Transduction and transgene expression in retina cells
Microscopic image by
Iris Wang, Ophthalmology Research Unit

Biogen Scientists
Gene Therapy Analytical Development
Cambridge, MA

2019 Year in Review

Our Commitment to Corporate Responsibility

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Our purpose

Caring Deeply. Working Fearlessly. Changing Lives.™ These words are not just a philosophy we live by but are words that define every action we take. A deep unwavering commitment to the patients we serve, the employees that make us who we are and the environment and communities where we live and work. At Biogen, we are not afraid to go where others won't.

With our expertise and technology, we have pioneered drug discovery in neuroscience and we remain committed to expanding access to new potential treatments. Our goal is to make a meaningful difference in the lives of people suffering from devastating neurological and neurodegenerative conditions. Not because we can, but because we must.

In addition to serving patients, we are passionate about our commitment to our employees, the environment and our local communities. These commitments not only reflect who we are and our dedication to changing lives, but also to changing the world we live in for the better.

Message from the CEO

2019 was a remarkable year for Biogen as we delivered strong operating performance across all of our core business areas, double-digit earnings growth versus a year ago and strong execution of our strategy. We strengthened our pipeline by adding seven new clinical programs, which we believe will help us further expand our multi-franchise portfolio and drive mid- and long-term growth.

2019 was also marked by changing developments for aducanumab, an investigational treatment for early Alzheimer's disease. In October 2019, together with our collaboration partner Eisai Co., Ltd. (Eisai), we announced plans to pursue regulatory approval for aducanumab in the U.S. This decision was based on a new analysis, conducted in consultation with the U.S. Food and Drug Administration (FDA), of a larger dataset from the Phase 3 EMERGE and ENGAGE studies of aducanumab that had been discontinued in March 2019 following a pre-specified futility analysis.

The extraordinary events surrounding aducanumab and the progress across our portfolio is a testament to Biogen's commitment to follow the science – one that was made possible by fearless, dedicated colleagues.

Before turning to 2019 in more detail, we want to acknowledge the health and economic challenges facing all of us as a result of the current COVID-19 pandemic. Many of our communities as well as a number of our colleagues have been directly affected by COVID-19. We are committed to doing all we can to ensure the health and safety of all our employees and provide an uninterrupted supply of our medicines to patients around the world. We are grateful to everyone at Biogen who has helped us maintain our manufacturing and business operations so that patients can continue to receive our therapies. We are closely monitoring the ongoing and ever-changing developments and the impact it may have on our business operations, including our sales, manufacturing and clinical trials.

Our purpose

At Biogen we pioneer science with the goal of better understanding and preserving the underlying qualities of our essential human nature. We strongly believe that neuroscience is the next frontier that will see real scientific progress and breakthrough, and we believe that our diverse, talented workforce, with more than 7,700 employees worldwide, is uniquely positioned to take on some of the most challenging healthcare needs and to move Biogen forward. As we work to improve patients' lives, we also care deeply about making a difference in our society as a whole through science that may have the potential to, among other things, improve brain health, mobility and vision. We focus on science that seeks to solve societal problems and create access to innovation. We work with purpose to advance science to address the urgent and long-term challenges facing humanity.

> We work with purpose to advance science to address the urgent and long-term challenges facing humanity.
>
> — Michel Vounatsos
> Chief Executive Officer

Delivering sustainable performance

In 2019, we generated $14.4 billion in full-year total revenues, a 7% increase versus the prior year, and we generated net cash flows from operations of approximately $7.1 billion. GAAP diluted earnings per share for 2019 were $31.42, an increase of 46% over 2018, and Non-GAAP diluted earnings per share increased 28% over the prior year to $33.57.

Our business and cash generation remained strong and provided us with the flexibility to allocate capital to create long-term stockholder value. In 2019 we spent approximately $2.3 billion in research and development and repurchased approximately 24 million shares of our common stock for a total value of approximately $5.9 billion. In addition, we spent approximately $515 million in 2019 on capital expenditures including a significant investment in the large-scale biologics manufacturing facility we are building in Solothurn, Switzerland.

These results reflect the resilience of our multiple sclerosis (MS) business as well as the continued growth of both SPINRAZA and our biosimilars business.

Capturing the neuroscience opportunity

To review Biogen's strong 2019 performance – as well as Biogen's future – let's consider some key statistics.

It is estimated that approximately 50 million people worldwide suffer from dementia and approximately 10 million suffer from Parkinson's disease. Neurological disease is the leading cause of disability and the second largest cause of death globally.

Aging populations will almost certainly increase these numbers significantly. It is estimated that the global population over the age of 60 will be nearly 1.5 billion by 2030, and by 2050 those over 60 will be nearly 2 billion, with 1.5 billion over the age of 65.

These numbers are only part of the story. There are important inflection points in medical history when a breakthrough in knowledge or technology generates new ideas and treatments. Consider, for example, the advancements that followed the discoveries of anesthesia, medical imaging, penicillin, organ transplants, HIV treatment and immunotherapy. For Biogen, we believe our expertise and capabilities could lead to the next major inflection point in neuroscience.

