About this report

Welcome to the first Novartis in Society Integrated Report. This report highlights progress against our strategy and describes how we create value for our stakeholders. It is intended for all Novartis stakeholders, particularly shareholders, investors, and environmental, social, and governance (ESG) professionals.

This report combines our Novartis in Society ESG Report and Annual Review. It is published in conjunction with our regulatory disclosure documents: our Annual Report filed with the SIX Swiss Exchange, and our Form 20-F filed with the US Securities and Exchange Commission (SEC). Details of our annual reports can be found at www.reports.novartis.com.

Our Novartis in Society Integrated Report contains three main sections:

• Our approach, including details of our business environment, stakeholders, strategy and risk management
• Our performance, including financial performance and performance against our five strategic priorities: deliver transformative innovation, embrace operational excellence, go big on data and digital, unleash the power of our people, and build trust with society
• Corporate governance and our approach to executive compensation

Content of this report is subject to approval by the Governance, Nomination and Corporate Responsibilities Committee of the Novartis Board of Directors prior to publication. PricewaterhouseCoopers AG (PwC) has provided limited independent assurance on risk management.

All financial data is taken from our Annual Report, prepared in accordance with International Financial Reporting Standards (IFRS), as issued by the International Accounting Standards Board (IASB). This report has been prepared in accordance with the GRI Standards. Core option. We used other frameworks as references, including the Integrated Reporting Framework and SASB Standards provided by the Value Reporting Foundation. Further details of our compliance with the GRI and SASB Standards can be found on pages 102-107.

In addition, Novartis supports the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). Our TCFD disclosure can be found on pages 108-111.

2021 at a glance

766 m
Patients reached with Novartis medicines

21
Major approvals (US, EU, Japan, China) including two new molecular entity approvals from the US Food and Drug Administration (FDA)

3
Breakthrough therapy designations from the FDA

51.6 bn
Net sales growing 4% in constant currencies from 2020 (USD)

16.6 bn
Core operating income growing 6% in constant currencies from 2020 (USD)

74 bn
Total dividends paid to shareholders (USD)

71 bn
Treatments supplied through Novartis facilities

300 000
Patients using Ai Nurse our cardiovascular disease app in China

78
Employee engagement score in Q4 out of 100. 5 points higher than the industry benchmark

1 bn
Antimalarial treatments delivered in the past two decades in endemic countries, more than 90% of which were supplied without profit

40 m
Doses produced of the Pfizer-BioNTech vaccine for COVID-19

–34%
Greenhouse gas emissions reduced vs. 2016 baseline (Scope 1 and Scope 2)

Ratings and recognition

Access to Medicine Index
Novartis ranked second in 2021 retaining our 2020 position

Dow Jones Sustainability World Index
Novartis was included in both the DJSI World and Europe indices

Sustainalytics
Novartis leads in the pharmaceutical subindustry group

World’s 25 Best Workplaces™
Novartis was included in Fortune's World’s 25 Best Workplaces™ list

Bloomberg Gender-Equality Index
Novartis was included for the third year in a row

Cover photo: Silvia Bally, a Novartis employee at a production facility in Stein, Switzerland
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Photo: Jian Zhang cooks in his kitchen in Shenyang, China. Mr. Zhang, who has heart failure, is one of approximately 300,000 people in China using AI Nurse, a digital health app that makes it easier for patients to manage cardiovascular disease progression.
Novartis delivered a solid performance in 2021. Strong demand for heart failure medicine Entresto, psoriasis and autoimmune disease treatment Cosentyx, and recently launched therapies such as multiple sclerosis drug Kisplima helped us increase sales and net profit as we maintained cost discipline. Looking ahead, we are confident we can maintain our momentum as we remain focused on operational excellence and science-based innovation.

With more than 12 new drug approvals by the US Food and Drug Administration in the past five years, we are committed to our long-term research and development (R&D) strategy, which is aimed at creating break-through therapies for patients with high unmet medical needs. We strive to build leading market positions in fast-growing areas of medicine and broaden patient reach to deliver on our purpose to improve and extend people’s lives around the world.

Acute pressure on societies and healthcare systems due to the COVID-19 pandemic remains high. In this challenging environment, our focus on operational excellence and shift to flexible working by our employees continued to help us navigate the crisis. In a post-pandemic world, these lessons will enable us to maintain high levels of resilience and operational efficiency while continuing to position us as an employer of choice in a changing work environment.

We also made further progress in our environmental, social and governance (ESG) activities, which are an essential part of our strategy and an important reputation driver. Besides our progress in reducing our environmental footprint, we broadened patient access to our strategic medicines and launched a new program in the United States to address health disparities – all with the intention to create more equitable and sustainable healthcare systems and support the United Nations’ efforts to achieve the Sustainable Development Goals.

The Board of Directors took further action to strengthen governance. We paved the way for comprehensive ESG oversight and changed the leadership of the Compensation Committee and the Governance, Nomination and Corporate Responsibilities Committee. We also nominated a new Board member. Together with the Executive Committee, the Board of Directors will continue the intensive dialogue with all stakeholder groups with a view to further strengthen trust in society and to maximize shareholder return.

I thank you for the confidence you have placed in our company and am pleased to be able to propose a dividend increase of 3.3% to CHF 3.10 at the next Annual General Meeting.

Sincerely,

Joerg Reinhardt
Chairman of the Board of Directors

2021 was another year of rapid change for the biopharmaceutical industry and the world. The pandemic continues to disrupt care for patients across the spectrum of disease, creating a syndemic, or confluence of epidemics, that requires healthcare systems to cope with COVID-19 while caring for patients with chronic diseases.

Through the challenges ahead, there are reasons to be optimistic. A healthcare future is within our grasp – including the ways our industry has brought to this crisis the power of technology and shown once again the extraordinary ability of science to overcome humanity’s greatest tests.

As we reimagine medicine at Novartis, our unwavering focus on our strategy and purpose enabled us to continue creating value for patients, healthcare professionals, healthcare systems, employees, shareholders and society.

The adaptability and commitment of our employees, together with the resilience of our operations and capabilities in data science and technology, minimized disruptions to our business. Many changes, such as hybrid working, are now business as usual.

Our impact on the world remains extraordinary, with 766 million patients reached in 2021. We received 21 approvals in the US, the EU, Japan and China, including two new molecular entities. Our sRNA therapy, Louvex, is now approved in more than 50 countries, including the US. We also demonstrated the strength of our in-market portfolio, with medicines like Cosentyx, Entresto, Zoledrinas, Kesimpta and Kisplima driving growth.

Our pipeline promises innovation for years to come. We have built depth in five therapeutic areas and are building scale in five next-generation technology platforms. 2021 saw important data readouts, including for Kisplima in H-R/MED advanced breast cancer, and for 15Lu-PsiMA-617, our investigational targeted radionuclide therapy for patients with advanced prostate cancer, which received breakthrough therapy designation by the US Food and Drug Administration (FDA). We also received approval for Scintbi, a novel stamp inhibitor for the treatment of chronic myeloid leukemia.

We have a promising mid- and late-stage portfolio, with more than 20 assets with expected approval by 2026 that each have sales potential over USD 1 billion. We also initiated a share buyback of up to USD 15 billion, underscoring our confidence in our mid- and long-term pipeline and growth outlook.

Progressing on our journey to build trust with society and furthering our legacy in global health and access, in 2021 Novartis reached the milestone of delivering a staggering 1 billion courses of malaria treatment to people in endemic countries. We continue delivering on our longstanding commitment to expand access, narrowing the time it takes to scale our latest innovations. Our progress was underscored by improved environmental, social and governance (ESG) ratings, and we once again ranked second in the Access to Medicine Index.

We continued to go big on data science and digital technologies, integrating our data and digital teams within Customer & Technology Solutions to maximize efficiency as we scale value-driving projects. For example, AI Nurse, developed in collaboration with Tencent, helps patients with heart failure and other cardiovascular diseases manage disease progression. It is used by 300,000 patients in China.

Novartis also continued doing our part to end the pandemic, quickly scaling up production of COVID-19 vaccines. We’re proud to have helped develop a potential new treatment option with Molecular Partners. Our financial performance highlights the progress we’ve made and drives confidence for the future – with 4% growth in net sales and 6% growth in core operating income from the previous year. We’re confident we’ll drive consistent growth to 2030 and beyond. We’ve also initiated a strategic review of SANDZ to be positioned as a long-term leader in the generics industry.

Emerging from the COVID-19 pandem- ic, I remain optimistic about a new era in medicine. Stakeholders like you play an important role in that. On behalf of all of us at Novartis, we’re grateful for your contributions on the journey of reimagining medicine.

Sincerely,

Vas Narasimhan
Chief Executive Officer
Who we are

Novartis reimagines medicine to improve and extend people’s lives. Our medicines, which reached 766 million patients around the world in 2021, address most major disease areas, from cancer to heart disease to rare genetic disorders.

Our purpose

Our purpose is to reimage medicine to improve and extend people’s lives. We use innovative science and technology to address some of society’s most challenging healthcare issues. We discover and develop breakthrough treatments and find new ways to deliver them to as many people as possible.

Our company

We have two global operating divisions: Innovative Medicines, which specializes in patent-protected medicines, and Sandoz, which sells generics and biosimilars. These divisions are supported by our research and development teams, our manufacturing operations, our business services and technology organization, and our corporate functions.

Innovative Medicines

The Innovative Medicines Division has two business units:

Novartis Pharmaceuticals
Novartis Pharmaceuticals focuses on patented treatments in multiple disease areas to enhance health outcomes for patients and offer solutions to healthcare providers.

Novartis Oncology
Novartis Oncology focuses on patented treatments for a variety of cancers and rare diseases.

Sandoz

The Sandoz Division offers patients and healthcare professionals high-quality, affordable generics and biosimilars.

Research and development (R&D)

The Novartis Institutes for Biomedical Research (NIBR) is the innovation engine of Novartis. NIBR focuses on discovering new drugs that can change the practice of medicine.

The Global Drug Development (GDD) organization oversees the development of new medicines discovered by our researchers and partners.

Novartis Technical Operations (NTO)

is responsible for making our innovative medicines, devices and Sandoz products, and delivering them to our customers across the world.

Customer & Technology Solutions (CTS)

consolidates digital and other support services across our organization, helping drive efficiency, standardization and quality.

Corporate functions

support the enterprise in specific areas of expertise, including finance, human resources, legal, communications, global health, and ethics, risk and compliance.

Our global footprint

Novartis headquarters are located in Basel, Switzerland. We have more than 380 sites – including research and development locations, offices and production facilities – around the world.

Major Novartis facilities

(by area of site and/or number of employees)

Europe

Switzerland
Basel
Global headquarters of Novartis

Stein
Production of a range of medicines, including cell and gene therapies, production of active pharmaceutical ingredients

Holzkirchen
Sandoz Division production of transdermal delivery systems, biosimilars development, and certain international and global service functions

Austria
Kundl and Schaftenau
Production of biotechnological products, drug products and finished products, anti-infectives, active drug substances and nucleic acids, product development

Slovenia
Menges
Production of drug substances and drug intermediates

France
Huningue
Production of drug substances for clinical and commercial supply

North America

USA
East Hanover, NJ
Innovative Medicines Division US headquarters, research and development

Cambridge, MA
Research and development

Asia

China
Shanghai
Research and development

India
Hyderabad
The largest of our five global service centers supporting all Novartis business units

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Who we are

Research & development
Finding and developing new treatments for patients is at the core of our business. More than three-quarters of our sales come from innovative patient medicines. Our pipeline of investigational treatments, which spans around 50 diseases, has the potential to transform the standard of care for millions of patients worldwide.

Procurement & manufacturing
We have 53 manufacturing sites worldwide. These sites produce our patent medicines, devices, generics and biosimilars, as well as some raw materials we need for manufacture. Across our sites, we maintain high quality standards to ensure patient health and safety, and we require our suppliers to do the same.

Marketing & distribution
We aim to deliver our treatments to as many people as possible. We work with customers and payers, such as hospitals, physicians, insurance groups and governments, to understand their needs and improve outcomes for patients. We use a range of access approaches to ensure our medicines reach underserved patient populations.

Our medicines

Our medicines address most major disease areas and are sold in approximately 155 countries around the world. Our manufacturing facilities supplied 71 billion treatments in 2021.

We develop and produce innovative medicines to address patient needs in disease areas where our experience and knowledge have the potential to produce transformative treatments.

- Oncology
- Neuroscience
- Cardiovascular, renal and metabolism
- Infectious diseases
- Respiratory and allergy
- Immunology, hepatology and dermatology
- Ophthalmology

We also offer about 1,000 generic and biosimilar medicines covering a broad range of therapeutic areas. They can bring substantial savings to patients and healthcare systems, and help improve access to healthcare.

Novartis top 10 innovative medicines
Brand / 2021 net sales (USD, millions)

- Cosentyx
- Entresto
- Gilenya
- Lucentis
- Tasigna
- Promacta/Revolade
- Tafinlar
- Mekinist
- Xolair
- Sandrolimus

Our culture and values

Our Values and Behaviors underpin our culture and enable us to deliver on our purpose. We encourage all Novartis employees to be inspired, curious and unbossed while acting with integrity.

Inspired
- Engage our people
- Strive for patients
- Live our purpose

Curious
- Learn
- Be open
- Be self-aware

Unbossed
- Create clarity
- Serve others
- Own your actions

Integrity
- Be honest
- Have courage
- Do what is right

Our people

The greatest strength of Novartis is our people, whose diversity, energy and creativity are crucial to our success. Around the world, we employ 108,514 people (104,323 full-time equivalent positions), with around one-fifth of our employees working in research and development.
Our business environment

The need for high-quality healthcare has never been more urgent or important. People around the world are living longer, fueling a rise in chronic diseases and pressuring healthcare systems to restrain spending growth. At the same time, digital technology and a deeper understanding of the root causes of disease are accelerating medical innovation and opening new possibilities to improve the lives of patients.

Healthcare demand is expected to rise post-COVID-19
Global demand for healthcare and associated spending is expected to grow over the next five years, supported by renewed economic growth and increased investment in healthcare in many countries after the COVID-19 pandemic. We see growth for our business in many markets, including in the US and – over the longer term – in China. At the same time, pressure on pharmaceutical pricing is expected to continue as payers step up initiatives to reduce the cost of healthcare.

Use of data and technology is expanding across our industry
The use of data science and technologies such as artificial intelligence is increasing rapidly across our industry – in everything from clinical trials and manufacturing to patient diagnostics and treatment. COVID-19 has accelerated this trend. Meanwhile, customers want more efficient and personalized ways to connect with pharmaceutical companies. Against this backdrop, data privacy and cybersecurity are growing in importance.

3–6%-

The global medicines market is expected to grow between 3–6% CAGR through 2025, according to IQVIA. Growth in non-COVID-19 spending is expected to return to its pre-pandemic outlook by 2023. In China, spending on medicines is predicted to exceed USD 1 trillion by 2025.

Innovation continues to accelerate
Medical innovation is accelerating, as technologies such as gene therapy and ribonucleic acid (RNA) therapies open new paths to scientific discovery. Increased cooperation within the industry could lead to a new era of open science. At the same time, innovation is getting harder, with new discoveries requiring significant long-term investment.

Access to healthcare remains a global challenge
Almost a third of the world’s population does not have access to the medicines they need. For the past five years, access rates in the poorest countries have been declining. Meanwhile, the COVID-19 pandemic has highlighted deep health inequalities in both developed and developing countries.

123 bn-

In 2020, spending on research and development by the world’s 15 leading pharmaceutical companies reached USD 123 billion, an increase of 4% since 2018, according to research published in 2020 by IQVIA.

2bn-

The number of people who lack access to essential medicines, according to the World Health Organization (WHO).

Climate crisis threatens to undermine global health gains
Climate change is already causing extreme heat and poor air quality in some areas, which threaten to exacerbate pre-existing health conditions such as respiratory diseases. In addition, an increase in temperature and humidity may cause a proliferation of insects that carry vector-borne diseases, including dengue fever and malaria. Ultimately, climate change could undermine decades of progress in improving human health at a time when antimicrobial resistance is also rising.

123 bn-

Between 2020 and 2050, the WHO expects climate change will cause approximately 250,000 additional deaths each year – from malnutrition, malaria, dengue and heat-related illness alone.

Aging and other factors are changing the disease burden
As the complexity of the world’s healthcare challenges grows, the nature of the global disease burden is also changing. Aging populations and lifestyle changes are fueling a rise in noncommunicable conditions such as cardiovascular disease and cancer, driving an increase in disability and early death, and putting additional pressure on healthcare systems.

71%-

Noncommunicable diseases (NCDs) are responsible for 71% of global deaths, according to the WHO. Cardiovascular diseases account for most NCD deaths, followed by cancer, respiratory diseases, and diabetes.

New ways of working are here to stay after COVID-19
COVID-19 changed our work habits. Post-pandemic, many employees continue to want more flexibility in how they work. Within our own workforce, there is more emphasis on digital skills. At the same time, workplace diversity is more important than ever to attract and retain talented employees, and support innovation.

74%-

Nearly three-quarters of workers want a mix of office-based and remote working, according to a 2021 survey by Accenture Research. This shows more flexible working can bring benefits for employers and can help companies widen their talent pool.

57%-

Worldwide, trust in pharmaceutical companies stood at 57% in 2021, according to the Edelman Trust Barometer. Trust improved in the US, and more than one-third of people in the UK, Germany, the UK, and Italy from 2020, though from relatively low levels.

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Our stakeholders

We can deliver on our purpose only by working with a diverse range of individuals and groups who are important to our business. Engaging these stakeholders helps us to better understand their needs and expectations, and work together toward common goals.

The table below shows a summary of how we engage with our main stakeholder groups.

<table>
<thead>
<tr>
<th>Patients and caregivers</th>
<th>Customers</th>
<th>Employees</th>
</tr>
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<tbody>
<tr>
<td>We work with patients and caregivers to understand the effects of our medicines and to ensure our treatments address unmet medical needs.</td>
<td>We build relationships with customers – including healthcare professionals and payers – to understand their needs and constraints, and to explain the benefits and risks of our medicines.</td>
<td>We engage employees to develop skills, improve working conditions, and promote an inspired, curious and unbossed culture.</td>
</tr>
</tbody>
</table>

How we engage:

- Engage with patients and patient representative groups, because they have a voice in the research and development of our medicines.
- Talk with patients to better understand and integrate their perspectives before we launch our medicines.
- Work with patient organizations worldwide to address common goals, such as improving cardiovascular health.
- Conduct surveys of patients to better understand unmet needs and improve patient outcomes.
- Provide policymakers with regular data and insights to enable informed decision-making.

Shareholders and investors

We communicate with shareholders and other investors to explain our strategy, performance, and governance.

How we engage:

- Hold face-to-face and online meetings with asset managers, financial and environmental, social and governance (ESG) analysts and stewardship teams.
- Hold conferences, seminars and quarterly earnings presentations.
- Focus on our 100 largest shareholders, who together own 60% of our shares.
- Conduct risk assessments of suppliers and work to improve areas such as environmental sustainability.
- Foster a network of academic and industry research alliances.
- Work alongside global health organizations to improve access to medicines.
- Establish co-marketing leasing and distribution agreements with other companies.

Partners

We work closely with external researchers, suppliers and a variety of other organizations to help discover new medicines, improve access to our medicines, and support business growth.

How we engage:

- Conduct risk assessments of suppliers and work to improve areas such as environmental sustainability.
- Foster a network of academic and industry research alliances.
- Work alongside global health organizations to improve access to medicines.
- Establish co-marketing leasing and distribution agreements with other companies.

Policymakers and regulators

We maintain a constructive dialogue with policymakers and regulators so that our views are represented on issues affecting our industry.

How we engage:

- Conduct quarterly surveys that measure employee engagement and other aspects of corporate culture.
- Talk with payers to understand their needs and promote an inspired, curious and unbossed culture.
- Work with trade associations and participate in leading industry initiatives alongside peer companies.
- Conduct risk assessments of suppliers, and work to improve areas such as environmental sustainability.
- Foster a network of academic and industry research alliances.
- Work alongside global health organizations to improve access to medicines.
- Establish co-marketing leasing and distribution agreements with other companies.
- Work with trade associations and participate in leading industry initiatives alongside peer companies.

Our 2021 materiality assessment

Every four years we conduct a detailed materiality assessment to identify issues that matter most to our stakeholders, and where we have the most potential to create value aligned with our purpose. The assessment informs our strategy and our reporting on ESG topics, and guides our impact performance measurement.

Our latest materiality assessment, conducted in 2021, was based on a survey of more than 500 external stakeholders and 12,000 internal stakeholders, and 140 follow-up interviews.

External stakeholders were drawn from our main stakeholder groups, including patients, customers, partners and shareholders. Internal stakeholders – including senior management – were drawn from across our business divisions. Participants were asked to rank the impact of Novartis across eight impact clusters. Results can be seen in the chart below.

Overall, results were in line with our previous materiality assessment conducted in 2017 and were consistent across stakeholder groups: patient safety, access to healthcare, innovation and ethical business practices were again ranked highly. Although environmental sustainability was ranked lower than other impact clusters, it remains an essential component of our strategy and operating model.

For full details of our materiality assessment, please see www.novartis.com/materiality
Our strategy

Our strategy is to build a focused medicines company powered by technology leadership in research and development, world-class commercialization, global access and data science. As we implement this strategy, we have five priorities to help shape our decision-making and ensure we continue to deliver on our purpose.

Deliver transformative innovation
We seek to find new ways to cure disease, intervene earlier in chronic illnesses, and improve patients’ quality of life.
Our research and development (R&D) programs stand to help millions of people living with cancer, heart disease, neurological conditions and immune system disorders, as well as a variety of other diseases.
We prioritize projects with the potential to transform the standard of care for patients, and we are investing in new technology platforms – including cell and gene therapies, RNA therapeutics, and radioligand therapies – that offer more targeted approaches to fighting and, in some cases, potentially curing serious diseases.
Our focus on transformative innovation is expected to drive above-sector sales growth. By 2026, we anticipate approval of more than 20 pipeline assets with the potential to become blockbuster medicines with annual sales of more than USD 1 billion.

Embrace operational excellence
We strive to improve the efficiency and effectiveness of our operations while maintaining high standards of patient safety, product quality and environmental sustainability. These activities underpin our investments in innovation and support our financial performance, while helping to build trust with society.
In our commercial operations, we aim to consistently deliver successful launches enabling broad and rapid access to our medicines.
Our manufacturing operations are evolving as we invest in new technologies to improve productivity and respond to the changing business environment.
We continue to transform our business services and technology functions to enable the execution of our strategy and drive profitable growth.

Go big on data and digital
Our aim is to transform Novartis into a medicines company powered by data science and digital technologies.
Using data, we believe, can improve efficiency, drive sales and spur innovation to enhance our pipeline of new medicines and improve outcomes for patients.
To do this, we are embracing data analytics and technologies such as artificial intelligence while partnering with technology companies both large and small.
We also work to ensure the ethical and responsible use of new technologies and prioritize effective data privacy and cybersecurity.

Unleash the power of our people
We continue to transform our corporate culture to support our long-term performance.
We want every employee to feel inspired by our purpose, be curious about new ideas, and work in an unbossed environment that encourages initiative and teamwork.
We are exploring new ways of working, post-pandemic, to give employees greater flexibility and ensure we continue to attract and retain world-class talent.
At the same time, we are making progress in diversity and inclusion to increase employee engagement and support innovation.

Build trust with society
Building trust with patients, customers, partners, our employees and society is critical to delivering on our purpose.
It defines our approach to managing our key environmental, social and governance (ESG) topics: being part of the solution on pricing and access, addressing global health challenges, being a responsible citizen, and holding ourselves to high ethical standards.
We strive to make our medicines accessible to as many people as possible, while embedding ethics across our business, reducing our environmental footprint, and helping to address global issues such as antimicrobial resistance.
We take a systematic approach, integrating our ESG priorities across our strategy with clear targets and reporting. Please see page 16 for more information on our ESG management targets.

We have made significant progress since we launched our strategy in 2018.
We have improved the productivity of our R&D pipeline, delivered cost savings and ramped up our investments in data and digital. We have also made important progress in providing access to our medicines, and further strengthened our approach to ethics and compliance.
For more information on our performance against our strategy see pages 28-86.

ESG management targets

Our management targets covering environmental, social and governance (ESG) topics are integrated throughout our strategy. Topics covered include access to medicines, global health challenges, environmental sustainability and ethical business practices. Relevant information is disclosed in this report within the strategic priority sections as outlined below.

