Novartis in Switzerland
Novartis in der Schweiz
Novartis en Suisse
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Dear reader,

Rarely have we experienced a year so extraordinary as the one that has just ended.

Across the world, the dramatic developments in the wake of the COVID-19 pandemic were a test of endurance both for society as a whole and for our economic and healthcare systems: 2020 was a year of dissent and empathy, impotence and rapid action, isolation and solidarity.

With so many forces working in opposition to one another, many of us justifiably craved stability and continuity. This is why we are thankful that our employees were able to quickly and easily adapt to working from home, with our modern work culture resilient enough to offer security and continuity throughout the year. As a company, we were able to weather the crisis well. The past year also reminded us of how invaluable medicine, ongoing research and scientific facts are – this is what allowed us to continue to provide sound medical care for patients around the world while developing key tools to help combat the pandemic. In this context, Novartis announced at the beginning of this year that it would provide production capacity in Switzerland in order to boost the global COVID-19 vaccine supply.

2021 is more than just the year in which Novartis is celebrating its 25th anniversary – it is also 12 months in which it is up to us to help ensure long-term continuity and stability in Switzerland. Our successful economy, based as it is on exports, is a key pillar of prosperity in our country and continues to be anchored around international cooperation. Ensuring unobstructed access to global markets and establishing more points of access in the future, especially within the EU, is critical for a buoyant economy. We are also set to vote on a series of issues relating to the environment and the climate in Switzerland in 2021 – topics that will be instrumental for sustainability in our country. Novartis wishes to start setting benchmarks right away: we are aiming to make our operations neutral in terms of CO2, plastic and water by 2030, and we intend to extend this goal of becoming carbon neutral to our supply chain, too.

We hope you enjoy your reading experience – stay healthy!

Best regards,

The Novartis Executive Committee in Switzerland

Management of the Novartis units in Switzerland (top to bottom):
Matthias Leuenberger, Country President of Novartis Switzerland
Silvia Schweickart, CEO of Novartis Pharma Schweiz AG
Vincent Gruntz, General Manager Oncology, Novartis Pharma Schweiz AG
Jan Tangermann, CEO of Sandoz Switzerland
Alice Huisman, CEO of Novartis Gene Therapies Switzerland
What drives us

We reimagine medicine to improve and extend people’s lives. We use innovative science and the latest 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. We also aim to reward those who invest their money, time and ideas in our company.
Engaging patients in medicines development creates value for Health Care Systems. Systematically embedding the patient perspective early in medicine development improves the likelihood of getting drugs to market by 19%\textsuperscript{1}. The patient community increasingly expects to be engaged in medicines development. In 2018 we launched our Commitment to Patients and Caregivers, our ambition to embed the patient perspective more systematically and consistently in the life cycle of medicine. It is the outcome of a dialog with over 40 patient organizations representing more than 200 million patients around the world.

\textsuperscript{1} The Innovation Imperative, The Future of Drug Development, The Economist Intelligence Unit Limited, 2018
An essential and unique part of this commitment is to annually report on the progress made. We published the baseline data in 2018 and are now reporting our 2020 progress along the four pillars of our commitment:

- **Respecting and understanding the patient community perspective**

- **Conducting responsible clinical trials**

- **Expanding access to our medicines**

- **Recognizing the importance of transparency and reporting**

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**IN ACCESS TO MEDICINES INDEX**

- **67%**
  - Of early research programs in general medicines obtained patient insights before first in-human trials (healthy volunteers); piloted patient panels for five Proof of Concept indications

- **9,998**
  - Patients reached through managed access programs
  - 94% of requests approved for 64 compounds in 82 countries – providing pre-approval access to Novartis medicines; more than 14,000 patients are currently on treatment via MAPs

- **44**
  - Clinical development programs comprising 69 clinical trials, had a patient engagement component to obtain the patient perspective on the design and/or conduct of clinical trials

- **66 million**
  - Patients reached through access activities

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1. Managed Access Programs, Novartis
2. About 4,500 patients with COVID-19 related conditions received medicines in response to unsolicited Managed Access requests from healthcare institutions and governments
3. Patient engagement component defined as interaction with patients to seek input, advice or guidance
Our business model

We focus on innovative patent-protected medicines and generics. Both segments have global reach and strong customer relations. Research and development (R&D) forms the core of our business and is a crucial part of our strategy. At the global level, our functional organizations help to increase efficiency and to promote operational excellence.

Our divisions

Innovative Medicines comprises two business units:

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

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

Sandoz is a global leader in the production of generic pharmaceuticals and biosimilars. The company contributes to society by meeting increasing healthcare needs, promoting ground-breaking, innovative approaches and offering people all over the world access to high-quality medicine.

Research and development forms the core of our business.
Research and development (R&D) is divided into two organizations:

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.

Global Drug Development (GDD) 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 support services across our organization, helping drive efficiency, simplification, standardization and quality.

Corporate functions support the enterprise in specific areas of expertise, including finance, human resources, legal, communications, and ethics, risk and compliance.
Strong Swiss roots

Novartis is a global company with a strong commitment to its Swiss roots, which stretch back over 250 years.

