

# Annual Review 2018

 NOVARTIS





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**Cover photo** Dr. Helen Yifter, an Ethiopian endocrinologist, and one of her patients, Amina Shafi, a charcoal seller who is being treated for diabetes. About 3 million people in Ethiopia are diabetic, and the number is rising.

Christian Schnell, an animal testing specialist, has for nearly 30 years used technology to improve the quality of research results and reduce stress for laboratory animals. His efforts contributed to a 50% decline in the number of animals used in lab testing at Novartis since 1990.

# Chairman's letter

## Dear shareholder,

In 2018, Novartis strengthened its operations, expanded its therapeutic platforms, and accelerated its push into the data and digital healthcare space. Together, these steps are set to increase our ability to develop breakthrough therapies, improve patient outcomes, and support our sales and profit growth to create sustainable value for our shareholders and society as a whole.

Last year, we announced the intention to spin off our eye care division, Alcon; divested a part of the US-based generics business of Sandoz; and sold our remaining consumer healthcare stake to joint venture partner GlaxoSmith-Kline. These moves were designed to position Alcon as an independent leader in ophthalmology, strengthen the existing operations of Sandoz, and solidify the position of Novartis as a focused pharmaceutical company.

We also made substantial investments in breakthrough technologies such as gene therapy, nuclear medicine and data science. These include the acquisitions of gene therapy firm AveXis and radiopharmaceutical companies Advanced Accelerator Applications and Endocyte, which are set to strengthen our position in neuroscience and oncology. As a science-based healthcare company with cutting-edge global research and

development activities, we expect innovative medical approaches in areas such as gene therapy and immunology to hold the potential for the development of curative therapies. In domains such as chimeric antigen receptor T-cell (CAR-T) therapy, we have made good progress over the past few years. We also deepened our digital footprint by initiating a range of collaborations to strengthen scientific and commercial operations.

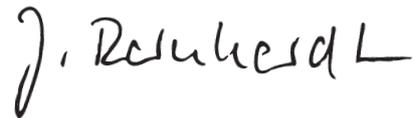
In view of the rising healthcare challenges both in industrialized and in developing and emerging countries, we remain acutely aware of the need to deliver our medicines to more patients. We have a proven track record of supporting individual patient assistance and global drug access programs, such as the Novartis Malaria Initiative and our Novartis Access program, and we remain dedicated to these global activities. We believe they help stabilize healthcare systems and increase trust in Novartis as a reliable healthcare partner.

As much as we are dedicated to the highest scientific standards when developing new medicines, Novartis is also committed to the highest ethical norms regarding the execution and governance of our business. As part of our continual efforts to maintain high integ-

egrity and ethical behavior across our company, we have further strengthened our risk and compliance structure and improved our respective processes, including our approach toward the management of cyber risk.

I thank you for the confidence you have placed in our company and am pleased to be able to propose a dividend increase of 2% to CHF 2.85 at the next Annual General Meeting.

Sincerely,



**Joerg Reinhardt**  
Chairman of the Board of Directors



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As a science-based healthcare company with cutting-edge global research and development activities, we expect innovative medical approaches in areas such as gene therapy and immunology to hold the potential for the development of curative therapies

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Joerg Reinhardt



We began a cultural transformation aimed at empowering our people to apply their full creativity to tackling big scientific and healthcare challenges

Vas Narasimhan

## CEO's letter

### Dear shareholder,

We are endeavoring every day to reimagine medicine to truly impact the lives of people all around the world. As I wrap up my first year as CEO, I'm pleased to report that Novartis continued to deliver on its purpose while we transformed the company into a more focused, agile enterprise that is well placed to deliver cutting-edge innovation, drive sustained, profitable growth, and earn the long-term trust of the stakeholders we serve.

Over the course of 2018, we took significant steps to focus Novartis as a leading medicines company. We sold our stake in our global consumer health joint venture and announced plans to spin off our eye care division, Alcon. We built up three new technology platforms that we believe offer powerful new treatment options to doctors and patients, including cell and gene therapies and radioligand therapies. And we signed more than 100 collaboration and licensing agreements to build greater depth in our core areas.

Meanwhile, our teams delivered strong performance. Growth accelerated, driven by strong sales of key products. Net sales of USD 51.9 billion grew 5%, measured in constant currencies (cc). Our core operating income grew 8% to USD 13.8 billion (cc).

We also defined five strategic priorities that we believe will drive the successful future of Novartis – and we made important progress in each of these areas. Here are some highlights.

We began a cultural transformation aimed at empowering our people to apply their full creativity to tackling big scientific and healthcare challenges. This is the start of a multi-year journey that we believe will help us continue to create long-term value for shareholders and society. To help drive change, we revitalized the top leadership of the company, appointing seven new members to the Executive Committee. I also visited our teams in more than 25 countries to learn about the organizational hurdles our people face and to gather ideas for addressing them. I thank them for their energy and commitment, which are both encouraging and infectious.

Our research and development teams secured 20 major approvals during 2018, including a second indication for our breakthrough cell therapy, *Kymriah*, to treat large B-cell lymphoma. They also made 20 major filings, including for BAF312 to treat multiple sclerosis, and for AVXS-101, a potentially transformative treatment for spinal muscular atrophy. We believe we have more than 20 potential blockbusters in development, and we plan to make 60 major submissions to regulators from 2019 to 2021.

We are taking steps to build greater effectiveness and efficiency into how we work. In manufacturing, we're adjusting production capacity to match our evolving product mix, and in business services, we're further concentrating operations in five global service centers. Our commercial teams are focused on improving how we plan and execute new product launches.

We want to help lead a digital revolution in our industry. We built a team of 1500 experts across the enterprise and are pursuing 12 major projects to embed digital technologies and advanced data analytics in our labs, factories and commercial operations. For instance, a new system called Nerve Live uses insights from hundreds of past drug development clinical trials to help design and run more effective trials today.

We need society's trust to continue doing the incredible work we do, and we strive to earn that trust through our actions. We have made clear to everyone at Novartis that we must never compromise our ethical standards to meet business objectives. We reinforced our compliance function and added the role of Chief Ethics, Risk and Compliance Officer to the Executive Committee. To further expand access to our medicines, we renewed commitments to fighting malaria and leprosy, and adopted principles aimed at embedding access into our everyday business. Our systematic approach helped us rise to No. 2 in the 2018 Access to Medicine Index.

More work remains, but I hope you share my enthusiasm for the strides we're making in all of these areas.

Sincerely,

**Vas Narasimhan**  
Chief Executive Officer

# Who we are

## Our purpose

We reimagine 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. We also aim to reward those who invest their money, time and ideas in our company.

## Our company

### INNOVATIVE MEDICINES

The Innovative Medicines Division has two business units:

#### Novartis Oncology

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

#### Novartis Pharmaceuticals

Novartis Pharmaceuticals focuses on patented treatments in the areas of ophthalmology; immunology, hepatology and dermatology; neuroscience; respiratory; and cardio-metabolic.

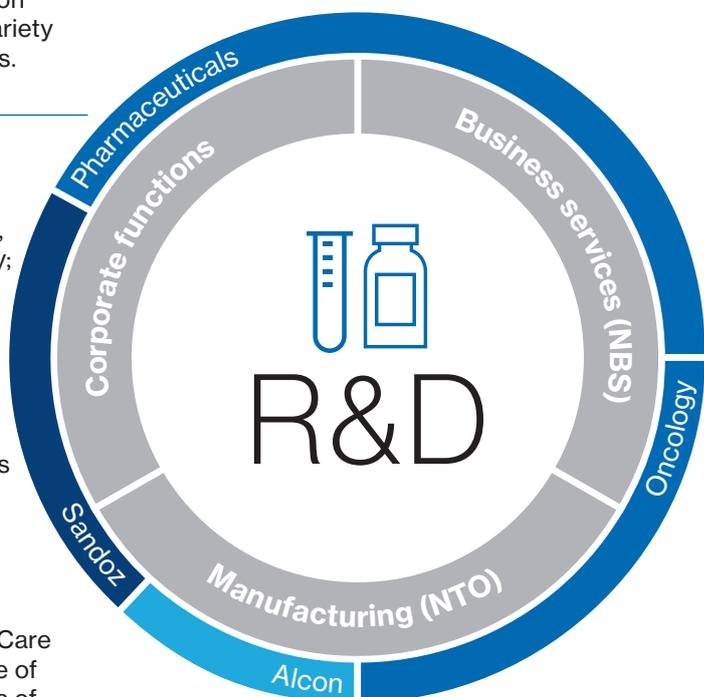
### SANDOZ

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

### ALCON

With its Surgical and Vision Care businesses, Alcon offers one of the world's widest selections of eye care devices – from sophisticated equipment for delicate eye surgery, to a wide portfolio of advanced contact lenses.

In 2018, Novartis announced the intention to spin off Alcon, pending approval from shareholders and regulators.



### 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)

handles manufacturing of innovative medicines and Sandoz products. NTO helps us optimize resource allocation and capacity planning across our production sites.

### NOVARTIS BUSINESS SERVICES (NBS)

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

### CORPORATE FUNCTIONS

Corporate functions support the enterprise in specific areas of expertise, including finance, human resources, legal and communications.

## Our culture

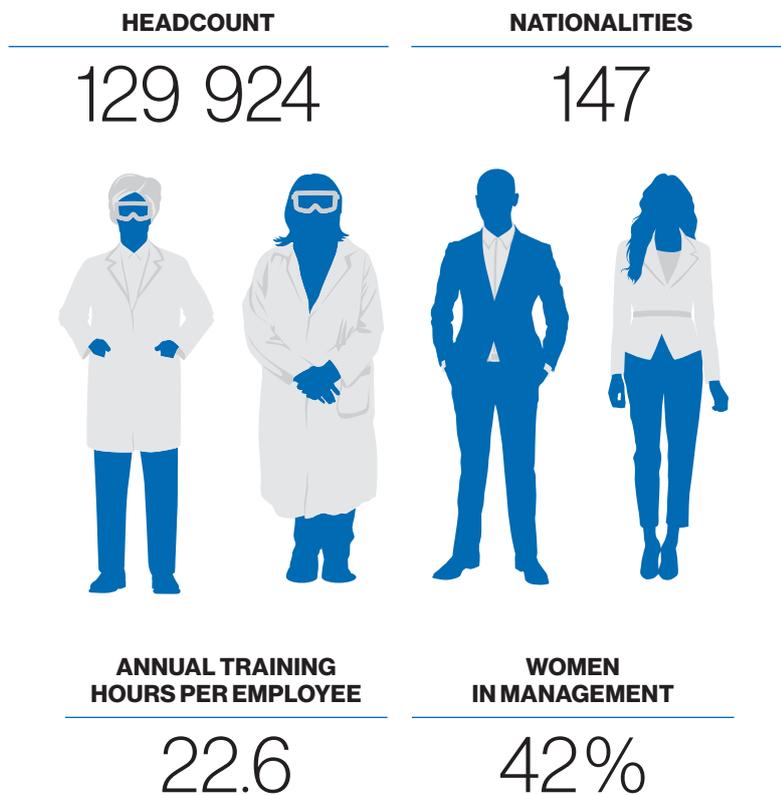
Curious  
Inspired  
Unbossed

## Our values

Innovation      Performance  
Quality          Courage  
Collaboration    Integrity

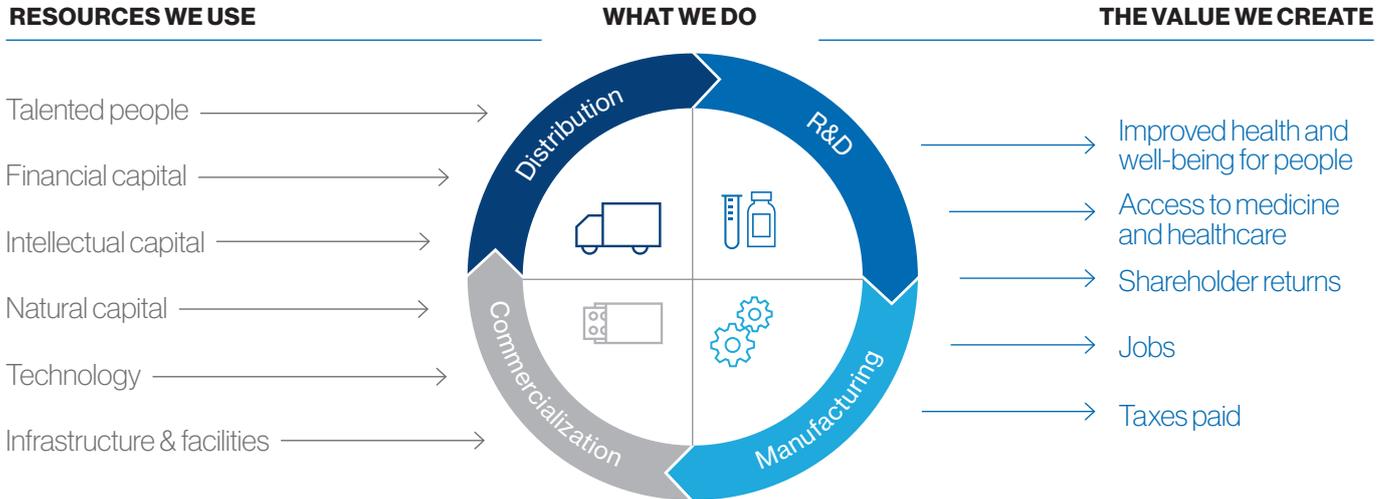
### Our people

The greatest strength of Novartis is our people, whose diversity, energy and creativity are crucial to our success.



# What we do

## Our business model



## Our products and reach

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**
- RESPIRATORY**
- NEUROSCIENCE**
- CARDIOVASCULAR AND METABOLISM**
- IMMUNOLOGY HEPATOLOGY DERMATOLOGY**
- INFECTIOUS DISEASES**
- OPHTHALMOLOGY**

We also offer about 1 000 generic medicines and biosimilars covering major therapeutic areas. They can bring substantial savings to patients and healthcare systems, and help improve access to healthcare.

- PILLS**
- INJECTIONS**
- INHALERS**

**155 COUNTRIES**  
where Novartis products are sold

**817 m PATIENTS**  
reached in total

**24 m PATIENTS**  
reached through access programs

## Our environment

We live in an era of amazing medical innovation, driven by better understanding of the genetic and biological roots of disease, and surging use of data analytics and digital technology in science and healthcare. At the same time, the world's population continues to grow and people are living longer, fueling a rise in chronic diseases. Together, these factors are increasing demand for high-quality care worldwide and pressuring healthcare systems to restrain spending growth.

### ACCELERATING INNOVATION

49%

The rise in the average yearly number of new drugs approved in the US from 2014-2018, compared to 2009-2013

### AGING POPULATION

1.4bn

The projected number of people in the world aged 60 or older by 2030, an increase of 46% from 2015

### HEALTHCARE SPENDING

5.4%

The expected annual average growth in healthcare spending between 2018 and 2022

## Our strategy

**Our strategy is to build a leading, focused medicines company powered by advanced therapy platforms and data science.**

### STRATEGIC PRIORITIES

As we implement our strategy, we have five priorities to shape our future and help us continue to create value for our company, our shareholders and society.



#### Unleash the power of our people

We are transforming our culture to ensure people can fully apply their talent and energy. We're creating an organization where people are inspired, curious and unbossed.

→ p.22



#### Deliver transformative innovation

In our pursuit of transformative treatments, we challenge medical paradigms and explore possibilities to cure disease, intervene earlier in chronic illnesses, and find ways to dramatically improve quality of life.

→ p.26



#### Embrace operational excellence

We are rethinking how we work, embracing agile teams and building better productivity into our company to free resources that we can invest in innovation and help boost returns.

→ p.32



#### Go big on data and digital

We aim to spark a digital revolution at Novartis, embracing digital technologies, advanced analytics and artificial intelligence to help drive innovation and improve efficiency.

→ p.38



#### Build trust with society

We strive to build trust with society through our efforts to operate with high values and integrity, and to find new ways to expand patients' access to our treatments.