Deliver transformative innovation

- **Innovation for global health** → p. 41
  - Advance clinical development programs for our next-generation antimalarials and for patients with Chagas-related heart failure

- **Diverse clinical trials** → p. 42
  - Evaluate diversity and inclusion principles for 100% of Phase III studies with US country participation (with a longer-term goal to increase and embed this evaluation throughout our global trials)

Embrace operational excellence

- **Third-party risk management** → p. 52
  - Conduct risk assessments for all new eligible suppliers

Unleash the power of our people

- **Diversity and inclusion** → p. 64
  - Close the gender pay gap by 2023
  - Achieve gender balance in management by 2023

- **Learning and development** → p. 63
  - Invest USD 100 million in learning over five years from 2019

Build trust with society

- **Access and global health** → p. 70
  - Implement an access strategy for all new medicines launched
  - Implement tiered pricing for launches in our Pharmaceuticals and Oncology business units based on national income levels and value-based pricing
  - Increase by at least 200% patients reached with strategic innovative medicines in low- and middle-income countries (LMICs) by 2025 (compared with 2019)
  - Increase by at least 50% the number of patients reached with Novartis flagship programs in LMICs by 2025 (compared with 2018)

- **Ethical business practices** → p. 80
  - Post all clinical trial results on www.clinicaltrials.gov or www.novartisclinicaltrials.com within one year of completion
  - Integrate human rights into third-party risk assessments in scope
  - Enhance external reporting on anti-bribery

- **Environmental sustainability** → p. 83
  - Emissions:
    - Be carbon neutral in our own operations (Scope 1 and 2) by 2025 and across the value chain (Scope 1, 2 and 3) by 2030
    - Achieve net zero carbon emissions across our value chain by 2040
    - Include environmental criteria in all supplier contracts by 2025
  - Water:
    - Reduce water consumption in our own operations by half by 2025 (compared with 2016), with no water quality impacts from the manufacturing of our products
  - Waste:
    - Eliminate polyvinyl chloride in packaging by 2025 (secondary and tertiary packaging; primary packaging when feasible)
    - Reduce the amount of waste sent for disposal by half by 2025 (compared with 2016)
    - Become plastic neutral by 2030 with all new products meeting sustainable design principles

1 Additional information on environmental sustainability in our manufacturing and supply chain can be found on page 48 and page 53, respectively. Information relevant to the Task Force on Climate-related Financial Disclosures (TCFD) is on page 108.
How we create value

By executing on our strategy and delivering on our purpose, we create value for our business and improve the lives of millions of people around the world.

Our strategy

Deliver transformative innovation
- 9.5 bn Investment in research and development (USD)
- 160+ Pipeline projects in clinical development
- 20,000+ Employees in research and development

Embrace operational excellence
- 53 Novartis manufacturing facilities
- 12,064 Suppliers assessed
- 9.8 m Energy use in our facilities (trend and purchased)

Go big on data and digital
- 2,700+ Clinical trials spanning two decades available on our data analysis platform
- 3,000+ Clinical trials participants included via an online enrollment portal in the US
- 16,000 Employees using a learning platform to enhance their digital skills

Unleash the power of our people
- 108,514 Headcount
- 521 Arms-length hours per internal employee
- 5,000 Leaders being unbossed training

Build trust with society
- 98% Employees trained on Novartis Global Health Code of Ethics
- 31 Emerging market brands launched in 2021
- 122 Countries with Novartis Global Health Meds on the ground

Our approach

Social, environmental and economic impact

Our medicines positively impact society by improving the lives of up to 500 million people around the world. Over the course of 2021, we positively impacted our stakeholders in 160+ countries with our medicines.
Measuring and valuing our impact

Impact valuation is an emerging discipline that seeks to measure the positive and negative effects of companies on society. Novartis is pioneering an approach called social, environmental and economic (SEE) impact valuation that aims to show the positive impact we bring to countries, health systems and individuals, balanced by the negative impact of our operations on the environment and other areas. Expressing these impacts in monetary terms makes them transparent and comparable for stakeholders.

Our latest SEE impact valuation figures for 2020 take into account the social impact of our Innovative Medicines and Sandoz product portfolio in 131 countries. We also assessed our impact on living wages and employee development in our own operations and in our supply chain, as well as our contributions to gross domestic product and employment in the countries in which we operate.

At the same time, we measured the negative impact of our business on occupational safety – both in our own operations and across our supply chain – as well as the negative impact of carbon and other greenhouse gas emissions, land use, water use and waste. Minimizing risks associated with third parties in our supply chain and improving environmental sustainability are key parts of our strategy and operating model. For more information, please see the section “Embrace operational excellence.”

While impact valuation methodology is still evolving, our efforts are based on current leading approaches. For example, we engage with WfWon, an independent economic research institute, to calculate the social impact of our medicines, our direct GDP contribution, and our indirect and induced environmental and economic impacts. We are also a founding member of the Value Balancing Alliance (VBA), a nonprofit organization that aims to create a standard for measuring and disclosing the value companies provide to society. With the exception of the social impact of our medicines, which is specific to our industry, all other reported impact indicators are subject to standardization through the VBA.

We first applied our impact valuation methodology in 2016. Since then, we have further developed the approach and expanded its scope. SEE impact valuation results have been used by Novartis teams for stakeholder engagement and business decision-making.

We also engage with stakeholders to raise awareness of impact valuation and promote standardization. In 2021, we hosted our fourth annual Co-Creating Impact Summit with more than 1,800 participants from academia, industry, the investment community and other areas.

For more information on the Co-Creating Impact Summit and impact valuation methodology, please see www.cci-summit.com

Novartis social, environmental and economic impact in 2020

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Results</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Living wages</td>
<td>$1.8 bn</td>
<td>Own operations $1.1 bn, indirect $0.7 bn</td>
</tr>
<tr>
<td>Employee development</td>
<td>$1.5 bn</td>
<td>Own operations $0.75 bn, indirect $0.75 bn, induced $0.03 bn</td>
</tr>
<tr>
<td>Occupational safety</td>
<td>$0.2 bn</td>
<td>Own operations $0.1 bn, indirect $0.1 bn</td>
</tr>
<tr>
<td>Other human capital impacts</td>
<td>Employee well-being, voluntary turnover, human rights beyond living wages not valued in 2020</td>
<td></td>
</tr>
<tr>
<td>Medicines</td>
<td>$242 bn</td>
<td>Based on 68 Innovative Medicines brands and 71 Sandoz products in 131 countries</td>
</tr>
<tr>
<td>Environmental</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Climate, energy and air pollution</td>
<td>$-3.8 bn</td>
<td>Own operations $-2.0 m, indirect $-1.8 bn, induced $-2.0 bn</td>
</tr>
<tr>
<td>Water and waste</td>
<td>$-1.0 bn</td>
<td>Own operations $-0.35 m, indirect $-1.6 m, downstream $-0.5 m</td>
</tr>
<tr>
<td>Land use</td>
<td>$-2.0 bn</td>
<td>Own operations $-1.5 m, indirect $-0.5 m, downstream $-0.5 m</td>
</tr>
<tr>
<td>Other environmental impacts</td>
<td>Biodiversity not valued in 2020</td>
<td></td>
</tr>
<tr>
<td>Economic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDP contribution</td>
<td>$97.4 bn</td>
<td>Own operations $46.7 bn, indirect $50.7 bn, induced $10.0 bn</td>
</tr>
<tr>
<td>Employment</td>
<td>337,023 FTEs</td>
<td>Own operations 136,603 FTEs, indirect 132,949 FTEs, downstream 67,471 FTEs</td>
</tr>
<tr>
<td>Economic inefficiencies</td>
<td>Not valued in 2020</td>
<td>– no methodology available</td>
</tr>
<tr>
<td>Total taxes</td>
<td>Not valued globally in 2020</td>
<td></td>
</tr>
</tbody>
</table>

*2021 figures will become available in May 2022 and will be published in our 2022 report.
| Remarks |
| | |
| | |
| | |
How we manage risk

Our strategy brings opportunities for our stakeholders and society – for example, by creating new medical breakthroughs or expanding access to our medicines. At the same time, our strategy also carries risks. Many of these relate to our business environment, such as the uncertainty inherent in research and development (R&D), or changing societal expectations of our industry.

Our approach to risk

The Novartis Enterprise Risk Management (ERM) framework is designed to generate a holistic view of risks for the company and drive a culture of smart risk-taking. While our Code of Ethics sets the ethical framework for all employees to manage risk across our business, risk management is a fundamental leadership responsibility that involves active engagement by leaders at each stage of the process.

The overall ERM process is the responsibility of the Chief Ethics, Risk & Compliance Officer, with oversight from the Executive Committee of Novartis and the Board of Directors. For further details on governance of risk at Novartis, please see the section “Our corporate governance approach.”

Our ERM framework is aligned with our strategic planning and helps us better understand our overall level of risk exposure. The Risk & Resilience team conducts risk workshops and collaborates with all risk assurance functions to identify key risks across the company. Each Novartis unit organizes a focused risk workshop at the leadership level. In parallel, risk workshops are held in our largest markets by revenue and in certain focus markets. The outcomes of these workshops are consolidated into the Novartis Risk Compass, which groups risks into three categories: strategic, operational and emerging. Risks are rated based on likelihood and potential impact over the next five years, using the “most-probable worst-case” scenario for each risk as a reference point. Once key risks are identified, mitigation plans are created. In addition to the three categories described above, we identify separate “awareness topics” that we believe may become new risks over time.

The Risk Compass helps senior management and our Board of Directors focus discussions on key risks and align strategy with risk exposure. We regularly monitor risks and revise our assessments, if necessary.

Novartis Risk Compass

Strategic risks are the most concerning to our ability to execute our strategy or achieve our business objectives.

Emerging risks require close monitoring and have the potential to become strategic or operational risks.

Operational risks relate to internal processes or systems, employee errors or external events.

Awareness topics are longer-term trending topics that have the potential to become new risks.

Risks in 2021

Our risk portfolio covers 20 risks. Of those, seven are categorized as strategic, nine as operational, and the remaining four as emerging. In addition, we have identified four awareness topics.

Overall, our 2021 risk portfolio is broadly consistent with the previous year. “Sandoz business transformation” was added as a new strategic risk in 2021, reflecting the increasingly competitive environment for generic medicines. Additionally, “facility and workplace safety” was renamed “occupational health and workplace safety” in 2021 to incorporate aspects of the post-pandemic working environment – such as employee well-being – that were identified as an emerging risk in 2020.

Risk rating: Very high High Medium Low

Strategic risks

1. Key products and commercial priorities
   - Failure to deliver key commercial priorities and successfully launch new products

2. Pricing, reimbursement and access
   - Pricing and reimbursement pressure including access to healthcare

3. Alliances, acquisitions and divestitures
   - Failure to identify external business opportunities or realize the expected benefits from our strategic acquisitions or divestments

4. Research and development
   - Failure or delay in the research and development of new products or new indications for existing products

5. Sandoz business transformation
   - Inability to drive sustainable growth in the Sandoz business

6. Environmental, social and governance matters
   - Failure to meet increasing social responsibility expectations

7. Environmental business models
   - Missed opportunities in digitalization and emerging business models

Operational risks

1. Cybersecurity and IT systems
   - Cybersecurity breaches and possible data loss of IT systems

2. Fragmented IT landscape and ERP/EDM implementation
   - Fragmented business processes and under-documented or fragmented data ownership may impact future digital opportunities including the implementation of the new Enterprise Resource Planning (ERP) system and Enterprise Data Management (EDM) governance

3. Talent management
   - Inability to attract, integrate and retain key personnel and qualified individuals

4. Third-party management
   - Failure to maintain adequate governance and oversight over third-party relationships, and failure of third parties to meet their contractual, regulatory or other obligations

5. Occupational health and workplace safety
   - Failure to ensure the safety of Novartis facilities and operations, and that of our employees and contractors

6. Legal, ethics and compliance
   - Challenges in keeping up with legal and regulatory requirements and evolving societal expectations regarding ethical behavior

7. Manufacturing and product quality
   - Inability to ensure proper control in product development and product manufacturing and failure to comply with applicable regulations and standards

8. Data privacy
   - Non-compliance with personal data protection laws and regulations

9. Supply chain
   - Inability to maintain continuity of product supply

Emerging risks

1. Geo-political and socio-economic threats
   - Impact of geo- and socio-political trends and macroeconomic developments

2. Tax laws and developments
   - Changes in tax laws and their application

3. Intellectual property
   - Exposure to a potential loss of intellectual property protection

4. Antibiotic resistance
   - Potential increased antitrust scrutiny of our transactions, together with continued close examination of conduct by pharmaceutical companies

Awareness topics

Climate change
- Climate change and increased risk of major natural disasters

Changes in disease patterns, antimicrobial resistance and pandemics
- Antimicrobial resistance as a growing threat to public health, closely related to changes in disease patterns and patterns in future pandemics

Counterproductive practices, partner misconduct and fraud
- Counterproductive practices and misuse of partners, the risk of fraud in new collaborations or deals

Regulatory or other obligations
- Failure of third parties to meet their contractual, regulatory or other obligations

Lack of scientific and medical knowledge
- Lack of scientific and medical knowledge, and failure to ensure that the right clinical trial is executed appropriately to address the right unmet medical need

Sustainability
- Challenges in keeping up with legal and regulatory requirements and evolving societal expectations regarding ethical behavior
Risks in focus
The table below provides an overview of our seven strategic risks. For more information on our full risk portfolio, please see Item 3D (“Risk factors”) in the Novartis Annual Report.

### Deliver transformative innovation

<table>
<thead>
<tr>
<th>Research and development</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Failure or delay in the research and development of new products or new indications for existing products</td>
<td>Enter into agreements with other pharmaceutical and technology companies and with academic and other institutions to develop new products.</td>
</tr>
<tr>
<td>Alacrity in the use of data science and digital technology to make the drug discovery and development process more efficient and effective</td>
<td></td>
</tr>
</tbody>
</table>

### Embrace operational excellence

<table>
<thead>
<tr>
<th>Key products and commercial priorities</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Failure to deliver key commercial priorities and successfully launch new products</td>
<td>Pursue a “launch excellence” strategy in commercial execution including investing earlier in pre-launch activities and using data science to test and learn from new commercial products.</td>
</tr>
<tr>
<td>Accelerate the implementation of a new customer engagement model which combines traditional face-to-face visits with virtual engagements with healthcare professionals.</td>
<td></td>
</tr>
</tbody>
</table>

### Alliance, acquisitions and divestments

| As part of our strategy, we acquire and divest products or entire businesses, and enter into strategic alliances and collaborations. This strategy depends in part on our ability to identify and move forward with strategic opportunities. Efforts to develop and market acquired products; to integrate acquired businesses or to achieve expected synergies may fail or may not fully meet expectations. Also, our strategic alliances and collaborations with third parties may not achieve their intended goals and objectives. | Establish an enterprise-wide business development strategy to identify external opportunities that align with and advance our corporate strategy. |
| | Enhance our risk-based due diligence approach through both on- and off-site management. |

### Sandzox business transformation

| Inability to drive sustainable growth mid-term by pursuing bio-similar and organic growth opportunities | Accelerate bio-similar growth. |
| | Rebuild the US business by increasing loss-of-exclusivity coverage and enhancing our pipeline with first-to-file launches. |
| | Pursue organic growth opportunities, for example through bolt-on acquisitions and in-licensing. |

### Go big on data and digital

<table>
<thead>
<tr>
<th>Emerging business models</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rapid adoption of digital technology is transforming our industry. There is a risk of Novartis missing the opportunity while other companies with specialized expertise or business models may enter the healthcare field, potentially disrupting our relationships with patients, healthcare professionals, customers, distributors and suppliers.</td>
<td>Develop a digital operating model to enable faster innovation, simplify our operations and improve productivity.</td>
</tr>
<tr>
<td></td>
<td>Accelerate the implementation of a new customer engagement model which combines traditional face-to-face visits with virtual engagements with healthcare professionals. We are similarly changing our approach to partnering with healthcare systems, payers and other healthcare providers.</td>
</tr>
</tbody>
</table>

### Build trust with society

<table>
<thead>
<tr>
<th>Pricing, reimbursement, pressure and access</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>We experience significant pressures on the pricing of our products and on our ability to obtain and maintain satisfactory rates of reimbursement from governments, insurers and other payers. These pressures have many sources, including rising healthcare costs (accelerated by the COVID-19 pandemic), funding restrictions and policy changes, and public controversies, debates, investigations and legal proceedings around pharmaceutical pricing. Such pressures may impact product pricing and market access. We also face price controls and other measures imposed by governments and other payers. In addition, our Sandzox Division faces continued price erosion in the generics and biosimilars segment.</td>
<td>Establish dedicated teams that actively seek to optimize patient access, including formulary positions, for our products.</td>
</tr>
<tr>
<td></td>
<td>Increase efforts to enable patient access through innovative pricing and access initiatives in the US, Europe and other markets, including contract structures such as pay-over-time and outcome-based agreements.</td>
</tr>
<tr>
<td></td>
<td>Continue to speculate against access to medicine and global health targets. These targets are backed by a sustainability-linked bond, which embeds them into the core of our business operations.</td>
</tr>
</tbody>
</table>

### Environmental, social and governance matters

<table>
<thead>
<tr>
<th>Failure to meet increasingly challenging environmental, social and governance expectations</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increasingly, in addition to their financial performance, companies are being judged on their performance on a variety of environmental, social and governance (ESG) matters. A variety of organizations measure the performance of companies on ESG topics, and the results of these assessments are widely publicized. In addition, investment in funds that specialize in companies that perform well in such assessments are increasingly popular, and major institutional investors have publicly emphasized the importance of such ESG measures in making their investment decisions. An inability to successfully perform on ESG matters and meet societal expectations can result in negative impacts to our reputation, recruitment, retention, operations, financial results and share price.</td>
<td>Further develop the Novartis ESG strategy based on the results of the 2021 global materiality assessment.</td>
</tr>
<tr>
<td></td>
<td>Revise and further strengthen our environmental target for full carbon neutrality by 2030 by committing to achieve net zero across all Novartis value chains by 2040.</td>
</tr>
</tbody>
</table>
Novartis in Society Integrated Report

27 RISKS IN FOCUS

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Photo: Romanus Oyibe, a medicine vendor in Ebonyi State, Nigeria, attends to a patient in his store. Together with local partners, Novartis is helping to train vendors like Mr. Oyibe to test patients for common childhood illnesses such as malaria. Severe cases are referred to the closest health center.
Novartis delivered a solid financial performance in 2021, supported by sales growth in key products and increased margins. These factors helped counter the impact of the COVID-19 pandemic in some therapeutic areas and a challenging environment for our generics business.

Financial performance

Strong sales of key products continued to underpin our financial performance in 2021. Novartis full-year net sales were USD 51.6 billion, up 4% from the prior year when measured in constant currencies (cc) to remove the impact of exchange rate movements, and up 6% when measured in US dollar terms. The COVID-19 pandemic continued to impact some therapeutic areas – most notably oncology and our generics business.

Sales of our heart failure medicine Entresto grew 40% (cc) to USD 3.5 billion, driven by increased patient share across major markets. In 2021, Entresto received approval in the US for an expanded indication in chronic heart failure.

Cosentyx, our treatment for psoriasis and other autoimmune diseases, also continued to grow strongly. Sales rose 17% (cc) from the prior year to USD 4.7 billion, driven by demand in the US and Europe as well as strong volume growth in China. Meanwhile, Zolgensma, our gene therapy for children with spinal muscular atrophy, delivered sales of USD 1.4 billion, up 46% (cc), reaching blockbuster status for the first time.

Recently launched products also progressed well: Kesimpta, a treatment for relapsing multiple sclerosis that was approved in Europe in 2021, had sales of USD 372 million, driven by increased patient share across major markets.

Our oncology products also contributed to the solid performance. Promacta, a treatment for blood disorders that is known as Revolade outside the US, grew 15% (cc) to USD 2.0 billion. Kjakki, a breast cancer treatment, had sales of USD 937 million, up 36% (cc). Jakavi, a treatment for blood disorders and cancers, grew 16% (cc) to USD 1.6 billion, showing double-digit growth across all regions.

Sales of Sandoz biopharmaceuticals continued to be a bright spot, with a 7% (cc) increase to USD 2.1 billion. However, that was countered by growing competition and softer retail demand, including the impact of a weak cough and cold season, leading to an overall decline (–24%; cc) in US dollar terms) in Sandoz Division net sales.

Novartis Group sales in Europe, our largest market, grew 5% (cc). Sales in emerging growth markets grew 11% (cc), led by a double-digit increase in China. Operating income was USD 11.7 billion, up 13% (cc) from the prior year, mainly driven by higher sales and lower legal expenses, partly offset by increased investments in marketing and sales and in research and development, and higher amortization. Net income was USD 24.0 billion, benefiting from the USD 16.6 billion gain from the divestment of our investment in Roche.

2021 net sales by division

(USD billions; % growth in constant currencies, and divisional or business unit share of net sales)

<table>
<thead>
<tr>
<th>Division</th>
<th>2021 (USD billions)</th>
<th>2020 (USD billions)</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oncology</td>
<td>16.818</td>
<td>15.476</td>
<td>8%</td>
</tr>
<tr>
<td>Sandoz</td>
<td>9.631</td>
<td>8.557</td>
<td>13%</td>
</tr>
<tr>
<td>Novartis Drugs</td>
<td>10.966</td>
<td>9.832</td>
<td>12%</td>
</tr>
<tr>
<td>Novartis Institutes</td>
<td>15.476</td>
<td>14.156</td>
<td>2%</td>
</tr>
<tr>
<td>Alcon</td>
<td>5.848</td>
<td>5.782</td>
<td>1%</td>
</tr>
<tr>
<td>Other</td>
<td>11.689</td>
<td>11.282</td>
<td>4%</td>
</tr>
<tr>
<td>Total</td>
<td>51.625</td>
<td>48.039</td>
<td>7%</td>
</tr>
</tbody>
</table>

Key figures

(USD billions, unless indicated otherwise)

<table>
<thead>
<tr>
<th>2021 (USD billions)</th>
<th>2020 (USD billions)</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core operating income</td>
<td>11.609</td>
<td>10.122</td>
</tr>
<tr>
<td>Core net income</td>
<td>14.094</td>
<td>13.158</td>
</tr>
<tr>
<td>Share price at year-end (CHF)</td>
<td>94.43</td>
<td>83.65</td>
</tr>
<tr>
<td>ADR price at year-end (USD)</td>
<td>87.47</td>
<td>74.93</td>
</tr>
<tr>
<td>Dividend (CHF)</td>
<td>3.00</td>
<td>3.00</td>
</tr>
</tbody>
</table>

This Novartis in Society Integrated Report 2021 includes non-IFRS financial measures such as operating income, net income, core operating income, core earnings per share, and free cash flow. Novartis believes that investor understanding of the Group’s performance is enhanced by disclosing these non-IFRS core results, constant currencies and free cash flow. Novartis believes that investor understanding of the Group’s performance is enhanced by disclosing these non-IFRS core results, constant currencies and free cash flow. Novartis believes that investor understanding of the Group’s performance is enhanced by disclosing these non-IFRS core results, constant currencies and free cash flow.
### Innovative Medicines

The Innovative Medicines (IM) Division includes the Novartis Oncology and Innovative Medicines business units. Novartis Pharmaceuticals focuses on the fringes of Immunology, Hepatology and Dermatology. Neurosciences, Ophthalmology, Cardiovascular, Renal and Metabolism, Respiratory and Allergy, and Established Medicines. Novartis Oncology, which provides treatments for a variety of cancers and rare diseases, consists of the Hematology and Solid Tumor franchises.

The IM Division delivered net sales of USD 42.0 billion in 2021, an increase of 6% (cc) from the prior year. Overall, products that we consider our key growth drivers contributed 52% of IM net sales in 2021, compared with 44% in 2020, demonstrating our ability to renew our product portfolio and offset the impact of patent expirations. Core operating income for the IM Division was USD 15.2 billion, up 10% (cc).

### Novartis Pharmaceuticals

The Novartis Pharmaceuticals business unit had net sales of USD 26.5 billion in 2021, an increase of 7% (cc) from the prior year, supported by continued growth in key products across multiple franchises.

<table>
<thead>
<tr>
<th>Area</th>
<th>Net Sales (USD billions)</th>
<th>% Growth (cc)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovative Medicines</td>
<td>26.5</td>
<td>7%</td>
</tr>
<tr>
<td>Neurosciences</td>
<td>5.8</td>
<td>-1%</td>
</tr>
<tr>
<td>Ophthalmology</td>
<td>4.3</td>
<td>-4%</td>
</tr>
<tr>
<td>Cardiovascular, Renal and Metabolism</td>
<td>3.95</td>
<td>+40%</td>
</tr>
<tr>
<td>Respiratory and Allergy</td>
<td>2.065</td>
<td>+16%</td>
</tr>
<tr>
<td>Established Medicines</td>
<td>5.75</td>
<td>-30%</td>
</tr>
<tr>
<td>Oncology</td>
<td>15.476</td>
<td>+4%</td>
</tr>
<tr>
<td>Hematology</td>
<td>8.363</td>
<td>+40%</td>
</tr>
<tr>
<td>Solid Tumor</td>
<td>7.131</td>
<td>+2%</td>
</tr>
</tbody>
</table>

### Neurosciences

Sales were USD 5.1 billion, increasing by 15% (cc), mainly due to expanded access in Europe and other markets for Zolgensma, as well as Kesimpta launch uptake. Zolgensma reached blockbuster status with sales of USD 1.4 billion, up 46% (cc). Sales of Kesimpta reached USD 372 million. Meanwhile, sales of Gilenya decreased 9% (cc) to USD 2.8 billion due to increased competition.