Our view is that neurological diseases are deeply connected. As the pathways of disease are interrelated, so are the potential approaches to treating them. Our experience in MS gives our scientists and researchers deeper insights into remyelination and repair, neuroprotection and axonal health, with potential applications in Alzheimer's disease, Parkinson disease, amyotrophic lateral sclerosis (ALS) and stroke.

Leading in Alzheimer's disease

The announcement in October 2019 of our plan to pursue regulatory filing for aducanumab in the U.S. was one of the highlights of our year.

In March 2019, we announced the discontinuation of EMERGE and ENGAGE, our two Phase 3 studies, based on the results of a pre-specified futility analysis that predicted that both studies were unlikely to meet their primary endpoint upon completion. In retrospect, we now know that the result of the futility analysis, based on a smaller and earlier dataset, was incorrect. Following the discontinuation of the studies, additional data from a greater number of patients became available.

A new analysis of this larger dataset, conducted in consultation with the FDA, showed that the Phase 3 EMERGE study met its pre-specified primary and secondary endpoints by showing a significant reduction in clinical decline. And, we believe that results from a subset of patients in the Phase 3 ENGAGE study who received sufficient exposure to high dose aducanumab support the findings from EMERGE, though ENGAGE did not meet its primary endpoint.

Over the past months, we have been actively engaging with the FDA and are working diligently to complete the regulatory filing in the U.S. as soon as possible. We are also actively engaging with regulators in Europe and in Japan based on the positive results of the new findings.

One of our first priorities was to offer eligible patients who had been enrolled in the discontinued aducanumab studies the possibility of restarting the investigational treatment.

The first patient in the U.S. returned to dosing in March 2020, and we are also actively working in Europe and Japan to re-open sites.

If approved, aducanumab would become the first therapy to reduce clinical decline in patients at early stages of the disease. While this brings tremendous hope, there remain significant challenges as patients are usually diagnosed late in the progression of the disease. Consequently, we have started working collaboratively with healthcare stakeholders to help support efforts that could enable the system to diagnose patients early enough so they might benefit from potential treatment.

The path for innovation is not straightforward – especially for Alzheimer's disease research – and aducanumab's journey has been humbling, fueled by both a drive to address the unmet need and hope. All along, we have worked with determination to follow the science with patients in mind.

We also believe it will take more than one therapy to treat Alzheimer's disease, so we continue to advance a broad portfolio of potential Alzheimer's therapies. In March 2019, our collaboration partner Eisai announced the start of CLARITY AD, a Phase 3 study of BAN2401, an anti-amyloid beta antibody co-developed with Biogen to potentially treat patients with early Alzheimer's disease. In addition, our portfolio includes BIIB080, a tau-targeted antisense oligonucleotide (ASO) in Phase 1; BIIB076, an anti-tau antibody in Phase 1; and gosuranemab (BIIB092), a distinct anti-tau antibody in Phase 2, as well as a number of pre-clinical programs.

In addition to our Alzheimer's disease pipeline and pre-clinical programs, we have entered into a number of transactions with potential applications in Alzheimer's disease:

- In December 2019, we entered into a collaboration with Camp4 Therapeutics, whose platform may bring additional capability in the identification of potential druggable targets for Alzheimer's disease, among others.

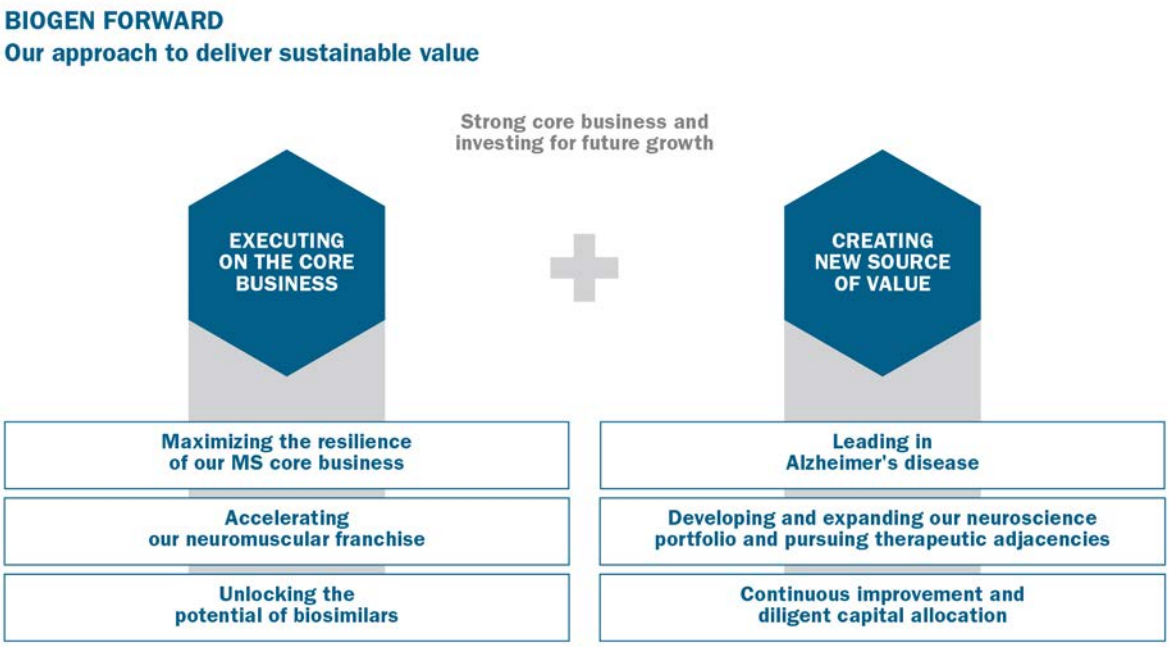
- In January 2020, we entered into an agreement with Pfizer Inc., which was completed in March, and acquired a Phase 1 asset for the potential treatment of patients with behavioral and neurological symptoms across various psychiatric and neurological diseases, including the treatment of sundowning in Alzheimer's disease.