→ p.40

# Key performance indicators consolidated highlights

## Financial

### Key figures<sup>1</sup>

(in USD millions, unless indicated otherwise)

	2018	2017	% Change	
			USD	Constant currencies
Net sales to third parties	<b>51 900</b>	49 109	6	5
Operating income	<b>8 169</b>	8 629	- 5	- 5
Return on net sales (%)	<b>15.7</b>	17.6		
Net income	<b>12 614</b>	7 703	64	64
Basic earnings per share <sup>2</sup> (USD)	<b>5.44</b>	3.28	66	66
Core operating income	<b>13 823</b>	12 850	8	8
Core return on net sales (%)	<b>26.6</b>	26.2		
Core net income	<b>11 938</b>	11 391	5	5
Core earnings per share <sup>2</sup> (USD)	<b>5.15</b>	4.86	6	6
Free cash flow	<b>11 717</b>	10 428	12	

### Share information

	2018	2017	% Change
Share price at year-end (CHF)	<b>84.04</b>	82.40	2
ADR price at year-end (USD)	<b>85.81</b>	83.96	2
Dividend <sup>3</sup> (CHF)	<b>2.85</b>	2.80	2

<sup>1</sup> This Novartis Annual Review 2018 includes non-IFRS financial measures such as 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 measures. A definition of non-IFRS measures used by Novartis, and further details, including reconciliation tables, can be found in "Item 5. Operating and Financial Review and Prospects" of the Novartis Annual Report 2018.

<sup>2</sup> 2018 weighted average number of shares outstanding: 2 319 million (2017: 2 346 million)

<sup>3</sup> Dividend 2018: proposal to shareholders for approval at the Annual General Meeting on February 28, 2019

## Innovation

### Key figures<sup>1</sup>

	2018	2017
Projects entering development pipeline <sup>2</sup>	8	9
Ongoing Phase III programs <sup>3</sup>	35	37
US FDA breakthrough therapy designations <sup>4</sup>	4	6
Major submissions (US, EU, JP) <sup>5</sup>	20	16
Major approvals (US, EU, JP) <sup>5</sup>	20	16
New molecular entity (NME) approvals <sup>6</sup>	3	3

## Social

### Access

	2018	2017
Total patients reached (millions)	817	886 <sup>7</sup>
Patients reached through access programs (millions)	24	46
People reached through training, health education and service delivery (millions) <sup>8</sup>	17	15

### People

Full-time equivalent positions / headcount <sup>9</sup>	125 161 / 129 924	121 597 / 126 457
Turnover: % voluntary / % overall	7.1 / 11.5	7.0 / 11.3
Women in management: % of management <sup>10</sup> / % of Novartis Top Leaders <sup>11</sup> / % of Board of Directors	42 / 28 / 25	41 / 27 / 23
Misconduct cases reported / allegations substantiated <sup>12</sup>	951 / 618	2 086 / 1 571

### Health, safety and environment<sup>13</sup>

Lost-time injury and illness rate (per 200 000 hours worked) <sup>14</sup>	0.16	0.12
Greenhouse gas emissions, total Scope 1 and Scope 2 (1 000 t) <sup>15</sup>	1 123.24	1 250.39

<sup>1</sup> Includes Innovative Medicines and Sandoz biosimilars only

<sup>2</sup> Includes programs entering confirmatory development, based on internal R&D activities. First patient, first visit (FPFV) has occurred in post-proof-of-concept stage after NIBR or external entry

<sup>3</sup> Includes projects with FPFV in a Phase III study but not yet filed in the US, EU or Japan

<sup>4</sup> Number of breakthrough therapy designations granted by the US Food and Drug Administration for therapies under development by Novartis

<sup>5</sup> Includes small molecules, biologics; new fixed-dose combinations of existing APIs; and new target indications, defined as new disease or new line of treatment (e.g., first line vs. second line)

<sup>6</sup> Includes NMEs such as small molecules, biologics; in the EU, new fixed-dose combinations of existing APIs

<sup>7</sup> The 2017 patient number was restated to account for the Ophtha OTC brands that were carved out from Novartis Pharmaceuticals.

<sup>8</sup> Programs run by Novartis Social Business and Novartis Foundation. Programs at scale report the catchment of a population in the area where a program has been implemented.

<sup>9</sup> Headcount reflects the total number of associates in our payroll systems. Full-time equivalent adjusts headcount for associates working less than 100%. All data as of December 31

<sup>10</sup> Management defined by Global Job Level Architecture and Novartis Top Leaders

<sup>11</sup> Novartis Top Leaders comprise the approximately 350 most senior managers at Novartis, including the Executive Committee of Novartis.

<sup>12</sup> The number of misconduct cases reported may change, as matters may be reassessed in the course of the case lifecycle. The number of substantiated allegations may change due to the fact that investigation reports with assessments are received on an ongoing basis, which potentially leads to a difference in numbers at a later stage.

<sup>13</sup> The 2018 environmental sustainability data published in this report are actual data for the period from January through September, and best estimates for the period from October through December, which will be updated with actual data in the first quarter of 2019. Significant deviations will be reported on our website and restated in next year's report.

<sup>14</sup> Data include Novartis associates and third-party personnel managed by Novartis associates.

<sup>15</sup> Scope 1: combustion and process, and vehicles; Scope 2: purchased energy



## Mongolia

Dr. Naranjargal Dashdorj

# After training abroad, a doctor returns to her roots

Dr. Naranjargal Dashdorj has been on a journey for most of her life. She grew up as a nomad in Mongolia with dreams of becoming a surgeon, and studied her way to prestigious universities and training programs in China, the UK and the US. After fulfilling her childhood goal, she was inspired to return to her homeland to make a difference in the lives of disadvantaged Mongolians. Today she heads the Onom Foundation, an organization she co-founded to address education and healthcare challenges in Mongolia, including liver disease. Mongolia has the world's highest rate of liver cancer mortality – and both liver cancer and cirrhosis (late-stage liver scarring) account for 15% of all deaths in the country each year. In September 2014, the foundation and its partners initiated a program in Mongolia aiming to eliminate hepatitis C by 2020. As part of the program, the foundation established the Liver Center, Mongolia's first nonprofit healthcare facility solely dedicated to the diagnosis, treatment and research of liver disease.



- 1 Patients travel great distances to see Dr. Naranjargal Dashdorj and her team. One of them is a woman named Tuyu, a nomadic camel herder from the Gobi Desert who has liver disease.
- 2 Dr. Dashdorj visits the temple where her great-grandfather, a lama (spiritual leader), stored his religious textbook. The Onom Foundation was named after her grandfather, who was also a lama.
- 3 Dr. Dashdorj provides medical services on World Hepatitis Day, a global event to raise awareness about viral hepatitis. Viral hepatitis causes liver damage and is responsible for two in every three liver cancer deaths.





# Highlights

## JANUARY

### Acquire Advanced Accelerator Applications (AAA)

The acquisition strengthens our oncology portfolio

### Obtain ex-US rights to breakthrough gene therapy

*Luxturna*, from Spark Therapeutics, treats rare vision loss

### Announce FDA approval of *Lutathera*

Developed by AAA, the drug is approved to treat certain neuroendocrine tumors

## FEBRUARY

### Launch *Glatopa* 40 mg/mL in the US

It is a generic option for relapsing forms of MS

## MARCH

### Develop digital therapeutics

We are working with Pear Therapeutics on treatments for schizophrenia and MS; Pear Therapeutics and Sandoz launched a substance use disorder app in November

### Expand alliance with Science37

The agreement aims to advance virtual clinical trials

### Receive FDA approval for *Tasigna* in new indication

*Tasigna* is approved to treat children with a rare form of leukemia

## APRIL

### Renew commitment to malaria elimination

USD 100 million to go toward R&D over the next five years

### Launch app to modernize ophthalmic clinical trials

With *FocaView*, patients can participate in trials from home

### Obtain FDA approval for *Tafinlar + Mekinist* in new indication

Approval is for the adjuvant treatment of BRAF V600-mutant melanoma

## MAY

### Receive FDA approval for *Kymriah* in second indication

It is approved to treat appropriate r/r patients with large B-cell lymphoma

### Secure FDA approval for *Gilenya* in new indication

It is the first disease-modifying therapy for pediatric relapsing MS

### Complete AveXis acquisition

The deal could help transform spinal muscular atrophy treatment

### Announce FDA approval of *Aimovig*

The novel drug was developed with Amgen specifically for migraine prevention

### Receive EU approval for biosimilar *Zessly*

It treats gastroenterological, rheumatological and dermatological diseases

## JUNE

### Complete sale of stake in consumer healthcare business

The GSK joint venture was formed during our portfolio transformation

### Announce planned Alcon spin-off

We will seek shareholder approval at the 2019 AGM

## JULY

### Announce expanded indications for *Kisqali* in the US

It is approved to treat pre-, peri- or postmenopausal women with HR+/-HER2-advanced or metastatic breast cancer

### Receive EU approval for biosimilar *Hyrimoz*

It is the seventh Sandoz biosimilar approved in Europe

### Obtain EU approval for *Aimovig*

It is the first drug of its kind approved in the EU, the US, Switzerland and Australia

## AUGUST

### Announce EU approval of *Kymriah*

Approval is for two forms of blood cancer

### Secure third European approval for *Tafinlar + Mekinist*

It is for the adjuvant treatment of advanced melanoma

## SEPTEMBER

### Announce plans to sell portions of the Sandoz US portfolio

We will divest the US dermatology and generic oral solids businesses to Aurobindo

## OCTOBER

### Receive FDA and EMA filing acceptance for *BAF312* (siponimod)

If approved, the drug would treat secondary progressive MS in adults

## NOVEMBER

### Rise to second place in the 2018 Access to Medicine Index

We remain the industry leader in one area: access-to-medicine management

### Receive EU approval for *Luxturna*

It is the first gene therapy to treat an inherited retinal disease

## DECEMBER

### Complete Endocyte acquisition

Endocyte is focused on developing radioligand and CAR-T therapies for cancer treatment

# Performance

Novartis delivered strong performance in 2018. Growth accelerated, driven mainly by rising sales of key products launched in the last several years. We also continued to make significant progress reshaping Novartis into a company focused on developing and commercializing transformative medicines.

## Accelerating growth

Strong performance by key products underpinned our growth in 2018. Novartis net sales were USD 51.9 billion, rising 5% from the prior year when measured in constant currencies (cc) to remove the impact of exchange rate movements. Four products achieved USD 1 billion in annual sales for the first time to become blockbusters.

*Cosentyx*, our treatment for psoriasis and other autoimmune diseases, had sales of USD 2.8 billion, up 36% (cc). *Entresto*, a treatment for heart failure that has now been used to treat more than 1 million people worldwide, had sales of USD 1.0 billion, more than doubling from the prior year.

Treatments for cancer and related rare diseases also performed well. *Promacta*, a treatment for blood disorders and cancers that is also known as *Revolade* outside the US, grew 35% (cc) to USD 1.2 billion. *Tafinlar + Mekinist*, a combination treatment for skin and lung cancers, had sales of USD 1.2 billion, up 31%

(cc). *Jakavi*, a treatment for blood disorders and cancers, grew 24% (cc) to USD 977 million.

We continued to see strong uptake of biosimilars – less expensive follow-on versions of complex biologic drugs that are being embraced by healthcare systems, particularly in Europe. In our generics division, Sandoz, sales of biosimilars and other biopharmaceuticals grew 24% (cc) to USD 1.4 billion. In our eye care division, Alcon, sales grew for the second consecutive year with the strong performance of *Dailies Total1* advanced contact lenses and intraocular lenses for cataract surgery.

In Europe, our largest market, overall sales grew 6% (cc). In the US, where there is increasing pressure on prices, sales rose 4% (cc). Emerging growth markets, including China, grew 8% (cc).

Operating income was USD 8.2 billion, down 5% (cc), mainly due to the impact of higher restructuring charges, merg-

ers and acquisitions, asset write-downs, and increased investment in marketing and sales, which more than offset the positive impact of higher sales. Net income of USD 12.6 billion benefited from a net gain of USD 5.7 billion from the sale of our stake in the consumer health joint venture with GlaxoSmithKline (GSK). Earnings per share were USD 5.44.

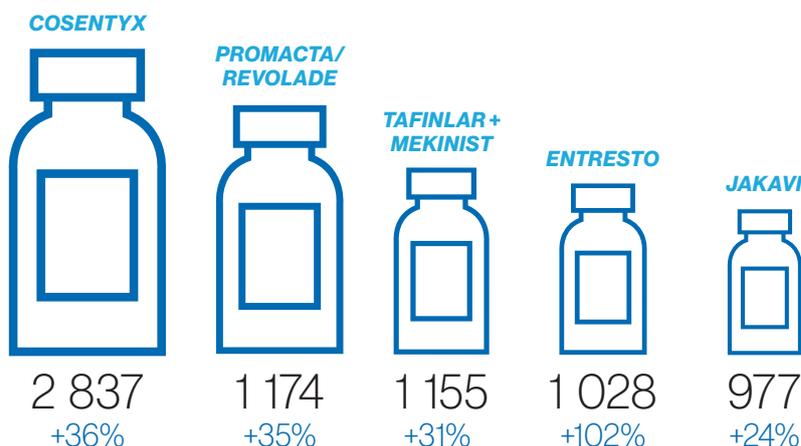
To help people understand our underlying performance, we also present our core results, which exclude the impact of acquisitions, disposals, restructurings and other significant items. Core operating income of USD 13.8 billion rose 8% (cc), driven by the higher sales. Core net income of USD 11.9 billion rose 5% (cc). Core earnings per share were USD 5.15, up 6% (cc). Free cash flow of USD 11.7 billion was up 12%.

For more detail on our financial performance, please see our Annual Report 2018 at [www.novartis.com/annualreport2018](http://www.novartis.com/annualreport2018)

### TOP FIVE GROWTH CONTRIBUTORS – INNOVATIVE MEDICINES IN 2018

(in USD millions, % growth in constant currencies)

Strong performance by key products underpinned our growth in 2018. Novartis net sales of USD 51.9 billion rose 5% (cc)



## Focusing our company

We took important steps in 2018 to focus Novartis as a leading medicines company, divesting non-core businesses and increasing investments in transformative new types of treatments. In addition to selling our stake in the consumer health joint venture with GSK, we announced plans to spin off our Alcon eye care division in 2019, pending final approvals, while at the same time maintaining our strong position in ophthalmic pharmaceuticals.

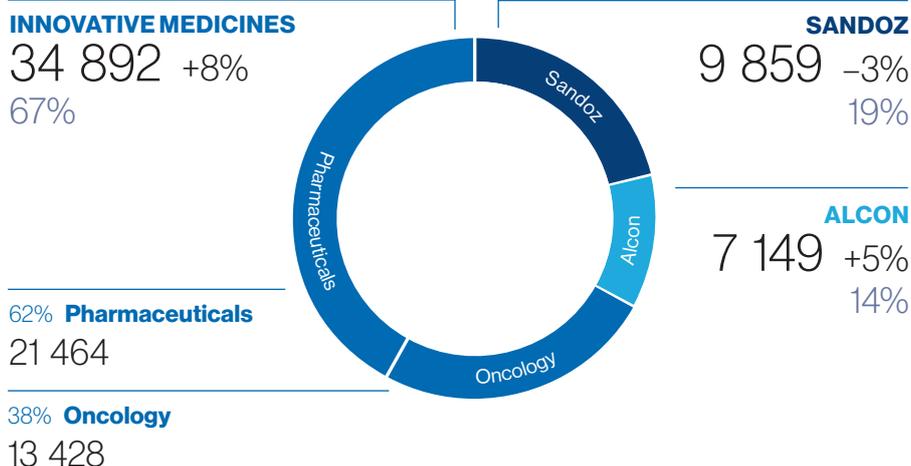
Our Sandoz generics division moved to optimize its core generics business and increase focus on complex generics and biosimilars. As part of this effort, Sandoz announced plans to sell a portfolio of about 300 medicines and dermatology products in the US to Aurobindo.

We continued to build new technology platforms that we believe will address important unmet medical needs. To reinforce our leading position in cell and gene therapies, we purchased AveXis, a US company developing a breakthrough therapy for spinal muscular atrophy, a severe and often deadly neuromuscular disease caused by a genetic defect.

We are also building our expertise in nuclear medicines, which use precision-targeted radioactive particles to fight disease. We completed the purchase of Advanced Accelerator Applications (AAA) and launched *Lutathera*, a radioligand therapy for a rare type of cancer of the gut or pancreas. To complement the capabilities of AAA, we also acquired Endocyte, a US company developing innovative radioligand and CAR-T therapies for cancer treatment.