### Ophthalmology

Sales were USD 4.3 billion, declining by 4% (cc) from the previous year due to generic competition for our mature ophthalmology portfolio. Lucentis sales grew 8% (cc) to USD 2.2 billion. Xidra sales grew 24% (cc) to USD 468 million. Bevovis declined 3% (cc) to USD 186 million.

### Cardiovascular, Renal and Metabolism

Sales were USD 3.6 billion, up 40% (cc), driven by sustained demand across indications in the US and Europe, as well as strong volume growth in China after the product was included in the country’s National Reimbursement Drug List. Sales of Entresto reached USD 1.1 billion, up 22% (cc), with double-digit growth across all regions.

### Established Medicines

Sales were USD 5.7 billion, down 10% (cc) from the previous year, as sales of established medicines such as Ovair and Gav-kit continued to decline as a result of generic competition.

### Novartis Oncology

The Novartis Oncology business unit delivered net sales of USD 15.5 billion, an increase of 4% (cc) from the prior year. The performance underscores the strength of our oncology portfolio, with solid growth in sales of key products.

### Hematology

Sales were USD 8.4 billion, up 6% (cc) from the prior year. Promacta, which is known as Revolade outside the US, grew 15% (cc) to USD 2.0 billion, with double-digit growth across all regions, driven by increased use in chronic immune thrombocytopenia and as first-line treatment for severe aplastic anemia. Sales of Tasigna grew 4% (cc) to USD 2.1 billion, mainly driven by growth in emerging markets.

Jakshov showed double-digit growth across all regions to register sales of USD 1.6 billion, up 16% (cc) from the previous year, driven by strong demand in the myelofibrosis and polycythemia vera indications. Kymjänsh saw growth across all markets as coverage for the chimeric antigen receptor T-cell (CAR-T) therapy continued to expand, with sales of USD 587 million representing a 22% (cc) increase from the previous year.

### Solid Tumor

Sales were USD 71 billion, up 2% (cc) from the previous year. The performance was led by Kiospat, which continued to see growth across all regions with sales of USD 393 million, up 36% (cc). Tafinlar + Merckin, a combination therapy, registered an 8% (cc) increase in sales to USD 17 billion as demand increased in the BRAF + /MEK inhibitor melanoma and non-small cell lung cancer indications. Tabrecta registered USD 90 million in sales in its first full year after launch, as the lung cancer treatment continued to gain traction in the US. Meanwhile, sales of three products – Sandostatin, Alimta/ Zolostar, and Vialinn – declined due to increased competition in major markets.

### 2021 news highlights

**In February** we were granted an expanded indication for Entresto by the US FDA, allowing for the treatment of most chronic heart failure patients, including all those with an ejection fraction below normal.

**In March** we received EU approval for Kesimpta for treatment of relapsing forms of multiple sclerosis in adults, with active disease defined by clinical or imaging features. Kesimpta is the first B-cell therapy that can be administered once-monthly at home.

**In June** we announced US approval for Cosentyx for treatment of children and adolescents with moderate to severe plaque psoriasis – a chronic inflammatory disease that may impact up to 350,000 children worldwide, with onset most common during adolescence.

**In October** we received US approval for Kisqali for treatment of chronic myeloid leukemia (CML) in two distinct indications. It offers a new treatment option for CML patients who are resistant or intolerant to prior treatments.

**In December** we received US approval for our cholesterol-lowering medicine Lexapro. Separately, we announced in September a world-first agreement between Novartis and the National Health Service in England to enable broad and rapid access to Lexapro via a population health management approach.
Sandoz

The Sandoz Division is a global leader in generic pharmaceuticals and biosimilars, and sells products in more than 100 countries. The division has three global franchises: Retail Generics, Biopharmaceuticals and Anti-Infectives.

Sandoz net sales were USD 9.6 billion in 2021, decreasing by 2% (cc) from the previous year, as volume growth in our Biopharmaceuticals and contract manufacturing businesses was offset by the effects of price competition and continued headwinds for our Retail Generics business in the US. We continued to see an impact from COVID-19, particularly in the Retail Generics and Anti-Infectives businesses. However, the effects have been more moderate in recent months and the Sandoz business is continuing to normalize.

Sandoz sales in Europe declined 2% (cc) due to the impact of COVID-19 on the Retail Generics business. Sales in the US were down 15%. Core operating income was USD 2.1 billion, declining 14% (cc) from the previous year due to unfavorable gross margin and lower sales.

Sales in the Retail Generics business declined 4% (cc) to USD 7.1 billion, impacted primarily by continued sales volume decline in the US for oral solids as a result of partnership terminations.

Sales in the Biopharmaceuticals franchise grew 7% (cc) to USD 2.1 billion, driven by continued growth outside the US. Sandoz develops, manufactures and markets protein- and other biotechnology-based products, including biosimilars, and provides biotechnology manufacturing services to other companies.

In Anti-Infectives, Sandoz manufactures and supplies active pharmaceutical ingredients and intermediates, mainly antibiotics, for use by the Retail Generics franchise and for sale to third-party customers. Total franchise sales were USD 1.1 billion, a decrease of 5% (cc) from the prior year.

In 2021, Novartis announced that it will commence a strategic review of the Sandoz Division. The review will explore all options, ranging from retaining the business to separation, to determine how to best maximize value for our shareholders.

Sandoz 2021 net sales by franchise

(in USD millions, % growth in constant currencies, and franchise share of net sales)

<table>
<thead>
<tr>
<th>Franchise</th>
<th>Net Sales (USD millions)</th>
<th>% Change (cc)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail Generics</td>
<td>7,092</td>
<td>-4%</td>
</tr>
<tr>
<td>Biopharmaceuticals</td>
<td>2,116</td>
<td>+7%</td>
</tr>
<tr>
<td>Anti-Infectives (contract manufacturing)</td>
<td>423</td>
<td>-2%</td>
</tr>
</tbody>
</table>

1 FY sales growth for Sandoz includes +4% impact from reclassification of contract manufacturing from other revenue to sales.
Every day, Novartis is working to reduce the burden of disease for patients and societies around the world. More than 20,000 Novartis employees in research and development deploy cutting-edge technologies to find new ways to cure disease, intervene earlier in chronic illnesses and improve patients’ quality of life.

2021 highlights

9.5 bn
Invested in R&D
comprising approximately
18.5% of our net sales (USD)

3
Breakthrough therapy
designations
from the US Food and Drug
Administration (FDA)

54
Ongoing Phase III
programs
in our development pipeline

21
Approvals
in the US, the EU, Japan and
China for new treatments as
well as new indications for
existing treatments

In this section

Our approach to R&D
We tackle the toughest scientific challenges and prioritize projects with the potential to transform the standard of care for patients.

Advancing a strong and diverse pipeline
We have one of the strongest clinical development programs in the industry, spanning around 50 diseases. We focus on areas where unmet need remains high.

Advanced technology platforms
We are investing in technologies that offer precise new approaches to fighting otherwise intractable diseases.

Innovation for global health
We work to reduce the burden of neglected diseases that affect hundreds of millions of patients worldwide.

Putting patients at the center of our clinical trials
We integrate the views of patients and caregivers into how we research and develop new medicines, and we strive to include diverse patient populations in our clinical trials.

Related links and disclosures:

Novartis pipeline
Position on Responsible Clinical Trials
Commitment to Patients and Caregivers
Commitment to Diversity in Clinical Trials
Clinical Study Transparency
Our approach to R&D

The COVID-19 pandemic is only one example of the enormous burden that disease puts on society. From leading causes of death such as heart disease and cancer, to rare genetic disorders, the disability and mortality associated with serious illness harms economic growth and exacerbates social inequality.

Finding solutions to these problems is why Novartis employs more than 20,000 employees in research and development (R&D) work to discover and develop medicines for diseases with high unmet need. Our R&D teams have built depth in core disease areas including cardiovascular and renal, oncology, hematology, immunology and neuroscience, while we maintain innovative investigational and in-market programs in ophthalmology and respiratory-allergy. We are also advancing our pipeline of investigational medicines for malaria and other neglected diseases.

With our strong capabilities across five platforms – chemical biology, biotechnologies, biologicals, radiogand therapy, cell therapy and gene therapy – we have a unique opportunity to address disease burdens faced by people around the world today and for decades to come.

Novartis continued to deliver transformative innovation to patients in 2021. We received 21 major approvals, including new treatments for high cholesterol and chronic myeloid leukemia, and made 34 major submissions. We advanced our diverse pipeline of investigational therapies, with three breakthrough trials – the first approval in China and Japan for Leqvio (lucelarcelstat), the first approval for Entresto (valsartan/hydrochlorothiazide) in adults and children with heart failure and the first approval for LNP023 (iptacopan) in hemophilia A patients.

Novartis tackled the COVID-19 pandemic head-on, supporting scientists around the globe in the search for vaccines, boosting supply chains and running critical trials to ensure access to new therapies.

Our investment in digital technology across our R&D operations to open new paths to scientific discovery, improve patient outcomes and streamline the development process. Our investments in digital technology also helped to keep our clinical trials on track during the COVID-19 pandemic. For more details please see the section ‘Go big on data and digital’.

Advancing a strong and diverse pipeline

We are advancing more than 160 projects in full clinical development, with 34 ongoing Phase III programs. By 2026, we anticipate approval of 20 pipelines with the potential to become blockbuster medicines with annual sales of more than USD 1 billion. Building on our success in small-molecule therapies and biologics, we are also advancing 140 investigational medicines that offer new treatment paradigms for patients, including 71 new molecular entities.

These efforts have given Novartis one of the strongest discovery and development programs in the industry, with more than 275 research projects as well as 98 assets in development, spanning around 50 diseases and 71 new molecular entities. We invested USD 9.5 billion in R&D in 2021, or approximately 18.5% of our net sales, compared with USD 9 billion in 2020. We prioritize projects with the potential to transform the standard of care for patients. Approximately 85% of our treatments in development have the potential to be first in class or first in a specific indication, while about 80% target areas of high unmet patient need.

We systematically integrate access into our discovery and development work. For example, we regularly review our clinical submissions and hold our clinical research teams accountable for acting on access opportunities. We also engage patients in how we research and develop our medicines, and we strive to include diverse patient populations in our studies to ensure we understand how patients from every background might respond to a medicine.

Also in 2021, Entresto received approval in China and Japan for treatment of patients with essential hypertension, the most common form of high blood pressure. This new indication marks Entresto the first new therapy for hypertension in China in over 10 years.

Leqvio is a novel treatment that reduces low-density lipoprotein (LDL) cholesterol, a highly important modifiable risk factor for atherosclerotic cardiovascular disease (ASCVD), which accounts for over 85% of all CVD deaths. Clinical studies showed that this first and only small-interfering RNA (siRNA) therapy for ASCVD can reduce LDL cholesterol by up to 52%, on top of maximally tolerated statins, through a unique mechanism of action, once weekly after an initial dose and once at three months. Leqvio has been approved in more than 50 countries, including the US and the EU, as well as in the UK as part of a population health management agreement that is expected to reach up to 10 million patients by 2027.

TQJ230 (palacosan), another nucleic acid-based therapy, is currently in Phase III development for the secondary prevention of cardiovascular events in patients with elevated levels of lipoprotein(a), an independent inherited ASCVD risk factor that cannot be effectively addressed by diet and other lifestyle changes. Phase II trial data showed that TQJ230 can reduce lipoprotein(a) in high-risk patients below recognized risk thresholds.

LNP023 (iptacopan) is an investigational treatment for several severe, life-limiting kidney conditions, including C3 glomerulopathy (C3G) and IgA nephropathy (IgAN) – two diseases that mainly affect younger patients – as well as paroxysmal nocturnal hemoglobinuria, a life-threatening blood disorder. In 2021, we announced that LNP023 met its primary endpoints for C3G and its primary endpoint for IgAN in Phase II clinical trials. Phase III studies are ongoing.

Oncology

Cancer, one of the world’s leading causes of death, inflicts a growing human and economic burden. Global cancer deaths are expected to nearly double by 2040 due mainly to population growth and aging.

Novartis is a leader in finding new treatments for cancer, with approximately 45 compounds in development across four therapeutic platforms: targeted treatments, radioligand therapies, cell therapies and immuno-therapies.

Our oncology pipeline also includes LHX254 (naparabotin), a targeted cancer therapy currently being studied in multiple combinations in defined populations of melanoma and lung cancer patients, and N85793, for which the FDA has granted orphan drug designation for the treatment of pancreatic cancer in combination with chemotherapy.
Prostate cancer
Prostate cancer is the second most diagnosed cancer in people with a prostate gland and with poor prognosis in metastatic disease.

Novartis is exploring a new, targeted way to treat metastatic castration-resistant prostate cancer (mCRPC) with 

\[ { }^{11} \text{Lu-PSMA-617 (lutetium Lu}^{117} \text{) radiopeptide treatment, an investigational radioguided therapy. In 2021, the FDA granted “} \text{\textsuperscript{11}} \text{Lu-PSMA-617 break-through therapy designation after a Phase III study showed that the treatment plus existing care options significantly improved overall survival and radiographic progression-free survival for patients with mCRPC compared to existing care options alone. Regulatory submissions for \text{\textsuperscript{11}} \text{Lu-PSMA-617 have been accepted by the FDA and European Medicines Agency.} \]

Breast cancer
Breast cancer, the most common cancer in women, is responsible for more than 685,000 deaths per year.

We continue to see results from our clinical program for Kisqali. The results of a Phase III study announced in 2021 showed that Kisqali in combination with an aromatase inhibitor achieved an overall survival benefit of more than five years for postmenopausal women with hormone receptor-positive (HR+)/human epidermal growth factor receptor 2-negative (HER2-) advanced breast cancer, which is the most common subtype of the disease. The data represent the longest reported median survival from a randomized trial in HR+/HER2- advanced breast cancer. Novartis is also conducting a Phase III study of Kisqali with endocrine therapy in the adjuvant treatment of HR+ HER2- early breast cancer. The trial completed enrollment in 2021.

Piqray is approved in the US and the EU for breast cancer patients whose disease harbors a PIK3CA mutation. Results from an ongoing Phase II study presented in 2021, as well as recent guideline updates, highlight the efficacy of Piqray with fulvestrant for postmenopausal HR+/HER2-.

Two decades of pioneering innovation in chronic myeloid leukemia (CML)

With a breakthrough approval 20 years ago, Novartis opened the door to revampting CML and other cancers. Despite these advancements, we’re not standing still.

In May 2001, Novartis received approval in the US for the first targeted therapy for cancer, known as a tyrosine kinase inhibitor. This was a watershed moment in drug discovery, transforming the treatment landscape for CML and opening the door to treatment possibilities for other forms of cancer and blood disorders. Today the estimated five-year survival rate for CML is above 70%; in the 1970s, it was only 22%.

Yet despite CML being transformed into a chronic disease for many patients, significant unmet needs still remain—particularly for patients who have experienced resistance or intolerance to available treatments. Our research continues, and in 2021 we received US approval of a new treatment for CML in two distinct indications, offering a new treatment option for patients who are resistant or intolerant to existing therapies, and marking another milestone in our long-standing commitment to patients living with CML.

In 2021, we reported that a Phase III clinical study of our chimeric antigen receptor T-cell (CAR-T) therapy Kymriah as a second-line treatment in aggressive B-cell non-Hodgkin lymphoma did not meet its primary endpoint. We continue to study Kymriah in other forms of lymphoma and leukemia.

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Our gene therapy, Zolgensma, is a treatment for both presymptomatic and symptomatic children with SMA, a devastating neuromuscular disease that is inherited in a recessive mode. It was approved in 42 countries in 2019. Building on our success with Zolgensma, in 2021 we began a new Phase III trial of an intrathecal formulation in treatment-naive SMA type 2. Early patient identification through newborn screening is critical for SMA patients since the disease causes irreversible motor neuron loss. For more on how we work with payers and health-care systems to help meet the importance of early screening for SMA patients, please see the section Embrace operational excellence.”

Our comprehensive portfolio for MS—a debilitating chronic disease that affects 2.8 million people worldwide—emphasizes our commitment to improving the quality of life for people living with MS at all stages of the disease. Kesimpta, one of our therapies for MS, received approval in the EU in 2021 for the treatment of relapsing forms of MS in adults with active disease. It is already approved in the US and other key markets. Kesimpta is the first B-cell therapy that can be self-administered at home. In 2021, we also started Phase III trials to investigate LOQ0614 in patients with relapsing forms of MS.

Our portfolio shows our commitment to improving the quality of life for people living with multiple sclerosis. We are exploring other neurological conditions where the need for effective treatments is pressing. One example is Huntington’s disease, a rare inherited neurodegenerative condition that leads to progressive disability and death. There currently are no approved therapies that delay onset or slow the disease’s progression. LM007 (branaplam), our investigational oral, small-molecule RNA splicing modulator, could potentially treat Huntington’s disease by targeting RNA to reduce levels of a mutant protein. Phase II trials were initiated in 2021.

In 2021, Novartis and UCB announced a global co-development and co-commercialization agreement to bring a potential new treatment for Parkinson’s disease to people living with Parkinson’s disease, which affects more than 10 million people worldwide. The investigational therapies include UCBD099, a small-molecule, alpha-synuclein misfolding inhibitor currently in Phase II development, which is being studied to understand if it can slow or stop the progression of Parkinson’s disease. The new combination of an ongoing Phase I program, there is an on-hold co-develop UCBT983, an anti-alpha-synuclein antibody.

Ophthalmology

We are working to find innovative treatments for diseases of the eye, with the goal of reducing or eliminating the huge burden on patients and society caused by visual impairment and blindness.

One of our new treatments is UNR844, a topical ophthalmic solution currently in Phase II development for presbyopia—a common, gradual, age-related loss of the ability to focus on nearby objects, caused by loss of elasticity of the lens. In 2021, we started Phase III trials to investigate LOU0416 in patients with relapsing forms of MS.

Respiratory and allergy

Novartis is developing novel therapies to treat potential new treatments for airways and respiratory diseases. Our strategy is to bring the next generation of radioligand therapies for cancer.

In gene therapy, one of our technologies uses germline viruses called adeno-associated viruses (AAVs) to deliver genes to cells inside the body. The goal is to repair the cells with a one-time treatment. Our first approved AAV-based therapy was Zolgensma for SMA, and we are now exploring experimental forms of gene therapy for other diseases, from brain hemorrhage to the treatment of neurodegenerative diseases. Altogether we have more than 20 research programs in gene therapy.

The Novartis early-stage pipeline features a growing arsenal of optogenetic gene therapies, based on genetically engineered light-sensitive proteins that can rewire cells in the eye, allowing them to act as replace-photoreceptors. In 2020 and 2021, we obtained two key optogenetic technologies through the acquisitions of Vedere Bio and Arctis Medical. The resulting therapies could potentially treat blinding diseases such as inherited retinal dystrophies and age-related macular degenera- tion, which affect millions of patients worldwide.

With cell therapy, a patient has cell types extracted and genetically modified in a clinical lab before being injected back into the body. An example of this is CAR-T therapy, a treatment generated from a patient’s own T-cells. Novartis was the first pharmaceutical company to significant success in clinical trials. Our flagship CAR-T therapy, Kymriah, was the first cell therapy approved in the US for certain cancers. In 2021, we approved the US for certain cancers and developed a partner program to treat over 100 different cancers. Our R&D efforts include discovering and developing novel medicines for our company’s flagships therapies, as well as other diseases that predominantly affect underserved patients in lower-income countries, while exploring new ways to treat COVID-19, the most urgent public health issue in the world today.

COVID-19

We are collaborating with Molecular Partners to develop oncolytic virus, a potential new treatment option for COVID-19 that targets the virus using proprietary DARPin technology to neutralize SARS-CoV-2.

The topline results of a Phase II study reported in early 2022 showed that a single intravenous dose of ensifentrin could potentially treat multiple corona virus-related symptoms. In separate studies, it maintained potent in-vivo pan-viral activity against all variants of concern identified so far, including Omicron. Novartis in-licensed ensifentrin from Molecular Partners. We will accelerate manufacturing scale-up projects and plans to seek expedited regulatory authoriza- tions globally.

Separately, we are working to dis- cover a novel therapy targeting the main protein—a protein that is essential to viral replication across coronavirus, including SARS-CoV-2. The goal is to develop a therapy that could treat many or all other forms of coronaviruses, potentially addressing future pandemics.
Malaria

Malaria continues to burden societies across the globe, particularly in Africa. Evidence suggests that cases may rise as a result of climate change. Novartis has taken a multipronged approach to fighting the disease, working with partners such as Medicines for Malaria Venture to research, develop, and manufacture a portfolio of essential antimalarial drugs.

In 1999, we introduced our first malaria drug, a highly effective fixed-dose combination anti-malarial combination therapy. In 2021, we crossed the 1 billion mark in antimalarial treat-ments delivered to patients worldwide (please see “Build trust with society” for more information).

For more than 20 years, the Novartis Malaria for Treatment (NITD), part of NBR, has been at the forefront in the search for novel medicines for malaria and other neglected diseases. Two Novartis compounds for uncomplicated and severe malaria, KAF156 (ganapacil) and KAE609 (sipagrapirin), respectively, are in clinical trials in Africa and Asia. These compounds could potentially address resistance to currently available therapies, as well as provide simplified therapeutic regimens. In 2021, a Phase IIIb study of cipargamin and its partner medicine, lumefantrine, in adults and children with malaria reported positive results, supporting continued development of the combination treatment.

Neglected tropical diseases

NTD, with funding from the Wellcome Trust, is in the early stages of a discovery program aimed at finding first-in-class curative anti-parasitic therapies for Chagas disease, a serious condition affecting more than 10 million people mainly in Latin America. We are also conducting a Phase IV trial of our heart failure therapy to cure SCID, designed from the start to be practical for use in lower-resourced settings.

With an estimated 50,000 to 90,000 new cases per year, visceral leishmaniasis is the most serious form of leishmaniasis, causing weight loss, spleen and liver enlargement, and death if left untreated. In 2020, we announced a collaborative approach to the Drugs for Neglected Diseases initia- tive (DNDi) to jointly develop LVE408, a first-in-class inhibitor of the kine- toplastid protoplasmodia, for the treatment of visceral leishmaniasis. Within the scope of the agreement, Novartis is responsible for Phase I of technical research and development, as well as Phase II and III clinical activities. Upon approval, we have committed to distributing the drug on an affordable basis worldwide to maximize access in endemic countries. DNDi will lead Phase II and III clinical development activities, with the first Phase II study scheduled to start in 2022 in India. Additional trials are planned in East Africa, which has the highest burden of visceral leishmaniasis.

Sickle cell disease

Sickle cell disease (SCD) is a hereditary blood condition that afflicts millions around the globe, particularly people of African descent, with 80% of the disease burden in sub-Saharan Africa. SCD affects roughly 80% of the disease burden. Our commitment to addressing SCD includes a therapeutic pipeline as well as a holistic approach to diagnose, treat and manage the disease in sub-Saharan Africa.

While the genetic cause of SCD has been known for decades, only recently has medical research gained the tools to potentially mitigate the biological effects of the errant gene that causes the disease. We are also pursuing an off-axis hematopoietic stem-cell program for SCD, using CRISPR gene editing technology licensed from Intellia Therapeutics, and in 2021 we initiated patient dosing. Also in 2021, Novartis announced a pioneering collaboration with the Bill & Melinda Gates Foundation to support the discovery of a single-administration in vivo gene therapy to cure SCID, designed from the start to be practical for use in lower-resourced settings.

Putting patients at the center of our clinical trials

Engaging with patients and caregivers across the life cycle of our medicines is critically important to ensure we develop treatments that not only are safe and effective, but also truly address unmet medical needs.

The Novartis Commitment to Patients and Caregivers, launched in 2020, guides our teams across functions and all divisions in ensuring patients have a voice in the research, development and commercialization of our medi-cines. We continue to roll out a systematic approach to patient engagement that covers the full development life cycle – from early research to post-launch.