- In February 2020, we announced a global collaboration with Sangamo Therapeutics, Inc., which became effective in April 2020, to develop gene regulation therapies for Alzheimer's, Parkinson's, neuromuscular and other neurological diseases.

Resilience in MS

In 2019, we remained a global market leader in MS with an approximately 34% market share of the approximately one million MS patients being treated worldwide. Our portfolio ranges from symptomatic treatment to disease-modifying therapies and, with 25 active MS clinical trials, we continue pioneering research across all stages of MS.

In October 2019, together with Alkermes plc, we announced FDA approval for VUMERITY, a novel fumarate treatment for relapsing MS. We are excited about the prospect of this new option for patients. VUMERITY offers the well-characterized efficacy of TECFIDERA, the most prescribed oral medicine for relapsing MS in the U.S., and showed superior patient-reported gastrointestinal tolerability.



We continued to advance the Phase 2b study of opicinumab (anti-LINGO) as a potential remyelinating agent for MS. If successful, opicinumab would represent a first-in-class therapy to potentially repair or restore function in MS patients, an entirely different approach from current disease-modifying therapies.

We recently had two label updates in the European Union to allow, where clinically needed, the use of AVONEX and PLEGRIDY during pregnancy and breastfeeding, and we have several portfolio innovations in progress, such as the evaluation of extended interval dosing with TYSABRI, that we believe are primed to strengthen the business from multiple facets. Looking ahead, our unwavering commitment in MS continues.

Continued growth and regional expansion in spinal muscular atrophy

SPINRAZA, the first treatment approved for infants, children and adults with spinal muscle atrophy (SMA), continued to grow in the U.S. and even more so outside the U.S. In 2019 full-year SPINRAZA revenues increased 22% from 2018 to $2.1 billion, driven by 9% growth in the U.S. to $933 million and 34% growth outside the U.S. to $1.2 billion.

By the end of 2019 SPINRAZA, was approved in over 50 countries with formal reimbursement in 40 countries, including China. More than 10,000 patients have been treated with SPINRAZA globally, including in clinical studies, the expanded access programs and the post-marketing setting.

Despite progress, a cure has yet to be found for this devastating disease, and our commitment to the SMA community remains unwavering. The results of the NURTURE study in pre-symptomatic infants, presented at the annual Cure SMA meeting in June 2019, showed that treating patients earlier improved outcomes. We are pleased that newborn screening for SMA has increasingly become routine and implemented in 23 states in the U.S. to date. In September 2019, we announced that we plan to initiate DEVOTE, a new Phase 2/3 study evaluating the safety and potential for even greater efficacy of a higher dose of SPINRAZA in the treatment of SMA. The first patient in the study was dosed in March 2020.

SPINRAZA's success is an example of Biogen's pioneering science and strong execution capabilities. In less than four years, SPINRAZA has become a foundation of care for SMA, providing life-changing benefits to many patients and turning what was an often-fatal disease for infants with the most severe form of SMA into a potentially survivable condition.

Double-digit growth in biosimilars

A core part of our strategy is to unlock the potential of biosimilars as a growth driver and as part of our value proposition to support a sustainable healthcare system. Biosimilars are products that have been demonstrated to be similar in efficacy and safety to the originator's approved biological product, with the advantage that they offer cost savings, providing payers and health systems the budgetary headroom to fund innovation.

In 2019, our biosimilars business grew 35%, generating $738 million in revenues. More than 200,000 patients were treated with our three anti-tumor necrosis factor (anti-TNF) biosimilars, an increase of approximately 70% versus the prior year. Overall, we estimate that our anti-TNF biosimilars have contributed healthcare savings of approximately €1.8 billion in Europe in 2019.

In December 2019, we bolstered our biosimilar business by securing the exclusive rights to commercialize two potential ophthalmology biosimilar products, SB11 referencing LUCENTIS and SB15 referencing EYLEA, in major markets worldwide, including the U.S., Canada, Europe, Japan and Australia.