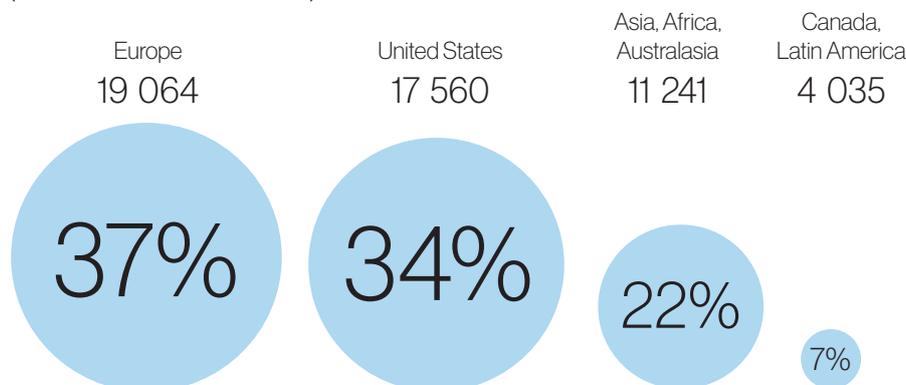
## 2018 NET SALES BY DIVISION

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



## 2018 NET SALES BY GEOGRAPHICAL REGION

(% of net sales and in USD millions)



## NET SALES

	USD millions	% growth in cc
2018	51 900	+5%
2017	49 109	+2%
2016	48 518	0%

## OPERATING INCOME

	USD millions	% growth in cc
2018	8 169	-5%
2017	8 629	+7%
2016	8 268	-3%

## NET INCOME

	USD millions	% growth in cc
2018	12 614	+64%
2017	7 703	+12%
2016	6 698	-59%

## CORE OPERATING INCOME

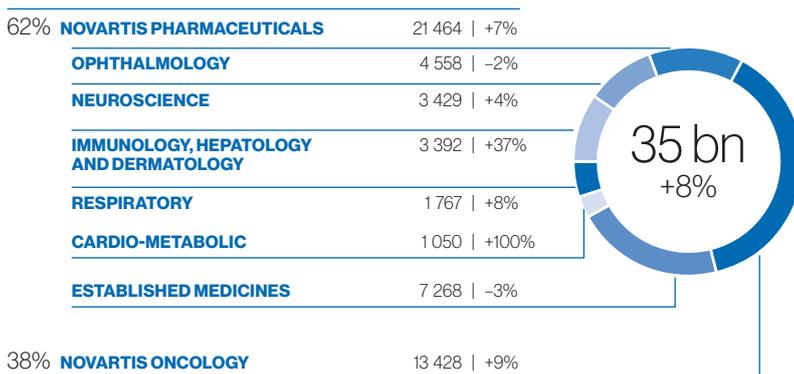
	USD millions	% growth in cc
2018	13 823	+8%
2017	12 850	0%
2016	12 987	-2%

## Innovative Medicines

In the Innovative Medicines Division in 2018, key products continued to see strong growth. Net sales of USD 34.9 billion grew 8% (cc) from the prior year. Both business units contributed to growth. Net sales in Novartis Pharmaceuticals were USD 21.5 billion, up 7% (cc) from 2017, driven by increases for *Cosentyx*, our treatment for psoriasis and other autoimmune diseases, and *Entresto*, our heart failure treatment. Net sales in Novartis Oncology were USD 13.4 billion, up 9% (cc) from 2017, driven by *Promacta/Revolade* and *Jakavi*, treatments for blood disorders and cancers; *Tafinlar + Mekinist*, a combination therapy for skin and lung cancers; and products from Advanced Accelerator Applications, such as *Lutathera*, a radioligand therapy for a rare type of cancer in the pancreas or gut. Core operating income was USD 11.2 billion, up 11% (cc) thanks to higher sales and improved gross margin, which more than offset higher spending on product launches.

### Innovative Medicines 2018 net sales by business unit and franchise

(in USD millions and % growth in constant currencies)

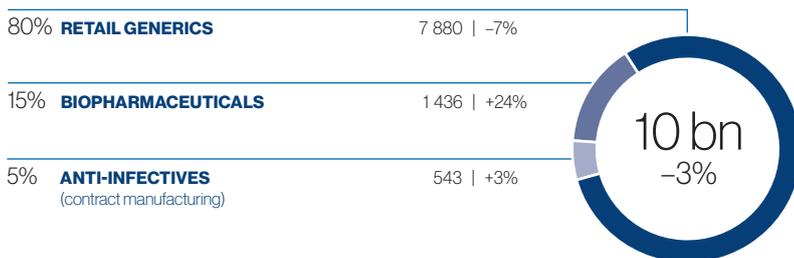


## Sandoz

Sandoz had net sales of USD 9.9 billion, down 3% (cc), due to continued intense pressure on prices for generic medicines industrywide in the US. A bright spot continued to be biopharmaceuticals, including biosimilars, with sales of USD 1.4 billion, up 24% (cc). Core operating income was USD 2.0 billion, down 3% (cc), mainly due to lower sales and higher marketing investments outside the US – although Sandoz continued to drive improvement in gross margin.

### Sandoz 2018 net sales by franchise

(in USD millions and % growth in constant currencies)

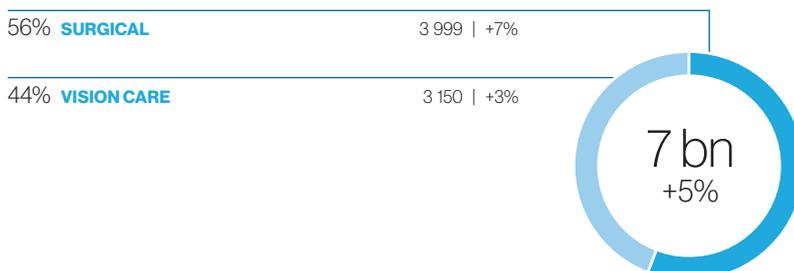


## Alcon

Alcon net sales rose 5% (cc) to USD 7.1 billion, mainly driven by intraocular lenses and supplies for cataract surgery, and *Dailies Total1* advanced contact lenses. Sales in the Surgical business grew 7% (cc), while sales of Vision Care products grew 3% (cc). Core operating income of USD 1.3 billion rose 10% (cc), mainly due to higher sales and improved gross margin, which more than offset increased investment in marketing and sales.

### Alcon 2018 net sales by franchise

(in USD millions and % growth in constant currencies)





**Slovenia**

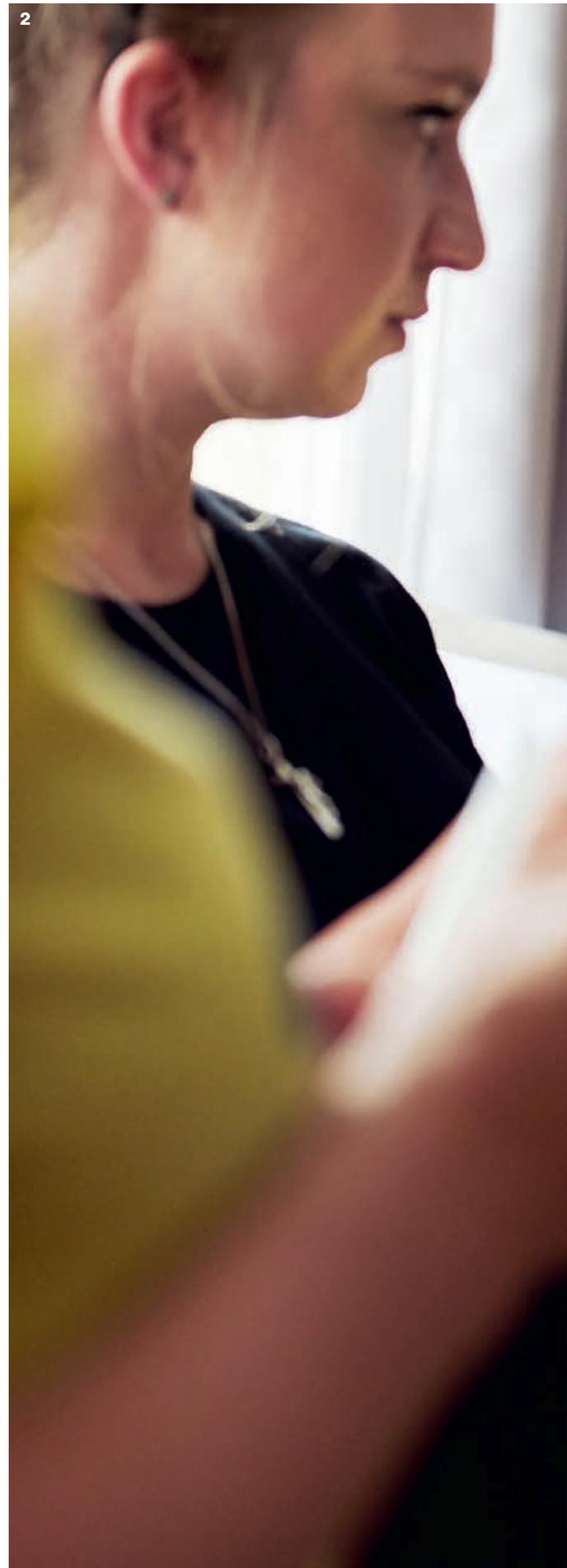
Milena Remic

**A cancer survivor makes it her mission to help other patients**

At age 42, Milena Remic learned she had advanced-phase chronic myeloid leukemia, a cancer of the white blood cells. To survive, she needed to receive a transplant of blood-forming stem cells from a genetically compatible donor. Ms. Remic, who lives in Slovenia, matched with a donor and underwent the complex procedure to replace her cells with healthy donor cells. It was a success. Now 54, she is committed to helping other patients with blood cancer. Ms. Remic is vice president of the Slovenian Lymphoma and Leukemia Patients Association, and spends her days working on disease awareness and patient support initiatives. She is also involved in a national campaign called Enroll Yourself, which encourages eligible candidates to enroll as potential blood stem cell donors. She credits her own donor with saving her life.



- 1 Milena Remic visits her bone marrow donor and "blood brother," Thomas Renkel. They wrote anonymous letters to each other via the transplant clinic and eventually decided to meet.
- 2 Ms. Remic speaks with attendees at an Enroll Yourself donor event in Prevalje, Slovenia. After signing paperwork, eligible candidates collect cell samples using cheek swabs. Their genetic information is then stored in a searchable database.
- 3 Ms. Remic meets with colleagues in her office in Ljubljana, Slovenia. From her office, she advises and encourages patients on a daily basis.





**STRATEGIC PRIORITIES**

# Unleash the power of our people

A great strength of Novartis is our people, whose energy and creativity are crucial to successfully implementing the company’s strategy. In 2018, we pursued two approaches to help unleash the power of our people: We embarked on a transformation of the Novartis culture to ensure people can be at their best, and we enhanced our strategy for attracting, developing and retaining talented individuals who will embody this new culture.

## Transforming the Novartis culture

The company’s culture is central to stimulating innovation, driving performance and maintaining our reputation. Our goal is to ensure employees feel inspired, curious and unbossed. We are evolving to a culture where leaders set clear goals, serve their teams, and remove obstacles rather than controlling and micromanaging employees. Team members are empowered to take ownership of their work and are encouraged to collaborate across the organization to maximize their impact.

The need for change was highlighted in a survey involving nearly 14 000 employees in May. The Organizational Culture Inventory® provided a deeper understanding of the company’s culture, and a baseline for measuring progress. The survey showed that employees overwhelmingly enjoy coming to work and are proud of the company, but it also revealed concerns about competitive behaviors and the desire for a more collaborative style of working.

The Novartis Board of Directors and Executive Committee reviewed assessments of the company’s culture and our plans for pursuing change.

We are taking four major steps to transform our culture. First, we are ensuring that employees understand our aspirations and are inspired to take action. For example, in January 2018 we created a group on our internal social network that brings together more than 120 000 members, with over 94 000 active users and almost 7.3 million messages shared. In May, we organized an online crowd-

sourcing event called generate.action to gather proposals for implementing culture change. About 27 000 employees participated, submitting 2 400 ideas and casting 158 000 votes on the best ways to unleash the power of our people. A pitch event was held in January 2019 to seek endorsement for the companywide rollout of the most popular proposals, including initiatives to support continuing education and adopt more family-friendly policies. In addition, the way we describe our Novartis Values and Behaviors – innovation, collaboration, courage, performance, integrity and quality – has been refined to encourage an inspired, curious and unbossed culture.

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About 27 000 employees took part in generate.action, our online crowdsourcing event seeking ways to implement culture change

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A second major step is helping employees apply the new culture in their daily activities. We have made clear to leaders our expectation that they should inspire and empower others, display curiosity and be self-aware. These expectations are reflected in a new 360-degree assessment that forms the foundation for leadership development in the company, and are embedded in our immersive development programs. For our top 350 leaders, we launched a year-long program to build the capabil-

### FOUR STEPS TO TRANSFORM OUR CULTURE



ities they need to transform the culture and meet the new expectations. This intensive leadership journey involves a significant investment of time to benefit from the webinars, simulations, social learning and personalized coaching support.

We also designed an online tool called Team Perspectives to help managers improve their leadership skills by receiving upward feedback from their teams. The company's top 350 leaders received initial feedback during the Novartis Leadership Forum in September, and formed small networks to provide support as they change their approach. Team Perspectives will be expanded to include all 12500 leaders in 2019.

The third step for transforming our culture is to ensure the company's internal environment and processes encourage people to do their best work. For example, the process for reviewing employees' performance has been improved with simpler, informal check-ins, putting more emphasis on conversation and reducing written documentation. In addition, we have introduced a companywide business performance factor, which is one element used to determine employees' annual bonuses. This replaced 57 different performance factors based on individual groups or divisions, in a move designed to stimulate enterprise-wide thinking.<sup>1</sup>

Finally, we are taking steps to help employees sustain their energy and impact, both at work and in every other aspect of their lives. An initiative called Energized for Life encourages more flexible working practices and greater well-being through a range of programs,

such as health and disease awareness. This includes our partnership with a company that helps people maximize their personal impact. We also launched a program to support employees who are affected by cancer and cardiovascular and neurological diseases. It currently operates in Brazil, India, Italy, Switzerland and the US, and we plan to expand its reach in 2019.

We will measure progress in evolving our culture by repeating the Organizational Culture Inventory® on a regular basis, to track employees' behavior and engagement as organizational changes take effect. In addition, the previous biennial Global Employee Survey will be replaced by instantly accessible tools to detect changing sentiment in real time – for instance by analyzing internal communications, and conducting simple and frequent surveys to measure and address employees' motivations and degree of engagement.

## Talent strategy

Our success also depends on attracting, developing and retaining people who embody our desired culture. We have maintained our focus on promoting diversity and inclusion (D&I), and were ranked second out of more than 7000 companies in the 2018 Thomson Reuters D&I Index, up from sixth in 2017. Demonstrating our focus on inclusion, in 2018 Novartis became the first major pharmaceutical company to support the United Nations' workplace standards protecting the rights of lesbian, gay, bisexual, transgender and intersex people.

## No. 2

Novartis ranking in the 2018 Thomson Reuters D&I Index, which evaluates companies based on 24 metrics across four categories: diversity, inclusion, people development and news controversies

## UNBOSSED

Our approach to empowering our people is inspired by ideas explored in the book "UNBOSS" by Lars Koliind and Jacob Bøtter

<sup>1</sup> This typically excludes sales associates, who have a different incentive system.

### AN EPIC PLEDGE

In 2018, Novartis pledged support for the Equal Pay International Coalition (EPIC), which is committed to achieving equal pay between men and women for work of equal value

In September, Novartis also joined the United Nations Equal Pay International Coalition (EPIC), with a pledge to continue its global practice of conducting regular gender pay equity analyses and remediating where appropriate. To help prevent pay differences, we have pledged to avoid using historic salary data when making job offers and to ensure transparency by telling employees how their pay compares to internal and external benchmarks.

Novartis remains committed to achieving gender balance in management within five years

# 79%

Percentage of our top 350 leaders who have at least one successor prepared to take over right away

Novartis remains committed to achieving gender balance in management within five years. Currently, four of the 19 senior positions reporting to the CEO are held by women. Two of them are ECN members, up from zero in 2017. Women make up 42% of management<sup>2</sup> – the same as in 2017. Of the top 350 leaders, 28% are women, a slight increase from 2017.

Our work in developing people was recognized by the Dow Jones Sustainability Index, a key measure of companies' performance in the environmental, social and governance spheres. In 2018, Novartis maintained its strong position with an overall ranking of No. 4 in the world, and was recognized as industry leader in the field of human capital development. We are preparing plans to address areas where there is further scope for improvement, such as talent attraction and retention.

Another major component of our talent strategy in 2018 was the development of an Employer Value Proposition (EVP), which captures our appeal as a place to work and provides a framework for attracting talented people. Managers and recruiters can use a toolkit of EVP materials to target candidates with specific experience and career goals. We have also increased our social media presence on websites such as LinkedIn and Glassdoor.

