Application

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Clinical Diagnostics

Research

Research Segment to Continue Dominating the Canada Next-Generation Sequencing (NGS) Market (by Application)

Based on application, the Canada next-generation sequencing (NGS) market is led by research, which held an 86.58% share in 2023.

Segmentation 3: by End User

Academic and Research Institutes

Clinical Laboratories

Pharmaceutical and Biotechnology Companies

Other End Users

Academic and Research Institutes Segment to Continue Holding its Dominance in the Canada Next-Generation Sequencing (NGS) Market (by End User)

Based on end users, the Canada next-generation sequencing (NGS) market is led by academic and research institutes, which held a 39.53% share in 2023.

Segmentation 4: by Technology

Sequencing by Synthesis

Ion Torrent Semiconductor Sequencing

Single Molecule Real-Time Sequencing

Nanopore Sequencing Technology

Other Technologies

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Sequencing by Synthesis Segment to Continue Holding its Dominance in the Canada Next-Generation Sequencing (NGS) Market (by Technology)

Based on technology, the Canada next-generation sequencing (NGS) market is led by sequencing by synthesis, which held a 75.09% share in 2023.

Segmentation 5: by Region

Atlantic Canada

Central Canada

Northern Canada

Other Region

Recent Developments in the Canada Next-Generation Sequencing (NGS) Market

In June 2025, Genome Canada, as a lead partner in the Canadian Genomics Strategy, invested over $6 million to support five new genomics-driven R&D projects. These initiatives, with an additional $12 million in co-investment, aim to tackle national challenges in cancer diagnostics, personalized medicine, and sustainable industries.

In April 2025, researchers at the UBC Faculty of Medicine secured new funding from the Government of British Columbia, in collaboration with Genome BC and Genome Alberta, to advance patient care and genetic testing in areas such as cancer, heart disease, organ transplants, infections, and more.

In March 2025, Genome Canada announced the launch of the Canadian Precision Health Initiative (CPHI), supported by an initial $81 million investment from the Government of Canada. The initiative is expected to reach a total investment of $200 million, incorporating additional funding from industry, academic institutions, and public sector partners.

In March 2025, Genome Canada and Oxford Nanopore Technologies

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announced a partnership designed to substantially advance genomics research throughout Canada.

Demand: Drivers and Limitations

Market Demand Drivers

Increasing NGS-Based Testing Adoption in the Treatment of Cancer: The adoption of NGS-based minimal residual disease (MRD) testing in cancer care is rapidly increasing in Canada, driven by technological advancements, government support, and the growing demand for personalized medicine. NGS enables highly sensitive detection of residual cancer cells, allowing for earlier detection of relapse and more tailored treatment plans, which can significantly improve patient outcomes.

While challenges such as high costs, regulatory barriers, and the complexity of genomic data exist, the opportunities for improving cancer care are substantial. Continued investments in infrastructure, research, and collaboration are essential for overcoming these hurdles. By addressing these challenges, NGS-based MRD testing has the potential to transform cancer diagnostics and treatment, positioning Canada as a leader in genomic medicine and personalized oncology.

Increasing Government Initiatives: The Canadian Precision Health Initiative (CPHI) is a significant step forward in genomic healthcare, with substantial government investment aimed at providing personalized health solutions to Canadians while driving economic growth and ensuring data sovereignty. The initiative seeks to establish Canada as a global leader in genomic data collection, fostering innovations in precision medicine and improving healthcare accessibility.

Additionally, the Canadian Genomics Strategy emphasizes precision medicine, clean technology, and genomics innovation, positioning Canada to address critical healthcare challenges and contribute to sustainable economic growth. By advancing in genomics, Canada aims to lead global healthcare breakthroughs, offering tailored treatments and fostering new industries, while strengthening its role as a leader in healthcare technology and genomic research.

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Market Restraints

High Costs and Resource Allocation: NGS-based testing offers significant clinical benefits, including personalized treatments for cancer, genetic disorders, and infectious diseases. However, the high costs of sequencing equipment, reagents, and bioinformatics infrastructure, along with the need for specialized training, present major barriers to widespread adoption, especially in rural and remote areas of Canada. To overcome these challenges, increased government support and investment are crucial. Funding can subsidize the cost of NGS technologies and enable the establishment of centralized resources, making the technology accessible to smaller healthcare providers.

Additionally, investments in training programs and research can reduce costs and enhance the efficiency of NGS. By addressing these barriers, NGS-based testing can become more accessible across Canada, improving healthcare equity and enabling personalized medicine for all Canadians.

Market Opportunities

Growing Advancements in Point-of-Care NGS: The increasing availability and affordability of portable NGS devices, such as the Oxford Nanopore MinION, present a transformative opportunity for the Canadian healthcare system, particularly in remote and under-resourced regions. These devices can revolutionize point-of-care diagnostics, enabling rapid and accurate testing for conditions such as rare diseases, cancer genomics, and infectious disease monitoring. In rural areas, where access to centralized labs is limited, the MinION allows healthcare providers to perform real-time sequencing on-site, speeding up diagnoses and treatment decisions.