In 2021, we engaged with 162 patient organizations across 47 diseases to inform our decision-making. During the COVID-19 pandemic, the need for patient support grew while the income of patient organizations dropped, primarily due to the cancel-lation of educational events and fundraising activities. We provided funding to the community that was – among other purposes – used to strengthen digital communications tools and channels to help bridge these gaps. In 2020, the latest year for which data is available, Novartis supported 124 patient organizations in 79 countries. Please see the Novartis corporate website for more information.

Diversity in clinical trials

We strive to recruit diverse patient populations in our clinical trials – both to understand how patients who are more likely to be treated for a disease will respond to a medicine, and because it is the right thing to do, and because it is the right thing to do.

We are working to address barriers to clinical trial participation, such as identifying sites where patients with a particular disease or condition may be located, identifying healthcare provid-ers that treat underserved or under-represented populations, and collaborat-ing with researchers to enroll diverse populations in clinical trials.

In 2021, we published a Commitment to Diversity in Clinical Trials. In the short term, we committed to evaluating diversity and inclusion principles for all our Phase III studies with US diversity and inclusion principles for short term, we committed to evaluate for diversity and inclusion principles for all our Phase III studies with US diversity and inclusion principles for short term, we committed to evaluate for diversity and inclusion principles for all our Phase III studies with US diversity and inclusion principles for short term, we committed to evaluate for diversity and inclusion principles for all our Phase III studies with US diversity and inclusion principles for short term, we committed to evaluate for diversity and inclusion principles for all our Phase III studies with US diversity and inclusion principles for short term, we committed to evaluate for diversity and inclusion principles for all our Phase III studies with US diversity and inclusion principles for short term, we committed to evaluate for diversity and inclusion principles for all our Phase III studies with US diversity and inclusion principles for short term, we committed to evaluate for diversity and inclusion principles for all our Phase III studies with US diversity and inclusion principles for short term, we committed to evaluate for diversity and inclusion principles for all our Phase III studies with US diversity and inclusion principles for short term, we committed to evaluate for diversity and inclusion principles for all our Phase III studies with US diversity and inclusion principles for short term, we committed to evaluate for diversity and inclusion principles for all our Phase III studies.
Embrace operational excellence

From discovery to delivery, we work to improve the efficiency and effectiveness of our operations. These activities support our profitable growth and free up resources to invest in innovation for patients. In everything we do, patient safety and product quality remain paramount.

2021 highlights

- 52% Launch brands and growth-driver products contribution to Innovative Medicines Division net sales
- 71 bn Treatments supplied through Novartis manufacturing sites
- 99.2% Regulatory inspections of our facilities deemed acceptable without major findings
- 12,064 Suppliers risk-assessed through our third-party risk management framework

In this section

- Strengthening product launches
  We aim to consistently deliver successful launches to support our financial performance and enable broad and rapid access to our medicines.
  → p. 46
- Transforming manufacturing
  We are transforming our manufacturing operations to support our strategy while reducing the environmental footprint of our facilities.
  → p. 47
- Delivering effective business services
  Our business services and digital teams improve productivity while enabling our people to execute on our strategy and deliver on our purpose.
  → p. 53
- Managing our supply chain responsibly
  We promote ethical behavior and foster environmental sustainability across our supply chain.
  → p. 57
- Ensuring patient health and safety
  Patient health and safety is fundamental to our purpose. Our activities are focused on three areas: product quality, pharmacovigilance and combating falsified medicines.
  → p. 48

Related links and disclosures:

- Novartis Third-Party Code
- Quality Commitment
- Green Expectations from Suppliers
- Our Ethical and Sustainability Standards for Third Parties
- Position on Falsified and Counterfeit Medical Products
**OUR PERFORMANCE IN 2021**

**Strengthening product launches**

In our commercial operations, we aim to consistently deliver successful launches to support our financial performance and enable broad and rapid access to our medicines.

In 2021, launch brands and medicines we consider our key growth drivers contributed 52% of net sales in our Innovative Medicines Division, compared with 44% in 2020. By 2026, we expect approval of more than 20 pipeline assets with the potential to become blockbuster medicines with sales of more than USD 1 billion.

By 2026, we expect approval of more than 20 pipeline assets with the potential to become blockbuster medicines.

The preparations paid off. In the six months after launch in the US, we had reached 85% of our target customer base, most of them virtually, while around 20% of patients received Kesimpta as their first-ever treatment for MS and more than 95% of patients received it as their first-line treatment. Kesimpta is approved in more than 60 countries worldwide.

Another example is Zolgensma, our gene therapy for spinal muscular atrophy (SMA) that reached USD 1.4 billion in sales in 2021. Early patient identification through newborn screening programs and treatment awareness is critical for SMA patients. We work closely with stakeholders such as payers to highlight the importance of early treatment, and provide disease awareness programs for parents, physicians and other health professionals to spot the signs and symptoms of SMA. In 2021, around 85% of new births in the US underwent screening for SMA, we anticipate that the EU will have SMA screening in place for all new births by 2025.

For Kesimpit, our treatment for multiple sclerosis (MS), we focused pre-launch investment on three key markets: the US, Germany and China.

We deployed an unbranded digital information platform that reached up to 2,000 physicians in the US. We also worked with patient advocacy groups to ensure their views were integrated into our launch preparations, and we talked to payers to understand their needs.

**Contribution of launches and growth drivers to Innovative Medicines Division (IM) net sales (IM net sales in USD) % of IM net sales**

<table>
<thead>
<tr>
<th>Year</th>
<th>Net Sales (bn)</th>
<th>Percentage of IM Net Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>2021</td>
<td>42.0</td>
<td>52%</td>
</tr>
<tr>
<td>2020</td>
<td>39.0</td>
<td>54%</td>
</tr>
<tr>
<td>2019</td>
<td>37.7</td>
<td>39%</td>
</tr>
</tbody>
</table>

**2021 at a glance**

- **Launch brands include** Zolgensma, Kisqali, Tabrecta, Mekinist, Scemblix, JAKAVI and Entresto.
- **Growth drivers include** Sandoz products, cell and gene therapies, and ophthalmology and local market production.
- **Novartis medicines to help address unmet needs**
  - For treatment of CML in two distinct indications.
  - The EU will have SMA screening in place for all new births by 2025.
- **Novartis in Society Integrated Report | 46**

**Supporting demand for COVID-19 vaccines**

Novartis is helping produce COVID-19 vaccines at our facilities in Switzerland and Austria as part of our efforts to help end the pandemic and support the stability of global health systems.

Although Novartis no longer has a vaccines business, our many biologics products give us the capabilities to perform mRNA manufacturing and the final step of aseptically filling the vaccine into vials. We prepared our facilities to do this task in only a few months – a process that usually takes more than a year. We produced 40 million doses of the Pfizer-BioNTech vaccine in 2021.

We also signed an agreement with Roche for the production at our Singapore site of the active pharmaceutical ingredient for Roche’s Actemra®/RuxActemra®, a treatment for rheumatoid arthritis that received emergency use authorisation by the US FDA for the treatment of COVID-19 in hospitalized adults and children.

**Transforming manufacturing**

The Novartis Technical Operations (NTO) organisation, which manufactures innovative medicines and Sandoz products, helps us to optimize resource allocation while ensuring quality across our 53 production sites worldwide. NTO is split into different technology platforms with responsibility for large molecules, small molecules, Sandoz products, cell and gene therapies, and ophthalmology and local market production.

In 2021, we continued to ensure a reliable supply of medicines to patients worldwide. Our NTO employees supplied 27 billion treatments in 2021, broadly in line with the previous two years, while also supplying tens of millions of vaccine doses for COVID-19.
Our manufacturing operations also continue to evolve as we invest in new technologies and respond to the changing business environment. In 2021, we started manufacturing our cholesterol-lowering drug Leqivo at our Schaffhausen drug production site in Austria. Leqivo is a small interfering RNA (siRNA) therapy that is approved in more than 50 countries. We are also installing our first siRNA oligonucleotide manufacturing facility at our Schweizerhalle site in Switzerland, which will produce the active ingredient of Leqivo.

In 2021, our production sites responded to sharply increased demand for some Novartis products in China after their inclusion on the country’s National Reimbursement Drug List made them available to more patients. For example, we responded to a significant increase in demand for Cosentyx and Tafinlar versus the previous year.

We are also pursuing a digital transformation of our manufacturing operations with the aim of improved quality and greater efficiency. For more details on how we are using digital technology and data analytics across the company, please see the section ‘Digital on data and digital’.

We continue to optimize our network of manufacturing sites worldwide, adjusting our production capacity to match our changing product mix. In 2021, we announced plans to transform 11 sites, including three that we plan to sell or close and one that we already sold. We are working with employees affected by the changes to help them manage through the transition.

Sustainability in manufacturing
Our manufacturing facilities are central to our efforts to minimize our environmental footprint. The majority of Novartis carbon emissions, water usage and waste in our own operations come from our production sites. In 2021, efforts to reduce the environmental footprint of our manufacturing sites contributed more than 10% of our overall reduction in carbon emissions (Scope 1 and 2) and more than 7% reduction in waste consumption, as well as more than 24% of waste reduction in our own operations.

We are investing in new technologies to make our manufacturing processes more resource efficient. For example, an upgrade to the solvent process at our Kundl site in Austria led to a reduction of 8,500 tons of carbon dioxide (CO₂) annually. Our site in Hürtingen, France, reduced 19% of its annual energy consumption – equivalent to 1,600 tons of CO₂ – through a more energy-efficient system. A site in Turkey used a filtration system to cut water consumption by 14%.

All manufacturing sites are required to treat process water according to local legal requirements before it is returned to the environment. Novartis facilities and priority suppliers are included in our PIE (Pharmaceuticals in the Environment) program to assess their efficient load of active pharmaceutical ingredients (APIs) in water streams against internal standards and requirements from the AMR Industry Alliance framework – a private sector coalition providing sustainable solutions to curb antimicrobial resistance. Potential impacts on water quality from the use of our products downstream in the value chain are considered part of the marketing authorization approval process.

Novartis sites are on track to eliminate polyvinyl chloride in secondary and tertiary packaging by the end of 2022.

In addition, Novartis sites are on track to eliminate polyvinyl chloride (PVC) in secondary and tertiary packaging by the end of 2022. For example, we now use a carton-based packaging design for Amovig, a migraine treatment.

For more on this topic, please see the section ‘Build trust with society’ and our TCFD disclosures.

Ensuring patient health and safety
Patient safety is fundamental to our purpose. We cannot improve and extend people’s lives if we do not deliver safe, high-quality medicines. The importance of patient safety was highlighted in our 2021 materiality assessment, with both internal and external stakeholders identifying it as the most material topic.

Patient safety cuts across several strategic priorities for Novartis, including operational excellence and building trust with society. Our activities are focused on three areas that span the life cycle of our medicines and cover both our own operations and activities outside our walls: product quality, pharmacovigilance and combating falsified medicines.

Product quality
We maintain a robust quality management system for the production of marketed products and investigational medicines, in full compliance with requirements from health authorities and other regulators around the world.

We hold relevant manufacturing licenses and Good Manufacturing Practice (GMP) certificates for 100% of our manufacturing, supply and distribution operations. These are issued after inspections by external health authorities such as the US Food and Drug Administration (FDA), the European Medicines Agency (EMA), the World Health Organization (WHO) and Swissmedic. We hold relevant ISO certifications for the manufacture of medical devices.

Of 106 inspections of our facilities by health authorities around the world in 2021, all but one (99.2%) were found to be acceptable without major findings. For the one inspection that required further improvement, a corrective action plan was deemed acceptable by the relevant health authority (EMA). Of the 106 inspections, 31 were performed remotely, and one FDA inspection relied on a prior inspection conducted by the Austrian healthcare authorities under a mutual recognition agreement. We also have a strong auditing program covering both our own operations and those of our suppliers. Despite COVID-19-related challenges such as travel restrictions, we conducted 1,419 audits in 2021, including 1,294 audits of suppliers, with 960 audits carried out on external sites and 206 audits on GxP suppliers.
With a growing number of medical devices in the Novartis portfolio, we have also built a robust system to monitor adverse events associated with medical devices worldwide. Novartis was the first company certified for compliance with the European Medical Devices Regulation, which came into force in 2021.

As a complement to traditional pharmacovigilance methods, we increasingly use technologies such as process automation, machine learning and natural language processing to analyse data and detect adverse events. Novartis collaborates with pharmacovigilance associations and authorities in many countries, including Italy, the Scandanavian countries, Switzerland, China and India, to support the implementation of local and international guidelines as well as the implementation of new adverse event reporting submission methods.

Further examples of our capacity-building initiatives in 2021 included training for clinical trial investigators in Mexico and China. In response to the COVID-19 pandemic, we set up a task force to ensure the continuity of our pharmacovigilance system while providing support to healthcare professionals. We applied a pragmatic approach that created efficiencies across some of our processes such as the Individual Case Safety Report (ICSR) follow-up. We estimate that the ICSR efficiency gain translated into 2,500 saved hours for healthcare professionals at a critical time.

Worldwide patient safety offices contributed with safety data collection on COVID-19 investigator-initiated trials to support assessments about the impact of the new virus.

Falsified medicines
Falsified medicines are a growing global problem. The Pharmaceutical Security Institute reported a 38% increase in incidents of falsified medicines from 2016 to 2020, a trend that has been exacerbated by increased demand for medicines amid the COVID-19 pandemic.

At Novartis, our priority is to protect patient health and safety through quick access to authentic medicines. In 2021, our efforts have helped prevent falsified medicines from reaching and harming more than 1.6 million patients.

In 2021, close collaboration with local law enforcement led to the investigation of 318 incidents in 41 countries, 66 successful enforcement actions, and the seizure of 1 million units of falsified medicines as well as the removal of more than 100 illicit advertisements from online platforms.

In 2021, we look for ways to strengthen and improve our capacity to support patient safety worldwide. We conduct thorough investigations when any deviations from current GMPs or other relevant regulations occur, or when we detect out-of-specification results or any other failures in our manufacturing processes. Incidents are assessed by subject matter experts and conclusions are provided to the appropriate health authorities with relevant documentation. Actions such as recalls are executed in agreement with the relevant authorities.

Novartis initiated 27 recalls in 2021. We also monitor our medicines for the possible presence of nitrosamines and complete all necessary nitrosamine assessments in 2021, closely following the recently agreed EMA/EMA/2021/107/FDA implementation plan for the pharmaceutical industry.

We have a robust quality and safety training process for employees and third parties. We require all employees involved in manufacturing, supply and distribution to undertake at least two annual training sessions on quality standards. Employees can take additional training relevant to their role or workscope. We are regularly audited on our training procedures.

All third parties providing services or products manufactured to good practice standards are required to have their own quality assurance department and a formal training process. Novartis routinely assesses the capability and effectiveness of third-party training programs during audits to confirm suitability for the provided service or product. Despite the ongoing disruptions created by the COVID-19 pandemic, we maintained our quality and safety training process in 2021.

In 2021, we rolled out paperless quality control at three sites, including in Torni Amstrantsila, Italy, and in Ljubljana, Slovenia. For more on this topic, please see the Novartis quality management system section of our corporate website.

Pharmacovigilance
Novartis continues its efforts to boost pharmacovigilance capabilities to support patient safety worldwide.

While clinical trials provide important information on a medicine’s safety during development, it is only after its use in greater numbers of patients in real-world settings that some adverse events will become known. Effective pharmacovigilance requires activities to educate patients, providers and pharmacists, and strengthen reporting of adverse events to the company. Our pharmacovigilance and falsified medicines teams also work closely together, for example in cases where a disproportionate number of adverse events may indicate the presence of suspected falsified medicines.

We maintain a high level of compliance to regulatory requirements for both individual case safety reports and periodic benefit-risk assessments. In addition, in 2021 an internal audit confirmed the strength of the Novartis integrated pharmacovigilance governance model after it obtained ISO 9001 certification in the previous year.

Examples of our capacity-building initiatives in 2021 included training for clinical trial investigators in Mexico and China. Novartis in Society Integrated Report

In 2021, we continued to lead an initiative with the Innovative Medicines Initiative and 12 major pharmaceutical companies to develop a use case for blockchain technology in the pharmaceutical supply chain. The aim is to empower patients to check their own medicines for authenticity while generating data – backed by robust privacy controls – on trends in falsified medicines.

We also engage with public and private stakeholders, such as the WHO and the Organization for Economic Co-operation and Development, to encourage coordinated action and promote effective policy-making on falsified medicines. In 2021, we delivered over 150 engagements and reached over 7,200 stakeholders in 14 countries.
Managing our supply chain responsibly

We are committed to working with third parties who operate in a manner that is consistent with our values and ethical principles. While interactions with third parties at Novartis are broadly defined by our Third-Party Code, we identify, assess, monitor and mitigate risk associated with suppliers through our Third-Party Risk Management (TPRM) framework.

Implemented globally across Novartis in 2019, our TPRM process promotes ethical behavior and fosters sustainability across our supply chain by addressing risk areas such as anti-bribery; animal welfare; health, safety and environment (HSE); labor rights; information security; and data privacy. We conduct risk assessments for all new eligible suppliers and new products, services or sites from existing suppliers. Not all suppliers trigger a detailed risk assessment.

In 2021, we assessed 12,064 suppliers through our TPRM process, up from 8,448 in 2020. We agreed on remediation actions with 912 suppliers, and we stopped engagements with 37 suppliers due to the risk assessment results. We audited 85 suppliers, a significant increase from the previous year as the impact of the COVID-19 pandemic eased in several countries.

We took steps to increase the efficiency of our TPRM process and align it more closely to our overall view of risk at Novartis.

In 2021, we took steps to increase the efficiency of our TPRM process and align it more closely to our overall view of risk at Novartis, while maintaining a high level of assurance. For example, we started to prioritize all third parties in scope by risk severity. As part of this process, we de-scoped two risk areas – financial due diligence and business continuity – since the former is already embedded in other process steps while the latter is covered by default within other risk areas.

We also completed the integration of human rights into four relevant risk areas (labor rights, HSE, data privacy, and anti-bribery and corruption) in our TPRM process. (For more on human rights at Novartis, please see the section “Build trust with society.”) In addition, we moved responsibility for screening new vendors for Good Manufacturing Practice under the scope of Quality teams in TNO, which have specialized expertise in this area.

We also evaluated ways to automate our processes. For example, current manual risk assessments for distributors and wholesalers will be gradually incorporated into an automated TPRM process, ensuring a standardized and auditable practice around the world.

Sustainability in our supply chain

To reach our emissions reduction targets, we are working with our suppliers to help them apply, where possible, the same high standards of environmental sustainability as we do. By 2025, we aim to include environmental sustainability criteria as part of all supplier contracts.

We are working with key suppliers to set baselines and targets for CO₂ emissions, water consumption and waste management.

In our manufacturing operations, we are working with key suppliers to set baselines and targets for CO₂ emissions, water consumption and waste management, as well as confirm the API content of manufacturing efficiencies. We are jointly developing sustainability roadmaps by focusing on product-specific technology action plans. Suppliers are also expected to report annually on progress and implement remediation plans where needed.

We are also engaging our commercial suppliers, with a focus on those with the largest contribution to our carbon footprint. In 2021, we published the Novartis Green Expectations from Suppliers’ engagement framework. Our top 100 suppliers are expected to commit to emissions reduction targets approved by the Science Based Targets initiative (SBTi) and regularly report on their environmental impact management and achievements through CDPR. Meanwhile, we organized a Green Supplier Summit to discuss environmental sustainability challenges and potential solutions with our commercial suppliers.

Also in 2021, we worked with Schneider Electric and nine major pharmaceutical companies through an initiative called Energoize to accelerate the adoption of renewable electricity in our shared supply chains in the US and Europe. We also provide guidance and tools to our manufacturing suppliers on water quality topics, including a tailored mass balance calculator to identify and quantify APIs in wastewater.

For more on this topic, please see the section “Build trust with society” and our TCFD.

Delivering effective business services

Since 2018, we have transformed business services at Novartis to better enable our people to execute on our strategy and deliver on our purpose. Through these efforts, we have improved productivity and user satisfaction while reducing our cost base and expanding our service offerings.

In 2021, we made further progress by creating a new organization called Customer & Technology Solutions (CTS), which combines the global scale of our business services functions with the transformative nature of our enterprise digital teams. The aim is to deliver services and solutions that drive value across Novartis and enable the transformation of our enterprise. Over the next several years, CTS is expected to continue to improve productivity to drive profitable growth.

CTS has around 12,000 employees located in over 40 countries and across five global service centers, with offerings spanning technology, facilities, finance, human resources, procurement, consulting, data science and artificial intelligence (AI).

Key focus areas include upgrading and simplifying our global enterprise resource planning systems. This multiyear project, which started in 2020, will help Novartis leverage digital technology at an even greater scale. The goal is to significantly simplify our core processes, capabilities and systems to provide greater flexibility and support to our business operations.

CTS teams are also helping to simplify the employee experience at Novartis. For example, we have introduced an AI-based virtual assistant to support employees with technology and human-resource-related queries. The tool will be expanded in the coming years to include all other functions.

We are also accelerating the use of technologies such as cognitive robotic process automation to improve productivity, enhance remote assistance, and enable employees to focus their time on high-impact tasks. For example, more than 1 million transactions that account for 75,000 hours of manual, repetitive work in functions such as human resources, finance and drug development are now done in a fraction of the time through AI-enabled automation.
Go big on data and digital

We are reimagining medicine using the power of data science and digital technology. With tools like artificial intelligence (AI), we’re opening new paths to treat disease while finding new ways to engage customers, support patients and streamline our operations.

2021 highlights

- **300,000** Patients using AI Nurse, our cardiovascular disease app in China
- **16** Clinical trials incorporating digital endpoints, with plans to add more in the coming years
- **900+** Employees using data42 our advanced data analytics platform
- **3,000+** Clinical trial participants referred through an online enrollment portal in the US

In this section

- **Accelerating innovation**
  Novartis aspires to be an industry leader in applying data science and digital technologies to the challenge of discovering new medicines. → p. 56
- **Engaging customers**
  We continue to invest in digital tools to provide personalization and better experiences for customers. → p. 57
- **Digital health solutions**
  We are deploying digital health solutions to support patients across the world. → p. 57
- **Embedding data and digital in our operations**
  We use technology to increase efficiency, while promoting digital skills and following robust standards on data management, ethics and cybersecurity. → p. 59

Related links and disclosures:

- Privacy Policy
- Position on Nanotechnology-Based Medicine
- Novartis Biome
- Position on Regulatory Data Protection
- Our Commitment to Ethical and Responsible Use of AI
**Accelerating innovation**

Novartis aspires to be an industry leader in applying data science and digital technologies to the challenge of discovering new medicines. By enhancing assets in our pipeline through data and digital, we aim to improve patient outcomes, streamline the development process, and support diverse, inclusive trials.

One example is the use of digital devices, such as wearable sensors, to capture continuous data on physical activity, sleep quality or fatigue, which could be used as endpoints in trials for diseases including chronic obstructive pulmonary disease (COPD) and Sjögren’s syndrome. Such “digital endpoints” can improve the relevance and objectivity of clinical trial data, as well as offer new insights. In our chimeric antigen receptor T-cell (CAR-T) programs, for example, we are using a wearable digital sensor as an exploratory endpoint to plot the early detection of serious side effects like cytokine release syndrome in outpatient settings. In 2021, digital endpoints were used in 6 Novartis trials, with plans to add more in the coming years.

Digital technology can also make clinical trials more convenient for patients and caregivers by reducing the need for repeated in-person clinic visits. For example, in a Phase III study of our gene therapy, Zolgensma in older children with spinal muscular atrophy, parents can upload videos of their child’s progress remotely from home.

**Leveraging our data**

We are taking advantage of a key resource — vast amounts of data that could be used as endpoints in clinical trials. In 2021, Novartis received a “Life on Innovation” award from Gartner for our success in bringing this data together on a foundational, enterprise-wide data and analytics platform that includes more than 100 solutions and covers the life cycle of our business.

One example is data42, which makes data from more than 2,700 clinical trials available through our data42 analytics platform. In 2021, Novartis received a Gartner for our success in bringing this data together on a foundational, enterprise-wide data and analytics platform that includes more than 100 solutions and covers the life cycle of our business.

Data42 makes it possible to discover connections in our data, identify relevant patient populations, and test hypotheses on a previously unimaginable scale.

Patient data in data42 is anonymized and protected by a robust clinical data access policy. We use data42 access only after receiving training. We are currently expanding data42 by adding more preclinical data.

In 2021, data42 was used by more than 900 employees working on around 300 projects. These include efforts to better understand disease progression, optimize treatments and improve clinical trial design. For example, for an analysis in COPD, researchers can include data from patients in a heart failure trial who have COPD in their medical history or as an adverse event. For the first time, data scientists and researchers can also view the gender balance across all Novartis trials, sorted by disease area, indication and country. These insights help us design future trials with more emphasis on diversity and inclusion.