Innovation and quality have always been an essential part of our company history, which our three predecessor companies also vouched for: Geigy started in Basel in the 18th century by selling chemicals and dyes, then Ciba was set up in 1859 focusing on the production of dyes. In 1886, the chemical company Sandoz was also founded in Basel. In 1996, the by then merged Ciba-Geigy merged with Sandoz to form Novartis.

Novartis is reimagining medicine to improve and extend people's lives. As a leading global medicines company, we use innovative science and digital technologies to create transformative treatments in areas of great medical need. Worldwide, around 110,000 people from 142 nationalities work at Novartis.

Importance of Switzerland

Switzerland is one of the most important research and production hubs of Novartis. The approximately 11,900 employees who work here make an important contribution to the success of the pharmaceutical industry, which has become a stable driver of the economy in Switzerland since Novartis was established in 1996. Around 2% of the company's total sales are generated in Switzerland.

Many international units are based in Basel, including our company headquarters and the head office of the global Innovative Medicines Division. The campus is one of our most important research sites: Scientists from all over the world are engaged in research here on innovative medicines and therapies.

With the acquisition of the gene therapy company Novartis Gene Therapies (formerly known as AveXis) and the radiopharmaceutical company Advanced Accelerator Applications (AAA) in 2018, we are increasing our presence not only worldwide, but also in Switzerland.
Our sites

- **Basel (BS)**
  - Company headquarters
  - Head office of Innovative Medicines Division
  - Research & development
  - Production
  - Sandoz AG

- **Schweizerhalle (BL)**
  - Production

- **Stein (AG)**
  - Production

- **Rotkreuz (ZG)**
  - Head office of Swiss business units
  - Innovative Medicines
  - Sandoz

- **Fribourg (FR)**
  - Novartis Ophthalmics AG

- **Zurich (ZH)**
  - Novartis Gene Therapies

- **Geneva (GE)**
  - Advanced Accelerator Applications (AAA)

- **Locarno (TI)**
  - Novartis Pharmanalytica
Sites in Switzerland

Basel St. Johann (BS)

Novartis Campus

The Basel site is home to the global headquarters of Novartis. The Novartis Campus is a modern center for research, development and management, where work takes place across divisions and teams. Forward-looking laboratory models and office landscapes with diverse work and encounter zones now shape the character of this former industrial complex.

In light of shifting social and economic conditions we announced in early 2020 that over the coming years we would be opening up the campus in Basel and allowing partners and companies access to it. Our aim is to improve collaboration in areas of research and technology and strengthen the innovation hub Novartis Campus in Basel.

In 2021, we will also complete a new visitor center with an exhibition area on the Novartis Campus to increase our involvement and interaction with the local community and society as a whole.

Schweizerhalle (BL)

Production

Schweizerhalle has been a production site since the late 1930s. Today, the employees working in chemical production in Switzerland mainly produce small-batch, innovative compounds and intermediate products for a range of drugs. These drugs are produced with technically complex, specially designed systems that employ state-of-the-art laboratory technologies; the drugs are then approved for further processing by various partners in the Novartis production network. The site also plays an important role in introducing new drugs within the global chemical production network.
Stein (AG)

Production

Stein, about 30 kilometers up the Rhine from Basel, is a strategically important location for the production and launch of innovative medicines and treatments. One production site each for sterile and solid dosage forms is located here. Each year millions of tablets, capsules, ampules, prefilled syringes, vials and autoinjectors are produced, inspected, packaged and shipped to over 150 countries around the world from the site.

By the end of last year, around 320 jobs had been created in the new production facility for innovative cell and gene therapy treatments, which has provided patients with CAR-T cell therapies since 2020. The opening of this new state-of-the-art facility is a further investment in Switzerland as a key location.

Novartis announced in February 2021 that it has signed an initial agreement to leverage its manufacturing capacity and capabilities by supporting the production of the Pfizer-BioNTech COVID-19 Vaccine. The agreement will see Novartis utilizing its aseptic manufacturing facilities at its site in Stein.

Additionally, Novartis is further developing the Stein site into a state-of-the-art “Life Science Park Rheintal” in order to attract other life sciences businesses to take up residence there.

The park will provide a wide range of services. This will allow the companies to focus on their core business and work in an environment focused firmly on innovation and production.

Rotkreuz (ZG)

Head office of Swiss business units

Employees of the Swiss business units share a modern office building in Rotkreuz.

Novartis Pharma Schweiz

The Pharma division of the company is responsible for marketing around 70 prescription medicines in Switzerland. The main therapeutic areas include neurology, immunology, dermatology, ophthalmology, cardiology, and respiratory diseases.

The Oncology division markets around 25 prescription medicines in Switzerland for oncology, hematology and rare diseases.

Sandoz

The company employs a total of around 270 people internally and in the field, working in such areas as marketing, sales, medical consulting and quality assurance, as well as logistics, order processing and the coordination of clinical trials.