For cancer care, it facilitates quicker detection of genetic mutations, enabling personalized treatment adjustments. In infectious disease monitoring, it enables swift genomic sequencing of pathogens, crucial for controlling outbreaks. The MinION's portability and cost-effectiveness make advanced diagnostic capabilities more accessible, offering equitable healthcare solutions and enhancing healthcare access across Canada, particularly in underserved regions.

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How can this report add value to an organization?

Product/Innovation Strategy: The Canada next-generation sequencing (NGS) market has been extensively segmented based on various categories, such as offering, application, technology, end user, and region. This can help readers get a clear overview of which segments account for the largest share and which ones are well-positioned to grow in the coming years.

Growth/Marketing Strategy: Funding accounted for the maximum number of key developments in the Canada next-generation sequencing (NGS) market between January 2022 and June 2025.

Competitive Strategy: The Canada next-generation sequencing (NGS) market has numerous established players with product and service portfolios. Key players in the Canada next-generation sequencing (NGS) market, as analyzed and profiled in the study, include established companies offering next-generation sequencing systems, consumables, and services.

Methodology

Key Considerations and Assumptions in Market Engineering and Validation

Detailed secondary research was performed to ensure maximum coverage of manufacturers/suppliers operating in a country.

Exact revenue information, up to a certain extent, was extracted for each company from secondary sources and databases. The revenues specific to the offering, application, technology, end user, and region were then estimated for each market player based on fact-based proxy indicators, as well as primary inputs.

The scope of this report has been carefully derived based on interactions with experts in different companies across the world. This report provides a market study of next-generation sequencing.

The market contribution of next-generation sequencing, anticipated to be launched in the future, has been calculated based on historical analysis. This analysis has been supported by proxy factors, including the innovation scale of the companies, funding status, collaborations, customer base, and patent

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scenario.

The scope of availability of next-generation sequencing products and services in a particular region has been assessed through a comprehensive analysis of companies' prospects, regional end-user perceptions, and other factors influencing the launch of next-generation sequencing equipment, consumables, and services in that region.

The base year considered for the calculation of the market size is 2024. A historical year analysis has been done for the period FY2021-FY2023. The market size has been estimated for FY2024 and projected for the period from FY2025 to FY2035.

Revenues of the companies have been referenced from their annual reports for FY2021-FY2024. For private companies, revenues have been estimated based on factors such as inputs obtained from primary research, funding history, product approval status, market collaborations, and operational history.

The regional distribution of market revenue has been estimated based on the number of companies in each region and the adoption rate of next-generation sequencing. All the numbers have been adjusted to a single digit after the decimal for better presentation in the report. However, the real figures have been utilized for compound annual growth rate (CAGR) estimation. The CAGR has been calculated for the period 2025-2035.

The market has been mapped based on the available next-generation sequencing equipments, consumables and services. All the key companies with significant offerings in this field have been considered and profiled in this report.

Market strategies and developments of key players have been taken into account for calculating the market potential in the forecast period.

Primary Research

The primary sources involve industry experts in the next-generation sequencing market, including the market players offering next-generation sequencing. Resources, including CXOs, vice presidents, product managers, directors, territory managers, and business development professionals, have been interviewed to gather and verify both qualitative

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and quantitative aspects of this research study.

The key data points taken from the primary sources include:

- Validation and triangulation of all the numbers and graphs
- Validation of the report's segmentation and key qualitative findings for next-generation sequencing
- Understanding the competitive landscape and business model
- Current and proposed production values of a product by market players
- Validation of the numbers of the different segments of the market in focus
- Percentage split of individual markets for regional analysis

Secondary Research

Open Sources

- European Medicines Agency (EMA), American Chemical Society (ACS), Frontiers, Health Canada, World Health Organization (WHO), and National Center for Biotechnology Information (NCBI), among others
- Annual reports, SEC filings, and investor presentations of the leading market players
- Company websites and detailed study of their portfolios
- Gold standard magazines, journals, whitepapers, press releases, and news articles
- Databases

The key data points taken from the secondary sources include:

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Segmentation and percentage share estimates

Company and country understanding and data for market value estimation

Key industry/market trends

Developments among top players

Qualitative insights into various aspects of the market, key trends, and emerging areas of innovation

Quantitative data for mathematical and statistical calculations

Key Market Players and Competition Synopsis

The companies that are profiled have been selected based on inputs gathered from primary experts and by analyzing company coverage, type portfolio, and market penetration.

Some prominent names in the Canada next-generation sequencing (NGS) market include:

Illumina, Inc.

Oxford Nanopore Technologies plc.

Pacific Bioscience of California, Inc.

MGI Tech Co., Ltd.

QIAGEN N.V.

ELEMENT BIOSCIENCES

Agilent Technologies, Inc.

PerkinElmer, Inc.

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Singular Genomics, Inc.

Thermo Fisher Scientific Inc.

Bio-Rad Laboratories, Inc.

F. Hoffmann-La Roche Ltd.

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