In addition to external recruitment, Novartis has a strong track record of promoting home-grown talent. More than 50% of ECN members (including the CEO) and 15% of our top 350 leaders changed roles in the last 12 months, and 70% of these positions were filled through internal promotion. Our succession pipeline also remains strong, with 79% of the top 350 leaders having at least one successor ready to take over immediately.

A major focus for the company is to build our talent pipeline and capabilities in the digital arena

A major focus for the company is to build our talent pipeline and capabilities in the digital arena. During 2018, we launched interactive online education that covers many aspects of digital technology and is open to all employees, as well as a series of leadership simulations to help managers enhance their digital skills. To learn more, see the chapter "Go big on data and digital."

<sup>2</sup> Defined by Global Job Family Architecture and Novartis Top Leaders



## STRATEGIC PRIORITIES

# Deliver transformative innovation

Our research and development activities span multiple therapeutic areas and are fueled by creativity and commitment. Novartis employs more than 23 000 scientists, physicians and business professionals focused on finding innovative treatments and bringing them to patients.

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## 9.1bn

Research and development spending in 2018, amounting to 17% of net sales (USD)

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## 4

US FDA breakthrough therapy designations in 2018

In 2018, our dedicated researchers made progress on a number of fronts, especially in neuroscience, oncology and ophthalmology. They also embraced new technology as we expanded data science and digital initiatives while acquiring key assets, such as gene therapies, to bolster our pipeline of unconventional medicines.

Our teams harness new inventions and knowledge to discover and develop transformative therapies. 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 promising ideas from a variety of internal and external sources, focusing on projects with the potential to significantly improve or extend lives.

It takes courage and collaboration to produce breakthrough therapies. Our teams seize a challenge, working on intractable diseases and difficult drug targets, or molecules that play a central role in human illness. We place big bets, prioritize our resources, and find or build new tools to make progress where others have failed. We're deploying genome engineering tools, for example, to design and develop therapies for certain types of cancer as well as several rare genetic diseases. And we're changing the definition of a medicine in the process.

Conventional pills and injections continue to bring tremendous benefit to patients and society, but new technology platforms such as chimeric antigen receptor T-cell (CAR-T) therapy may offer advantages for certain difficult-to-treat diseases. Our researchers have adopted an open, multidisciplinary mindset to explore the possibilities. We are working on novel types of medicines, such as radioligand therapies and mole-

cular glues, while collaborating to overcome obstacles and following the science wherever it leads. Project teams tap experts and inventions from across the company and beyond, forging alliances with external innovators at major biomedical research institutions.

Our strategy for tackling an increasingly common disease called nonalcoholic steatohepatitis (NASH) also illustrates this collaborative approach. NASH is a bit like multiple diseases in one, typically starting with the buildup of fat in the liver, but also involving inflammation and liver cell death leading to scarring. Given the biological complexity, we're working to develop combination therapies for NASH straight out of the gate, before there is a single drug approved for the disease. And we're using molecules born inside and outside of Novartis for this effort.

Teams are also leveraging the latest innovations in data science and digital technologies to streamline the drug discovery and development process. Each step of the complex, lengthy process presents an opportunity for tech-savvy researchers to innovate.

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Teams are leveraging the latest innovations in data science and digital technologies to streamline the drug discovery and development process

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We are using machine learning, predictive analytics and related tools to improve the way that we find potential medicines at

### RISING PREVALENCE OF LIVER DISEASE

We are pursuing new therapies for nonalcoholic steatohepatitis (NASH), a growing unmet health need. For instance, prevalence in the US is expected to increase by 65% from 2015 to 2030

every stage of research. We're also using these new methods to transform large clinical trials that are designed to determine if therapies are safe and effective.

## Data science and digital technologies

Novartis expanded key data science and digital programs in 2018 to accelerate the metamorphosis of research and development. One challenge that we face is finding the time to dream up applications for emerging technologies. To address this hurdle, we encourage employees to pitch projects with transformative potential through programs such as Genesis Labs, an internal incubator for multidisciplinary ideas. Teams – which can include external researchers – are given the time, space, mentors and resources to develop and rapidly test their proposals.

A number of Genesis Labs projects focus on the integration of data science and digital technologies in research and development. One team, for example, is using machine learning – a method in which computers teach themselves from data – to improve how we analyze tissue samples that have been placed on slides, particularly for preclinical safety studies. Our researchers process hundreds of thousands of slides each year. This project could streamline and enhance their work.

In 2018, we expanded Genesis Labs beyond our early research labs, inviting employees in our drug development and manufacturing groups to participate. The program organizers received nearly 250 initial proposals from 22 different Novartis sites and ultimately selected six projects to move forward.

While Genesis Labs emphasizes prototyping, other initiatives aim to increase the use of data science and digital technologies in our daily work. Take Nerve Live, a platform designed to help us run development operations, including clinical trials, faster and more efficiently. Two years ago, we began to consolidate our huge pool of past and present data about our clinical trial operations into one centralized system, working with computational experts to create custom apps that can bring actionable insights at key decision-making points. Nerve Live is the result.

The platform employs predictive analytics to help us select the best trial sites, predict participant enrollment, optimize drug supply, anticipate delays before they occur, and more. It includes a control room that opened in 2018 and receives real-time updates on all ongoing trials to direct actions in support of our global teams. Data is one of our greatest assets, and tools such as Nerve Live will help us unlock its potential.

In addition to helping us behind the scenes, digital technologies are increasingly visible to patients in our clinical trials. We're leveraging smartphones, electronic health diaries and wearable devices to improve our research as well as the patient experience. In some cases, it's possible to collect comprehensive data from patients without requiring them to visit clinical trial sites at regular intervals. To this end, we are collaborating with startup companies, such as Science 37, that design decentralized clinical trials, which are more convenient for patients. We have already initiated decentralized clinical trials for cluster headache, acne and NASH.

In some cases, digital technologies are even changing what the word “medicine”

means. We are collaborating with Pear Therapeutics, a pioneer in prescription software applications. Such “digital therapeutics” undergo rigorous testing in clinical trials before they're considered for approval by health authorities. We're working with Pear Therapeutics to develop mobile apps for patients with schizophrenia and multiple sclerosis and to commercialize an app for substance use disorder. The apps are designed to deliver cognitive behavioral therapy anywhere at any time.

## New technology platforms

The rise of digital therapeutics illustrates that medicines increasingly take different forms from conventional pills and injections. In 2018, we made significant investments in several new technology platforms – broadly applicable tools with the potential to become therapeutic staples and game changers for patients.

For example, we acquired Advanced Accelerator Applications (AAA) and its radioligands, targeted drugs that are designed to deliver radiation to tumors. AAA's treatment for gastroenteropancreatic neuroendocrine tumors, a peptide receptor radionuclide therapy called *Lutathera*, was the first of its type to receive approval in the US and Europe. Additional radioligand therapies targeting other tumor types are under development. We also acquired Endocyte, a company developing similar technology to treat prostate cancer.

We also advanced our portfolio of cell and gene therapies in 2018. These involve genetically reprogramming cells either outside or inside the body. Our flagship cell therapy, *Kymriah*, is a CAR-T therapy that is generated by removing



### AVXS-101

Has been granted FDA breakthrough therapy designation for the treatment of spinal muscular atrophy type 1, a life-threatening neurological genetic disorder



### AIMOVIG

Is approved in the US and EU for the prevention of migraine, which affects 1 billion people around the world

a patient's own white blood cells, reprogramming them to recognize cancer, and then reinserting them into the body. In August 2017, this "living drug" became the first CAR-T therapy approved in the US, providing a much-needed treatment option for pediatric and young adult patients with a particular type of acute lymphoblastic leukemia. In 2018, we received approval in the US, EU and other markets for a second indication: a particular type of relapsed or refractory large B-cell lymphoma in adult patients.

Our teams are designing and developing next-generation CAR-T therapies with the potential to target more than one protein on cells. Researchers are also working to apply CAR-T technology to other tumor types, streamline our manufacturing processes, and further increase manufacturing capacity in an effort to help more patients.

In addition to growing our CAR-T pipeline, we're investing in a platform that facilitates the genetic reprogramming of cells inside the body. In 2018, we closed deals with biotech companies that have deep experience with adeno-associated viruses (AAVs), the tool behind a new wave of gene therapies. AAVs resemble hollow balls. They can be filled with cargo, including human genes, and directed toward particular cell types. AAVs differ from other viruses in one key respect: They don't cause illness. This built-in safety feature makes them attractive for therapeutic applications.

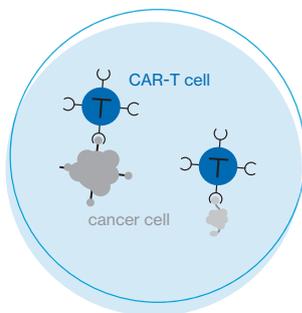
In May, we acquired AveXis, including its lead product candidate, AVXS-101, an AAV-based gene replacement therapy designed to treat a neurodegenerative disease called spinal muscular atrophy (SMA), the leading genetic cause of

death in infants. AveXis has valuable AAV manufacturing capabilities to bolster our expertise.

Earlier in the year, we entered into a licensing agreement with Spark Therapeutics to register and commercialize its product *Luxturna* (voretigene neparvovec) – the first AAV-based therapy approved by the US Food and Drug Administration – in markets outside the US. *Luxturna* is designed to restore vision in patients with mutations in both copies of the RPE65 gene, a rare genetic condition that leads to total blindness by the time patients are in their mid-30s.

These agreements complement our existing programs, including an AAV collaboration with Homology Medicines. We began working with the company in 2017 to discover therapies for genetic blood disorders and eye diseases.

Other technology platforms are just beginning to emerge. Our scientists are exploring a new class of therapeutics called molecular glues. The cellular world is full of compounds that bind two protein molecules together. Such "glues" can help cells function and thrive. Inspired by Mother Nature, Novartis scientists are now creating new, synthetic glues to short-circuit disease cells and treat serious medical conditions. Some of the proteins that glues target have for years been known to contribute to disease, yet conventional approaches to drug discovery have failed to yield medicines. Now some proteins that cannot easily be targeted by drugs may be glued to other proteins, enabling us to degrade them.



### CAR-T CELL

Within the patient's body, CAR-T cells have the potential to recognize cancer cells and other cells expressing a specific antigen, and attach to them, which may initiate direct cell death

## Advancing transformative therapies

We continue to use the effective, conventional tools of drug hunters to find new ways to successfully fight disease. Our teams focus on advancing small molecules and biologics with the potential to make a big difference for patients. In 2018, we made significant progress in several therapeutic areas, including neuroscience, oncology and ophthalmology. We launched new products for diseases with limited treatment options and laid the foundation for additional drug approvals.



### NEUROSCIENCE

Our neuroscience pipeline has delivered innovative therapies to address unmet medical needs in migraine and multiple sclerosis. In partnership with Amgen, we received approval for *Aimovig* (erenumab) in the US, the EU and other markets for migraine prevention. Novartis co-commercializes *Aimovig* with Amgen in the US, and Novartis has the exclusive rights to *Aimovig* outside the US, except for in Japan. Migraine affects one in 10 people and is the third leading cause of disability in people under 50. Patients frequently suffer from recurrent, debilitating attacks, and until now, there have been no treatments specifically designed to prevent migraine. *Aimovig* blocks a protein signal that is believed to trigger the excruciating pain and other symptoms of migraine. In clinical trials, many patients on *Aimovig* reported more than a 50% decline in their monthly number of migraine days.

Multiple sclerosis (MS) is a debilitating disease in which the body's immune system attacks the protective myelin

coating that surrounds the brain and spinal cord. In total, MS affects 2.5 million people worldwide, with the disease occurring in different forms. *Gilenya* (fingolimod), our oral treatment for relapsing-remitting MS, received additional approval in the US and EU in 2018 as the first disease-modifying therapy for young patients with the disease. Young MS patients frequently suffer double or triple the relapse rates of adults, and clinical studies have shown that *Gilenya* reduces these rates by approximately 82% compared to interferon beta-1a, a standard MS treatment. We're also advancing a different compound for the treatment of secondary progressive MS. Phase III clinical studies have shown that BAF312 (siponimod), our investigational oral treatment, delays disability progression in this form of MS, a first. We have filed in the US and EU for this indication.



### ONCOLOGY

Our oncology pipeline delivered treatments for advanced breast cancer and melanoma in 2018. In July, we received a new approval for *Kisqali* in the US for women with hormone receptor-positive (HR+)/human epidermal growth factor receptor 2-negative (HER2-) advanced or metastatic breast cancer. *Kisqali* is now the only CDK4/6 inhibitor approved for use with an aromatase inhibitor for the treatment of pre-, peri- or postmenopausal women in the US. It is also approved for use in combination with fulvestrant as both first- or second-line therapy in postmenopausal women.

We initiated global submissions for approval to market BYL719 (alpelisib) in combination with fulvestrant for postmenopausal women and men with HR+/

HER2- advanced breast cancer who have progressed on or after an endocrine-based regimen. This combination nearly doubled the time to disease progression in patients with this mutation compared to fulvestrant alone in a Phase III clinical trial. If approved, BYL719 would be the first and only PI3K inhibitor for HR+ breast cancer.

Our combination treatment for melanoma, *Tafinlar + Mekinist*, received several approvals – including in the US and EU – for an additional indication as an adjuvant therapy for melanoma patients with a BRAF V600 mutation. Of the roughly 200 000 melanoma diagnoses made each year, nearly half of these are driven by a specific genetic mutation called BRAF. *Tafinlar + Mekinist* is one of the only combination treatments available as an adjuvant treatment for these patients, and clinical trials have shown that this option can be used to reduce the risk of death or cancer re-appearence after tumors are removed via surgery.



### OPHTHALMOLOGY

We have also been working toward innovative therapies for eye diseases such as neovascular age-related macular degeneration (nAMD). nAMD is a leading cause of severe vision loss, affecting up to 25 million people worldwide, and current treatments require injections into the eye every four or eight weeks. In October, we announced additional positive results from Phase III studies of RTH258 (brolucizumab) in nAMD. RTH258 is a novel antibody fragment with the potential to significantly reduce the burden associated with the number of treatment injections needed for nAMD.

# Key products in development

Novartis is consistently rated as having one of the industry's most respected development pipelines, with more than 200 projects in clinical development, as of December 31, 2018. We highlight some promising late-stage projects, including new molecules and existing treatments that are under investigation for new indications.

**BAF312** (siponimod, *Mayzent*<sup>1</sup>) is an investigational treatment for reducing disability progression in secondary progressive multiple sclerosis. It is a second-generation therapy based on a similar mechanism of action as *Gilenya*, an approved treatment for relapsing multiple sclerosis.

**OMB157** (ofatumumab) is an antibody therapy under development for relapsing multiple sclerosis.

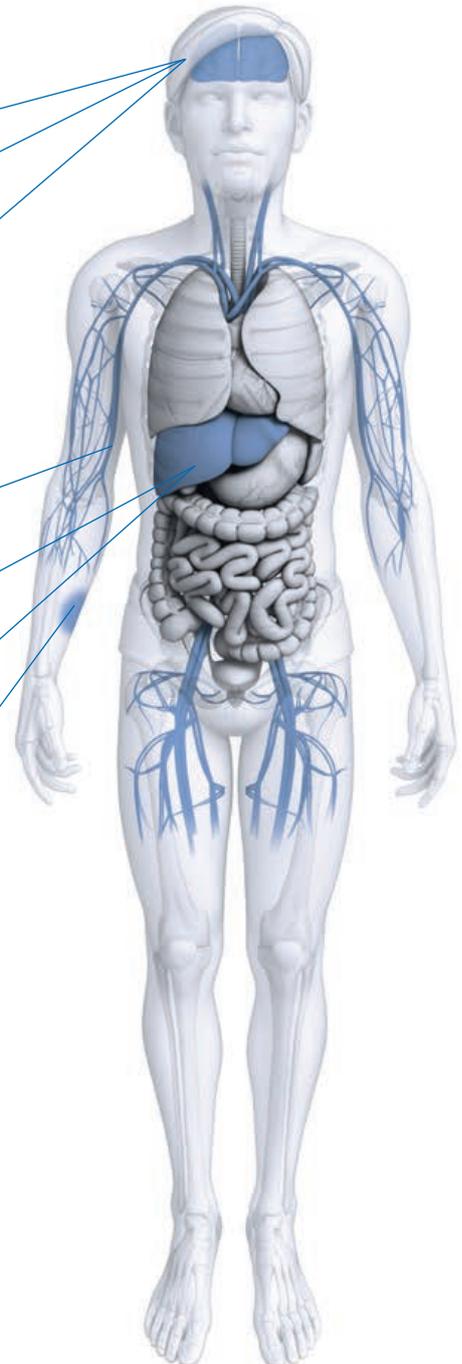
**AVXS-101** (onasemnogene abeparvovec-xxxx, *Zolgensma*<sup>2</sup>) is an investigational gene replacement therapy for spinal muscular atrophy. This therapy targets the defective or missing gene that causes this fatal disease.