Sandoz

The Sandoz subsidiary in Switzerland is one of the leading generics producers in the country. The product portfolio includes more than 200 products in around 1 000 different dosage levels and pack sizes, and covers all the major indication areas. Sandoz is also a pioneer in biosimilars. Sandoz has around 140 internal employees and field staff.
Zurich (ZH)

**Novartis Gene Therapies**

The European headquarters of Novartis Gene Therapies are located in Zurich. With cutting-edge technology, Novartis Gene Therapies, a Novartis company, is dedicated to developing and commercializing novel treatments for patients suffering from rare and life-threatening neurological genetic diseases. In addition to a treatment for spinal muscular atrophy (SMA), Novartis Gene Therapies also plans to introduce other novel treatments for rare neurological diseases like Rett Syndrome or Friedreich Ataxia.

Geneva (GE)

**Advanced Accelerator Applications (AAA)**

Since 2014, the Geneva office has been home to both Advanced Accelerator Applications International and Advanced Accelerator Applications Switzerland. Located adjacent to the picturesque Lake Geneva, this location serves as a collaboration hub for many business functions.

AAA is the radioligand business of Novartis and currently markets one targeted radioligand therapy in oncology and several precision imaging products.

Locarno (TI)

**Pharmanalytica**

Analytical tests are performed on more than 55 Novartis products at the Locarno site. Pharmanalytica's responsibilities include performing stability tests and specific release tests for Novartis products, writing stability reports, storing stability samples in climate chambers and developing new analytical methods. Specific approval tests for Novartis products and ingredients are also carried out and new analytical methods developed.

Locarno handles the implementation of new analytical technologies at Novartis as well as the inspection and analysis of potential duplicate or counterfeit products.

As the Novartis center of excellence for stability, the Locarno site plays a leading role in the development and implementation of current standards and is pivotal in establishing new technologies and trends.
Facts and figures 2020

Employees

- 11,900 employees in Switzerland, representing 11% of the global total of 110,000 employees.

Sales

- CHF 0.8 billion in sales in Switzerland.
- CHF 45.6 billion in sales worldwide, with 2% of the total.

Current income taxes

- CHF 0.9 billion in current income taxes in Switzerland, representing 46% of the global total of CHF 2 billion.

Research and development

- CHF 3.3 billion in research and development in Switzerland, representing 39% of the global total of CHF 8.4 billion.

Investment in property, plant, and equipment

- CHF 0.3 billion in investment in property, plant, and equipment in Switzerland, representing 17% of the global total of CHF 1.5 billion.

Mean value: 2018–2020
Our contribution to the Swiss economy

How Novartis contributes to the Swiss economy

The purchase of goods and services by Novartis, its employees’ consumer spending as well as tax and social security contributions all create major impetus for the labor market, economy and funding of public coffers.

Novartis as an economic factor
• Novartis benefits the Swiss economy not only through its business activities, but also indirectly through contracts awarded to other companies and through its employees’ own spending.
• Total value-added effect: CHF 21.5 billion – which equates to 3% of Switzerland’s Gross Domestic Product (GDP).
• Every CHF 1 of added value created by Novartis generates CHF 0.25 for other companies.

Jobs for the Swiss labor market
• Novartis is a major contributor to the Swiss labor market – both directly and indirectly.
• In addition to 11 800 jobs created directly, Novartis generates a further 42 400 jobs indirectly in Switzerland, meaning one job at Novartis secures about three and a half additional jobs.
• The business activities of Novartis Switzerland are connected to more than 54 200 jobs in total.

GDP effects
in CHF, 2019

<table>
<thead>
<tr>
<th>Direct effect</th>
<th>Overall effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.2 bn</td>
<td>x1.25</td>
</tr>
<tr>
<td>21.5 bn</td>
<td></td>
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</tbody>
</table>

Employment effects
in no. of people employed, 2019

<table>
<thead>
<tr>
<th>Direct effect</th>
<th>Overall effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 800</td>
<td></td>
</tr>
<tr>
<td>54 200</td>
<td></td>
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</table>

Source: WiFOR 2020
Increased productivity thanks to innovative drug therapies

The innovative drug therapies of Novartis also make an impact on the economy and society. Taking certain medications can, for instance, prevent hospitalization and other care-related costs, thereby cutting healthcare spending. Helping patients return to work, to their families and to social activities sooner helps to reduce productivity losses resulting from illness-related absences. In other words, drug therapies also play an economic and social role.

A social impact analysis was conducted to study this positive effect for a sample of 78 innovative Novartis medicines and quantify their health and socio-economic impact in Switzerland.

- Novartis reached over 1.4 million patients with 78 medicines, translating to a total of 25 000 healthy years added to people’s lives.
- Novartis generated over CHF 6.1 billion of added value in Switzerland through increased productivity in the workplace and society at large.

Source: WifOR 2020

1 The healthcare footprint refers to the additional quality-adjusted life years (QALY) attributable to the medications. A QALY value of 1 corresponds to one fully healthy year of life, while a QALY of 0 equates to mortality.