**Resilient clinical trials**

Our investments in technology also helped keep our clinical trials on track during the COVID-19 pandemic. For example, more than 3,000 participants across nine clinical trials were referred through an online enrollment portal, after more than 16,000 potential participants completed an online trial qualification questionnaire. In one Phase II trial, digital trial recruitment contributed over 25% of the cohort of randomized patients.

We used another digital tool to forecast COVID-19 case progression and anticipate disruptions to clinical trials. In one trial, for instance, we identified potential delays of up to several months in patient enrollment and first visits related to specific locations. By redirecting resources to compensate, we reduced this gap to a few weeks. In other trials, we switched to remote solutions such as home nursing and home delivery of the investigational medicine.

**Streamlining R&D**

The Novartis AI Innovation Center (Al Lab), a collaboration with Microsoft, continues to use digital technologies to improve productivity in early research through to product launch. For example, the AI Lab developed a platform that assists medicinal chemists in optimizing molecular structures of promising molecules, enabling faster compound design and selection.

Also in partnership with Microsoft, we rolled out a new tool to help simplify and streamline some of our processes. In 2021, it was used by employees responsible for formulation development and early manufacturing of investigational medicines. The platform is improving efficiency by connecting data sets and leveraging information from thousands of past formulations, and is expected to yield cost savings of several million dollars per year. We plan to expand the platform to other areas in our R&D operations.

Novartis saved over USD 14 million from 2018 to 2021 by deploying BenchSci, an AI platform that derives actionable knowledge from scientific publications. Scientists at the Novartis Institutes for BioMedical Research (NIBR) use BenchSci to select the best antibody and other key reagents for their work, avoiding costly and unproductive experimental dead ends. BenchSci has helped accelerate projects by months, while also delivering novel scientific insights.

**Digital health solutions**

We are expanding patient-focused digital health solutions in key markets. This includes the cardiovascular disease app AI Nurse in China, which was developed in collaboration with Tencent. For more information, please see “Improving heart health in China” on the following page.

Another patient-focused solution is in our clinically validated, AI-powered symptom checker for difficult-to-diagnose conditions such as arthritis and axial spondyloarthritis, a chronic inflammatory disease that can take up to five years to diagnose. Patients enter their symptoms through a website that provides a detailed report that can be shared with their doctor. The site also gives links to disease information, details about local specialists, and, in some cases, a telemedicine consultation.

At the end of 2021, patients had completed more than 53,000 assessments. Over 12,100 had symptoms consistent with psoriatic arthritis or axial spondyloarthritis, and approximately 2,300 took follow-up actions. The tool was developed with Ada Health, and the

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**2,700+**

Clinical trials

over two decades

available through our

data42 analytics platform
Digital solutions for global health

One of the first companies to partner with the Novartis Biome was Hemex Health, which developed a small, automated testing device – already approved for use in Ghana – to quickly detect genetic blood disorders such as sickle cell disease. The Novartis Biome is now working with Hemex Health on an extensive research implementation study to support expanded use of the device in primary care settings in sub-Saharan Africa, which carries 80% of the global disease burden.

We continued to work on an initiative co-founded by Novartis that aims to strengthen the foundations of digital healthcare systems in low- and middle-income countries (LMICs). Partners include the University of Oslo in Norway, which has developed the world’s largest open-source health and disease information management system for LMICs, known as DHIS2. It is currently in use in more than 73 countries. Together with our partners, we are adding disease metadata packages for our global health flagship programs to DHIS2, along with other enhancements, to enable countries to further reduce supply chain bottlenecks and improve access to medicine. Novartis teams are using the system to support our malaria programs as well.

In addition, we launched a partnership with Hewlett Packard Enterprise to accelerate the use of data and digital technologies for global health solutions. The first use case is a disease surveillance platform for dengue fever, which the World Health Organization has listed as a top 10 global health threat. For more information about how we address global health challenges, please see the section “Build trust with society.”

Using data and AI responsibly and securely

In 2021, we continued the rollout of a new data management process – covering the entire data life cycle – to accelerate our digital transformation while ensuring data privacy. The new process spans nearly 5 million data sets, covering functions including R&D, finance, operations and procurement. Each domain has a data owner who is responsible for making their data available to the enterprise with the right quality and traceability, while also ensuring correct usage. These leaders are working together to unify data governance and processes across the organization and ensure that data is a strategic reusable asset for the company.

We promote training opportunities to develop digital skills among our employees. We have expanded our data science training and mentoring programs, which we launched in 2020. We have also invested in a learning platform for data science coding skills, which has been used by over 850 employees who spent a total of over 11 000 hours on the platform in 2021. For more examples of our progress in building digital skills across Novartis, please see the section “Unleash the power of our people.”

Embedding data and digital in our operations

We use technology to drive greater efficiency and cost savings across our operations. For example, a platform in our manufacturing operations called SpotOnInsights Center provides multiple digital solutions to help maximize economy of scale, reduce throughput times and optimize inventories. One of these solutions already helps 18 production sites to optimize finished goods supply chains for more than 400 of our products.

In addition, we are automating core operational processes at scale by deploying robotic cognitive automation – also known as “bots” – across our Customer & Technology Solutions organization. One example is an intelligent assistant that automates large parts of the writing of medical reports. Bots are also helping to resolve (either partially or fully) approximately 80% of user requests to our enterprise-wide IT helpdesk.

We have robust governance, policies and procedures in place to ensure the security of our data and IT systems, including Board-level oversight of cybersecurity through the Risk Committee, and management-level responsibility through our Chief Information Security Officer. Novartis did not experience any material cyber-security incidents in 2021.

To prevent system interruptions, we have business continuity plans that we test at least every six months. We conduct internal vulnerability analyses as well as external testing via a third party to ensure the effectiveness of our controls.

The Novartis Global Information Management Policy is available to all employees via the Novartis intranet. We include cybersecurity in our Code of Ethics commitments and require suppliers to implement organizational security policies and standards.

Improving heart health in China

Cardiovascular disease is a leading cause of death in China. AI Nurse is a digital health app developed in collaboration with Tencent, that leverages the WeChat social media platform to make it easier for patients with heart failure and other cardiovascular diseases to manage disease progression.

Hospitals enrolled patients with the AI Nurse app after treatment for a cardiac event. Upon discharge, patients send regular updates to their doctor via an AI-enabled chatbot, which provides medication reminders and recommendations for diet and exercise. The app alerts the doctor to signs of deterioration, helping to determine if follow-up care is needed.

At the end of 2021, usage of AI Nurse had grown to more than 300 000 patients, from around 20 000 in the prior year. More than 5 000 healthcare professionals and over 1 000 hospitals in at least 200 cities across China are using AI Nurse. We are in the process of expanding AI Nurse to hypertension (high blood pressure) and other cardiovascular diseases to help manage disease progression.
Unleash the power of our people

Our people bring our purpose to life. We are transforming our culture to empower each employee to be inspired by our purpose and drive innovation. We are creating an environment that supports diversity and the freedom to be our authentic selves, while providing the flexibility to deliver our best work.

2021 highlights

- Employee engagement score (out of 100): 78, 5 points higher than the industry benchmark
- 16,000 Employees using a digital awareness hub to enhance their skills in data science, AI and other areas
- 80% Of global hiring with no historical salary data to reduce the risk of gender bias
- 5,000 Leaders taking part in the Unbossed Leadership Development program

In this section

- Evolving ways of working
- Learning and development
- Supporting and protecting our employees
- Engagement and volunteering
- Diversity and inclusion

Related links and disclosures:

- Our Equal Pay International Coalition (EPIC) commitments
- Global Guideline on P&O Principles and Labor Rights Practices
- Health, Safety and Environment Policy
- Global Non-Discrimination, Non-Harassment, Civility and Non-Retaliation Guideline
- Global Parental Leave Guideline

Photo: Skye Towers, a Novartis employee based in our Dublin office. Ms. Towers, a transgender woman who transitioned while working for Novartis, helped create our guide for managers to support employees who are gender transitioning.
Evolution ways of working

COVID-19 has reshaped the global working environment. In an internal survey, more than three-quarters of Novartis employees said they wanted to continue with a mix of office-based and remote working post-pandemic – consistent with external trends.

In this environment, we embarked on a multiyear progrm called Choice with Responsibility to explore new working models. The aim is to give employees greater flexibility in how they work to optimize their well-being and performance while maintaining a focus on productivity and innovation. As part of this program, we conducted a policy introduced in 2020 for employees to choose how, when and where they work within their team, in alignment with their needs to ensure a continued focus on collaboration and innovation.

Choice with Responsibility applies to all employees, but we recognize there is a wide diversity of roles within the organization. Some production work and laboratory research, for example, may not allow as much flexibility as other roles. The choices about how, when and where employees work will therefore be different based on their role, the nature of their team, and health, safety and legal/Regulatory requirements.

During 2021, we conducted around 70 local and global experiments involving a total of 25 000 employees, which are giving clarity on the path forward. The results will provide the basis for our ways of working in the future.

For example, 500 employees in 15 countries took part in a three-month experiment to understand and address the challenges of moving to a virtual environment. The results showed 70% of participants prefer a hybrid arrangement in which their time is divided between their home and workplace. Meanwhile, teams that determined their own solutions on how to work together felt more able to collaborate and manage their workload compared with teams that had not, leading to an overall feeling of Novartis having improved as a place to work.

In 2021, we continued expanding our global program to help manage their physical, mental and social well-being. All 20 000 Novartis leaders and 2 169 other employees took part in an e-learning program to enhance their well-being, while 57 001 people visited a “How are you feeling?” webpage with resources to help them manage stress and other topics. In addition, 14 257 employees attended workshops during a well-being month, with 96% of attendees saying they would apply learnings in their daily work. Meanwhile, two third-party smartphone apps provided by Novartis were used by 32 709 employees to increase self-awareness and develop positive habits in areas including movement, nutrition, recovery and mindset, which are important for holistic well-being.

In another important change, we transformed our approach to performance management and development by replacing annual performance ratings with a flexible, continuous performance system of coaching, feedback and recognition by managers and peers. Teams and individuals create objectives that include a focus on longer-term impact over several years. In addition, managers and employees have regular discussions on topics including progress toward goals, development, feedback and well-being.

Learning and development

In 2021, we continued to focus on promoting a culture of curiosity and learning. This was the third year of our Go Big on Learning initiative, which involves a USD 100 million investment in addition to the normal annual training budget of USD 200 million.

Our aspiration is for every internal employee to spend 100 hours a year on learning. We achieved an average of 52.1 training hours per internal employee in 2021, broadly in line with the previous year.

Our focus on learning and development is being recognized by current and prospective employees. The score for learning engagement and growth in the OurVoice survey remained at an all-time high of 75 in 2021, compared to an industry benchmark of 71. In addition, opportunities for learning and career growth were cited by successful applicants as a leading reason for wanting to join Novartis.

Learning requirements reflected the change to more flexible working practices as well as greater demand for digital skills to support our strategy. Across both LinkedIn Learning and Coursera, we registered a total of more than 47 000 active users and more than 105 000 courses completed in 2021. We also maintained access to the Coursera friends and family program for 15 000 users.

Approximately 16 000 employees used a tool called a digital awareness hub to enhance their knowledge and skills in data science, artificial intelligence (AI) and related areas. In 2021, training related to digital skills more than doubled from the previous year, based on an analysis provided by Coursera. Novartis was ahead of the industry benchmark in data analysis and other areas, according to Coursera.

Furthermore, we launched a new learning platform for 10 000 employees, primarily in our commercial operations, that uses AI to customize learning on digital skills based on an individual’s role and daily activities.

Unbossed: learning to lead differently

The idea behind “unbossed” is that people are most creative and productive when they are empowered to pursue their ideas. We want Novartis leaders to provide clarity and accountability for their teams, remove obstacles, and empower others to reach their potential.

In 2021, more than 5 000 leaders took part in a development program called the Unbossed Leadership Experience (ULE), which provides them with the skills needed to drive our cultural transformation in an environment conducive to personal growth. We are now nearly halfway to meeting our ambition of bringing ULE to all 20 000 leaders at Novartis.

In an employee survey, teams reporting to senior leaders who completed the program showed higher results for engagement (3.6 percentage points), empowerment (2.9 percentage points), and feeling safe to speak up (3.6 percentage points) compared with the company benchmark. Teams working closely with ULE leaders were also more comfortable with experimentation and potential failure, according to a separate feedback process, suggesting they are becoming more open to innovation.
Diversity and inclusion

We seek to create a diverse, equitable and inclusive environment that provides equal opportunities for all employees and where everyone is treated with dignity and respect. We do this not only because it is right, but also because it helps to generate new ideas and brings us closer to the diverse perspectives of patients and other stakeholders. We recognize that everyone plays a part in building an inclusive environment, and in 2021, 97% of our employees reported that Novartis is the first global company to train on diversity and inclusion (D&I).

A key element of our D&I strategy is gender equality, and we made progress in 2021 toward our Equal Pay International Coalition (EPIC) pledge to eliminate gender pay gaps. In 2021, we distributed an updated guide for our employees to support employees in gender transitioning. We are working to include coverage for gender dysphoria, the condition in which someone feels a strong desire to change gender, in Novartis company healthcare plans, where possible. In 2021, 63% of our employees are eligible for the workplace and ensure they have the solutions to involve them fully in the workplace and ensure they have the space to share their interests, experiences and backstories.

In 2021, we achieved external pay transparency in a further 10 countries, including Switzerland and the US, bringing the total to 16 countries. We continue to extend this initiative, through which employees can compare their pay to external benchmarks, and by February 2022 we expect pay transparency to cover more than 50 000 employees across 33 countries.

We have eliminated historical salary data from 80% of global hiring to reduce the risk of gender bias when making job offers. We are taking steps to apply this to every job offer worldwide by 2023.

Novartis was the first global pharmaceutical company to support the United Nations Standard of Conduct for Business to tackle discrimination against lesbian, gay, bisexual, transgender, queer and intersex (LGBTQI) employees. In 2021, we distributed an updated guide for our employees to support employees in gender transitioning. We are working to include coverage for gender dysphoria, the condition in which someone feels a strong desire to change gender, in Novartis company healthcare plans, where possible. In 2021, 63% of our employees are eligible for the workplace and ensure they have the solutions to involve them fully in the workplace and ensure they have the space to share their interests, experiences and backstories.

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## OUR PERFORMANCE IN 2021

### People performance indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>2021</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Headcount</strong></td>
<td>106,914</td>
<td>110,728</td>
<td>108,776</td>
</tr>
<tr>
<td>Full-time equivalent positions</td>
<td>104,823</td>
<td>105,794</td>
<td>103,914</td>
</tr>
<tr>
<td>Annual training hours per employee (full population / internal only)**</td>
<td>46.5 / 53.2</td>
<td>39.5 / 60.4</td>
<td></td>
</tr>
<tr>
<td>Representation of nationalities: overall / management*</td>
<td>143 / 115</td>
<td>142 / 113</td>
<td>149 / 110</td>
</tr>
<tr>
<td>Employees represented by an employee representative body or covered by a collective bargaining agreement*</td>
<td>47</td>
<td>46</td>
<td>46</td>
</tr>
<tr>
<td>Percentage turnover: voluntary / overall</td>
<td>7.8 / 10.3</td>
<td>7.2 / 14.0</td>
<td></td>
</tr>
<tr>
<td>Percentage of hires: internal / external</td>
<td>62 / 38</td>
<td>58 / 42</td>
<td>55 / 45</td>
</tr>
<tr>
<td>Health and safety</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lost-time injury and illness rate (per 200,000 hours worked)</td>
<td>0.13</td>
<td>0.13</td>
<td>0.18</td>
</tr>
<tr>
<td>Total recordable case rate (per 200,000 hours worked)</td>
<td>0.25</td>
<td>0.23</td>
<td>0.36</td>
</tr>
<tr>
<td>Fatalities</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

### Industrial relations indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>2021</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender indicators</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median tenure in years: female / male</td>
<td>4.8 / 5.5</td>
<td>4.7 / 5.5</td>
<td>5.2 / 5.5</td>
</tr>
<tr>
<td>Gender representation (% female / % male)</td>
<td>51 / 49</td>
<td>50 / 49</td>
<td>50 / 50</td>
</tr>
<tr>
<td>Hires</td>
<td>52 / 47</td>
<td>52 / 48</td>
<td>52 / 48</td>
</tr>
<tr>
<td>Promotions</td>
<td>52 / 47</td>
<td>52 / 48</td>
<td>52 / 48</td>
</tr>
<tr>
<td>Overall turnover</td>
<td>50 / 50</td>
<td>49 / 51</td>
<td>48 / 52</td>
</tr>
<tr>
<td>Entry-level positions (job levels 6, 7, 8)</td>
<td>52 / 48</td>
<td>52 / 48</td>
<td>52 / 48</td>
</tr>
<tr>
<td>Percentage of hires: internal / external</td>
<td>62 / 38</td>
<td>58 / 42</td>
<td>55 / 45</td>
</tr>
<tr>
<td>Data and digital</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Fewer than 0.5% of employees have unknown classification, apart from hires, which have a 1.2% unknown classification.

** Data includes all full-time employees, both permanent and temporary.

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[1] Headcount reflects the total number of employees in our payroll systems. Full-time equivalent adjusts headcount for employees working less than 100%.

[2] From 2021, Novartis has begun reporting training hours for internal employees only, in addition to data for the full population.


[4] Non-management employees

[5] Data include Novartis employees and third-party personnel managed by Novartis employees.

[6] Data include all work-related injury and illness, whether leading to lost time or not.

[7] Novartis Top Leaders comprises the approximately 300 most senior managers at Novartis, including the Executive Committee of Novartis.

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**About this report**

- 2021 at a glance
- Chairman’s letter
- CEO’s Letter
- Our approach
- Who we are
- Our business environment
- Our stakeholders
- Materiality assessment
- Our strategy
- How we create value
- How we manage risk
- Our performance
- Financial
- Innovation
- Operational excellence
- Data and digital

**Our people**

- Build trust with society
- Governance
- Compensation
- Appendices
Build trust with society

Our long-term success depends on building and maintaining trust with society. We strive to meet the expectations of our stakeholders by making our medicines available to as many people as possible, by acting ethically, and by making a positive difference for society while minimizing our environmental impact.

2021 highlights

- **56.2 m** Patients reached through access approaches
- **1 bn** Antimalarial treatments delivered to patients since 1999, with more than 90% supplied without profit
- **31%** Increase in patients reached through emerging market brands
- **–34%** Greenhouse gas emissions reduced vs. 2016 baseline (Scope 1 and Scope 2)

In this section

- **Leading the way on access and global health**
  Improving access to medicines remains one of the world's greatest healthcare needs. We seek to expand access to underserved patient populations while addressing major global health challenges. → p. 70

- **Holding ourselves to high ethical standards**
  Our stakeholders expect us to act with high ethical standards wherever we operate. We are making progress in embedding ethics and human rights across our company. → p. 80

- **Being a responsible citizen**
  Novartis is committed to playing a positive and constructive role in society by addressing issues such as environmental sustainability and antimicrobial resistance. → p. 83

Related links and disclosures:

- Position on Access to Medicines
- Position on Value-Based Healthcare
- Anti-Bribery Report
- Environmental Sustainability Strategy
- Human Rights Commitment Statement
Novartis access principles

Affordability: We aim to price our medicines based on the value they deliver to patients. We work to make our medicines available by adopting innovative access and pricing models, taking into account local income levels, affordability barriers and economic realities.

System strengthening: We work with governments and other partners to overcome barriers to healthcare delivery and support quality patient care in areas where we can have the greatest impact.

Research & development: We systematically assess our product development strategies for all new medicines launched. These strategies include innovative pricing and access models, earlier launches in low- and middle-income countries (LMICs), and approaches to strengthen healthcare systems. Information in this chapter on access and global health is organized according to the three pillars of R&D: Novel, R&D: Access, and R&D: Innovation.

Our global health priorities

Our work on global health is aligned with our overall efforts to expand access to our medicines. We follow an integrated approach for the control or elimination of four diseases where there has been market failure and little investment in research and development:

- **Sickle cell disease (SCD)**: This is a genetic blood disorder that affects more than 6 million people worldwide. While around 80% of the global disease burden is in Africa, SCD also affects approximately 100,000 children and adults in the US. Novartis is exploring new therapeutics and working to improve care for SCD patients in both developed and developing countries.
- **Malaria**: This is preventable and curable, yet it remains one of the most deadly infectious diseases in the world. Novartis has been at the forefront of the fight against malaria for more than two decades, launching the first fixed-dose-artemisinin-based combination therapy (ACT) and working with partners to deliver more than 1 billion antimalarials, the majority without profit.
- **Legrosy**: This causes physical disability and stigma for approximately 15 million people worldwide. Multidrug therapy donated by Novartis has been a cornerstone of global elimination efforts, leading to the treatment of more than 7 million people since 2000.

In addition, through the Novartis Institute for Tropical Diseases (NITD), we continue to research and develop a promising portfolio of drug candidates for the treatment of neglected tropical diseases that affect around 16 billion people worldwide, including dengue fever, diarrheal disease and visceral leishmaniasis.

For more information on our research and development activities for malaria, sickle cell disease and other neglected diseases, please see the section “Deliver transformative innovation.”

Adaptive development
Beyond our investigational therapies, we also adapt existing medicines for different patient groups or for diverse environments. In 2021, for example, our Sandoz team worked on a pediatric formulation of hydroxyurea to treat sickle cell disease that received conditional approval in Ghana less than six months after submission. Our adaptive development work supports our global health flagship programs, as well as a range of other therapeutic areas. For more information, please see the “Selected adaptive development projects” table in the appendix of this report.
Our access strategies are adapted to the needs of people across income segments.

Novartis access strategies

<table>
<thead>
<tr>
<th>Income segments</th>
<th>Novartis access approaches</th>
<th>Value-based pricing models</th>
<th>Patient assistance programs</th>
<th>Market access</th>
<th>Philanthropy</th>
</tr>
</thead>
<tbody>
<tr>
<td>High income</td>
<td>Equitable commercial models</td>
<td>Pharma strategic model</td>
<td>Patient assistance programs</td>
<td>Strategic model</td>
<td>Grant-making</td>
</tr>
<tr>
<td>Middle income</td>
<td>Emerging markets funded</td>
<td>Strategic model</td>
<td>Patient assistance programs</td>
<td>Strategic model</td>
<td>Grant-making</td>
</tr>
<tr>
<td>Low income</td>
<td>Equitable commercial models</td>
<td>Pharmaceutical funded</td>
<td>Patient assistance programs</td>
<td>Strategic model</td>
<td>Grant-making</td>
</tr>
<tr>
<td>Poor</td>
<td>Equitable commercial models</td>
<td>Pharmaceutical funded</td>
<td>Patient assistance programs</td>
<td>Strategic model</td>
<td>Grant-making</td>
</tr>
</tbody>
</table>

**Access to healthcare performance indicators**

<table>
<thead>
<tr>
<th>Category</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall patients reached (millions)</td>
<td>4,500</td>
<td>4,100</td>
</tr>
<tr>
<td>Patients reached with medicines – total</td>
<td>760</td>
<td>700</td>
</tr>
<tr>
<td>Patients reached through access approaches</td>
<td>560</td>
<td>500</td>
</tr>
<tr>
<td>Sustainability Bond (September 23, 2020 – September 23, 2028)</td>
<td>13,625</td>
<td>12,600</td>
</tr>
<tr>
<td>Patients reached with high income European patients</td>
<td>247,000</td>
<td>235,000</td>
</tr>
<tr>
<td>Patients reached with low income patients</td>
<td>32,055,224</td>
<td>39,122,152</td>
</tr>
</tbody>
</table>

**Novartis Global Health**

<table>
<thead>
<tr>
<th>Country</th>
<th>2021</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients reached with medicines Novartis Global Health (millions)</td>
<td>55.5</td>
<td>53.8</td>
</tr>
<tr>
<td>Health educators trained</td>
<td>8,577</td>
<td>7,571</td>
</tr>
<tr>
<td>Healthcare providers trained</td>
<td>10,710</td>
<td>12,000</td>
</tr>
<tr>
<td>Patients received at points of service provision</td>
<td>4,362</td>
<td>5,082</td>
</tr>
<tr>
<td>Awareness events held</td>
<td>412,872</td>
<td>434,076</td>
</tr>
</tbody>
</table>

**Value-based pricing**

We aim to price our medicines according to the value they deliver to patients, healthcare systems and society. We believe this approach incentivizes healthcare systems to focus on interventions that deliver the most effective, efficient and sustainable outcomes.

In 2021, for example, we announced a world-first agreement with the UK’s public healthcare system to make Lempiz, our cholesterol-lowering medicine, available to patients in England through an innovative population health management approach. The agreement followed a positive recommendation by the UK’s National Institute for Health and Care Excellence, which determined whether medicines represent value-for-money for the country’s healthcare system.