> The progress of our pipeline reflects our commitment to bringing potentially innovative new therapies to patients and further supports our goal of building a multi-franchise neuroscience portfolio.
>
> — Michel Vounatsos
> Chief Executive Officer

Advancing significant opportunities for value creation

The progress of our pipeline reflects our commitment to bringing potentially innovative new therapies to patients and further supports our goal of building a multi-franchise neuroscience portfolio.

We are pioneers in neuroscience and are not afraid to go where others won't. Our focus enables us to leverage the interconnectivity in neuroscience and to develop unique asymmetric core capabilities that we believe may increase the probability of success of our pipeline.

We closed 2019 with a pipeline that included 27 clinical programs, of which 6 are in Phase 3, 12 are in Phase 2 and 9 in Phase 1 – as well as a deep pre-clinical pipeline across multiple modalities. We believe that no other company is as well-positioned to develop potentially breakthrough medicines for patients living with devastating neurological and neurodegenerative diseases. Looking forward, we expect multiple mid- to late-stage readouts by the end of 2021.

We have an unwavering commitment to neuromuscular disorders, and we are inspired by the progress of tofersen (BIIB067), an ASO being studied for the potential treatment of a rare form of ALS in adults with a confirmed superoxide dismutase 1 (SOD1) mutation. At the 71st annual meeting of the American Academy of Neurology in May 2019, we presented positive results of a Phase 1/2 study of tofersen, and we have started enrollment of VALOR, a pivotal Phase 3 study. We believe the Phase 1/2 data further demonstrate the potential of targeting genetic drivers of disease.

In December 2019, we announced positive top-line results from the Phase 2 LILAC study evaluating the efficacy and safety of BIIB059 (anti- BDCA2) in patients with lupus. The study results showed that BIIB059, a monoclonal antibody, demonstrated a statistically significant reduction of disease activity in people with cutaneous lupus and systemic lupus erythematosus, as compared to those who received placebo.

There are currently only a limited number of treatment options available to help manage these difficult-to-treat and chronic diseases, and we are excited by the prospect to advance BIIB059 to Phase 3.

We continued to further our pipeline in ophthalmology. In March 2019, we acquired Nightstar Therapeutics plc, a clinical-stage gene therapy company. As a result, we added two mid- to late-stage clinical assets, as well as preclinical programs, that focus on adeno-associated virus treatments for inherited retinal disorders that can lead to blindness. Following the acquisition, we completed enrollment of the Phase 3 STAR study of BIIB111 (timrepigene emparvovec) for the potential treatment of choroideremia, a rare, degenerative, X-linked retinal disorder that leads to blindness and currently has no approved treatments. The study is designed to investigate the safety and efficacy of a single subretinal injection of the gene therapy.

While we hope to continue the clinical trials that we have underway, we expect that COVID-19 precautions may impact the timeline of some of our trials.

Where science meets humanity

We feel a great sense of responsibility in our role as a corporate citizen to make a positive impact both today and in the future. To do this, we must always consider and act on environmental, social and governance (ESG) issues as an integral part of how we do our business, every day.

In 2019, for the fourth time, Biogen was listed as the number one company for the biotechnology industry in the Dow Jones Sustainability World Indices.

Since 2014, Biogen has been carbon neutral, as reflected in our use of 100% renewable electricity and financially supported carbon offset projects. It is clear that more is needed, and we are working to find solutions that align with the recommendations of climate scientists to move beyond carbon offsets. Also, we treat water as a precious commodity – strictly monitoring and looking for ways to reduce use. We continue to actively employ green chemistry processes and techniques to reduce our waste, water and energy consumption.

Our employees are actively involved in our corporate responsibility efforts. In September 2019 more than 3,000 Biogen employees across more than 30 countries volunteered their time and energy for our annual Care Deeply Day. Since 2010 this global day of service has supported more than 100 community-based organizations, science education programs, nutrition and food security and other local needs.

In 2019, we took two major steps in providing greater transparency on how critical decisions are made about access to our medicines. In June, we published our updated Pricing Principles that outline how we determine responsible pricing for our therapies, and in December we published our framework of Access Programs for investigational therapies. Our thinking on these very important access matters has been guided by health equity and affordability while sustaining innovation.

The Biogen Foundation supports our commitment to science, technology, engineering and math education (STEM). In 2019 more than 4,220 students participated in education sessions at our Community Labs in our Cambridge, Massachusetts, and Research Triangle Park, North Carolina, locations. Since our Community Labs began, nearly 55,000 children have been engaged in our hands-on programs, and in 2019 54% of those students came from low-income households and/or groups traditionally underrepresented in science.

Biogen's ongoing success is rooted in the strength of our diverse people and our inclusive culture. We firmly believe that diverse teams drive better performance. Within Biogen today, we are proud of the fact that 46% of our director-level and above positions are held by women, and in the U.S., 26% of director-level and above roles are held by racial or ethnic minorities. Recently, we have taken important steps in setting goals to ensure diversity in our clinical trial programs. This is part of our commitment to address the needs of the patients we serve. In the U.S. alone, we know that African Americans make up only 5% of clinical trial participants, while Hispanic representation is 1%. This is not sufficient representation, a fact we are working to help change.