**Cosentyx** is an antibody therapy under development for non-radiographic axial spondyloarthritis. *Cosentyx* is already an approved therapy for plaque psoriasis, psoriatic arthritis and ankylosing spondylitis.

**KAF156** (ganaplacide) is an investigational treatment for malaria. This new class of molecules has the potential to clear malaria infections and block parasite transmission.

**LJN452** (tropifexor) is an investigational treatment for the liver disease nonalcoholic steatohepatitis (NASH). LJN452 is designed to break the cycle of fat buildup that leads to inflammation and scarring of the liver.

**Kymriah** is a CAR-T therapy that genetically reprograms a patient's immune cells to fight certain types of cancer. *Kymriah* is approved for B-cell acute lymphoblastic leukemia (ALL) and diffuse large B-cell lymphoma (DLBCL), and is under development for other blood cancers.



<sup>1</sup> The brand name *Mayzent* has been provisionally approved by the US Food and Drug Administration (FDA) and the European Medicines Agency (EMA) for BAF312, but the product itself has not been approved for sale in any country.

<sup>2</sup> The brand name *Zolgensma* has been provisionally approved by the FDA for AVXS-101, but the product itself has not received marketing authorization or Biologics License Application approval from any regulatory authorities.

200+

**PROJECTS IN  
CLINICAL DEVELOPMENT**

Ongoing trials in Phase II or III for programs that have reached confirmatory development

20

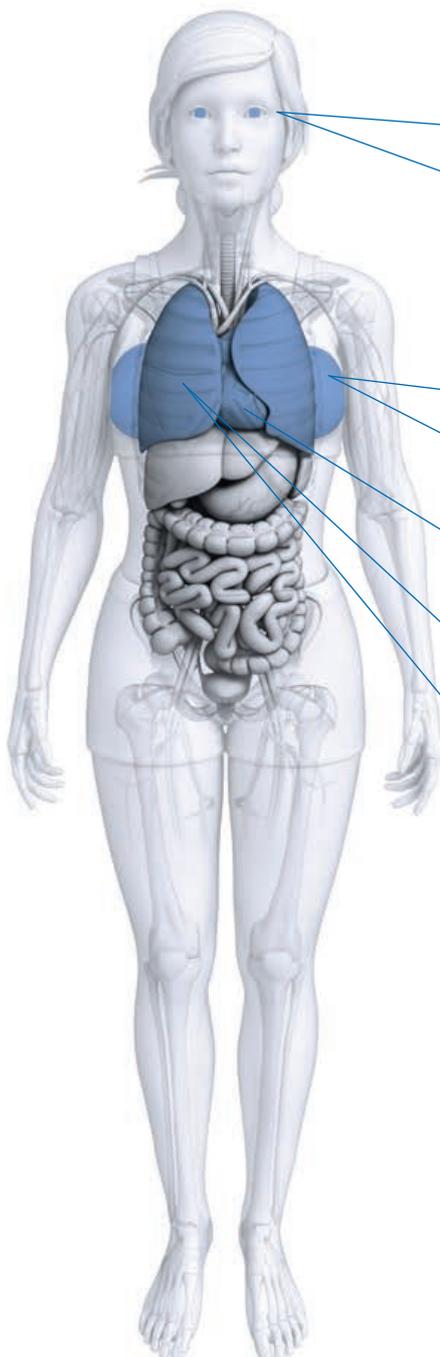
**MAJOR  
APPROVALS**

Granted in 2018 by health authorities in the US, the EU and Japan for new treatments as well as new indications for existing treatments

20

**MAJOR  
SUBMISSIONS**

Applications in 2018 to health authorities in the US, the EU and Japan for marketing approval for new treatments and new indications



**RTH258** (brolucizumab) is in late-stage development as an investigational antibody fragment therapy for neovascular age-related macular degeneration and diabetic macular edema. This treatment is designed to reduce the injection burden for patients.

**UNR844** is an investigational treatment for presbyopia, the age-related loss of near-distance vision. UNR844 is potentially a first-in-class treatment to restore vision by softening the eye's lens.

**BYL719** (alpelisib) is under development as a combination therapy to treat HR+/HER2- PIK3CA+ advanced breast cancer after progression on an endocrine-based regimen. This treatment is being tested in combination with fulvestrant to block cancer cell proliferation.

**Kisqali** is under development in multiple therapy combinations for a broad range of breast cancer patients, including men and premenopausal women. *Kisqali* is already an approved treatment for patients with advanced HR+/HER2- breast cancer.

**Entresto** is under development to treat chronic heart failure with preserved ejection fraction. *Entresto* is already an approved treatment for chronic heart failure with reduced ejection fraction.

**ACZ885** (canakinumab) is an antibody treatment under development for non-small cell lung cancer. ACZ885 is already an approved treatment, under the name *Ilaris*, for various inflammatory conditions, including cryopyrin-associated periodic syndrome and some forms of arthritis.

**QAW039** (fevipiprant) is an investigational treatment for asthma. QAW039 is designed to improve lung function and reduce attacks in patients with moderate to severe asthma that is unresolved by other treatments.

For more information about the pipeline and progress on individual development programs

 [www.novartis.com/our-science/novartis-global-pipeline](http://www.novartis.com/our-science/novartis-global-pipeline)

## STRATEGIC PRIORITIES

# Embrace operational excellence

Novartis teams continue to find new ways to improve the effectiveness and efficiency of our operations. These efforts help underpin our significant investment in research and development, our investments in the launches of innovative new treatments, and our financial performance. Our efforts cut across the company, with special emphasis on manufacturing, business services and new product launches.

## Manufacturing transformation

Our manufacturing operations are evolving as we shift from primarily making pills toward producing more complex medicines, including personalized cell therapies like *Kymriah*, our groundbreaking treatment for certain types of leukemia.

As part of this evolution, we are investing in new manufacturing technologies that support the development and production of innovative new treatments. For instance, we are beginning to use continuous manufacturing techniques. At a plant in China where we make heart failure treatment *Entresto*, part of the manufacturing process uses that approach, helping to lower the cost to produce the drug by 25% compared to the prior approach.

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We are using continuous manufacturing techniques at a plant in China where we make *Entresto*. This has lowered production costs for the drug by 25%

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### STRONG TRACK RECORD IN QUALITY

Of 202 health inspections of our facilities worldwide, 98.5% were without major findings

We are also pursuing a digital transformation of our manufacturing operations with the aim of improved quality control and greater efficiency. For instance, we are starting to use predictive analytics to flag when production equipment is likely to break down, allowing us to plan preventive maintenance

and reduce unplanned outages. This approach should help reduce stockpiles of spare parts at individual facilities.

For more detail on how we are employing digital technology and data analytics in manufacturing and across the company, see the section “Go big on data and digital.”

We continue work on plans initiated in 2015 to optimize our network of more than 60 manufacturing sites worldwide, adjusting our production capacity to match our changing product mix. In 2018, we announced plans to transform 16 plants, including eight that we aim to sell or close. We are working with employees affected by the changes to help them manage through the transition.

In the area of quality, we continued our solid track record in 2018. Of 202 health authority inspections of our facilities around the world completed in 2018, all but three were deemed good or acceptable (98.5%). We are working with regulators to address open issues related to how we collect and manage reports of adverse events in patients taking our medicines in the EU; registration requirements for the Russian market; and procedures to ensure treating physicians and patients in one clinical trial don't know who receives a placebo and who receives an experimental treatment.

## Consolidated business services

Novartis Business Services (NBS) continues to consolidate business support functions across the company. In 2018,

NBS launched a transformation program aimed at further simplifying and standardizing processes, improving productivity and better leveraging our global scale.

We are taking further steps to reshape NBS's footprint and concentrate activities in our five global service centers, transforming them from tactical execution locations to operational management centers. As part of this change, we are reducing the number of roles based in other countries. For instance, in 2018 we announced plans to reduce the number of NBS employees in Switzerland over four years. We are evaluating similar steps in other countries.

NBS is standardizing business processes to simplify the way we work and improve productivity. One example is how we handle employee expenses across the company. In the past we had about 100 expense policies, with different reimbursement rules based on location or business unit. Starting in 2019, we plan to move to a single global policy, simplifying and speeding the work of teams that process employees' monthly expense reports.

To support our simplification efforts, we're finding smart ways to apply digital technology. For instance, we are moving to a single system to field employee requests for a full range of business services, from requests for online training courses to questions about payroll or procurement. We plan to use artificial intelligence and robots to answer simple questions, or direct complex queries to specialists. We plan to launch the new system worldwide in 2019, initially in the areas of finance, procurement and human resources.

## FIVE NOVARTIS GLOBAL SERVICE CENTERS



We're also reinforcing efforts to lower procurement costs. We are working to further consolidate our supplier base and increase competition. We are also changing some internal processes to make more efficient use of the products and services we purchase. We're focusing these efforts on 10 countries that account for about 80% of our spending.

An example is procurement of marketing materials such as product brochures, videos and advertising, for which we spend a substantial amount annually. Until recently this was managed in a decentralized way by teams in local markets or individual product franchises working with about 300 different advertising agencies around the world. By changing and simplifying our approach, we aim to reduce overall spending on marketing materials by about 8–16% over the next three years.

To reduce duplicated effort and promote reuse of existing marketing materials, we are creating a central repository designed to enable marketing teams worldwide to access materials

already created by colleagues. We plan to begin with key products such as heart failure medicine *Entresto*, and in important markets such as the US, with implementation in 2019.

## Effective product launches

In our commercial operations, we are taking steps to improve the planning and execution of launches of new medicines. To ensure the launches of important new treatments receive sufficient resources and attention, during 2018 we looked across our portfolio and prioritized 18 products that were recently introduced or that we expect to launch through 2021.

We're also beginning our launch preparations further in advance, beginning three years or more before the anticipated launch date, rather than the two years or less typical in the past. Some of those preparations involve more carefully anticipating the needs and wishes of patients and doctors.



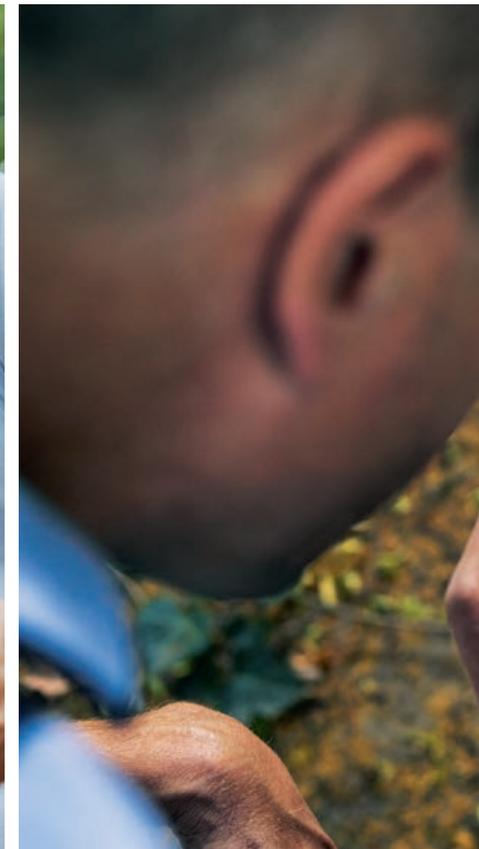
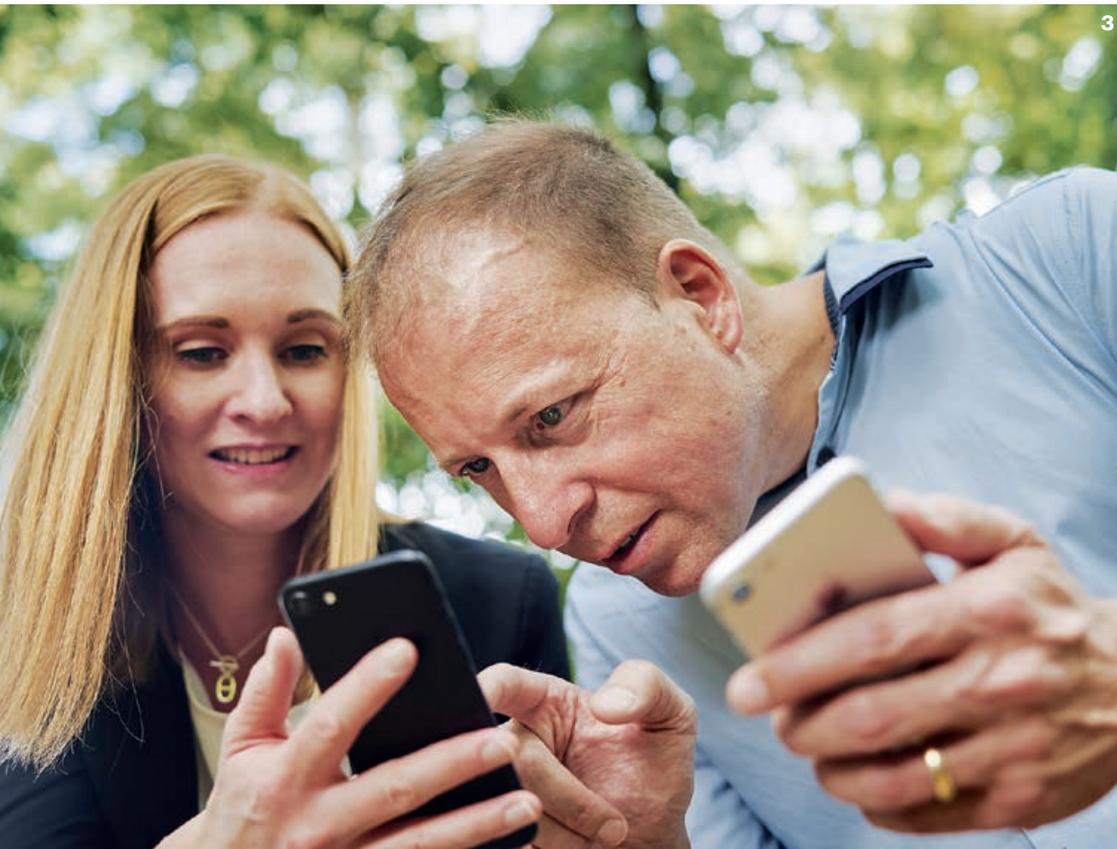
**Basel**