Novartis was also one of the first pharmaceutical companies to enter into value-based contracting for medicines, linking pricing and reimbursement rates to specific outcomes — including for Zolgensma, our break-through gene therapy for patients with spinal muscular atrophy.

We consider the following elements in proposing the price of our innovative medicines.

**Patient value:** Do our medicines help increase patient quality of life and/or patient safety?

**Healthcare system value:** Do our medicines help increase efficiency and/or reduce costs elsewhere in the system, for example by preventing hospitalizations?

**Societal value:** Do our medicines have an impact beyond the immediate healthcare benefit, such as by helping to improve economic productivity?

A variety of approaches exist on how to measure the value of our medicines. We aim to generate transparent, real-world evidence to support the most accurate possible value assessment for our medicines.

While we take all of these factors into account in proposing the price of our medicines, in the majority of cases the final price is the result of a negotiation with payers. We stand ready to support and strengthen healthcare systems in the journey toward value-based healthcare, so the price of medicines overall can more closely and consistently align with our principles without limiting patient access to care.

For more information on our position on value-based pricing, please see our novartis.com/affordability.

**Equitable commercial models**

In 2014, Novartis introduced an emerging market brand (EMB) strategy to expand access to innovative medicines to people in LMICs, in a way that is sustainable for our business and supports governments in responding to unmet medical needs.

In 2021, we launched 26 EMBS in our Novartis Pharmaceuticals portfolio and five in Oncology. These launches helped Novartis reach 484,459 patients through EMBs, a 3% increase from 2020.

**Enfesto, our heart failure medicine, is a key contributor to our target to increase patient reach and 43% growth in sales compared with 2020.**

We continue to narrow or eliminate the time lag between launches in Europe and in LMICs. For instance, we launched the EMB of our lung cancer treatment Tabrecta in India in November, at least six months ahead of expected first launch in Europe.

Novartis Access is our portfolio of medicines to address public health needs – in particular noncommunicable diseases – in lower-income countries. The program offers 15 on-and-off-patent medicines, which in 2021 were provided to governments and public sector customers in 11 countries across Asia and Latin America. Since 2015, Novartis Access medicines have reached more than 5.4 million patients.

We also use social business models to reach patients in countries where we have no limited or no presence. In 2021, through our global Health Markets, we reached patients in Cuba, Cambodia and Laos.

Our company advocates, known as Healthy Family programs, provide health education and strengthened healthcare infrastructure for populations living at the base of the income pyramid in India, Kenya, Uganda and Vietnam. In 2021, we expanded our geographical coverage in India and Vietnam, and aim to launch the program in additional underserved markets. Since 2007, Healthy Family programs have delivered health education to more than 75 million people.
To drive access in sub-Saharan Africa (SSA), we established a dedicated Novartis SSA unit of about 700 employees that aims to expand the availability of our full portfolio of medicines, taking a high-volume, lower-price approach – with an aspiration to double patient reach in the region by 2022.

For example, we aim to bring affordable cancer treatments to 22 countries in SSA through our Cancer Access Partnership (CAP) with the Clinton Health Access Initiative. In 2021, we implemented the program in more than six countries, reaching patients with breast, prostate and cervical cancer through our CAP product line, which includes patented medicines and Sandoz generics. Medicines are offered at a competitive yet sustaina-
ble price, and we are working with partners to minimize markups on CAP products for patients purchasing their treatments out of pocket. Together with our partners, we aim to optimize the continuum of care across the patient journey, including through health system strengthening activities.

Zero-profit models

In 2021, we reached the milestone of 1 billion treatments of our antimalarial medicine Coartem delivered since 1999, with more than 90% supplied without profit. For more information, please see “One billion antimalarials delivered to patients” on page 76.

Donations

Through our donation programs, Novartis supports LMICs in their efforts to treat patients for neglected diseases or life-threatening conditions, and to provide medicines in areas impacted by the COVID-19 pandemic, natural disasters and extreme poverty.

One of our key programs is CMLPath to Care™, which connects people living with chronic myeloid leukemia (CML) with effective treatments made affordable at no cost, professional medical capabilities, trained physicians and hands-on support. The initiative is implemented in 67 countries that are most urgently in need of medicines, as identified by the Access to Medicine Index. In 2021, the program reached more than 29,300 patients.

Legvio: integrated access in action

Our cholesterol-lowering medicine Legvio is a prime example of how we integrate innovative access strategies into the launch of our medicines.

Legvio is approved in more than 50 countries to treat athrosclerotic cardiovascular diseases, which accounts for over 80% of all cardiovascular disease (CVD) deaths. As part of our access strategy, we aim to introduce emerging market brands for Legvio with tiered pricing in LMICs and upper-middle-income countries to address affordability challenges, based on local feasibility assessments. We also intend to minimise time lags between first launch in Europe and launches in LMICs.

We also partner with health systems to improve patient outcomes. In the UK, for instance, Legvio is provided under a first-of-its-kind population health management approach through the National Health Service in England. It is expected to treat up to 300,000 patients at high risk of a second cardiovascular event in the community setting over three years.

For over 30 years, Novartis has been working with partners around the world to eliminate leprosy

For over 30 years, Novartis has been working with partners around the world to eliminate leprosy. Since 2000, Novartis has donated more than 68 million blister packs of multidrug therapy (MDT) valued at approximately USD 195 million through the WHO, helping to treat more than 7.3 million leprosy patients worldwide. In 2021, we extended our donation agreement with the WHO, and reached more than 75,000 patients. This was lower than the number of patients reached in 2000, primarily due to countries reducing their screening activities and the COVID-19 pandemic.

The new five-year agreement with the WHO also covers the continuing donation of triquinadazole for the treatment of fascioliasis, a disease caused by parasites known as liver fluke. Novartis has been donating the drug to the WHO since 2005, helping to treat around 2 million fascioliasis patients in more than 30 countries.

Another program is Novartis Oncology Access, which shares the cost of medicines with government healthcare systems, charities and other payers, or directly with patients without health-care coverage who are unable to pay the full cost. In 2021, more than 294,000 patients in seven countries accessed Novartis medicines through the Novartis Oncology portfolio in multiple disease areas.

Other examples include the Vale Mais Saúde™ program in Brazil, which reached more than 1.7 million patients in 2021. The program provides discounts on Novartis therapies for chronic conditions and promotes disease awareness and treatment adherence. In China, meanwhile, we reached 31,000 Cossent patients through a program designed to support patients and healthcare professionals with medication adher-
ence and disease awareness. Overall, our patient support programs helped more than 3.8 million patients in 2021.

Managed access programs

Physicians sometimes seek access to medicines that are not yet approved in their country to treat patients with serious or life-threaten-
ings conditions. Novartis Managed Access Programs (MAPS) address this need by making certain investiga-

tional or unapproved treatments available to eligible patients.

Patients reached through support programs

Novartis Patient Assistance Foundation Inc. (NPAF), which provides medicines at no cost for individuals who are experiencing financial hardship and have limited or no prescription drug coverage in the US. In 2021, NPAF made medicines available to more than 127,000 patients.

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ence and disease awareness. Overall, our patient support programs helped more than 3.8 million patients in 2021.
In 2021, Novartis received 8,559 MAP requests from physicians. We approved 99% of those requests from 95 countries and across 352 different compounds. At the end of 2021, more than 13,000 patients were receiving treatment through MAPs.

We fulfilled our 2021 commitment to make Zolgensma, our one-time gene therapy to treat pediatric patients with spinal muscular atrophy, available to up to 100 patients via a global MAP. Further, Tafdecra provides treatment for 13 patients suffering from lung cancer.

Since 2017, Novartis has collaborated with an external Independent Bioethics Advisory Committee (IBAC), which provides analysis and recommendations on Novartis guidelines and policies for the ethical conduct of clinical research, and on selected ethical challenges that may arise in clinical trials, development programs, managed access programs and other areas across Novartis. The IBAC is made up of bioethicists, clinicians, health care practitioners, patient advocates and other experts appropriate to the problem at hand.

Post-trial access programs
Novartis has a comprehensive post-trial access (PTA) policy to ensure access to our medicines for patients who have participated in a confirmatory Novartis-sponsored clinical trial designed to demonstrate superiority versus a placebo or another drug. Patients who have derived clinical benefit from an investigational treatment can continue to receive it, free of charge, until it is commercially available and accessible locally.

Our PTA commitment applies regardless of the nature of the disease, the availability of alternative therapies, or the geographical location of the clinical trial. PTA commitments were incorporated in all-in scope trials approved in 2021.

We also convene a cross-functional consultation board to provide guidance on PTA activities and ensure a consistent approach across the company in accordance with our Commitment to Patients and Caregivers and the Novartis Position on Post-Trial Access.

Access principle 3: strengthening healthcare systems
A medicine is only as good as the system that delivers it. Improving access to healthcare requires long-term investments in healthcare infrastructure. We work with governments and partners to strengthen healthcare systems and lower barriers to healthcare delivery. Several examples are provided below. For more information on our health system strengthening framework, please see the Novartis corporate website.

Tackling SCD in Africa
Launched in Ghana in 2019, our Africa sickle cell disease (SCD) program is a public-private partnership that encompasses newborn screening, diagnosis, treatment, education, research and advocacy. In 2021, the program was active in Ghana and Uganda. Novartis continues to work with our partners, including the ministries of health in both countries, to strengthen healthcare systems for the safe and sustainable delivery of SCD treatments for patients.

In 2022, we aim to launch the program in Tanzania and Kenya, where the government recently launched national guidelines for the management of SCD. As part of our efforts to support treatment for SCD in Africa, we received conditional approval for our SCD treatment crizanlizumab in Ghana in December 2021, only months after submission. Also in 2021, we received approval in Ghana for a pediatric-friendly formulation of hydroxyurea to treat SCD (see ‘Adaptive development’).

Addressing malaria and SCD in India
India has the world’s highest burden of malaria and SCD outside of Africa. Novartis is running a malaria screening campaign under the umbrella of the Novartis Healthy Family program (Arogya Parivar) in seven districts in Odisha state, a highly endemic area that bears almost a quarter of the country’s malaria burden. Since the start of the campaign in September 2020, more than 121,000 people have been screened for malaria and potential co-morbidities. We provided treatment to 2,200 health camps. Separately, Novartis and local authorities in India established the National SCD council, which aims to address policy-related gaps in delivering healthcare services to SCD patients. This resulted in dedicated or increased funding for SCD diagnosis and treatment across 11 states in the country. We also collaborated with partners to conduct education and awareness programs on SCD in the states of Maharashtra, Madhya Pradesh and Gujrat, covering a total of 80 districts, 250 health care professionals and 1150 health care workers. We plan to expand this project in 2022.

Since the start of the campaign, more than 121,000 people have been screened for malaria and potential co-morbidities.

Eliminating avoidable blindness
One billion people worldwide live with preventable visual impairment due to a lack of access to basic eye care. Of these, an estimated 90% live in LMICs. In 2021, we implemented a program built upon an ecosystem of key partners, including Aravind Eye Care System, a network of hospitals in India that is one of the largest providers of eye care in the world, to tackle avoidable blindness in underserved communities in India. In addition, our excellence in Ophthalmology Awards (XOVA) have funded 44 projects across 27 LMICs to elevate community health education activities, capacity-building and training for healthcare professionals, and access to affordable eye care services. Moving forward, together with Aravind, XOVA and other local and local partners, we plan to expand the program to improve outcomes in underserved communities in SSA, Vietnam, the US and Bolivia.

The Novartis Foundation
The Novartis Foundation focuses on advancing digital and data-led approaches to healthcare, especially when it comes to cardiovascular disease (CVD), the leading cause of death globally.

Better Health Better Cities
Rapid urbanization in LMICs, and associated lifestyle changes, present increasing challenges to address CVD and its prime risk factors, hypertension and obesity. Although with therapeutic options exist, blood pressure control rates remain poor. In November, the Novartis Foundation published its strategy to address cardiovascular population health known as the CARDIO approach, in the journal Cities & Health.

This approach has been applied across different continents together with local city authorities and partners in the Better Health Better Cities initiative, which addresses hypertension and its underlying determinants by increasing early access to quality care, promoting partnerships, and maximizing the application of technology to strengthen health systems. First results show that between 2018 and 2019, blood pressure control rates in patients treated with medication improved in São Paulo (Brazil), Dakar (Senegal) and Ubarbarat (Mongolia). Full results will be published in 2022.

Reducing inequality in cardiovascular health
Our health is influenced by where we are born, grow, live, work and age; these factors are referred to as social determinants of health (SDOH). During the COVID-19 pandemic, SDOH put a spotlight on health inequities worldwide, with a particular emphasis on cardiovascular disease (CVD), the leading cause of death globally.
13.7 m
Committed (USD)
to address racial disparities in healthcare as part of our 10-year commitment with Historically Black Colleges in the US

Expanding access through generics and biosimilars

Our Sandoz Division, a leading global generics company, plays an important role in Novartis efforts to increase access to affordable, high-quality medicines for patients worldwide. In 2021, Sandoz reached approximately 490 million patients with its portfolio of around 1,000 molecules across a wide range of disease areas.

Generics and biosimilars enable healthcare systems to improve access while containing spending growth. In the US, for example, generics accounted for 90% of the volume but only 18% of the cost of prescription medicines in 2020, according to research firm IQVIA.

Sandoz teams consider access in pricing strategies for all medicines, for example by typically entering the market well below the list price of the reference product, as well as taking local economic realities into account and acting to keep prices stable at times of market disruption – such as during the COVID-19 pandemic.

Our portfolio of generics and biosimilars increases the supply of affordable medicines across the income pyramid. They also provide the majority of products to our global health markets.

As one of the world’s largest suppliers of antibiotics, Sandoz also plays a central role in our efforts to tackle antimicrobial resistance. For more information, please see the section “Advancing our program to combat antimicrobial resistance.”

Photo: Romanus Oyibe, a medicine vendor in Ebonyi State, Nigeria, examining a patient in his store. Together with local partners, Novartis is helping to train vendors like Mr. Oyibe to test for common childhood illnesses such as malaria. Severe cases are referred to the closest health center.
Our Code of Ethics

Employees trained and certified (%)  98
Gravéness indicators: SpeakUp Office – central matters
Total allegations reported  174
Total allegations per category (%): SpeakUp Office – central matters
Principle-based misrepresentation  15
Severe breach  7
Breakeven records, accounting irregularities  1
Improper professional practices  20
Retaliation  14
Discretion and sexual harassment  18
Improper relations issues  18
Conflict of interest  12
IT security breach  4
Quality environment sustainability
Data privacy  3
Antitrust, fair competition  1
Compliance with clients’/products security information
Other  9
Allegations substantiated1  137
Disclosures and negotiations related to misconduct  137

1 Allegations substantiated include allegations that were addressed or investigated locally, as they were of lower and local risk.

2 The remainder of the complaints were addressed or investigated locally, as they were of lower and local risk.

3 The number of misconduct allegations has increased year-on-year. In 2021, we addressed or investigated a total of 174 allegations (2020: 118) for breaches of our Global Code of Ethics (2019: 137). The increase is due mainly to the higher number of misconduct allegations per category. (Note: Allegations per category = total allegations in these categories / average number of employees in those categories).
The Novartis SpeakUp Office, which from 2021 has been integrated into the Ethics, Risk & Compliance (ERC) function, enables employees to raise concerns about potential misconduct while being protected against retaliation. In 2021, a total of 2,099 complaints of alleged misconduct resulting in 1,932 cases, with 285 allegations, were received and handled. Of the complaints, 84% came via the SpeakUp channel and the remainder were self-identified via existing internal controls. Anonymous complaints were 33% of the total. We saw a 5% increase in SpeakUp complaints in 2021 compared with 2020, primarily due to employees returning to work sites as the pandemic situation eased in some countries, and due to increased training and awareness of the program.

Of the total cases, 174 (9%) were classified as central matters (higher-risk cases) warranting further investigation, while 1,758 lower-risk matters were addressed or investigated locally. The investigated allegations resulted in 62 dismissals or resignations, and in 27 written warnings. Other remedial actions such as training, coaching and implementing new controls were also used when deemed appropriate.

The shift to new ways of working amid the COVID-19 pandemic led to certain SpeakUp topics arising more frequently. For instance, we observed an increase in complaints regarding leadership behaviors amid flexible working arrangements, as well as those related to company guidelines on vaccinations or testing. Such complaints typically did not require investigation and could be addressed through local management or human resources teams. Allegations related to improper professional practices continued to decrease in 2021 due to the strengthening of our ERC policy, training and monitoring program.

In 2021, we took steps to increase awareness about the SpeakUp program in certain markets and regions through targeted training and awareness sessions. We saw a 6% increase in SpeakUp-related reporting in the Europe, Middle East and Africa region.

Commitment to transparency and disclosure

Transparent reporting and disclosure play a key role in building trust with society. Novartis supports and applies laws and regulations that promote transparency and accountability. We benchmark the performance of our healthcare companies and healthcare professionals, health organizations and patient organizations, and related transfers of value. Novartis is keeping pace with these developments and is committed to meeting new transparency requirements. Please see here for further details.

For patient organizations, Novartis goes beyond the reporting requirements set by the EFPIA (European Federation of Pharmaceutical Industries and Associations) Code of Practice. We publish a global report covering transparency of our research and development activities, and transparency around relationships with healthcare professionals, healthcare organizations, and patient organizations.

Environmental targets

Our targets to be carbon neutral, plastic neutral and water sustainable are the central focus of our environmental sustainability strategy. In 2021, we reduced greenhouse gas emissions by 34% (Scope 1 and Scope 2) versus our 2016 baseline, making further progress after a 26% reduction in the previous year. We reduced water consumption by 40%, compared with 35% in 2020, and reduced waste disposal by 56%, compared with 38% in 2020 (all versus 2016 baseline figures).

In addition, we achieved our goal of eliminating 17 types of single-use plastics at 132 Novartis workplaces in scope (reducing overall single-use plastics by 32%). In 2021, in the US, all single-use plastic bottles in vending machines were replaced by recyclable aluminum, glass or biodegradable containers.

To reach our emissions targets, we are reducing our energy demand and accelerating our procurement of renewable electricity. We aim to use 100% renewable electricity in our own operations by 2025. In 2021, we signed a 10-year pan-European power purchase agreement with three solar and wind developers, adding 275 megawatts of green power generation capacity to the Spanish grid by 2023. In 2020, our own operations (Scope 1 and Scope 2) represented 9% of our overall carbon footprint (Scope 1, Scope 2 and Scope 3). To achieve net zero carbon emissions across our value chain will therefore require a coordinated approach with our suppliers. In 2021, we launched Novartis Green Expectations from Suppliers, which requires suppliers to map out their emissions, water consumption and waste footprint baselines; understand water quality and waste disposal standards; and report their progress. For more on how we approach environmental sustainability in our manufacturing operations and our supply chain, please see the section “Embrace operational excellence.”

Novartis environmental targets

<table>
<thead>
<tr>
<th>Year</th>
<th>Climate</th>
<th>Waste</th>
<th>Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>2025</td>
<td>Achieve carbon neutrality (Scope 1 and 2)</td>
<td>Eliminate PVC in packaging and tertiary packaging primary packaging when feasible</td>
<td>Reduce water consumption by half in all operations</td>
</tr>
<tr>
<td>2030</td>
<td>Achieve carbon neutrality across our value chain</td>
<td>Become plastic neutral</td>
<td>Become water neutral</td>
</tr>
<tr>
<td>2040</td>
<td>Greenhouse gas emissions (Scope 1 and 2) excluding offsets –34% vs. 2016 baseline</td>
<td>Green Expectations published being acknowledged by suppliers</td>
<td>Water consumption –40% vs. 2016 baseline</td>
</tr>
</tbody>
</table>

We have a responsibility, together with governments and civil society, to contribute solutions to global societal problems such as climate change and antimicrobial resistance. We can help drive positive change by harnessing the assets that make us successful in the first place: people, ideas and capital. For information on how we help combat the global problem of falsified medicines, please see the section “Embrace operational excellence.”

Our commitment to environmental sustainability is an important part of how we build trust with society and is aligned with our purpose. Unless we can operate sustainably, our efforts to improve and extend people’s lives may be compromised by our environmental impact.

In 2021, we further strengthened our environmental targets by committing to become net zero in terms of climate emissions across our value chain by 2040, building on our mid- and long-term goals to become carbon neutral, plastic neutral and water sustainable. More details on our performance in 2021 can be found in our climate-related financial disclosures (TCFD). Please see our corporate website for full details of our environmental sustainability strategy.

For information on how we help combat the global problem of falsified medicines, please see the section “Embrace operational excellence.”
In 2021, Novartis laboratories were certified by My Green Lab, a third-party framework that aims to improve environmental lab, and laboratory settings. More than 800 Novartis researchers across 24 laboratory sites in 11 countries took part in the certification process. Novartis sites use water for cleaning and cooling purposes, and as a solvent. To ensure the effective management of water quality, we go beyond regulatory requirements and ensure that our active pharmaceutical ingredients (APIs) are discharged at levels that are predicted to not cause harm to the environment.

By 2030, we will expand our current water scope to include all effluents from API and finished dosage form production within Novartis and relevant suppliers, and become water neutral. This means ensuring the amount of water Novartis withdraws from the local environment does not contribute to the depletion of local water reserves. It entails valuing the water needs of stakeholders and the ecosystem in an equitable way.

Further details of our progress in the area of water quality and quantity are included in the GWP Water Security Report, the AMR Industry Alliance report and the Access to Medicine Foundation AMR Benchmark Report.

Environment performance indicators

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>2021</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy use,</td>
<td>9.77</td>
<td>10.83</td>
<td>12.73</td>
</tr>
<tr>
<td>(100,000 sq)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GWP emissions,</td>
<td>2861</td>
<td>2809</td>
<td>3566</td>
</tr>
<tr>
<td>Scope 1, combustion and process</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GWP emissions,</td>
<td>860</td>
<td>913</td>
<td>1284</td>
</tr>
<tr>
<td>Scope 1, vehicles</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GWP emissions,</td>
<td>350.4</td>
<td>328.9</td>
<td>104.7</td>
</tr>
<tr>
<td>Scope 2, purchased energy (market based)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GWP emissions,</td>
<td>10.5</td>
<td>22.0</td>
<td>19.1</td>
</tr>
<tr>
<td>Scope 3, business travel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total GWP emissions,</td>
<td>647.0</td>
<td>717.1</td>
<td>886.8</td>
</tr>
<tr>
<td>Scope 1 and Scope 2 (excluding offsets)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GWP emissions,</td>
<td>-341.7</td>
<td>-25.6</td>
<td>29.6</td>
</tr>
<tr>
<td>Offsets</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GWP emissions intensity</td>
<td>6.2</td>
<td>6.6</td>
<td>6.6</td>
</tr>
<tr>
<td>(100,000 sq)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GWP emissions (Scope 1 and Scope 2 per million USD sales)</td>
<td>11.6</td>
<td>14.7</td>
<td>18.7</td>
</tr>
<tr>
<td>GWP emissions (Scope 1 and Scope 2 per FTE)</td>
<td>6.2</td>
<td>6.6</td>
<td>6.6</td>
</tr>
<tr>
<td>VOCs (1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Halogenated volatile organic compounds</td>
<td>4.5</td>
<td>11.6</td>
<td>16.1</td>
</tr>
<tr>
<td>Non-halogenated volatile organic compounds</td>
<td>310.0</td>
<td>443.0</td>
<td>456.8</td>
</tr>
<tr>
<td>Water (million m3)</td>
<td>588.4</td>
<td>646.8</td>
<td>683.6</td>
</tr>
<tr>
<td>Water withdrawal(2)</td>
<td>47.0</td>
<td>54.7</td>
<td>66.6</td>
</tr>
<tr>
<td>Water discharged directly to aquatic environment (cooling water)</td>
<td>58.6</td>
<td>66.6</td>
<td>75.6</td>
</tr>
<tr>
<td>Water consumption(3)</td>
<td>7.8</td>
<td>9.4</td>
<td>11.7</td>
</tr>
<tr>
<td>Waste (1001)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-hazardous waste recycled</td>
<td>93.9</td>
<td>99.9</td>
<td>97.7</td>
</tr>
<tr>
<td>Hazardous waste recycled</td>
<td>15.9</td>
<td>20.7</td>
<td>56.6</td>
</tr>
<tr>
<td>Total waste recycled</td>
<td>109.8</td>
<td>120.6</td>
<td>154.3</td>
</tr>
<tr>
<td>Hazardous waste not recycled</td>
<td>9.6</td>
<td>9.6</td>
<td>11.3</td>
</tr>
</tbody>
</table>

1. Other than water-related environmental data for the current year are based on audits for January-September and estimates for October-December. See footnote for details. 
2. 2021 data includes data from the Palafolls and Sandoz sites, as well as all countries where we own or operate facilities. 
3. Includes international and local sourcing. 