In 2020 we will continue to advance our corporate responsibility leadership. Ultimately, we believe that by doing the right thing for our community and the world, we can help build sustainable value for all our stakeholders.

Our multi-front response to the COVID-19 pandemic

Biogen is engaging on many fronts to respond to the COVID-19 global crisis by focusing our efforts on the following major areas.

Through the Biogen Foundation, we have committed $10 million to support the global response efforts and the immediate needs of communities. Our donations are focused on expanding testing options, easing the strain on medical systems and supporting access to necessities like food.

We have directed employees to work from home and provided support, including financial support, to all Biogen employees and their families worldwide to protect their health and safety and prevent the disease from further spreading.

We have directed employees to work from home and provided support, including financial support, to all Biogen employees and their families worldwide to protect their health and safety and prevent the disease from further spreading.

We are helping to increase the understanding of COVID-19 and advance research efforts and potential therapeutic options.

For example, we have entered into a consortium with the Broad Institute of MIT and Harvard, and Partners HealthCare to create an open COVID-19 biobank. We will provide scientific expertise and enable impacted Biogen employees, as well as close contacts, to donate blood samples and related health data, which will then be analyzed by scientists and researchers and will be openly shared with the global scientific community.

Our teams are mobilized as we work to ensure patients continue to have access to our therapies and are closely monitoring developments and potential impacts on our business. As we've moved forward through this crisis, the importance of our work and the vital role our team plays in supplying critical therapies for people living with serious neurological and neurodegenerative diseases has become even clearer.

Looking to the future

Given the fluidity of the current environment, we anticipate that there may be near-term impacts on our business or operations from the COVID-19 pandemic. However, we believe that we have multiple opportunities for long-term value creation as we continue to build a multi-franchise neuroscience portfolio.

As always, we will remain financially disciplined, continue to drive efficiencies and operate with integrity as we aim to continue to deliver long-term value to our stockholders and society. We believe that neuroscience is at an inflection point, and Biogen is at the forefront.

None of our accomplishments or our prospects for future success would be possible without the commitment of the people of Biogen, the trust of our stockholders and the support all of our stakeholders – scientists, collaboration partners, healthcare providers, advocacy groups, caregivers and patients.

My sincere thanks and appreciation to all of you. Together, we are tackling some of the most difficult and devastating diseases, and I believe we can have a profound, positive impact on society. We are dedicated to working ethically and compliantly with a passion for science to help deliver innovative therapies for patients and value for our stockholders. At Biogen, we are pioneering science for humanity. Millions are waiting for life-changing therapies, which is why we can't wait. The time is now.

Michel Vounatsos

Chief Executive Officer

About Biogen

We are pioneers in neuroscience. Pioneers dedicated to the discovery and development of innovative therapies for global patient populations with neurological and neurodegenerative diseases. Since our inception more than 40 years ago, we embarked on a ceaseless journey to discover solutions for patients that need them the most.

Our focus on neuroscience, our deep scientific expertise and our courage to take risks make us leaders in the research and development of medicines to transform neuroscience to benefit society. While the fear of failure to tackle complex challenges in neurology keeps others away, at Biogen, we are not afraid to go where others won't.

Founded in 1978, as one of the world's first global biotechnology companies, Biogen today has the leading portfolio of medicines to treat multiple sclerosis, has introduced the first approved treatment for spinal muscular atrophy and commercializes biosimilars of advanced biologics. We are seeking U.S. regulatory approval for the potentially first early Alzheimer's disease treatment, and continue to advance research in multiple sclerosis and neuroimmunology, Alzheimer's disease and dementia, neuromuscular disorders, movement disorders, ophthalmology, immunology, neurocognitive disorders, acute neurology and pain.