2 Labor productivity includes both gainful employment as well as unpaid work, such as household or care provided privately.

3 The socio-economic footprint refers to the work productivity from additional healthy years of life.
The greatest strength of Novartis is our associates, whose diversity, creativity and commitment are crucial to our success.

**Our culture**
We strive to unleash the power of our people and we cultivate a company culture that is inspired, curious and unbossed.

**Our values**
Our four values underpin our company culture. They help guide us in our recruitment processes, employee development programs, and individual performance appraisals.

**INSPIRED**
ENGAGE OUR PEOPLE
STRIVE FOR PATIENTS
LIVE OUR PURPOSE

**CURIOUS**
BE OPEN
BE SELF-AWARE
LEARN

**UNBOSSED**
CREATE CLARITY
SERVE OTHERS
OWN YOUR ACTIONS

**INTEGRITY**
BE HONEST
HAVE COURAGE
DO WHAT IS RIGHT

As part of its restructuring efforts, Novartis has announced it is planning to cut an estimated 2,150 jobs in production and internal services in Switzerland by 2022.

At the same time, up to 450 new positions are planned for highly qualified individuals at the new European center for cell and gene therapy at the Stein location, which opened in late November 2019. Around 320 positions have been created since, of which 75% have been filled with retrained Novartis personnel from other production areas.
Starting a career

Talented, engaged and responsible young people are our future. We therefore offer people starting out on their career diverse opportunities for development. Current vacancies are regularly advertised on our careers portal: www.novartis.com/career

Students and university graduates

For our core business, we look in particular for students and university graduates in the fields of natural sciences, medicine and engineering. However, we also require specialists in the fields of economics, law, psychology and social sciences who are interested in starting their career at Novartis. Internships are available at every stage of academic training and are offered to:

- Bachelor’s degree students
- Master’s degree students
- Graduates
- MBA students
- Ph.D. students and postdocs

Vocational training

Around 90 trainees start an apprenticeship at Novartis each year. Altogether, Novartis trains around 280 apprentices at any given time. The main focus of this training is on research and development and production. We provide trainees with knowledge and skills in the following occupations:

- Laboratory technician in biology
- Laboratory technician in chemistry
- Chemical and pharmaceutical technician
- Automation engineer
- Office assistant
- Computer scientist
- Commercial assistant
- Logistician
- Polymechanic
- Animal keeper

Vocational training in 2019/2020

- 79 graduates
- 7 occupations
- 54% achieved a distinction

Vocational training in 2020/2021

- 78 new trainees
- 7 occupations
- 21 graduates will go straight on to further education (technical college, university, transfer, etc.)
The Novartis school laboratory

Research, experiments and observation: each year, around 3,000 pupils from all over Switzerland and its neighboring countries benefit from an interesting and enriching visit to the Novartis school laboratory. Here, the pupils gain a taste of the world of drug research and development by observing exciting experiments and spending time on absorbing issues relating to chemistry, biology and medicine.

The school laboratory serves as inspiration for future students and apprentices to embark on a career in the sciences and/or drug research and development.

Services

- 200 workshops per year
- Summer school
- Support for high school graduates
- Workshops for teachers
- Delivery of around 80 education packs for school experiments per year
- Participation at the tunBasel experience show and various job fairs

VISITS FROM

SWITZERLAND 62%
GERMANY 34%
FRANCE 4%

100 SCHOOLS
from Switzerland, Germany and France use this service per year

3,000 PUPILS
received per year

4% of the workshops are held in English
Diversity and inclusion in Switzerland

We want to build a diverse and inclusive workplace where every one of us can be our best and true selves. We are committed to diversity and work to foster inclusion. This establishes a foundation of trust and innovation and enables us to attract and retain the most talented individuals to our company. Diversity and inclusion are two of the cornerstones of our overall workplace culture, which is characterized by curiosity, inspiration and unbossed.

Our standards of conduct

In accordance with our Code of Conduct and our promise as part of the Equal Pay International Coalition (EPIC pledge), our policy is: equal pay for equal work. This promise underpins our aim to achieve gender parity at management level by 2023.

Novartis is the first global pharmaceutical company to commit to the United Nations Standards of Conduct for Business on Tackling Discrimination Against Lesbian, Gay, Bi, Trans, and Intersex (LGBTI) People. Due to this commitment, we have been entitled to use the Swiss LGBTI Label in Switzerland since January 1, 2021.

Novartis is also a member of the ILO Global Business and Disability Network, which promotes the inclusion of people with disabilities in workplaces around the world. As part of this, we also work with the Center for Disability Integration at the University of St.Gallen to identify and develop best practice solutions that enable people with disabilities to participate as equal members of our organization.

Our local D&I initiatives in Switzerland

Employee resource groups (ERGs) are employee interest groups in which our employees can voluntarily share their interests, experiences and goals as a means of developing their networks and exchanging ideas. Topics range from the environment, technology and mindfulness, to women, working parents, disability and impairment, and LGBTQI communities.