Mohanad Fors

**Using digital technology to enhance clinical trials**

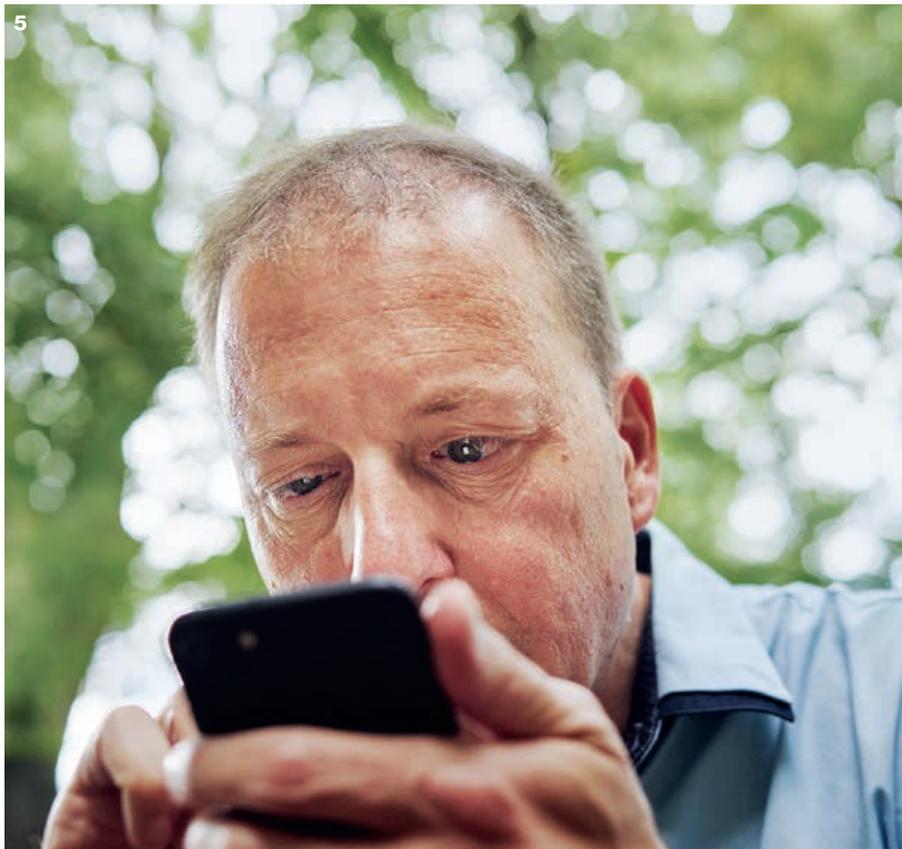
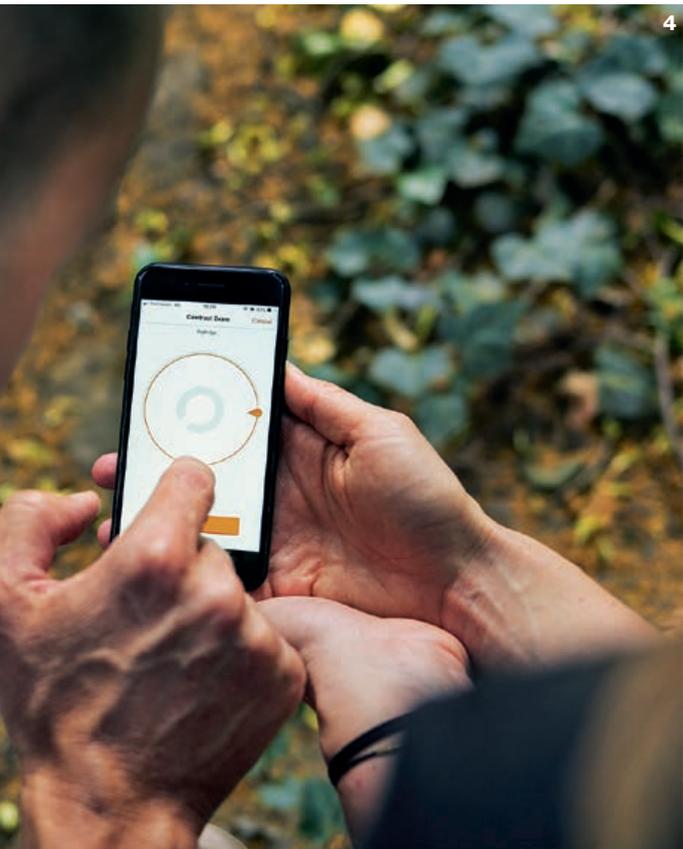
Mohanad Fors has a passion for digital technology. He co-founded the Novartis Biome, a digital innovation lab and series of open innovation initiatives. He also led the team that developed a first-of-its-kind app called *FocalView*, launched by Novartis in the US in 2018. *FocalView* is an ophthalmic digital research platform created with Apple's ResearchKit. It enables patients participating in studies of experimental eye disease treatments to test their vision on their iPhones® – without having to visit a doctor. The app collects real-time, patient-reported data, which researchers use to track disease progression. By making clinical trials more accessible and flexible, *FocalView* could increase the volume and accuracy of patient data. Ultimately, the work of Mr. Fors and the team that developed *FocalView* could improve our understanding of eye diseases and help lead to new and better treatments.

- 1 Mohanad Fors (center) with his colleagues in Basel, Switzerland. Together they developed the *FocalView* app for eye disease research.
- 2 Mr. Fors is working to accelerate the digital evolution of Novartis and is behind a new effort to boost the digital health ecosystem.
- 3 A member of the *FocalView* team shows a patient how to test his vision using the app. Patients can use the app to self-report data on their eyesight.



3

- 4 *FocalView* helps patients complete various assessments like visual acuity and contrast sensitivity tests. They can do this all from the comfort of their own home – a major convenience for patients, especially those with mobility issues.
- 5 By accommodating patients' daily routines, *FocalView* could break down barriers to clinical trial participation.



## STRATEGIC PRIORITIES

# Go big on data and digital

The digital revolution that has already reshaped many industries is gaining momentum in healthcare. We want to help lead the revolution in our industry and are harnessing the power of data science and digital technology across the enterprise. We aim to transform how we operate and are building a foundation to enable the large-scale adoption of technologies such as artificial intelligence, remote sensing and digital therapeutics.

These and other digital technologies are driving a new wave of scientific and medical innovation. They bring powerful new tools to every aspect of our work, from the lab to our interactions with doctors and patients. They are helping us automate processes and support our decision-making as we strive to increase productivity and find smarter ways of working. To underscore the importance of digital technologies in executing our strategy, in 2018 Novartis elevated the role of Chief Digital Officer to the Executive Committee of Novartis.

Our digital strategy has several facets. We are pursuing 12 major lighthouse projects to lead the way in embedding digital technology across the company. We are collaborating with other organizations to accelerate our digital capabilities and employ the latest technology. And we are equipping employees with the tools to help them apply digital technologies in their work.

## Projects across the enterprise

Major projects now underway aim to employ digital technology and data analytics on a large scale to boost efficiency and effectiveness in key areas, including research and development (R&D), manufacturing and our commercial operations.

In R&D, we are using digital technologies and data analytics to help find new drugs and bring them to patients more quickly. For instance, we are using artificial intelligence to improve the way we plan and run our development operations, including clinical trials of experimental new treatments.

We also plan to use data analytics to review the clinical results of hundreds of drug studies completed over the past

20 years. In a project called Data42, we hope to mine 2 million patient years of clinical trial data to uncover new insights into why patients suffered from diseases such as breast cancer, multiple sclerosis and heart failure, as well as how their disease progressed and how they responded to treatment.

Advances in machine learning – where computers learn to identify previously unseen patterns in large, complex data sets – offer the hope of identifying subgroups of patients most likely to respond to a particular treatment, or of identifying a previously unknown benefit from a particular drug.

One example of this approach is in the area of heart disease, where we are working to integrate into one data pool the results of 13 clinical trials involving about 50 000 patients. In addition, we plan to include data about the patients' genetic makeup and the levels of important proteins in their bodies.

## Smarter factories

Digital technologies also hold great promise to transform the way we manufacture medicines, improving efficiency and quality. Drawing on lessons from other industries, we have launched a number of digital initiatives.

For example, in a pilot at three manufacturing plants around the world, we are continuously monitoring key variables in the production process, such as temperature and pH, in lieu of spot testing at specific stages of the process. Then we use advanced analytics to help spot deviations early and correct them, before they become serious enough to disrupt production. We aim to use this approach to reduce instances where deviations in the process result in wasted batches.

### RESET DIGITAL THERAPEUTIC

In the US, Sandoz and Pear Therapeutics have launched the *reSET* digital therapeutic for substance use disorder, which impacts nearly 21 million Americans

### INCREASING ACCESS TO CLINICAL TRIALS

Only 2% of eligible patients in the US participate in clinical trials, and those who do participate visit trial sites an average of 11 times in six months. We aim to make it easier for patients to take part in trials

We are also deploying artificial intelligence to help predict if a specific product will be distributed to patients before reaching the end of its normal shelf life. This should enable us to maintain high levels of customer service while avoiding write-offs.

## Digital assistance in sales

In our commercial operations, we are transforming the way we approach physicians. Our sales representatives, who visit about 100 000 doctors a day around the world, are starting to benefit from the capabilities of new digital tools to facilitate more effective interactions. Working with a company called Aktana and other collaborators, we're using machine learning to sift through information from multiple databases, such as doctors' prescribing behavior, to suggest the best way for salespeople to approach them and address their needs.

For instance, in the US we've learned through experience that cardiologists tend to try our heart failure medicine *Entresto* with a few patients for about four months before deciding whether to prescribe it for additional patients. The new digital tool uses that insight, along with others from about 40 different databases, to suggest to sales representatives when to visit individual doctors and how to provide them with information or support they can use.

About 500 sales representatives in six countries piloted the new system in 2018. Initial findings show that they doubled their use of the customer relationship system, resulting in increased focus on physicians whose patients are most likely to benefit from a particular drug. We plan to expand the new system's use to 10 000 salespeople in our top 11 markets, with full coverage after 2020.

## Collaborations augment know-how

The tremendous potential of digital tools in science and healthcare is sparking creative ideas in universities, small startups and big companies. This is a boon to innovation, and we are working with more than 250 collaborators to access the latest technology and accelerate our digital and advanced analytics capabilities.

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One novel use of technology is digital applications that are prescription therapies for neurological disorders and other illnesses, or that work in combination with drugs to improve health outcomes for patients. We are collaborating with Pear Therapeutics to develop digital therapeutics to treat schizophrenia and multiple sclerosis. In addition, our generics division, Sandoz, is helping to commercialize a prescription digital therapeutic called *reSET* that was developed by Pear Therapeutics to treat substance use disorder and has been cleared by the US Food and Drug Administration.

A proliferation of digital sensors is enabling remote monitoring of patients' health. We are working with a US company called Science 37 that uses a combination of sensors, telemedicine and home nursing services that can

make it easier for patients to participate in our clinical trials. Their health can be at least partly monitored at home, reducing the number of times they must visit a trial site for tests. In small trials of new drugs to treat severe acne and cluster headache, Science 37 was more successful at recruiting and retaining participants than traditional sites.

We have also taken steps to support the development of digital health innovators. In recent years, we have invested in about a dozen young digital health companies, most of which are our collaborators, to help accelerate their growth. In 2018, we launched the Novartis Biome, an innovation lab for entrepreneurs in digital health that provides access to Novartis resources, such as data from our clinical trials and mentoring. And we provided support to StartUp Health, an organization that invests in entrepreneurs working on bold solutions to major health challenges.

## Digitally savvy employees

To support our transformation, we created learning opportunities for employees to improve their digital and data knowledge and capabilities. Our aim is to demystify digital technologies, show how they can transform our work, and accelerate their use.

We launched interactive online education covering many aspects of digital technology and the Novartis digital strategy. So far it has been used by more than 20 000 people, with 12 000 receiving badges for completing individual modules. In addition, we launched a series of leadership simulations that use realistic scenarios to help managers perform their role in adopting digital technology and data analytics.

## STRATEGIC PRIORITIES

# Build trust with society

We are taking steps to continue to build trust with key stakeholders and society. We aim to hold ourselves to the highest ethical standards, be part of the solution on pricing and access to medicines, help tackle global health challenges, and be a responsible citizen wherever we operate.

## AWARDS AND RECOGNITION

## No. 2

in the 2018 Access to Medicine Index, improving by one position versus 2016

## No. 4

in the 2018 Dow Jones Sustainability Index World

### Holding ourselves to the highest ethical standards

We continue to embed a principles-based approach to compliance through the new Professional Practices Policy (P3), which in 2018 replaced separate divisional compliance policies. We believe this approach will help ensure that employees act in the best interest of patients, physicians and Novartis.

Since 2016, we have adjusted the ratio of fixed to variable total compensation for our sales force to help ensure that the target variable component is a maximum of 35% of total compensation, on a country average basis. To receive any form of variable compensation, each employee, including the sales force, must perform to a minimum standard with regard to our Values and Behaviors, which include acting with integrity. For our sales force, in particular, 20% of target variable pay is based on demonstration of our Values and Behaviors. We are in the process of implementing these standards in every country in which Novartis operates. Ultimately, no sales representative will receive the variable compensation unless he or she meets expectations with respect to Values and Behaviors. In 2018, we assessed the rollout of the new incentive system with positive results. Across divisions, there was a 54% reduction in the number of reported complaints of fraud or professional practices in the sales force in 2018 compared to 2017.

Despite this progress, we are still facing questions about our business practices. Following the issue with Essential Consultants, when our political consultancy practices came into question, we took steps to improve oversight and help prevent similar matters in the future. We have strengthened the relevant contracting and due diligence processes to help ensure more ownership and transparency at a senior management level. For example, before Novartis

engages political consultants, we will secure an independent due diligence report from an external partner.

In addition, we continue to strengthen our Integrity & Compliance (I&C) function. In 2018, we combined our risk management and compliance functions in a single organization to help enable more effective risk management and mitigation efforts. We created the role of Chief Ethics, Risk and Compliance Officer to head the combined organization, and we elevated this role to the Executive Committee of Novartis (ECN).

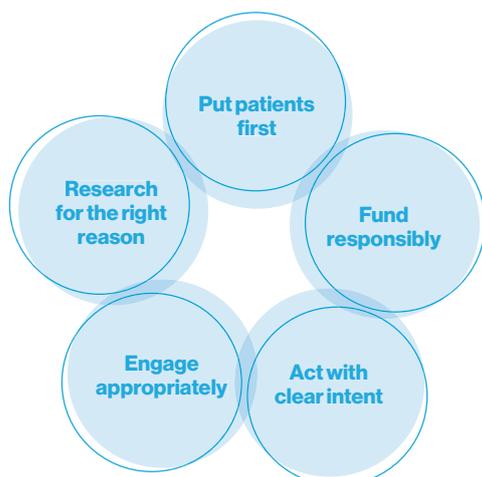
To help monitor and enforce our integrity standards, we added more than 100 people to the I&C function in recent years. The expanded team has increased the number of country visits to share learnings from across the organization, reaching about 220 in 2018. We also harmonized our I&C risk assessment and monitoring process and control activities into a single, continuous process supported by an online tool.

Across divisions, there was a 54% reduction in the number of reported complaints of fraud or professional practices in the sales force in 2018 versus 2017

We continue to evolve our reporting and data analytics to provide centralized and aggregated data across the risk functions to identify trends and help improve risk mitigation. For instance, in the last two years, we've seen a positive trend in generally effective internal compliance audits. At the same time, our whistleblower hotline continues to receive reports of suspected cases

## P3 PRINCIPLES

Novartis has adopted a single set of ethical principles that should be applied in daily decision-making by all Novartis associates



where employees may have failed to follow our ethical guidelines. However, the proportion of substantiated allegations related to ethics and compliance matters remains stable. We believe these are indications that our efforts are starting to pay off. We also started to employ data analytics for better monitoring and risk prevention. For example, in the US and China, the team leverages big data to monitor various aspects of engagement with healthcare professionals.

### Being part of the solution on pricing and access

Our medications reach more than 800 million people worldwide every year, but billions more still lack access to essential medicines and healthcare. We are making a fundamental shift in the way we do business and are reimagining how to expand access to critical healthcare innovations.

We launched the Novartis Access Principles, embarking on a journey to systematically integrate access strategies into how we research, develop and deliver our new medicines globally. These strategies include adopting innovative pricing and access models, refocusing research and development based on society's healthcare needs, and supporting approaches to strengthen healthcare systems. We made significant progress in setting up our internal systems and training our internal teams on our new business standards. The ECN reviewed plans for key brands in launch phase to assess access strategies targeting underserved populations. For example, *Aimovig*, our innovative medicine for the treatment of migraine, is supported by programs designed to help accelerate access both before and after reimbursement, as well as to speed up introduction and access in low- and middle-income countries (LMICs). We are also co-creating

employer-based access schemes in selected markets, including Russia and Mexico.

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We are making a fundamental shift in the way we do business and are reimagining how to expand access to critical healthcare innovations

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We aim to price our medicines responsibly, based on the value they deliver to patients, healthcare systems and society. In the US, we recently implemented guidelines for limiting average net price increases across our portfolio to the healthcare inflation rate, and we publish average price increases annually in the Novartis in Society US report.

In addition, we take local affordability into account when pricing our medicines. In LMICs, for instance, we introduced more affordable local brands of many innovative therapies, such as our heart failure treatment *Entresto*, to help speed up and improve access where there is inadequate healthcare coverage or reimbursement. Through our continued efforts and an impactful access strategy, the number of patients reached with *Entresto* in LMICs grew two-and-a-half-fold in the last 12 months. Overall, we have launched more than 60 local brands across more than 30 developing markets, reaching more than 220 000 additional patients to date. In addition, we are now able to reduce the time lag between availability of medicines in higher- and lower-income countries. For example, the first *Entresto* local brand was launched within 12 months of the launch in the European Union. We plan to further expand these strategies.