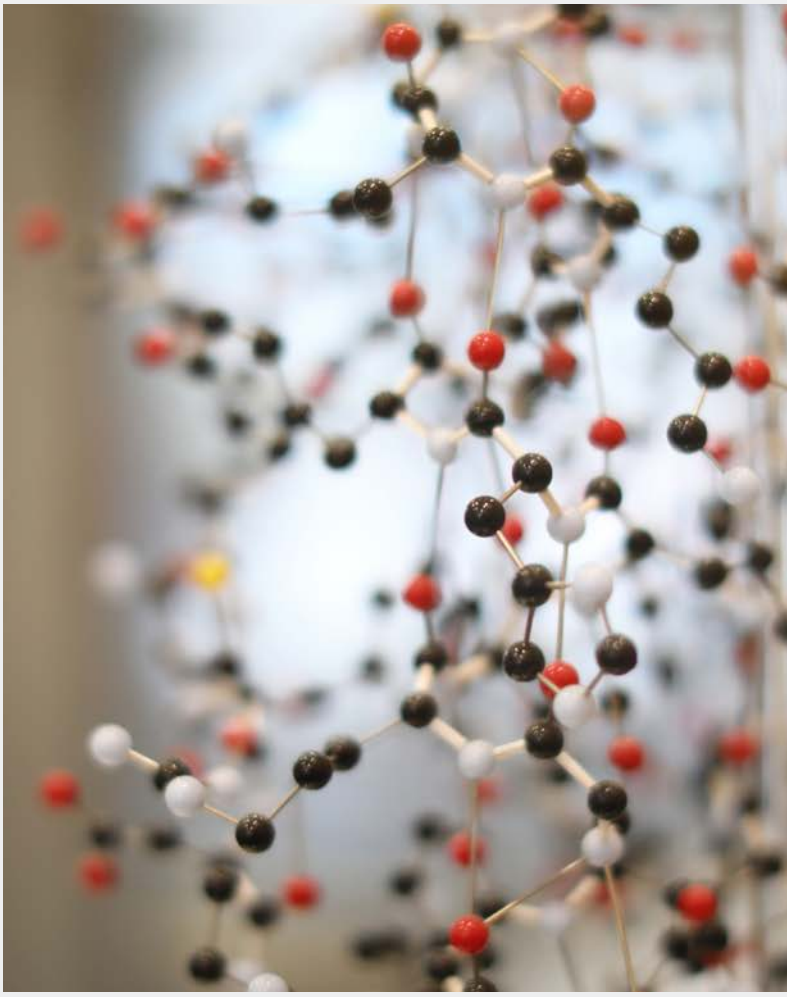
Strategy, Governance and Guiding Principles

Today, many neurological diseases remain largely untreated. But at Biogen, we believe we are at the forefront of unlocking promising scientific breakthroughs that have the potential to impact the lives of patients around the globe.

Strategy

We aim to further expand our multi-franchise portfolio to address the vast unmet need in neuroscience. We believe no other area of medicine holds as much promise for scientific breakthroughs that can impact the lives of patients.

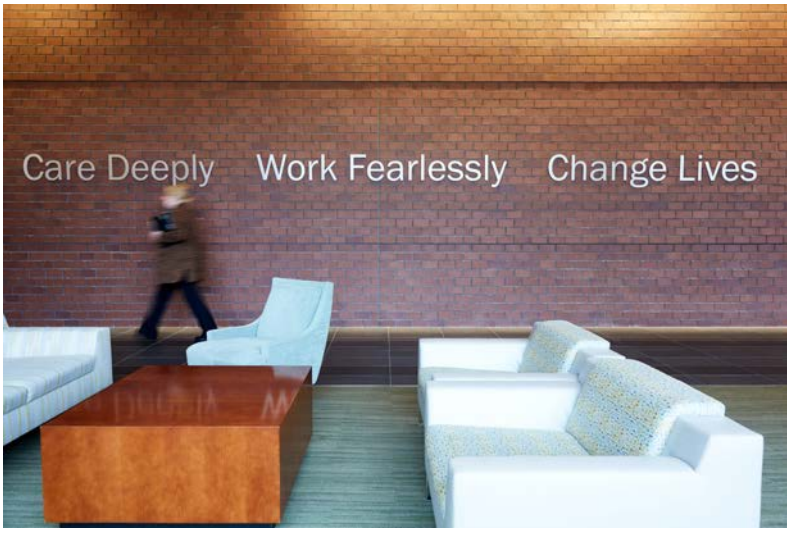
Through our research, we increasingly see that many neurological disease areas and the therapeutic strategies that treat them are interconnected. With knowledge gained from one area resonating across our pipeline, we have identified a set of scientific hypotheses with the potential to uncover medical breakthroughs across our disease areas.



Governance

The Company's Certificate of Incorporation and Bylaws, together with our corporate governance principles, provide the framework for the corporate governance of Biogen.

The Board reviews these governing documents and principles, as well as other aspects of the Company's governance, on a regular basis.



Guiding Principles

Our commitment is grounded in our Code of Business Conduct (Values in Action), our Sustainability Policy and our other related policies and position statements. These principles and policies outline our focus on ethical business conduct, compliance, accountability and transparency, among other topics. To review the full list of our commitments, visit Our Guiding Principles.

The foundation of everything we do is built around evidence-based science – for our business, for patients and for the environment. Our climate reduction targets, as well as our broader commitment to environmental sustainability, are science-based.