Sustainable medicines

Novartis is committed to embedding environmental sustainability into the design of new products, devices and packaging. We assess the environmental impact associated with all stages of a product’s life, from raw material extraction to processing, manufacturing, distribution, use and disposal. In 2020 and 2021, we conducted pilot life-cycle assessment studies for one of our respiratory dry powder inhaler devices, which showed that on average our product has a lower footprint compared to other products with similar published studies.

We also aim to create a culture where sustainability is embedded in the decision-making process. To this end, in 2021 we established a Green Ambassadors Network to communicate, sponsor and share sustainability initiatives between local and global teams. We also established a global network of colleagues collaborating on sustainability projects, and we offered new training modules to all employees on our environmental sustainability strategy.

Advancing our program to combat antimicrobial resistance

The WHO has declared antimicrobial resistance (AMR) – when antibiotics and other antimicrobial medicines become ineffective and infections become increasingly difficult or impossible to treat – as one of the major public health threats facing humanity.

Novartis supports the global scientific consensus that overuse, underuse and misuse of antimicrobial medicines all contribute to the spread of resistance, and that a balanced approach encompassing research, stewardship, access and innovation is needed.

Responsible manufacturing is a central part of our efforts. This includes minimizing antibiotic residues – especially into water bodies – and reducing waste. Please see the section “Enhancing environmental sustainability“ for more information.

We also continue to invest in new antibiotic manufacturing facilities. In 2021, the Sandra Division – which is the world’s largest volume producer of generic antibiotics – confirmed it would invest more than EUR 100 million in new manufacturing technology at its Kund site in Austria, the hub of the only remaining end-to-end antibiotic manufacturing network in Europe. Sandoz also announced a EUR 50 million investment in new production technology and increased manufacturing capacity at its Patillos site in Spain.

In addition, we contribute to multi-stakeholder solutions to combat AMR. For instance, through STELLA and Bio-Campus, we are developing solutions for enhanced AMR surveillance and recommendations for improved treatment guidelines to mitigate the risk of resistance. As a member of the AMR Industry Alliance, we are working with peer companies to roll out voluntary standards for responsible manufacturing, and with the Responsible Antibiotics Manufacturing Platform (RAMP) on responsible antibiotic manufacturing. We also extended our collaboration with AnaGenetics to further leverage molecular predictive antibiotic susceptibility testing to support physicians in selecting appropriate antibiotic therapies.

We support innovation and adaptive development in antibiotics. For example, Novartis is an investor in the AMR Action Fund together with other pharmaceutical companies, philanthropic organizations and development banks. The initiative aims to bring two to four new antibiotics to patients by 2030.
Responding to the call from UNICEF to combat childhood pneumonia, Sandoz developed pediatric amoxicillin, today recommended by the WHO as first-line treatment for childhood pneumonia.

Novartis was ranked fourth in the 2021 Antimicrobial Resistance Benchmark (from fifth in 2020), which evaluates the performance of the world’s 17 largest pharmaceutical companies in the fight against AMR. We are recognized for performing strongly in the areas of responsible manufacturing, appropriate access and stewardship.

Conducting animal research responsibly

Novartis is committed to using alternatives to animal research wherever feasible. Our global policy and standards define key principles, responsibilities and requirements governing animal research. All studies sponsored by Novartis, whether conducted internally or externally, must adhere to our policy and standards.

In 2021, all Novartis Institutes for BioMedical Research in-vivo research sites received accreditation from the Association for Assessment and Accreditation of Laboratory Animal Care International, underscoring our progress in conducting responsible animal research.

We adhere to the 3R principles: reduce the number of animals in studies, refine study methods to improve the animal’s experience, and replace animal studies with alternative options. In 2021, for example, researchers across three disease areas joined forces to profile neuroinflammation pathways in a model for amyotrophic lateral sclerosis (ALS), reducing the number of animals needed for study by 86%.

Similarly, researchers reduced the number of animals needed for a chimeric antigen receptor T-cell (CAR-T) study by developing a non-invasive method for measuring anti-tumor activity in the same animals over time. We also replaced the use of animals in a training program on key principles of surgery by deploying a new digital training platform.

Animal testing indicators¹

<table>
<thead>
<tr>
<th></th>
<th>2021</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>353,772</td>
<td>410,269</td>
<td>454,454</td>
</tr>
<tr>
<td>Rodents</td>
<td>295,811</td>
<td>312,332</td>
<td>355,451</td>
</tr>
<tr>
<td>% of total</td>
<td>83.64%</td>
<td>78.11%</td>
<td>78.21%</td>
</tr>
<tr>
<td>Zebrafish</td>
<td>88,229</td>
<td>97,596</td>
<td>97,551</td>
</tr>
<tr>
<td>% of total</td>
<td>24.94%</td>
<td>23.78%</td>
<td>21.47%</td>
</tr>
<tr>
<td>Other species</td>
<td>432</td>
<td>431</td>
<td>1,452</td>
</tr>
<tr>
<td>% of total</td>
<td>0.12%</td>
<td>0.11%</td>
<td>0.32%</td>
</tr>
</tbody>
</table>

¹ Data refer to animals needed for internally conducted animal studies for Novartis. For animals needed for both internally and externally conducted animal studies, please see here.
Our corporate governance approach

Strong corporate governance supports the effective management of our business and is the basis of trust in our company. Our corporate governance framework – along with our internal controls and policies – is intended to support sustainable financial performance and long-term value creation for shareholders, patients, employees and other stakeholders. For more detailed information on corporate governance at Novartis, please see our 2021 Annual Report.

In this section

- **Our corporate governance framework**
  - Our system of corporate governance is based on effective checks and balances. We have a three-tier structure: the Annual General Meeting, the Board of Directors, and our Executive Committee.

- **Ethics, risk and compliance**
  - We have an extensive ethics, risk and compliance approach that ensures clear alignment between risk management, policies and controls.

- **Internal Audit**
  - Our Internal Audit function assists the Board and Executive Committee by providing independent assurance and advice on key topics.
Our corporate governance framework

Our system of corporate governance is based on effective checks and balances. We have a three-tier structure: the Annual General Meeting of Shareholders (AGM), our Board of Directors, and the Executive Committee of Novartis (ECN).

- Shareholders approve the company’s financial statements and other disclosures, as well as compensation for members of our Board and ECN. They also approve the dividend and elect the company’s Chairman, Board members, Compensation Committee members, Independent Proxy and external auditor.
- Our Board of Directors holds the company’s ultimate decision-making authority, with the exception of decisions reserved for shareholders. The Board represents the interests of all stakeholders. The Board operates through five committees: Audit and Compliance, Compensation, Governance, Nomination and Corporate Responsibilities, Risk, and Science & Technology.
- The ECN, which reports to the Board and is led by the CEO, is responsible for operational management, including achieving the company’s financial and strategic objectives.

The external auditor provides their opinion on the compliance of Novartis Group consolidated statements and other financial information, the Compensation Report, internal controls over financial reporting, and sustainability reporting with applicable standards.

Board of Novartis

All members of the Board, including the Chairman, are independent and non-executive, as defined by our corporate governance rules. When choosing Board members, we aim for a balance of skills, expertise and experience. We believe a diverse Board, including in gender, age, nationality and ethnicity, supports long-term value creation. Most of our Board members have experience in leadership or management positions, half have direct experience in the healthcare or pharmaceutical industry.

Members of the Board are elected for one-year terms and may serve a maximum of 12 years, this term limit was approved by shareholders in 2021. The Board is subject to an annual assessment, which is carried out by an external consultant in every third year.

Board members also have regular training sessions. In 2021, these mostly virtual sessions included training on diversity and inclusion, our ethical commitments and our Professional Practices Policy, as well as insider trading, data privacy, and digital engagement for personal use. Please see page 91 for Board highlights in 2021.

Executive Committee of Novartis

The Board appoints the ECN members and delegates to them the overall responsibility for and oversight of the operational management of Novartis. The ECN currently has 12 members and is led by the CEO (see next page for details).

Novartis AG and Novartis shares

Novartis AG, the Group’s holding company, is a corporation organized under Swiss law with its registered office in Basel, Switzerland. Novartis shares are listed on the SIX Swiss Exchange (symbol: NVS) and the New York Stock Exchange (symbol: NVS). The latter are in the form of American depositary receipts representing Novartis American depositary shares.

Shareholder rights

Shareholders have the right to vote and to execute all other rights as granted under Swiss law and the Articles of Incorporation. All shares have equal voting rights and carry equal entitlements to dividends. The AGM usually takes place in late February or early March. Normally, shareholders can vote their shares by themselves or appoint another shareholder or the Independent Proxy to vote on their behalf. However, in accordance with Swiss legislation passed in response to the COVID-19 pandemic, it was not possible to physically attend our 2021 AGM, and shareholders could exercise their voting rights only through the Independent Proxy.

ESG governance

The Governance, Nomination and Corporate Responsibilities Committee (GNR&C) regularly reviews corporate governance principles and key governance documents against evolving best practice standards and new developments.

The ECN-level Trust & Reputation Committee, chaired by the CEO, meets every two months to oversee the company’s environmental, social and governance (ESG) performance. In addition, we have an ESG Management Office to further embed ESG priorities across our business. Stakeholder engagement is key to our ESG approach. We engage with our stakeholders through regular meetings, conferences and seminars, this engagement is a key part of building trust with society. For shareholders, we organize ESG investor days and issue a quarterly progress update. For more information, please see page 10.

In addition, we work through external initiatives on important health, industry and social issues. Please see “External initiatives and memberships of associations” in the appendix of this report.

Board highlights for 2021

During 2021, the Board of Directors met nine times, including both regular and ad hoc meetings. In response to the COVID-19 pandemic, the Board held virtual, hybrid and physical meetings, with participants joining in person when possible. In their discussions, the Board and committees covered a number of issues, including:

- Progress with the company’s strategy, including therapeutic areas and technology platforms, key geographic areas and the generics business
- Review of larger strategic considerations to drive sustainable growth, such as mergers and acquisitions
- Review of the Novartis ESG strategy
- A key strategy review for the US and China markets
- Longer-term Board succession planning and required profiles, including proposing one new Board member candidate to be elected at the 2022 AGM
- How Novartis is prepared to respond to cybersecurity incidents
- The annual Board self-evaluation
- Discussion and approval of the development of the Company’s investment in Roche Holding AG
- Initiation of a strategic review of Sandoz to maximize shareholder value
Our Board of Directors

Joerg Reinhardt, Ph.D.
Chairman
German

Enrico Vanni, Ph.D.
Vice Chairman, Lead Independent/ Director since January 1, 2021
Swiss

Nancy C. Andrews, M.D., Ph.D.
American/Swiss

Ton Buechner
Dutch/Swiss

Patrice Bula
Swiss

Elizabeth (Liz) Doherty
British/Irish

Ann Fudge
American

Bridgette Heller
American

Frans van Houten
Dutch

Simon Moroney, D.Phil.
German/New Zealand

Andreas von Planta, Ph.D.
Swiss

Charles L. Sawyers, M.D.
American

William T. Winters
British/American

For CVs of our Board members
www.novartis.com/about/board-directors

Our Executive Committee

Vasant (Vas) Narasimhan, M.D.
Chief Executive Officer
American

James (Jay) Bradner, M.D.
President of the Novartis Institutes for BioMedical Research (NIBR)
American

Karen L. Hale
Chief Legal Officer
American

Harry Kirsch
Chief Financial Officer
German/Swiss

Robert (Rob) Kowalski
Chief People & Organization Officer
American

Stefen Lang, Ph.D.
Global Head of Novartis Technical Operations (NTO)
German/Swiss

Klaus Moosmayer, Ph.D.
Chief Ethics, Risk & Compliance Officer
German

Richard Saynor
Chief Executive Officer of Sandoz
British

Susanne Schaffert, Ph.D.
President of Novartis Oncology
German

John Tsai, M.D.
Head of Global Drug Development and Chief Medical Officer
American

Mario-Franc Tschudin
President of Novartis Pharmaceuticals
Swiss

Robert Weltevreden
Head of Customer & Technology Solutions (CTS)
Dutch

For CVs of our ECN members and other members of senior management
www.novartis.com/ecn

1 Mr. von Planta will not stand for re-election at the 2023 AGM.
Ethics, risk and compliance

We have an extensive ethics, risk and compliance approach, comprising:

### Ethics
- Ethics (including our Code of Ethics)
- Human rights
- Ethical culture and impact

### Risk
- Enterprise risk and crisis management
- Enterprise policy and control management
- Third-party risk management
- Health safety and environment (HSE) governance

### Compliance
- Compliance management system
- SpeakUp Office (our whistleblower program)
- Centralized team for monitoring and remediation

This approach is overseen by our Ethics, Risk & Compliance (ERC) function. It ensures clear alignment between risk management, policies and controls. We have specific internal policies in place in areas such as data privacy, non-discrimination, anti-bribery, human rights and HSE, which help us maintain high standards of ethics and integrity across our business.

Central to our approach is the Novartis Code of Ethics, which comprises 23 commitments on topics such as human rights, drug safety, data use, and access to medicines. The code guides employees in daily decision-making and provides an ethical framework to our risk management approach. For more information on how we embed our Code of Ethics across the organization, see page 80.

Many of our policies and controls are based on international norms and standards, including the United Nations Global Compact, the OECD Guidelines for Multinational Enterprises, and the standards of the International Labor Organization. We regard ethics, compliance and good risk management as crucial to maintaining public trust.

Risk management

The Enterprise Risk Management (ERM) process at Novartis consists of a series of coordinated activities designed to identify risks, promote accountability and support balanced decision-making. Our objective is to prevent or minimize risks that may affect our business, while ensuring that we can still capture opportunities for growth.

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Regular workshops are held across the company to identify risks and possible mitigation measures. These are consolidated into the Novartis Risk Compass, which provides an overview of strategic, operational and emerging risks for use by senior management (see page 22).

The Chief Ethics, Risk & Compliance Officer is responsible for the overall risk management process at Novartis.

The ERC function oversees the company’s risk management and compliance functions, including risk-based companywide policy and internal control management, as well as crisis and business continuity management. The ERM, led by the CEO, reviews and endorses the risk portfolio.

The Board of Directors provides the highest layer of oversight. It focuses on the most significant risks, while the Board-level risk Committee reviews the entire risk portfolio and actions implemented by management. For further details on the Risk Committee and its activities, please see page 142 of our 2021 Annual Report.

In 2021, we integrated global governance of our HSE activities within ERC, merging it with our Business Continuity Management and Novartis Emergency Management teams to create a new function called Global HSE & Resilience. The goal is to reduce risks, increase resilience and generate further positive impact on our people, patients and planet.

Compliance

As part of our ERC approach, we have a comprehensive compliance management system to detect and prevent systemic misconduct. This system covers five principal risk areas: ethical dilemmas, bribery and corruption, third-party misconduct, professional practices, and conflicts of interest. Within our ERC function, we have a team responsible for monitoring and taking action to address any misconduct with internal units and third parties.

In 2021, the Novartis SpeakUp Office, which enables employees and external parties to raise concerns about potential misconduct while being protected against retaliation, was integrated into the ERC function to further align our efforts and embed our Code of Ethics across the organization (see page 83).

Internal Audit

Internal Audit assists the Board of Directors and the ECN in discharging their governance responsibilities by providing independent assurance and advice on the effectiveness, efficiency and adequacy of processes and controls that support Novartis in achieving its objectives, managing its major risks, and ensuring compliance with applicable policies, laws and regulations. The Internal Audit function executes the risk-based annual audit plan approved by the Board-level Audit and Compliance Committee (ACC) and reports the results to the audited units, the ECN and the ACC.

In 2021, our Internal Audit function carried out a total of 46 audits, ten internal reviews and 14 advisories – most conducted remotely due to the ongoing COVID-19 pandemic. These engagements covered the entire value chain of Novartis and key strategic and operational risks.

Internal Audit is part of Novartis Business Assurance & Advisory (NBA), an independent function that also comprises the Global Security function with its four pillars: falsified medicines, investigation, intelligence and executive protection. NBA plays an important role in supporting the risk and compliance process, and provides protection, insight and advice to the business and the ACC.

### 2021 Internal Audit activities and observations

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Recurring observations relate to:
- Data governance and management, oversight of digital initiatives
- Third-party management, including subcontracting oversight
- Design of certain commercial and R&D processes, and cross-functional collaboration between complex programs, such as Enterprise Resource Planning (ERP) implementation
- Patent support program, including monitoring of external service providers
Compensation Report summary

In 2021, we continued our transformation into a leading, focused medicines company powered by technology, leadership in research and development, world-class commercialization, global access and data science. Feedback from shareholder engagement prior to our last Annual General Meeting (AGM) suggested that shareholders were in agreement that our current compensation system is aligned with the company’s purpose, strategy and culture. No major changes are therefore proposed for 2022.

2021 changes to compensation system and disclosures

The year completes the first three-year performance cycle of the new Long-Term Performance Plan (LTPP), following the combination of the previous Long-Term Performance Plan (LTPP), as communicated in our 2018 Compensation Report. The combined plan focuses on four pillars of the company’s strategy: Oncology and Sandoz, Alcon, Sandoz and Promacta.

We continued to deliver innovation to patients in 2021 with 21 approvals, including Lepuvius (US, EU) and Scenovix (US, EU), and 34 submissions made across our top four markets. However, the year was not without setbacks, as some clinical trials of experimental compounds – including Relevodos for the treatment of cancer, AGZ885 (canakinumab) for kidney cancer, and CP2533 (socalmab) in kidney transplant patients – did not meet their primary goals.

In 2021, we reviewed our Compensation Report format with a view to increase its accessibility while maintaining its depth of disclosure. We chose to develop our “compensation at a glance” section to incorporate a more graphical illustration of the 2021 CEO pay performance metric.

Alignment with company strategy

Our strategy is to build a focused medicines company powered by technology, leadership in research and development, world-class commercialization, global access and data science. We foster a company culture that is inspired, curious and unbossed. We believe these elements drive continued innovation and will support the creation of value over the long term for our company, society and shareholders. To continue to align the compensation system with this strategy and to ensure Novartis is a high-performing organization, the Compensation Committee operates both a short-term Annual Incentive plan and a Long-Term Incentive (LTI) plan with a balanced set of measures and targets. The Board of Directors determines specific, measurable and time-bound performance measures for the Annual Incentive and LTI plans. The Compensation Committee has reviewed the existing compensation system and determined that it continues to support our strategy.

2021 performance highlights

2021 was a year of solid performance, with growth across sales, profits, margins and cash flow. Sales growth drivers were Entresto (USD 5.6 billion), Cosentyx (USD 4.7 billion), and Zolgensma (USD 1.4 billion), along with therapies like Kesimpta, Promacta/Relevodos, Kispgal and Jakson. Overall sales performance was on target, COVID-19 continued to impact parts of our business, specifically Oncology and Sandoz.

We progressed our efforts to deliver next-generation medicines while driving our environmental, social and governance (ESG) agenda. Pursuing new health equity initiatives in clinical trial diversity, advancing access to medicines, and using data and digital technologies in underserved regions in Africa, South America and Asia are examples of our long-term commitment to transform global health. More details on our ESG efforts are provided earlier in this report.

Performance against the incentive targets, combined with base salary and other benefits, pension, Alcon Keep Whole awards and dividend equivalents, resulted in 2021 total realized compensation for the CEO of CHF 112,727. This is a reduction of 11.8% compared to 2020. Overall, while the financial and operational targets were met or surpassed, some of the innovation targets were missed, which led to a reduction in long-term growth potential. This is reflected in a TSR performance below the peer group median. The reduced contribution of innovation and relative TSR to the 2019-2021 LTPP cycle were the main drivers of the lower total realized compensation in 2021 versus 2020. Full details of the 2019-2021 LTPP performance can be found in the Compensation Report of our 2021 Annual Report.

Executive Committee compensation governance

A summary of the compensation decision authorization levels within the parameters set by the AGM is shown below, along with an overview of the risk management principles.

Decision making authority

Board of Directors

Compensation Committee

Executive Committee compensation risk management principles

- Regress performance management process, with approval of targets and evaluation of performance for the CEO by the Board of Directors.
- Balances combinations of short-term and medium-term variable compensation elements.
- Values and behaviors are key component of the Annual Incentive and are embedded in our culture.
- Performance-based Long-Term Incentives for three-year cycles.
- All variable compensation is capped at 200% of target.
- Clawback and malus principles apply to all elements of variable compensation.
- Executive Committee compensation is aligned with the company’s purpose, strategy and culture. No major changes are therefore proposed for 2022.
- No clawback or payback on change of control clauses.
- Overage is aligned with the pay-for-performance principles.
2021 CEO pay for performance – outcomes

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<th>Target</th>
<th>Achievement versus target</th>
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<tr>
<td>Financial measures – 60% of Total Annual Incentive, comprising:</td>
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<td></td>
</tr>
<tr>
<td>Group net sales (cc) (30%)</td>
<td>USD 50 010 million</td>
<td>Met</td>
</tr>
<tr>
<td>Group operating income (cc) (30%)</td>
<td>USD 10 805 million</td>
<td>Above</td>
</tr>
<tr>
<td>Group free cash flow as a % of sales (cc) (20%)</td>
<td>24.9%</td>
<td>Above</td>
</tr>
<tr>
<td>Share of peers for Novartis Group (USD) (20%)</td>
<td>8.1%</td>
<td>Below</td>
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<tr>
<td>Overall assessment of Group financial targets in constant currencies</td>
<td></td>
<td>Met</td>
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<tr>
<td>Strategic objectives – 40% of Annual Incentive, comprising:</td>
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<td>Innovation (20%)</td>
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<td></td>
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<tr>
<td>Operational excellence (20%)</td>
<td>Above</td>
<td></td>
</tr>
<tr>
<td>Data and digital (20%)</td>
<td>Met</td>
<td></td>
</tr>
<tr>
<td>People and culture (including values and Behaviors) (25%)</td>
<td>Met</td>
<td></td>
</tr>
<tr>
<td>Building trust with society (including access to healthcare, reputation and other ESG topics) (25%)</td>
<td>Met</td>
<td></td>
</tr>
<tr>
<td>Overall assessment of strategic objectives</td>
<td>Met</td>
<td></td>
</tr>
<tr>
<td>Overall assessment of CEO balanced scorecard</td>
<td>Met</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL Annual Incentive:</strong></td>
<td>100% of target (payout range 0% – 200%)</td>
<td></td>
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2019-2021 Long-Term Incentives

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<th>Measure</th>
<th>Target</th>
<th>Achievement versus target</th>
</tr>
</thead>
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<tr>
<td>Net sales CAGR (25%)</td>
<td>4.3%</td>
<td>Above</td>
</tr>
<tr>
<td>Core operating income CAGR (25%)</td>
<td>7.0%</td>
<td>Above</td>
</tr>
<tr>
<td>Innovation (25%)</td>
<td></td>
<td>Above</td>
</tr>
<tr>
<td>Relative TSR (25%)</td>
<td></td>
<td>Below threshold</td>
</tr>
<tr>
<td><strong>TOTAL LTPP:</strong></td>
<td>107% of target (payout range 0% – 200%)</td>
<td></td>
</tr>
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2021 total realized compensation for the CEO

The 2021 total realized compensation for the CEO was CHF 11 224 727. It includes payouts of the Annual Incentive and LTPP based on actual performance assessed for cycles concluding in 2021.

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<th>Variable pay – performance-related</th>
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<tr>
<td>Vasant Narasimhan</td>
<td></td>
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<tr>
<td>Annual base salary</td>
<td>1 769 200</td>
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<tr>
<td>Pension and other benefits</td>
<td>442 132</td>
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<tr>
<td>2021 Annual incentives</td>
<td>2 057 287</td>
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<tr>
<td>LTPP 2019-2027</td>
<td>6 365 138</td>
</tr>
<tr>
<td>Total realized compensation</td>
<td>11 224 727</td>
</tr>
</tbody>
</table>

2021 Board of Directors compensation

All fees to Board members are delivered at least 50% in equity and the remainder in cash. Board members receive no variable or performance-based compensation, no share options, and no additional fees for attending meetings. Board members do not receive any company pension or insurance benefits.