24m

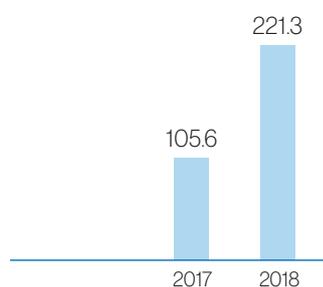
Patients reached through our access-to-medicine programs

17m

People reached through training, health education and service delivery programs

### PATIENTS REACHED THROUGH LOCAL BRANDS

Total patient equivalent (000's)



# 40m

People reached with health education through Healthy Family since 2010

# 3m

Novartis Access monthly treatments delivered since 2015

Through our Novartis Social Business (NSB) group, we continue to pursue unique social business models, such as the Novartis Access and Healthy Family programs, to help expand access to healthcare in lower-income countries. Novartis Access, which offers a portfolio of 15 medicines to governments, nongovernmental organizations and other institutional customers for USD 1 per treatment, per month, delivered almost 2.3 million monthly treatments to five countries in 2018, and Healthy Family reached 7.8 million people with health education initiatives. Since January, NSB has adapted its product and price offering in six African and Asian countries, expanding reach to patients across all income levels.

Novartis does not file or enforce patents in least developed countries or low-income countries. In late 2018, we reviewed our approach to patent filing in LMICs in an effort to better align it with the local socio-economic circumstances that exist in many of these countries. As a result, effective 2019, we decided to stop filing patent applications in nine LMICs, where Novartis had previously filed. In addition, in the remaining LMICs, we will aim to restrict patent filings to those patent applications covering new molecules or new chemical entities.

Novartis is also a founding member of the Patent Information Initiative for Medicines (Pat-INFORMED), a unique public online resource launched in September 2018 that provides basic patent information for medicines of participating companies, and that aims to help procurement agencies around the world better understand patent status to help inform procurement decisions. As of December, Novartis has listed patent information for all of our small-molecule medicines, which goes significantly beyond Pat-INFORMED's near-term goal of capturing information for medicines in a more limited number of disease areas.

Patent information for all of our small-molecule medicines has been listed online as part of the Pat-INFORMED initiative, of which we are a founding member

We regularly review our early- and late-stage development programs to identify further opportunities for adapting our existing medicines to address unmet patient needs in countries with a high disease burden. In 2018, 14 project proposals were endorsed to move forward. They include the development of a child-friendly formulation of hydroxyurea for treatment of sickle cell disease in Africa; the use of *Entresto* in heart failure related to Chagas disease; a project to identify potential differences in the pharmacokinetics of drugs in African patients, where such data is lacking; and the creation of a new *Coartem* formulation to treat infants below 5 kilograms of body weight.

### Tackling global health challenges

Novartis has a long history of helping tackle some of the biggest global health challenges, particularly leprosy and malaria.

The Novartis Foundation helped found the Global Partnership for Zero Leprosy in 2018. It brings together international organizations and national leprosy programs, with support from the World Health Organization, to accelerate progress toward eliminating the disease. The Novartis Foundation and Microsoft are partnering to develop a proof-of-concept digital health tool, enabled by artificial intelligence, and a Leprosy Intelligent Image Atlas – in collaboration

with local investigators from the Oswaldo Cruz Foundation in Brazil – to aid in the early detection of leprosy. The launch of the first public version of the atlas is planned for 2019.

In April, we renewed our commitment to malaria elimination, pledging USD 100 million to research and develop next-generation antimalarials over the next five years. In addition, we will help expand access to antimalarials formulated for children, and we plan to implement programs to strengthen healthcare systems in four sub-Saharan countries.

We also launched efforts in other areas where we believe we can have significant impact. In October, in Latin America, we kicked off our partnership with the World Heart Federation to develop a roadmap for addressing Chagas disease, the second most common cause of chronic heart failure in Latin America.

In Ghana, we kicked off a collaboration with the government and local partners to establish our commitment to sickle cell disease (SCD) in Africa. This collaboration aims to support the development of treatment guidelines; strengthen the healthcare system by establishing centers of excellence to advance newborn screening and train scientists; accelerate registration and launch of hydroxyurea for the treatment of SCD; and integrate the needs of patients into our drug development strategy. We plan to launch our commitment in 2019 and to also expand our efforts to other countries in sub-Saharan Africa.

## Being a responsible citizen

Building trust with society requires doing business responsibly wherever we operate. This includes minimizing our environmental impact, managing risk in our supply chain, respecting human rights and being transparent.

We have adopted a more ambitious 2030 environmental sustainability strategy, aiming for carbon neutrality, plastic neutrality and water sustainability. We have already taken steps to mitigate our exposure to environmental risk, completing a series of comprehensive supplier audits and taking relevant actions. For example, in the Hyderabad area of India, we are severing ties with six suppliers that failed to comply with our Supplier Code, and we are working with nine suppliers to improve their performance in critical areas such as operational efficiency, waste management, and use of natural resources. These suppliers share our values for environmental stewardship and employee health and safety.

In October, our Third-Party Risk Management program went live in Mexico. The program is to be rolled out globally in 2019 in a phased regional approach, beginning in the Americas (including the US) and followed by Asia-Pacific and Europe later in the year.

After completing human rights impact assessments in our own operations in Egypt, Turkey, China and Malaysia, we have established that we have strong policies and solid processes to identify and manage potential human rights risks. We have also identified common risk areas that require additional follow-up action in 2019. For example, we need more regular and broader engagement and consultation with external stakeholders at a local level – including representatives from patient groups, local communities, health authorities and third-party partners – to gain a better understanding of issues; to help ensure that formal grievance mechanisms and processes are in place for communities living close to our manufacturing operations; and, in some markets, to address risks associated with our outsourced workforce.

7.2m

People have received free treatment for leprosy since 1999

100m

To be invested over the next five years in the research and development of next-generation antimalarials (USD)

### NEW ENVIRONMENTAL TARGETS



Carbon neutral in own operations by 2025



Water neutral in all areas by 2030



Plastic neutral by 2030

For more information

**Novartis in Society 2018 report**

**Corporate responsibility section of our website**

**Transparency and disclosure section of our website**





## Ethiopia

Dr. Helen Yifter

# Addressing the rising tide of diabetes in Ethiopia

In her native Ethiopia, Dr. Helen Yifter (right) is one of only seven endocrinologists, specialized in treating diabetes and other hormonal disorders. Dr. Yifter, a graduate of the Novartis Next Generation Scientist program, treats patients at Black Lion Hospital in the capital of Addis Ababa. She also helped establish the first diabetic foot clinic in sub-Saharan Africa. Diabetes is on the rise in Ethiopia as more people move from rural to urban areas and adjust their diets and lifestyles. While nearly 3 million Ethiopians have diabetes, the overwhelming majority are undiagnosed – and without treatment, they risk developing other serious health complications, such as heart disease, kidney damage, and foot and vision problems. Dr. Yifter regularly trains other healthcare professionals to diagnose and treat diabetes as a way to boost patients' access to quality care.

- 1 Dr. Helen Yifter checks the blood pressure of Amina Shafi, 62, who has type 2 diabetes. Every three months, Ms. Shafi travels by bus to visit Dr. Yifter at Black Lion Hospital.
- 2 Dr. Yifter leads a weekly training session for medical students. As one of the few endocrinologists in Ethiopia, she knows it is imperative to train the next generation of doctors.
- 3 Ms. Shafi has developed eye and kidney complications as a result of her diabetes. During a recent checkup, she received the upsetting news that she must switch from oral medication to insulin injections.





# Our corporate governance approach

Our corporate governance approach supports our objective of creating long-term value for our company, our shareholders and society. We carefully monitor developments in corporate governance and regularly meet with shareholders to understand their expectations.

## Novartis AG and Group companies

Novartis AG, with its registered office in Basel, Switzerland, is a corporation organized under Swiss law that has issued registered shares. As the holding company, Novartis AG owns or controls directly or indirectly all entities worldwide belonging to the Novartis Group and conducting its business operations.

## Our Board of Directors

Our leadership structure is designed to establish effective checks and balances in the governance of our company. All Board members (including the Chairman) are independent and non-executive. The Board is responsible for the overall direction and oversight of management, and holds the ultimate decision-making authority for Novartis AG, with the exception of decisions reserved for shareholders.

The composition of the Board aligns with our strategy as well as our business portfolio, geographic reach and culture. Our Board's effectiveness is enhanced by its diversity, as reflected in nationality, gender, background and experience, age, tenure, viewpoints, interests, and technical and interpersonal skills. Background and experience in the following fields are represented on the Board: leadership and management; healthcare, life sciences and medicine; research and develop-

## Our leadership structure

### Governance bodies



ment; engineering and technology; marketing; banking, finance and accounting; human resources; legal and public affairs; and risk management.

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In 2018, the Board focused on strengthening the operations of Novartis, expanding our therapeutic platforms, and accelerating our push into the data and digital healthcare space to increase our ability to develop breakthrough therapies and improve patient outcomes. The Board also discussed the Alcon spin-off, our investments in breakthrough technologies (including the acquisitions of Endocyte, Inc., AveXis, Inc. and Advanced Accelerator Applications S.A.), as well as the divestments of a part of the US-based generics business of Sandoz and the selling of our remaining consumer healthcare stake to joint venture part-

ner GlaxoSmithKline. Additional topics were the restructuring of our technical operations and business services to become a leaner and more agile organization, our corporate culture as a key driver for the company, and an evaluation of the impact of external perspectives on our strategy. Topics addressed during private meetings included Board self-evaluation and the performance assessment of the Executive Committee members, as well as CEO and Executive Committee succession planning. In addition, the committees addressed a variety of key topics. The Audit and Compliance Committee focused on acquisitions as well as divestments, and discussed the reorganization of Internal Audit. The Compensation Committee discussed potential enhanced disclosures in the 2018 Compensation Report and reviewed the variable compensation programs for Executive Committee members, including financial metrics. The Governance, Nomination and Corporate Responsibilities Committee reviewed our corporate responsibility activities and reflected on the role of companies in society. The Research & Development Committee discussed the Sandoz biosimilar portfolio and reviewed an external assessment of the portfolio and productivity of Novartis research and development. The Risk Committee analyzed pricing and evaluated risks and opportunities associated with the digital status and strategy (including measures regarding cybersecurity).

## Our Executive Committee

The Board delegates day-to-day management of Novartis to the Executive Committee, as we operate under a strict dual board structure. Under the leadership of the CEO, the Executive Committee assumes overall responsibility for and oversight of our business.

Over the past few years, the Board of Directors has particularly focused on helping develop and attract top leadership talent. Vas Narasimhan became CEO on February 1, 2018, and we made a number of changes to the Executive Committee. We added two new female members: Liz Barrett to lead Novartis Oncology (succeeded by Susanne Schaffert as of January 1, 2019), and Shannon Thyme Klinger to serve as Group General Counsel. We also appointed Bertrand Bodson as our first-ever Chief Digital Officer; Klaus Moosmayer as our Chief Ethics, Risk and Compliance Officer; Robert Weltevreden to lead our Novartis Business Services transformation; and John Tsai to lead our Global Drug Development efforts.

The Executive Committee is committed to creating a culture of true empowerment and responsibility that can unleash the full potential of our company.

# Our Board of Directors



**Joerg Reinhardt, Ph.D.**  
Chairman  
German



**Enrico Vanni, Ph.D.**  
Vice Chairman  
Swiss



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



**Dimitri Azar, M.D.**  
American



**Ton Buechner**  
Dutch/Swiss



**Srikant Datar, Ph.D.**  
American



**Elizabeth (Liz) Doherty**  
British



**Ann Fudge**  
American



**Frans van Houten**  
Dutch



**Andreas von Planta, Ph.D.**  
Swiss



**Charles L. Sawyers, M.D.**  
American



**William T. Winters**  
British/American

**Audit and Compliance Committee**

E. Doherty (Chair)  
T. Buechner  
S. Datar  
A. von Planta  
E. Vanni

**Compensation Committee**

E. Vanni (Chair)  
S. Datar  
A. Fudge  
W. Winters

**Governance, Nomination and Corporate Responsibilities Committee**

A. von Planta (Chair)  
D. Azar  
A. Fudge  
C. Sawyers  
E. Vanni

**Research & Development Committee**

J. Reinhardt (Chair)  
N. Andrews  
D. Azar  
F. van Houten  
C. Sawyers

**Risk Committee**

S. Datar (Chair)  
N. Andrews  
E. Doherty  
A. Fudge  
A. von Planta

For full CVs of our Board members

[www.novartis.com/BoD](http://www.novartis.com/BoD)

# Our Executive Committee



**Vasant (Vas) Narasimhan, M.D.**

Chief Executive Officer  
*American*



**Steven Baert**

Chief People & Organization Officer  
*Belgian*



**Bertrand Bodson**

Chief Digital Officer  
*Belgian*



**James (Jay) Bradner, M.D.**

President of the Novartis Institutes for BioMedical Research (NIBR)  
*American*



**Richard Francis**

CEO, Sandoz  
*British*



**Paul Hudson**

CEO, Novartis Pharmaceuticals  
*British*



**Harry Kirsch**

Chief Financial Officer  
*German/Swiss*



**Shannon Thyme Klinger**

Group General Counsel  
*American*



**Steffen Lang, Ph.D.**

Global Head of Novartis Technical Operations  
*German/Swiss*



**Klaus Moosmayer, Ph.D.**

Chief Ethics, Risk and Compliance Officer  
*German*



**Susanne Schaffert,<sup>1</sup> Ph.D.**

CEO, Novartis Oncology  
*German*



**John Tsai, M.D.**

Head of Global Drug Development and Chief Medical Officer  
*American*



**Robert Weltevreden**

Head of Novartis Business Services (NBS)  
*Dutch*

For full CVs of our ECN members and other members of senior management

 [www.novartis.com/ECN](http://www.novartis.com/ECN)

<sup>1</sup> Elizabeth (Liz) Barrett stepped down as CEO of Novartis Oncology and as a member of the Executive Committee of Novartis on December 31, 2018.

## Board oversight and risk management

The Board is committed to creating sustainable shareholder value. We achieve this by setting a clear strategy and executing effective governance.

The Board ensures that it has all information required to oversee the Executive Committee and senior management. The CEO regularly informs the Board of current developments, and Executive Committee members regularly attend Board meetings to discuss specific topics. Board members are also entitled to request information from Executive Committee members or any other Novartis associate, and they may visit any Novartis site.

Comprehensive risk management is an integral part of the responsibility of the Board. The Board regularly assesses risks and fosters a culture of risk awareness throughout the organization, in line with our Values and Behaviors. We apply principles-based decision-making and require our employees to act in every situation with strong ethics and integrity. The Risk Committee assists the Board of Directors in ensuring that

risks are properly assessed and professionally managed by overseeing the risk management system and processes, as well as by reviewing the risk portfolio and related actions implemented by management. To further strengthen our risk management efforts, we made the position of Chief Ethics, Risk and Compliance Officer part of our Executive Committee in 2018. Additionally, as of January 1, 2019, we brought together the Internal Audit function, the SpeakUp Office and Global Security into one function called Novartis Business Assurance & Advisory. This new function is intended to drive fair and faster investigations, deliver value-adding audits and advisory engagements, and ensure that there is a safe place for our employees to speak up. Our approach to risk management includes streamlining the risk assessment and monitoring process to ensure we have a single risk approach through our company, fully supported by online tools and data analytics. In 2018, we launched our newly harmonized Integrity & Compliance Risk Assessment and Monitoring (RAM) process. The RAM process integrates current risk assessments, self-assessments, control activities and monitoring into a single, continuous, cyclical process.

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Comprehensive risk management is an integral part of the responsibility of the Board.

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## Our capital structure and shareholder rights

As of December 31, 2018, the share capital of Novartis AG is CHF 1 275 312 410 fully paid-in and divided into 2 550 624 820 registered shares (Novartis share). Each Novartis share has a nominal value of CHF 0.50. No authorized and conditional capital exists as of December 31, 2018.

Novartis shares are listed on the SIX Swiss Exchange (ISIN CH0012005267, symbol: NOVN) and on the New York Stock Exchange (NYSE) in the form of American depositary receipts (ADRs) representing Novartis American depositary shares (ADSs) (ISINUS66987V1098, symbol: NVS).

Shareholders have the right to receive dividends, to vote and to execute all other rights as granted under Swiss law and the Articles of Incorporation. Each Novartis share registered with the right to vote entitles the holder to one vote at General Meetings. To be registered with voting rights, a shareholder must declare that he or she acquired the shares in his or her own name and for his or her own account. Shareholders can vote their Novartis shares by themselves or appoint another shareholder or the Independent Proxy to vote on their behalf.

The General Meeting must be held within six months after the close of the financial year (December 31), and normally takes place at the end of February or the beginning of March.