Our comprehensive Work & Care services assist employees at various stages of their lives, enabling us, for example, to provide working mothers and fathers with extensive child care services and thus improve their work/life balance. At Novartis, parents receive at least 18 weeks of paid parental leave. We also provide paid leave for employees who have to look after or care for immediate family members or relatives.

Flexible employment models and choice with responsibility are the future of work. Introduced in July 2019, our 80–100% job model is our active contribution to fostering a culture of flexible work. All 80–100% job ads reference the option of taking advantage of a work schedule involving flexible hours.
The path to a new medicine

Each treatment begins as an idea, which is incubated, refined and tested – first in the laboratory and later in the clinic – over many years.

Our researchers advance these promising ideas from a variety of internal and external sources, focusing on projects with the potential to significantly improve or extend lives.
We develop and produce innovative medicines to address patient needs in disease areas where our experience and knowledge has the potential to produce transformative treatments. With 26 major approvals in key markets and 13 major submissions, we made significant progress in 2020.

In oncology, we offer and are engaged in research on treatment options for various cancers affecting, for example, the breast, skin, lung, kidney, or parts of the blood and bone marrow. A particularly innovative development is CAR-T (chimeric antigen receptor-modified T-cells) therapy, in which the T-cells of the patient are selectively reprogrammed to recognize cancer cells and destroy them.

In immunology and dermatology, our main focus is on the treatment of psoriasis and chronic rheumatic diseases (psoriatic arthritis, axial spondyloarthritis).

In respiratory diseases, we have an established portfolio for the treatment of asthma, including severe allergic asthma, and chronic obstructive pulmonary disease (COPD).

In cardiovascular diseases, our focus is on patients who suffer from heart failure or atherosclerotic cardiovascular disease.

In neurology, we are occupied above all with the treatment of multiple sclerosis and migraine.

In the eye care division, we offer treatment options for patients for example with retinal diseases and increased intraocular pressure.

In infectious diseases, we focus on innovative therapies to combat malaria and other tropical diseases.
Changing the standard of care

Our drug development is focused on changing the standard of care, regardless of the origin of the relevant scientific developments. Our ability to carry out large-scale, high-risk development and place big bets on innovation promise is backed by the depth and breadth of scientific expertise we’ve built over decades. This involves transformative growth in our pipeline and pioneering productivity to bring groundbreaking science to patients as soon as possible.

We have the most development programs in the industry\(^1\) spanning **52 disease areas**, with nearly every asset having the potential to be a **first-in-class treatment** (\(\sim 90\%\)) and **solve an unmet treatment need** (80%). Our development efforts involve pursuing breakthroughs and targeting “white spaces” in our robust mid- and late-stage portfolio.

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\(^1\) Cowen Industry Update, January 5, 2021, “Pharma pipelines: More products, better visibility, despite pandemic”
Research and development (R&D) is the heartbeat of our company. Our R&D teams are empowered to challenge the status quo, take bold risks and push the boundaries of discovery and development. We have more than 20,000 R&D associates throughout Novartis working to discover and develop first- or best-in-class medicines for diseases with high unmet medical need. These programs stand to cure or help treat over 365 million people living with cancer, heart and metabolic diseases, eye diseases, neurologic and immune conditions, dermatology conditions, respiratory diseases and hematologic disorders. This is nearly the equivalent of the combined populations of Switzerland, the United States and Australia.1 We have innovated a world-class R&D portfolio that includes approximately 300 research and early development programs, and over 160 projects in clinical development. Switzerland is a key location for Novartis research and development. In 2020, we invested a total of CHF 3.3 billion in this country.

Switzerland is a key location for Novartis research and development.

1 Analysis compilation of secondary, post-marketing and database research (IQVIA, EVALUATE, DRG, KANTAR) + articles/publications for the relevant target indication/country.

Our approach

Our R&D efforts span two units: the Novartis Institutes for BioMedical Research (NIBR) and Global Drug Development (GDD). NIBR leads drug discovery and development from concept to early clinical evaluation. GDD leads development to ensure pivotal registrational programs for regulatory approval and access to patients.

Drug discovery at NIBR is a team effort that benefits from close collaboration with innovators in academia and biotech outside our walls. Together we strive to break down barriers in science to accelerate medical discovery. We have cultivated an external network of more than 300 academic and 100 industry alliances focused on areas of mutual scientific interest. Around 130 of these partnerships are in Europe, and around 70 in Switzerland.

In Switzerland our key research partners are:
• Friedrich Miescher Institute for Biomedical Research (FMI)
• Institute of Molecular and Clinical Ophthalmology Basel (IOB)
• University of Basel
• University Hospital Basel
• Swiss Federal Institute of Technology Zurich (ETH)
• University of Bern
• University of Geneva
• University of Zurich
• University Hospital Zurich
• Paul Scherrer Institute
• Rennbahn Clinic
The Basel site is one of the key research and development locations for Novartis globally and is home to more than 2,500, or almost half, of NIBR’s scientists, physicians and business professionals. It is also the headquarters for GDD, encompassing more than 3,000 GDD associates.