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<td>3 800</td>
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<td>Board membership</td>
<td>289</td>
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<td>Vice Chairman</td>
<td>50</td>
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<td>Chair of the Audit and Compliance Committee</td>
<td>80</td>
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<tr>
<td>Chair of the Compensation Committee</td>
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<td>Governance, Nomination and Corporate Responsibilities Committees</td>
<td>70</td>
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<tr>
<td>Science &amp; Technology Committee</td>
<td>70</td>
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<td>Risk Committees</td>
<td>40</td>
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<tr>
<td>Membership of the Audit and Compliance Committee</td>
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<td>Membership of the following committees:</td>
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<tr>
<td>Compensation Committee</td>
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<td>Governance, Nomination and Corporate Responsibilities Committees</td>
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<tr>
<td>Science &amp; Technology Committee</td>
<td>40</td>
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<tr>
<td>Risk Committees</td>
<td>40</td>
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<tr>
<td>2 No additional compensation was paid for the Lead Independent Director role.</td>
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Total actual compensation earned by Board members in the 2021 financial year was CHF 3 804 560 for the Chairman of the Board and CHF 4 764 354 for the other members of the Board.

Shareholder votes on compensation at the 2022 AGM

In line with our Articles of Incorporation, at the 2022 AGM, shareholders will be asked to approve the maximum aggregate amount of compensation for the members of the Executive Committee of CHF 91 million. This is the same as the amount requested last year. For the Board of Directors, the maximum aggregate amount proposed to shareholders is CHF 8.6 million, which is in line with the prior term. This amount includes an annual fixed fee of CHF 20 000 for the Lead Independent Director role. Full details on compensation for the CEO, other Executive Committee members and Board members can be found in the Compensation Report of our 2021 Annual Report, and in the compensation votes at the 2022 AGM.
Photo: In Ivrea, Italy, production technician Paolo Ballurio takes a sample of Lutathera, a targeted radioligand therapy for certain rare tumors found in the digestive tract, for quality analysis. Lutathera vials are contained inside the green lead flasks.
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1 Please note that the “HSE Supplement” refers to the Novartis Environmental Sustainability and Occupational Health and Safety Data Supplement published on Novartis.com. This document will be updated with actuals and published in the second half of 2022.
Sustainability Accounting Standards Board (SASB) Index

Healthcare sector

Biotechnology and pharmaceutical industry

The Novartis Sustainability Accounting Standards Board (SASB) Index aligns with the biotechnology and pharmaceutical industry guidelines. Data and information disclosed are sourced from the Novartis 2021 corporate reporting suite (Novartis in Society Integrated Report and Annual Report (Form 20-F)), our corporate website, and Novartis public policies and positions.

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Task Force on Climate-related Financial Disclosures (TCFD)

Novartis committed in 2020 to fully support the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) and included a qualitative disclosure in the Novartis in Society Report that year. This is our first quantitative TCFD disclosure, building on our qualitative disclosures in 2019 and 2020. We aim to provide iterative qualitative and quantitative disclosures on climate-related topics on a recurring basis as we incorporate the TCFD recommendations into our business, enterprise risk management and strategy development and so become more mature in how we create actionable information on climate risks and opportunities.

Governance

Board oversight
Nominating and Corporate Responsibilities Committee of the Novartis Board of Directors receives regular updates on climate risks and opportunities as part of its oversight of environmental, social and governance (ESG) topics. These are scheduled as written updates semi-annually, with verbal updates in alternating quarters.

Management oversight
Under the leadership of the CEO, the Executive Committee of Novartis (ECN) is responsible for approving the environmental sustainability strategy of Novartis, including climate, water, and waste targets. The Chief Sustainability Officer provides guidance and portfolio management support that will support the implementation of our strategy. The primary steering committee for this strategy is the Environmental Sustainability Strategy Implementation Steering Committee (ESSIS), while the Trust & Reputation Committee will continue to oversee its delivery.

Relevant Disclosures

TCFD recommendations (governance) Novartis disclosure
a) Describe the board’s oversight of climate-related risks and opportunities. Refer to CDP question C1.1.
b) Describe management’s role in assessing and managing climate-related risks and opportunities. Refer to CDP questions C1.1 and C1.2.

Strategy

Climate change will have a major impact on our business, including our operations, strategy, financial planning and value chain, as well as on stakeholders such as patients. For example, climate change is already causing extreme heat and poor air quality in some areas, which threatens to exacerbate pre-existing health conditions such as heart failure, lung cancer and respiratory diseases. In addition, an increasing need for energy and water, in combination with temperature increase in many areas, can aggravate the spread of pests and diseases such as dengue, malaria, Chagas disease and leishmaniasis. Novartis is working to understand and anticipate these risks so we can continue to discover, develop and deliver life-saving medicines.

Novartis has been active in integrating climate and environmental considerations into our financial planning. For example, we applied a threshold of USD 200 million for capital expenditure projects requiring an environmental sustainability review. We also operate a USD 100 per ton shadow carbon price to help inform our strategic decision-making and budget planning with respect to carbon impacts. In 2020 and 2021, climate change met the financial materiality threshold for inclusion in our core Annual Report and in our ERM process as part of a broader strategic risk focused on ESG topics.

Novartis committed to fully support the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) and included a qualitative disclosure in the Novartis in Society Report that year. This is our first quantitative TCFD disclosure, building on our qualitative disclosure and responses to the CDP climate questionnaire in previous years. We aim to provide iterative qualitative and quantitative disclosures on climate-related topics on a recurring basis as we incorporate the TCFD recommendations into our business, enterprise risk management and strategy development and so become more mature in how we create actionable information on climate risks and opportunities.

Novartis launched a new environmental sustainability strategy in 2021. Per the revised governance, under the leadership of the Chief Sustainability Officer, the Environmental Sustainability Office will provide the leadership, subject matter expertise and portfolio management support that will support the implementation of our strategy. The primary steering committee for this strategy is the Environmental Sustainability Strategy Implementation Steering Committee (ESSIS), while the Trust & Reputation Committee will continue to oversee its delivery.

Novartis conducted a long-term sensitivity and stress-testing analysis for climate and water in collaboration with the Massachusetts Institute of Technology (MIT). Joint Program on the Science and Policy of Global Change as the first-generation climate risk analysis. The analysis was based on a scenario that aligns to the Representative Concentration Pathway (RCP) 6.0 model for temperature change, which assumes that climate policy remains constant in the wake of the Paris Accord after 2030, and that significant technology advancements in low-carbon emissions technologies take time to scale. The scenario analysis was a multiphase project which included a detailed climate risk analysis of a key site, as well as an initial global assessment of 70 sites that are critical for the production and research parts of the company. The scenarios used 2030, 2050 and 2070 as timelines.

During 2021, Novartis initiated a second round of climate scenario analysis to define physical and transition risks across its operations and supply chain. The physical risk analysis was based on a comparison of outcomes aligned to RCP 4.5 and RCP 8.5 supporting the 2050. Physical risk was assessed at 23 sites to include business critical operating sites, major research and development locations, and other major support sites. The transition risk analysis related to the transition to a low-carbon economy was based on a 1.5-degree outcome and a 3.0-degree outcome, and was run over four timeframes (2025, 2030, 2040 and 2050). Initial risks and opportunities were assessed at the enterprise level.

The ongoing climate scenario analysis is being coordinated with Novartis employees in production, procurement, facilities, finance, risk and business continuity, with the aim of supporting the existing ERM process as well as business decisions in areas such as utilities procurement, physical adaptation, and potential future changes in therapeutic research and development.

In 2020 and into 2021, we conducted a further analysis with MIT of water scarcity risks in three critical water basins in China, Europe and South Africa. The analysis is being used to plan for investments in water stewardship and to achieve our water neutrality target.

Progress

The following Novartis accomplishments in 2021 are relevant to the TCFD recommendations:

• Novartis conducted environmental life cycle analysis (LCA) pilot studies for its respiratory dry powder inhaler (DPI) devices across six environmental categories in accordance with the Greenhouse Gas (GHG) Protocol’s sector guidance for pharmaceuticals and medical devices. The study suggested that the Novartis DPIs have, on average, a carbon footprint of less than half compared to other published DPI LCA – with classical pressurized metered dose inhalers (pMDIs) using HFC-134a as propellant gas displaying a higher carbon footprint of up to 50 times than the Novartis DPI. Including carbon impact and pricing into early-stage development of drugs can drive investment optimization and reduce carbon emissions during the scale-up of new products.

• Following the success of DPI devices, we launched a new sustainability study on Coartem to make it our next and our first large-scale carbon-neutral project.

• We reached the milestone of 1 billion treatments of our artemisinin-based combination therapy (ACT) delivered since 1999, with more than 90% supplied without profit. More than 450 million were a pediatric formulation developed jointly with Medicines for Malaria Venture. The World Health Organization estimates that adopting ACTs as a first-line treatment for malaria, together with prevention efforts and better diagnostics, has saved 7.6 million lives since 2000.

• Construction started for new generation capacity as part of our pan-European virtual power purchase agreement. It will deliver 100% renewable electricity and carbon neutrality for priced electricity in Novartis European operations by 2022 through newly built solar and wind projects in Spain.

• Novartis partnered with One Young World to organize and sponsor Operation Planetary Health to raise awareness about environmental sustainability and to create a movement to accelerate change within the organization. The theme of “planetary health” aligned with and built on Novartis environmental sustainability targets and strategy. The event aimed to inspire employees to address specific environmental challenges with actionable and sustainable solutions. Our focus was on carbon neutrality (Scope 3 emissions; emissions in our value/supply chain) and the circular economy.

• Our focus was on carbon neutrality (Scope 3 emissions; emissions in our value/supply chain) and the circular economy.

• We developed the Novartis Green Expectations from Suppliers document to outline what is needed from our suppliers and support them on that journey. Using the ACCA model, we track and measure suppliers’ journey toward carbon neutrality. The four-stage ACCA framework includes:

  1. Awareness building
  2. Commitment to action plans to meet environmental sustainability targets
  3. Definition of action plans to meet environmental sustainability targets
  4. Development of action plans to meet environmental sustainability targets

• The Green Expectations framework was issued to 43 suppliers in 2021. Our Green Supplier Summit complemented the Green Expectations initiative, with 88% of participating suppliers acknowledging receipt. We are engaging our suppliers in dialogue, and this will be underpinned with concrete tools and mechanisms to facilitate their journey as much as possible. The breadth of this engagement – approximately 36 000 suppliers – means the process needs time to yield significant results, particularly among suppliers with whom we do not have direct interaction.

• In 2021, Novartis joined the 100-plus company EV100 initiative, demonstrating our commitment to transition our fleet of electric vehicles (EVs). Novartis plans to reduce vehicle fleet emissions by over 63% by 2025, and 94% by 2030. In 2021, implementation began in 30 countries, impacting 18,000 of 26,000 vehicles in the Novartis fleet.
Novartis has a goal to be net zero carbon across the entire value chain (Scopes 1, 2 and 3) by 2040. Novartis has an approved 1.5°C Science Based Target for 35% absolute emissions reductions across Scopes 1, 2 and 3.

In 2021, Novartis reduced greenhouse gas emissions by 34% compared to our 2016 baseline. A more robust tracking system is in place to enable comparability of calculations and data across years. Currently, we can account for over 90% of our Scope 3 emissions.

In 2021, Novartis supported the development of a watershed project in the Telangana, India, region that will address the long-term challenge of water availability in water-stressed areas. The goal is to help local communities in the long run by increasing water availability, providing additional and safe drinking water, supporting agricultural best practice, building personal hygiene structures for schoolchildren, and contributing to the local ecosystems. This will serve as a pilot to also examine how Novartis can most successfully contribute to water security in water-stressed regions of the world where we may have water-intensive production operations.

Novartis is potentially exposed to physical risks from varying extreme weather events such as hurricanes, tornadoes, floods, or any other event that may result from the impact of climate change on the environment. For example, some of our production facilities are located in places that, because of increasingly violent weather events, sea level rise, or both, are at a higher risk of experiencing a disruption to Novartis operations. Reasonable best and worst risk exposures in 2030 range from USD 80 million to USD 112 million, and in 2050 range from USD 151 million to USD 163 million.

We also joined RE100 in 2021, a global initiative bringing together the world’s most influential businesses committed to 100% renewable electricity. Our purchase power agreements with renewable power developers, both existing and in the commissioning phase, are a key vehicle to us achieving our target 100% renewable energy in the US, Canada and Europe.

Novartis has realized by Environmental Resources Management and that these numbers might change significantly in the future. Further work is already underway and will be completed in 2022 to provide greater clarity on physical and transition risks upstream and downstream in our supply chain, and on risks to our core business related to loss of biodiversity and the burgeoning impact of climate change on human health.

Relevant disclosures:
- Novartis disclosures
- CDP questions C1.1, C1.2, C1.3, C1.4, C1.5, C1.6.
- C2.1a, C2.3, C2.4a, C3.1.
- C4.1, C4.1a, C4.1b.

Risk management

Novartis integrates risk and strategy issues in a cross-functionalERMprocess. All risks are consolidated in a framework called the Novartis Risk Company, which enables senior management, the E&I and the Novartis Board of Directors to focus on key risks and to align the company strategy to our risk exposure. For more information on how we identify, assess and manage our risks, please see pages 22-25.

During 2021, Novartis initiated a second round of climate scenario analysis to define physical and transition risks across its operations and supply chain. All of the detailed calculations were provided by an expert third party, Environmental Resources Management, using initial data and a process that both data granularity and the understanding of company-specific risks will increase over time, Environmental Resources Management and Novartis have estimated risk exposure and management costs associated with these limited initial risks as:
Appendix: external initiatives and membership of associations

GRI 102-12: External initiatives

- Member of Access Accelerated, a global initiative to advance access to treatment and care for chronic diseases in lower-income countries.
- Joined Global Chagas Disease Coalition
- Signatory to the London Declaration on Neglected Tropical Diseases
- Member of the Swiss Alliance against Neglected Tropical Diseases
- Joined the AMR Industry Alliance
- Joined the AMR Action Fund, an industry initiative
- Joined the Responsible Antibiotics Manufacturing Platform
- Joined Business Refugee Action Network
- Founding member of the Value Balancing Alliance, which aims to develop a standard model for measuring and disclosing the environmental, human, social and financial value a company provides
- Member of the Impact Valuation Roundtable
- Joined the United Nations Equal Pay International Coalition (EPIC)
- Signatory to the Women’s Empowerment Principles launched by the UN Global Compact and the UN Development Fund for Women (UNIFEM)
- As a signatory to the UN Global Compact, the ILO’s Declaration on Fundamental Principles and Rights at Work, the Declaration on Environment and Development, the UN Convention Against Corruption, the Organization for Economic Cooperation and Development (OECD) Guidelines for Multinational Enterprises, the OECD Convention on Combating Bribery of Foreign Public Officials, the UN Guiding Principles on Business and Human Rights
- Signatory to the World Business Council for Sustainable Development’s CEO Guide to Human Rights
- Support for the United Nations’ workplace standards
- Support for the UN Global Compact’s CEO Water Mandate
- Joined PREMIER (Prioritization and Risk Evaluation of Medicines in the Environment)
- Voluntarily agreed to reduce greenhouse gas (GHG) emissions in line with the Paris Agreement and subsequent international target commitments, such as those of the European Union (GHG emissions are reported according to the GHG Protocol)
- Joining the UN Global Compact’s World Business Council for Sustainable Development (WBCSD) initiative Caring for Climate. The Business Leadership Platform, also fulfilling the Business Leadership Criteria on Carbon Pricing
- Clarity and disposal of waste according to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal
- Member of the Carbon Disclosure Project. Water Disclosure Project and Supply Chain Disclosure Project
- Signatory to WBCSD’s Manifesto for Energy Efficiency in Buildings
- Signatory to the Guiding Principles on Access to Healthcare (GPHRM), which frame the pharmaceutical industry’s approach to expanding access to quality healthcare globally
- Strategic Partner of the World Economic Forum (WEF)
- Joined the WEF Alliance of CEO Climate Leaders

GRI 102-13: Membership of associations

Novartis Group companies are members of various chambers of commerce, sustainability industry associations and pharmaceutical industry associations.

We work closely with trade associations, which create opportunities to raise industry standards and exchange best practices.

Novartis is a member of:
- Interpharma, the trade association that represents the European pharmaceutical industry associations.
- BI, the trade association representing the biotechnology industry in Europe.
- BusinessEurope, representing European business associations.
- EuropaBio, representing the European biotechnology companies.
- EFPIA, representing the European pharmaceutical industry associations.
- GPAH, which frames the pharmaceutical industry’s approach to expanding access to quality healthcare globally
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Category | Product | Objectives | Progress to date
--- | --- | --- | ---
**Pharma** | Pamra | Extensive treatment of epithelial ovarian cancer | Phase III clinical trial that started recruitment in January 2021
**Entrecto** | Conduct a Phase III clinical trial to assess the efficacy and safety of Entrecto in people with metastatic disease due to chronic Chagas cardiomyopathy | The study is still enrolling in Argentina, Brazil, Colombia and Mexico due to the COVID-19 situation
**Hydroxyurea** | Develop paediatric formulation for treatment of sickle cell disease | The drug was approved in Ghana in September and the launch is expected by February 2022. It was submitted for registration in India, Tanzania, and Pakistan July
**Coartem** | Develop paediatric formulation for infants 1-kg body weight | Enrollment for the cohort is complete and the initial trial in 2021 in collaboration with the WHO/Rhodesia is completed.
**Tamoxifen** | Conduct a study to understand how African-specific CYP19A1 polymorphism impacts estrogen metabolism and a large number of clinically important drugs - potentially affects how the drug metabolites in the body | Enrollment is complete and the study is on-back. The final study report is planned for release Q2 2022

**Expenditure of clinical use of existing medicines into new indications and populations**

<table>
<thead>
<tr>
<th>Country</th>
<th>Total %</th>
<th>Spend indirect %</th>
<th>Indirect spend</th>
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<th>Spend indirect %</th>
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<tr>
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<tr>
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<td>245</td>
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<td>0.91</td>
<td>0.64</td>
<td>414</td>
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**Appendix: Selected adaptive development projects**

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To the Board of Directors of Novartis AG, Basel

We have been engaged by the Board of Directors of Novartis AG to perform assurance procedures to provide limited assurance on the ESG performance indicators included within the 2021 Novartis in Society Integrated Report of Novartis AG and its consolidated subsidiaries (Novartis Group) for the period ended December 31, 2021.

SCOPE AND SUBJECT MATTER

Our limited assurance engagement focused on the following 2021 ESG performance indicators, data and information disclosed in the Novartis in Society Integrated Report 2021 of the Novartis Group for the year ended December 31, 2021:

- The "Supply chain performance indicators" on page 52, the "People performance indicators" on page 66 (excluding those metrics listed below), the "Access to healthcare performance indicators" on page 72, the "Patients reached with emerging market brands" on page 73, the "Donations" on page 75, the "Patients reached through support programs" on page 75, the "Ethical business practices performance indicators" on page 85, and the "Environmental performance indicators" on page 84.
- The materiality determination and stakeholder engagement process of Novartis at the Group level according to the requirements of the GRI Sustainability Reporting Standards (GRI Standards), published by the Global Reporting Initiative (GRI) and disclosed in the "Global Materiality Assessment 2021 Results Report" linked on page 13 and as applied to the Novartis in Society Integrated Report 2021.
- Reporting processes and related controls in relation to data aggregation of the select ESG indicators.

The following ESG "People performance indicators" on page 66 are not subject to this Assurance Report. Consequently, we do not express any conclusion on these ESG performance indicators:

- The following indicators within the subheading "Health and safety":
  - The "Fatalities"
- The following indicators within the subheading "Gender indicators":
  - The "Median tenure in years: female/male"
- The following indicators within the subheading "Gender representation (% female / % male)"
  - The "Overall headcount"
  - The "Promotions"
  - The "Overall turnover"
  - The "Entry-level positions (job levels 6,7,8)"
  - The "Revenue-producing roles"
  - The "IT roles (IT job family)"
  - The "Engineering roles (R&D + TechOps job families)"
- All indicators within the subheading "Gender representation by contract type (female/male)"
- All indicators within the subheading "Number of employees by region, by contract type (permanent/temporary)"

CRITERIA

The ESG performance indicators disclosed within the Novartis in Society Integrated Report 2021 were prepared by the Board of Directors of Novartis AG (the "company") based on the following criteria:

- GRI Standards
- Novartis Corporate Responsibility Guideline
- Novartis Code of Ethics
- Novartis procedures for gathering, collecting, and aggregating data for the ESG performance indicators
- The terms and conditions as outlined within the "Final Listing Prospectus dated 21 September 2020" for the "Patients reached with strategic innovative therapies" and "Patients reached through flagship programs" ESG performance indicators

BOARD OF DIRECTORS' RESPONSIBILITY

The Board of Directors of the company is responsible for preparing the Novartis in Society Integrated Report in accordance with the applicable criteria. This responsibility includes the design, implementation and maintenance of the internal control system related to the preparation of the Novartis in Society Integrated Report that are free from material misstatement, whether due to fraud or error. Furthermore, the Board of Directors is responsible for the selection and application of the criteria and adequate record keeping.

We performed the following procedures, among others:

- Review of application of the Novartis Corporate Responsibility Guideline
- Interviewing personnel responsible for internal reporting and data collection
- Performing tests on a sample basis of evidence supporting selected ESG data concerning completeness, accuracy, adequacy, and consistency
- Inspecting relevant documentation on a sample basis, including Novartis ESG policies, management reporting structures and documentation
- Review of the management reporting processes for ESG reporting and assessing the consolidation process of data at Novartis Group level and the related controls
- Inspecting the principles of the Novartis materiality assessment process providing the basis for the adherence to the GRI reporting requirements, addressing the soundness of the methodology, the identification process, the determination of the impacted stakeholders, as well as the prioritization based on the assessed impact of Novartis
- We have not carried out any work on data other than outlined in the "Scope and subject matter" section as defined above.

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our conclusion.

CONCLUSION

Based on the work we performed, nothing has come to our attention that would cause us to believe that the ESG performance indicators outlined within the "Scope and subject matter" section above of Novartis AG for the period ended December 31, 2021 are not prepared, in all material aspects, in accordance with the criteria as outlined within the "Criteria" section above.

INHERENT LIMITATIONS

The accuracy and completeness of the ESG performance indicators outlined within the "Scope and subject matter" section above are subject to inherent limitations given their nature and methods for determining, calculating and estimating such data. Our Assurance Report should therefore be read in connection with the criteria as outlined within the "Criteria" section above.

PricewaterhouseCoopers AG
Kelvin Muller
Claudia Benz
Basel, February 1, 2022

The maintenance and integrity of Novartis AG's website is the responsibility of the Board of Directors and Management. the work carried out by PricewaterhouseCoopers AG does not make consideration of these matters and accordingly, PricewaterhouseCoopers AG accepts no responsibility for any changes that may have occurred to the figures or criteria as published on Novartis AG's website.
Novartis annual reporting suite

Annual Report and US Securities & Exchange Commission Form 20-F

These reports, filed with the SIX Swiss Exchange in Switzerland and the Securities and Exchange Commission in the US, provide a comprehensive overview of Novartis, including our company structure, corporate governance and compensation practices. They also reflect our performance, accompanied by audited annual financial statements.

www.novartis.com/reportingsuite

Novartis in Society Integrated Report

The Novartis in Society Integrated Report covers our business, strategy and performance. It highlights progress against our five strategic priorities and describes how we create value for diverse stakeholders. A digital and interactive version can be accessed through the link below.

www.reporting.novartis.com

Disclaimer

These materials contain forward-looking statements within the meaning of the United States Private Securities Litigation Reform Act of 1995, and generally can be identified by words such as “anticipate,” “believe,” “expect,” “future,” “intend,” “may,” “might,” “plan,” “project,” “predict,” “should,” “will,” “would,” “estimate,” “potential,” “strategy,” “target,” “opportunity,” or similar expressions, or by express or implied discussions regarding future new product launches or product development or growth. In any such forward-looking statements, the risks and uncertainties that could cause actual results to differ materially from those projected, anticipated or implied include those discussed in Novartis’ annual report on Form 20-F filed with the US Securities and Exchange Commission, as well as current reports on Form 6-K filed or to be filed with the US Securities and Exchange Commission, or any other reports or statements issued or made by the company. Any forward-looking statements in these materials are based on current expectations and speak only as of their dates. If any forward-looking statements are made in these materials, we do not undertake to update any forward-looking statements, which are not promises and reflect current views or expectations about future events as of the dates of these materials. We do not assume any obligation to update any information contained in these materials, except as required by law.

All product and service names mentioned in these materials are the property of their respective owners, and the use of any such name in these materials is for identification purposes only and does not imply endorsement or otherwise.

The use of a ™ or the registered trademark symbol ® in combination with a brand name is a normal practice to indicate a third-party brand.

The business policy of Novartis takes into account the OECD’s Guidelines for Multinational Enterprises, with their recommendations on the disclosure of information to promote transparency in multinational enterprises. These guidelines are available at http://www.oecd.org.

All registered trademarks are the property of their respective owners. The use of any trademark is for identification purposes only and does not indicate endorsement by or affiliation with the trademark owner.

Photo (Image 610x458 to 657x475)

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