## Our information policy

Novartis is committed to open and transparent communication with shareholders, financial analysts, customers, suppliers and other stakeholders. The CEO, with the CFO and Investor Relations team, supported by the Chairman, are

responsible for ensuring effective communication with shareholders about the company's strategy, prospects, business operations and governance. Through communication with shareholders, the Board also learns about and can address their expectations and concerns.

## Website information

Topic	Information
<b>Share capital</b>	Articles of Incorporation of Novartis AG <a href="http://www.novartis.com/investors/company-overview/corporate-governance">www.novartis.com/investors/company-overview/corporate-governance</a> Novartis key share data <a href="http://www.novartis.com/key-share-data">www.novartis.com/key-share-data</a>
<b>Shareholder rights</b>	Articles of Incorporation of Novartis AG <a href="http://www.novartis.com/investors/company-overview/corporate-governance">www.novartis.com/investors/company-overview/corporate-governance</a> Investor Relations information <a href="http://www.novartis.com/investors">www.novartis.com/investors</a>
<b>Board regulations</b>	Board regulations <a href="http://www.novartis.com/investors/company-overview/corporate-governance">www.novartis.com/investors/company-overview/corporate-governance</a>
<b>Executive Committee</b>	Executive Committee <a href="http://www.novartis.com/our-company/executive-committee">www.novartis.com/our-company/executive-committee</a>
<b>Novartis code for senior financial officers</b>	Novartis Code of Ethical Conduct for CEO and Senior Financial Officers <a href="http://www.novartis.com/investors/company-overview/corporate-governance">www.novartis.com/investors/company-overview/corporate-governance</a>
<b>Novartis in Society</b>	Novartis in Society <a href="http://www.novartis.com/nisreport2018">www.novartis.com/nisreport2018</a>
<b>Additional information</b>	Novartis Investor Relations <a href="http://www.novartis.com/investors">www.novartis.com/investors</a>

More information on our corporate governance is provided in the Annual Report 2018.

 [www.novartis.com/annualreport2018](http://www.novartis.com/annualreport2018)

# Compensation Report summary

Novartis delivered strong performance in 2018 as it continues its transformation into a leading, focused innovative medicines company. We continued to engage with shareholders and proxy advisors to gather feedback on the proposed evolution of the compensation system. It has helped shape the changes, enhancements and simplifications we are making, effective January 1, 2019, to further align our compensation systems and disclosures with our strategy and best practice.

## 2018 CEO pay for performance

Novartis delivered strong performance in 2018, with net sales up 5% in constant currencies (cc), core operating income up 8%, and free cash flow up 12%. All these were ahead of targets set by the Board of Directors at the start of the year. Operating income declined 5% mainly due to the impact of M&A transactions made to transform Novartis into a leading, focused medicines company, and of restructuring to drive major productivity programs. Net income increased 64% primarily due to the one-off gain from the sale of the OTC Joint Venture.

Strong performance was also achieved against the five strategic objectives. Key highlights include performing above target on the delivery of the innovation pipeline; optimizing the business unit portfolio through the Alcon spin-off and other divestments and acquisitions; achieving

good commercial execution; establishing a new culture vision and taking steps to simplify processes globally; and prioritizing corporate responsibility projects, including the renewed commitment to malaria and leprosy.

The 2018 total realized compensation for the CEO was **CHF 6 680 288**. This incorporates a 2018 Annual Incentive payout at 145% of target, within the payout range of 0% to 200%. It also includes the 2016-2018 Long-Term Performance Plan (LTPP) award vesting at 136% of target, within the payout range of 0% to 200% (based on the award made prior to the CEO's appointment). The 2016-2018 Long-Term Relative Performance Plan (LTRPP) award lapsed in full (0% payout), despite Novartis 2018 total shareholder return (TSR) of 4.5%, and three-year TSR for 2016-2018 of 8.5%.

## 2019 Executive Committee compensation system

Every year, the Compensation Committee conducts a review of the Executive Committee compensation system. The 2018 review focused on the structure and performance measures of the Long-Term Incentive plans, taking into account a desire for simplification and the principle of compensating executives more directly on performance linked to our strategic priorities of accelerating top- and bottom-line growth.

This led to the decision to combine the existing LTPP and LTRPP into a single Long-Term Incentive plan and to replace Novartis Cash Value Added (NCVA) with net sales growth and core operating income growth for the 2019-2021 performance cycle onward. This will align the Long-Term Incentive with the evolving Group strategic

imperatives of accelerating growth and margin expansion to drive long-term value. The Compensation Committee decided to retain the long-term innovation and relative total shareholder return performance measures, and an equal weighting will apply to each of the four performance measures. The performance targets will be set at the beginning of each three-year cycle.

The Compensation Committee considered the use of another return-based performance measure and determined it not to be appropriate at this time. This is to ensure that decisions on research and development and future acquisitions and divestments are based on long-term value creation.

## Current Executive Committee compensation system

	Fixed pay and benefits		Performance related variable pay		
	Annual base salary	Pension and other benefits	Annual Incentive	Long-term share awards	
				LTPP <sup>1</sup>	LTRPP <sup>2</sup>
<b>Purpose</b>	Reflects responsibilities, experience and skill sets	Provides retirement and risk insurances (tailored to local market practices/regulations)	Rewards for performance against short-term financial and strategic objectives, and Values and Behaviors	Rewards long-term shareholder value creation and innovation in line with our strategy	
<b>Form of payment</b>	Cash	Country/individual-specific	50% cash 50% equity <sup>3</sup> deferred for three years	Equity, vesting following a three-year performance period	
<b>Performance measures</b>	–	–	Balanced scorecard comprising: <ul style="list-style-type: none"> <li>Financial measures (60%)</li> <li>Strategic objectives<sup>4</sup> (40%)</li> </ul>	<ul style="list-style-type: none"> <li>Novartis Cash Value Added (75%)</li> <li>Innovation milestones (25%)</li> </ul>	<ul style="list-style-type: none"> <li>Relative TSR versus global sector peers (100%)<sup>5</sup></li> </ul>

<sup>1</sup> LTPP = Long-Term Performance Plan

<sup>2</sup> LTRPP = Long-Term Relative Performance Plan

<sup>3</sup> Executive Committee members may elect to receive more of their Annual Incentive in equity instead of cash.

<sup>4</sup> Strategic objectives are aligned with the five strategic pillars: innovation, operational excellence, data and digital, people and culture, and building trust with society.

<sup>5</sup> For the 2018-2020 performance cycle, the peer group of 15 global healthcare companies applies, as listed in the Compensation Report within the 2018 Annual Report.

## Alignment with company strategy

The Novartis strategy is to reimagine 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. We also aim to reward those who invest their money, time and ideas in our company. The Novartis strategy is underpinned by five strategic pillars: innovation, operational excellence, data and digital, people and culture, and building trust with society. To align the compensation

system with this strategy and to ensure that Novartis is a high-performing organization, the company operates both a short-term Annual Incentive and two Long-Term Incentive plans with a balanced set of measures and targets. This includes strategic objectives within the Annual Incentive balanced scorecard, which align with the five strategic pillars of Novartis. The Board of Directors determines specific, measurable and time-bound performance measures for the Annual Incentive and the two Long-Term Incentive plans.

## Executive Committee compensation governance

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

### Decision on

Compensation of CEO

Compensation of other Executive Committee members

### Decision-making authority

Board of Directors

Compensation Committee

## Executive Committee compensation risk management principles

- Rigorous performance management process
- Balanced mix of short-term and long-term variable compensation elements
- Performance evaluation under the Annual Incentive includes an individual balanced scorecard
- Performance-based Long-Term Incentives only, with a three-year performance period
- All variable compensation is capped at 200% of target
- Contractual notice period of 12 months
- Post-contractual non-compete limited to a maximum of 12 months from the end of employment (annual base salary and Annual Incentive of the prior year only) as per contract, if applicable
- Good and bad leaver provisions apply to the variable compensation of leavers
- No severance payments or change-of-control clauses
- Clawback and malus principles apply to all elements of variable compensation
- Share ownership requirements; no hedging or pledging of Novartis share ownership position

## 2018 CEO pay for performance – outcomes

Measure	Target	Achievement versus target
<b>2018 ANNUAL INCENTIVE</b>		
<b>Financial measures – 60% of total Annual Incentive, comprising:</b>		
Group net sales (cc) (30%)	USD 50 447 million	Above
Group operating income (cc) (30%)	USD 8 504 million	Met*
Group free cash flow as a % of sales (cc) (20%)	20%	Significantly above
Share of peers for Novartis Group (USD) (20%)	9.3%	Met
<b>Overall assessment of Group financial targets in constant currencies</b>		<b>Above</b>
<b>Strategic objectives – 40% of total Annual Incentive, comprising:</b>		
Innovation (20%)		Significantly above
Operational excellence (20%)		Above
Data and digital (20%)		Met
People and culture (including Values and Behaviors) (20%)		Above
Building trust with society (including access to healthcare and reputation) (20%)		Met
<b>Overall assessment of strategic objectives</b>		<b>Above</b>
<b>Overall assessment of CEO balanced scorecard</b>		<b>Above Target</b>
<b>TOTAL Annual Incentive:</b>	<b>145% of target (payout range 0% – 200%)</b>	

\* The Board concluded that the achievement for Group operating income versus target was 'met' following adjustments mainly for M&A transactions made to transform Novartis into a leading, focused medicines company, and for higher restructuring to drive major productivity programs, which were not known at the time of target setting.

### 2016-2018 LONG-TERM INCENTIVES

<b>Long-Term Performance Plan (LTPP)</b>		
Novartis Cash Value Added (cc) (75%)	USD 5.1 billion	Above
Key innovation milestones (25%)		Above
<b>TOTAL LTPP:</b>	<b>136% of target (payout range 0% – 200%)</b>	
<b>Long-Term Relative Performance Plan (LTRPP)</b>		
Relative TSR against a global healthcare peer group (USD)		Below Threshold
<b>TOTAL LTRPP:</b>	<b>0% of target (payout range 0% – 200%)</b>	

## 2018 total realized compensation for the CEO

The 2018 total realized compensation for the CEO was **CHF 6 680 288**, and includes the payouts of the Annual Incentive, LTPP and LTRPP based on actual performance assessed for cycles concluding in 2018.

	Fixed pay and benefits		Variable pay – performance-related			Total realized compensation
	Annual base salary <sup>1</sup>	Pension and other benefits	2018 Annual Incentive <sup>1</sup>	LTPP 2016-2018 <sup>2</sup>	LTRPP 2016-2018 <sup>2</sup>	
CHF 000s						
Vasant Narasimhan (CEO from February 1, 2018)	1 492	203	3 190	1 796	0	<b>6 680</b>

<sup>1</sup> Base salary and Annual Incentive reflect the compensation relating to Vasant Narasimhan's roles in 2018 as Head of Global Drug Development (January 1, 2018 – January 31, 2018) and CEO (from February 1, 2018).

<sup>2</sup> The shown amounts represent the underlying share value of the total number of shares vested (including dividend equivalents) to the CEO for the LTPP and LTRPP performance cycle 2016-2018, which were granted before Dr. Narasimhan was appointed CEO.

## 2018 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.

CHF 000	AGM 2018-2019, annual fee
Compensation of Chairman	3 800
Board membership	280
Vice Chairman	50
Chair of the Audit and Compliance Committee	130
Chair of the Compensation Committee	90
Chair of the following committees: • Governance, Nomination and Corporate Responsibilities Committee • Research & Development Committee • Risk Committee	70
Membership of the Audit and Compliance Committee	70
Membership of the following committees: • Compensation Committee • Governance, Nomination and Corporate Responsibilities Committee • Research & Development Committee • Risk Committee	40

Total actual compensation earned by Board members in the 2018 financial year was CHF 3 804 336 for the Chairman of the Board and CHF 4 430 625 for the other 12 members of the Board (one of whom stepped down at the 2018 AGM).

## 2019 Annual General Meeting (AGM)

In line with our Articles of Incorporation, at the 2019 AGM, shareholders will be asked to approve the maximum aggregate amount of compensation for the members of the Executive Committee of CHF 92 million. This is the same level as 2018. There is also no change in the maximum aggregate amount of compensation for members of the

Board of Directors, at CHF 8.2 million. Full details on compensation for the CEO, other Executive Committee members and Board members can be found in the Compensation Report of our Annual Report 2018, and in the 2019 Say-on-Pay Brochure.

# Novartis annual reporting suite

## Annual Review



The Annual Review, our new corporate report, explains who we are and what we do, and highlights our progress against the company's five strategic priorities in 2018.

[www.novartis.com/ar18english](http://www.novartis.com/ar18english)

[www.novartis.com/ar18german](http://www.novartis.com/ar18german)

## Novartis in Society



Novartis in Society, formerly called the Corporate Responsibility (CR) Report, details our CR approach and performance in four strategic areas.

[www.novartis.com/nisreport2018](http://www.novartis.com/nisreport2018)

## US Securities & Exchange Commission Form 20-F/Annual Report



The Annual Report on Form 20-F provides a comprehensive overview of Novartis, including our company structure, corporate governance and compensation practices. It also discloses our operating and financial results, accompanied by annual financial statements.

[www.novartis.com/reportingsuite](http://www.novartis.com/reportingsuite)

## Digital Annual Review



A digital and interactive version of the Annual Review

[www.annualreview.novartis.com](http://www.annualreview.novartis.com)

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## Disclaimer

These materials contain forward-looking statements that can generally be identified by words such as "potential," "expected," "will," "planned," "pipeline," "outlook," or similar expressions, or by express or implied discussions regarding potential new products, potential new indications for existing products, or regarding potential future revenues from any such products; or regarding the potential outcome, or financial or other impact on Novartis, of the proposed spinoff of our Alcon Division, or of the proposed divestiture of certain portions of our Sandoz Division business in the US; or regarding the potential impact of the share buyback plan; or regarding potential future sales or earnings of the Group or any of its divisions or potential shareholder returns; or regarding potential future credit ratings of the Group; or by discussions of strategy, plans, expectations or intentions. Such forward-looking statements are based on the current beliefs and expectations of management regarding future events, and are subject to significant known and unknown risks and uncertainties. Should one or more of these risks or uncertainties materialize, or should underlying assumptions prove incorrect, actual results may vary materially from those set forth in the forward-looking statements. You should not place undue reliance on these statements. In particular, our expectations could be affected by, among other things: global trends toward healthcare cost containment, including ongoing government, payer and general public pricing and reimbursement pressures and requirements for increased pricing transparency; regulatory actions or delays or government regulation generally, including potential regulatory actions or delays with respect to the proposed transactions or the development of the products described in this Annual Report; the potential that the strategic benefits, synergies or opportunities expected from

the proposed transactions may not be realized or may take longer to realize than expected; the inherent uncertainties involved in predicting shareholder returns; the uncertainties inherent in the research and development of new healthcare products, including clinical trial results and additional analysis of existing clinical data; our ability to obtain or maintain proprietary intellectual property protection, including the ultimate extent of the impact on Novartis of the loss of patent protection and exclusivity on key products that commenced in prior years and will continue this year; safety, quality or manufacturing issues; uncertainties regarding actual or potential legal proceedings, including, among others, actual or potential litigation with respect to the proposed transactions, product liability litigation, litigation and investigations regarding sales and marketing practices, intellectual property disputes and government investigations generally; uncertainties involved in the development or adoption of potentially transformational technologies and business models; our performance on environmental, social and governance measures; general political, economic and trade conditions, including uncertainties regarding the effects of ongoing instability in various parts of the world; uncertainties regarding future global exchange rates; uncertainties regarding future demand for our products; uncertainties regarding potential significant breaches of data security or data privacy, or disruptions of our information technology systems; and other risks and factors referred to in Novartis AG's current Form 20-F on file with the US Securities and Exchange Commission. Novartis is providing the information in these materials as of this date and does not undertake any obligation to update any forward-looking statements as a result of new information, future events or otherwise.

All product names printed in italics in this Annual Review are trademarks owned by or licensed to the Novartis Group.

The use of a <sup>TM</sup> or the registered trademark symbol ® in combination with a brand name in a normal script indicates 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.

Our Annual Review is published in English; a German translation is also available.

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Marie Gratia Musanabera (left), a nurse entrepreneur who owns and runs a health clinic in rural Rwanda, speaks with one of her patients. Ms. Musanabera's clinic is part of an innovative network of more than 90 healthcare outposts in Rwanda affiliated with One Family Health, a nongovernmental organization.

**Back cover photo** Ms. Musanabera weighs a baby.