2019 Highlights and Achievements

7 new clinical programs

7% revenue growth

GAAP EPS increased **46%**

Non-GAAP EPS increased **28%**

~34% of all treated MS patients globally

FDA approved **VUMERITY** for the treatment of relapsing forms of MS

20% revenue invested in **R&D**

Cleo™ + aby™ now support more than **100,000** patients

- Biogen and its collaboration partner Eisai Co., Ltd. announced plans to submit a regulatory filing for aducanumab in Alzheimer's disease based on a new analysis of a larger dataset from the Phase 3 EMERGE and ENGAGE studies
- Biogen acquired commercialization rights to potential ophthalmology biosimilars of LUCENTIS® and EYLEA® in the U.S. and other major markets
- In Europe, ~215,000 patients have been treated with a Biogen biosimilar and Biogen estimates that these biosimilars contributed ~1.8 billion euros in healthcare cost savings in Europe in 2019

As Biogen grows, we remain committed to reducing our environmental footprint by eliminating harmful emissions and by minimizing resources used to manufacture our products. We are committed to:

- Continuing to match 100% of our electricity use (including power for electric vehicles) with electricity produced from renewable sources, our public commitment to the RE100 initiative since 2014.
- Reducing by 35% our absolute GHG footprint – across Scopes 1, 2 and 3 – by 2030 (compared to our 2013 footprint)
- Assessing our water use and keeping use within our determined fair share (what the Center for Sustainable Organizations calls “fair, just and proportional share” of local water resources)
- Maintaining Zero Waste to Landfill status for our manufacturing facilities
- Continuing to leverage our 2020 intensity-based metrics for internal operational excellence and benchmarking
- Engaging with our highest climate impacting suppliers to lower GHG emissions in our supply chain

Pioneering Science to Transform Patient Care

Neurological diseases are the leading cause of disability and the second leading cause of death worldwide. We believe that no other disease area holds as much need or as much promise for medical breakthroughs.

With our focus in neurological diseases and our deep scientific expertise we are a well-established leader in the research and development of medicines that have the potential to transform neuroscience to benefit patients and society. We closed the year with 27 clinical programs; 6 in Phase 3, 12 in Phase 2 and 9 in Phase 1. Since the pharmaceutical field is vast, with many intersecting therapeutic research areas, we are using pioneering science as we continue to build our multi-franchise portfolio, with a focus on five core and four emerging growth areas.

Our core growth areas include:

- Multiple Sclerosis and neuroimmunology
- Alzheimer's disease and dementia
- Neuromuscular disorders, including spinal muscular atrophy and amyotrophic lateral sclerosis
- Movement disorders, including Parkinson's disease
- Ophthalmology

Our emerging growth areas include:

- Immunology
- Neurocognitive disorders
- Acute neurology
- Pain

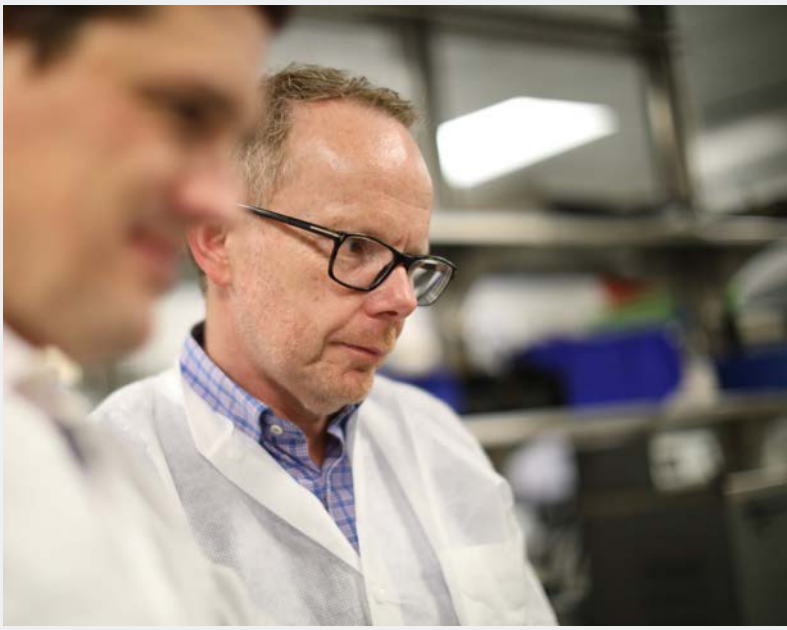
Learn more about our scientific expertise

Pursuing Medical Breakthroughs

Our portfolio of therapies aims to address humanity's most complex and difficult health challenges. We continue to advance scientific innovation that takes us deep into the body's nervous system, striving to deliver new treatments with the potential to transform care for patients.

Multiple Sclerosis (MS) is the foundation of our multi-franchise portfolio. In fact, as of April 2020, our therapies treated approximately 34 percent of all MS patients worldwide. In 2019 the U.S. Food and Drug Administration approved VUMERITY® (diroximel fumarate), bringing a new therapy to patients with relapsing MS.

We also continued the expansion of SPINRAZA® (nusinersen) for the treatment of spinal muscular atrophy (SMA). By the end of 2019, SPINRAZA was approved in over 50 countries, with formal reimbursement in over 40 countries, including China.



Sharing Our Progress

At the 71st annual meeting of the American Academy of Neurology (AAN), we built on our over twenty-years of expertise in MS research and development, with presentations on neurodegenerative diseases from our portfolio of medicines and investigational programs.

In addition to data supporting our established MS therapies – TECFIDERA® (dimethyl fumarate) and TYSABRI® (natalizumab) – our AAN presentations included results from a clinical investigation of a potential MS biomarker that could help standardize disease monitoring and inform future treatment decisions.