We take pride in establishing and adhering to the highest safety and quality standards while striving to embrace diversity in clinical trials. We believe that good science requires generating data from the people the medicine is supposed to help. To do this, we are actively working to improve the geographic diversity of our clinical trials and use digital and other communications tools to generate increased diversity in patient pools for all of our clinical studies. In Switzerland, around 95 trials were conducted by Novartis in 2020.

We focus on the patient experience throughout the treatment journey. Our goal is to conduct clinical trials that exceed industry standards for clinical trial operations and support the patient community from the very beginning.
New ways to treat disease

Novartis has assembled a toolkit of advanced therapy platforms to treat diseases that have been difficult to treat in the past. Many of these platforms have already brought life-changing treatments or potential cures to patients.

Chemical biology
Chemical biology brings together scientific disciplines to probe and manipulate biological systems with chemical tools.

Biotherapeutics
Biotherapeutics, sometimes referred to as biologics, are medicines composed of building blocks such as amino acids and nucleotides derived from living organisms.

Radioligand therapy (RLT)
Radioligand therapy (RLT) is a cutting-edge, precision approach to delivering radiation to tumor cells while only minimally affecting surrounding healthy cells.

Gene therapy
Gene therapy aims to treat diseases by activating, replacing, inactivating or introducing genes into cells – either inside the body (in vivo) or outside the body (ex vivo).

One of our leading gene therapy technologies uses benign viruses call adeno-associated viruses (AAVs) to deliver genes to cells inside the body. CRISPR is another gene therapy platform, which involves a set of programmable molecular “scissors” with the potential to modify cells by snipping the DNA that is found deep inside them at precise points.

Cell therapy
Cell therapy aims to treat diseases by restoring or altering certain sets of cells or by using cells to carry a therapy through the body. With cell therapy, cells are cultivated or modified outside the body before being injected into the patient. Chimeric antigen receptor T-cell (CAR-T) therapy, a therapeutic generated from a patient’s own T-cells, is an example. Some treatments – including CAR-T-based treatments – are considered to be both a cell therapy and gene therapy.

The development of our new production site for cell and gene therapies in Stein, situated in the Fricktal region, reflects our belief in the success of these pioneering therapies and in Switzerland as a key location.
The role of data and digital in research and development

The future that puts patients at the center of digitally enabled (or "virtual") clinical trials has arrived. We integrate data science and digital technologies into all aspects of the R&D process to enable teams to make decisions earlier and bring medicines to patients more quickly. This application in R&D is at the forefront of a companywide effort to harness advances in machine learning and predictive analytics. We are mining petabytes of data – from images of cells to patient test results from thousands of clinical trials – for insights. We are also looking for ways to enhance value for a given drug asset by, for instance, reducing the time it takes to bring medicines to patients.

For instance, we are using artificial intelligence to improve the way we plan and run our development operations, including clinical trials of experimental treatments. Our real-time monitoring platforms, including NERVE, the digital command center for clinical trial recruitment, and SENSE, the control tower with real-time clinical trial status updates (two of which are located on Basel campus), help us to anticipate problems or delays and speed up studies by several months. These two platforms have been key defenses that have allowed us to shift and mitigate risks to our clinical trials during the global pandemic with limited impact to our clinical trial operations and timelines.

data42

Through artificial intelligence and deep learning, data42 strives to uncover hidden insights from the large amount of clinical and research trial data collected by Novartis. Twenty petabytes of information come from the research and development department alone. After the data has been sorted and pooled together, the pioneering platform runs analyses and can potentially reveal previously unnoticed pieces of information. So far, data42 has run input from over 2,700 clinical studies and numerous machine-learning models have been tested.
To complement our new treatment approaches and platforms, Sandoz – our division for generic drugs – oversees the nationwide supply of high-quality, affordable drugs and supports the health system in the long term. The portfolio provided by Sandoz allows us to cover all key areas of indication. With seven licensed biosimilars, Sandoz is one of the pioneers in the field for biosimilar pharmaceutical products. Each year, 10% of the drugs administered in Switzerland come from Sandoz.\(^1\) The approximately CHF 160 million saved annually as a result of this situation is our contribution to ensuring the long-term resilience of the Swiss healthcare system.\(^2\) Even so, penetration of generic drugs is surprisingly low in Switzerland compared to other markets, meaning there is still huge potential to make more savings in the field of healthcare.

The importance of being able to provide drugs to patients nationwide was highlighted by the COVID-19 pandemic. Sandoz was able to cover the sharp increase in demand in 2020, thus making a significant contribution to ensuring the security of supply in Switzerland.

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\(^1\) IQVIA, Swiss Pharmaceutical Market, January–December 2020

Novartis Technical Operations (NTO) plays a critical role in driving business growth and performance. With a global network of over 50 sites, we manufacture high-quality, cost-effective products, and ensure they are delivered on time, every time, safely and efficiently. In total, we supply around 72 billion units to 150 countries every year. Our aspiration is to be the leading manufacturer in the industry. We continuously look for new and innovative solutions to reimagine manufacturing.

Our continuous manufacturing site in Basel is the first in the industry to integrate all steps of chemical and pharmaceutical production in one location. Our site in Stein continues to be a key launch site: at the end of 2019, we established a sophisticated production facility there for innovative cell and gene therapies. The first commercial therapies from Stein have been made available to patients in Europe and Switzerland since mid-2020.
Our responsibility

Investing in scientific exchange

Novartis offers mentorship opportunities that advance the research and development of new therapies for major global health problems. More than 260 scientists and clinicians from 35 countries have participated in these programs over the past decade.

The three-month Next Generation Scientist program, hosted at the Novartis research site in Basel, Switzerland, is designed to foster the scientific and professional development of research scientists from low- and middle-income countries (LMICs). Guided by Novartis mentors, the fellows work on a jointly agreed upon, precompetitive scientific or clinical research project and participate in a leadership development program designed to enhance their decision-making and communication skills. Research projects allow selected fellows to use state-of-the-art methodologies and work with leading experts in the fields, with the aim of them later applying what they have learned in their home countries. A key element of the programs is bi-directional learning. Scientists and physicians at Novartis and University of Basel learn from fellows by gaining a greater understanding of science and health in other countries. Due to the COVID-19 pandemic, the Next Generation Scientist program for 2020 was postponed, and we are currently evaluating virtual options for the program.

In 2020, we brought our core scientific exchange programs, including the Next Generation Scientist Program with the University of Basel, under a common framework called Global Health Scholars. Going forward, this will help ensure we harness synergies and lessons learned across initiatives to maximize impact.

FreeNovation

Many scientific breakthroughs have occurred not because success was predictable, but thanks to the pioneering spirit of people who gave free rein to their creativity. But there is little room for free creativity and bold, untried ideas these days. This is why the Novartis Research Foundation promotes offbeat project proposals with its FreeNovation program. It calls on researchers in Switzerland to submit proposals that are hard to fund by conventional programs.

This kind of research funding by a Swiss foundation is unique in the field of life sciences in Switzerland. With this program, the Novartis Research Foundation wants to encourage unconventional thinking and further enhance the attractiveness of Switzerland as a research location.

Supporting research in this way is unique in the Swiss life sciences sector.

Promotion of research
Our contribution to society

Novartis is on a journey to build trust with society and maximize our positive social impact wherever we do business.

We focus our efforts on the following areas:
- Holding ourselves to high ethical standards
- Being part of the solution on pricing and access to medicines
- Addressing global health challenges
- Being a responsible actor

Pricing and access

Novartis has a long-standing commitment to access to healthcare. We have been pioneering innovative access models for more than two decades. In 2020, 66 million patients were reached with products through our access activities.

We have introduced ambitious 2025 targets to increase patient access in low- and middle-income countries with our strategic innovative therapies by 200% and with our global health flagship programs by 50%.

To reinforce our commitment to the patient access targets, we issued a EUR 1.85 billion sustainability-linked bond (SLB), the first of its kind in the healthcare industry and the first SLB incorporating social targets. Bondholders will be entitled to receive a higher amount of interest if Novartis fails to meet its access targets.
Since 2001, we have provided more than 980 million malaria treatments.

**Digital health to strengthen health systems**

In 2020, Novartis co-founded the STELLA (Strengthening of Translational Ecosystems for Lifesaving Local Access) center of excellence with the University of Basel Innovation Office and the Swiss Tropical and Public Health Institute. STELLA aims to address health systems challenges in LMICs by bringing together the right partners to apply innovative digital solutions, while supporting local entrepreneurship and ownership.

**Addressing global health challenges**

**Sickle cell disease (SCD)**

In 2020, we expanded our Africa SCD program with three new memoranda of understanding with the Ministries of Health of Uganda, Tanzania and Kenya. Novartis and its partners are collaborating to develop a comprehensive approach that makes screening, diagnosis and treatment available, accessible and affordable for patients, and promotes scientific research, training and education.

**Chagas disease**

We continued our efforts in the fight against Chagas disease. In April, we joined the global community in marking the first World Chagas Day to raise awareness of this neglected disease. We also supported the World Heart Federation and the Inter-American Society of Cardiology in developing an end-to-end roadmap for Chagas disease, outlining an ideal pathway of care and offering actionable recommendations.

**Malaria**

For over 20 years, Novartis has played a pioneering role in helping fight malaria. Since 2001, we have provided more than 980 million treatments, including more than 430 million pediatric treatments, contributing to a significant reduction in malaria deaths. In collaboration with Medicines for Malaria Venture, we are working to develop a new formulation of our antimalarial for infants weighing less than five kilograms.

**Leprosy**

Novartis and the Novartis Foundation have been working with partners for over 30 years to eliminate leprosy, reaching more than 7.3 million patients worldwide with free multidrug therapy (MDT). In 2020, Microsoft selected the Novartis Foundation as one of its four initial partners for its new AI for Health initiative, a five-year program to scale up global health initiatives using the power of AI. This will provide the Novartis Foundation with access to the latest technology, resources and technical expertise to help further embed AI in our leprosy work.

**Novartis Foundation**

The Novartis Foundation works with global partners, including the University of Basel and the Swiss Tropical and Public Health Institute, to strengthen healthcare systems and improve access to healthcare in low-income communities.
Health, safety and environment

Health

A positive work atmosphere and the health and well-being of our associates are paramount. The Energized for Life prevention program offers a holistic approach that helps employees improve their energy levels through health awareness, physical and mental health and mindfulness activities. Novartis also offers all of its employees free health checkups and ergonomics support.

Safety

In 2020, the rate of occupational accidents and disease among Novartis employees in Switzerland resulting in an absence of one day or longer stood at 0.061 (50% lower than in 2019).

The Life Saving Rules were introduced at our production site in Stein to further reduce the risk of serious accidents. These ten basic safety rules must be applied when carrying out activities that pose a high risk of severe injury or death.

1 This number is calculated by dividing the number of work days lost by the number of hours worked multiplied by 200 000.
Energy and greenhouse gas emissions

We aim to be a leader in environmental sustainability and a catalyst for positive change. We aim to drive sustainability through our own operations, as well as those of our suppliers, and we have set ambitious targets to minimize our impacts on climate, waste and water. Our goal is to become carbon neutral in our own operations by 2025 and across our supply chain by 2030, and plastic and water neutral by 2030. In 2020, we signed five virtual power purchase agreements with three developers for wind and solar energy projects to address the company’s carbon footprint across its European operations (including Switzerland) over a period of 10 years from the start of operations.

In Switzerland, we are supporting these objectives by increasing our use of renewable sources of energy, constructing new, energy-efficient buildings, increasing our use of district heating and, not least, by changing behaviors so we use energy more efficiently.

Since 2016, the energy consumption of Novartis in Switzerland has fallen by 20%. Our electricity comes primarily from renewable sources; district heating is sourced mainly from waste and wood.

Water

By 2025, Novartis aims to halve its water consumption for all industrial and sanitary wastewater compared to 2016 levels. By 2030, we aim to be water neutral in all areas of our operations.

Since 2016, water consumption of Novartis operations in Switzerland has already fallen by 23% and, to meet our 50% reduction target, we are exploring several opportunities for saving water, particularly in the area of sanitary facilities (sinks, toilets, showers, etc.).

Since 2016, the energy consumption of Novartis in Switzerland has fallen by 20%.
Waste

Reducing the overall volume of waste is one of the key environmental objectives of Novartis. Many measures are aimed at either reducing the generation of waste or recycling as much waste as possible.

The volume of waste generated depends heavily on the production processes used. In Switzerland, the amount of waste sent for disposal has been reduced by 60% since 2016.

Through the Novartis Plastic-Free Workplace initiative, we have started to phase out “everyday single-use plastics” from our campuses and offices around the world. In Switzerland, for example, we are streamlining the range of office materials, and replacing plastic products with alternatives whenever possible. PET water bottles will be eliminated from most buildings.

In January 2020, restaurants and coffee bars started to shift away from disposable dishes, cutlery, beverage containers and coffee cups (as well as lids, plastic stirrers/spoons) for takeaway orders where possible. However the COVID-19 outbreak temporarily interrupted progress, as the use of single-use plastics has become necessary due to infection control protocols.
Sponsoring and donations

With its sponsoring and donation activities, Novartis engages in various initiatives and projects in humanitarian emergency relief, social affairs and the fostering of culture and sports. The main focus of this support is on activities that are either related to our business interests or in close geographic proximity to the company sites of Novartis.

Fostering social affairs

In the social sphere, institutions and initiatives that help disadvantaged people are supported in a variety of ways. For example, Novartis donates to local charitable organizations, neighborhood meeting points, soup kitchens and contact centers for parents, children and juveniles. In addition, Novartis is one of the official partners of the Swiss Red Cross.

Engagement in local communities

Due to COVID-19, Novartis postponed all physical volunteering activities in 2020, including our annual Community Partnership Day, and launched an associate campaign in April to generate ideas for virtual volunteering. More than 2,400 associates in 18 countries contributed, resulting in more than 60 new activities. One example is “Today Positive Thoughts”, an open forum that allowed associates to express thoughts and feelings during COVID-19 to help overcome social and emotional isolation.

Sponsoring culture

Novartis cultivates long-standing partnerships with well-known Swiss institutions, such as the Fondation Beyeler, Kunstmuseum Basel, and the Kunsthuis Baselland, as well as with the Basel Museumsnacht and the Theater Basel. Novartis is also a main sponsor of the Baloise Session.

Sponsoring sports

Novartis is the main sponsor of FC Basel and the basketball team Starwings Basket Regio Basel. In central Switzerland, Novartis is the official healthcare partner of the EV Zug hockey team. We also support the junior sections of various football clubs in the Basel region as well as various running sports events.