While earlier data demonstrated the clinical relevance of the serum neurofilament light chain (sNfL) levels to predict disease severity and monitor treatment response in MS patients, new findings from the ASCEND study further support the potential clinical relevance of sNfL levels.

We also presented insights about MS PATHS, our Learning Health System, which generates high-quality data to inform future approaches to patient care. With MS PATHS, researchers can evaluate common and disruptive MS symptoms, such as cognitive changes, to help drive more evidence-based, personalized treatment decisions. Collaborating with 10 leading MS centers in the U.S. and Europe, researchers have collected data from more than 17,000 people with MS to date.

At the annual conference of the European Committee for Treatment and Research in MS (ECTRIMS), we showcased our commitment to improve the care of patients with MS across the treatment spectrum. Data highlighted the benefits of TYSABRI in treating early MS to achieve NEDA (no evidence of disease activity) and improving disability and cognition. Data analysis from the TYSABRI Observational Program demonstrated the effectiveness of extended interval dosing (EID, every six weeks) compared to the approved dosing of every four weeks. And real-world data confirmed that exposure to interferon beta treatment, including PLEGRIDY® (peginterferon beta-1a) and AVONEX® (Interferon beta-1a), is not expected to impact pregnancy or infant outcomes. This data was leveraged for a class-wide label update in the E.U. for interferons, allowing for PLEGRIDY® (peginterferon beta-1a) and AVONEX® (Interferon beta-1a) to be used during pregnancy and breastfeeding in women with relapsing multiple sclerosis.

Lastly, we were excited to announce the first enrolled patient in NOVA a global Phase 3b study evaluating the efficacy and safety of extended interval dosing (EID, every six weeks) compared to standard interval dosing for TYSABRI in approximately 480 patients with relapsing MS.

Leading the way in biosimilars

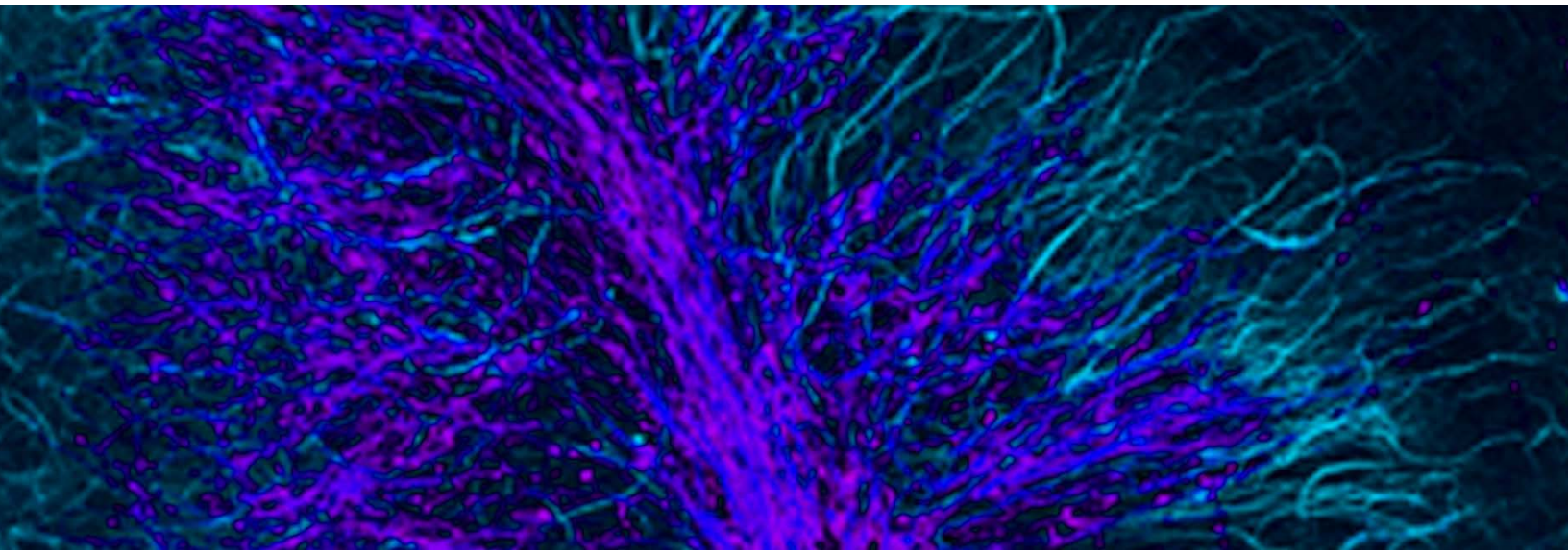
Biogen is one of only a handful of companies with the market-leading manufacturing capabilities and deep scientific expertise needed to produce biosimilars of advanced biologics. Biosimilars are products that have been demonstrated to be similar in efficacy and safety to the originator's approved biological product. They offer cost savings and promote sustainable access to therapies.

More than 200,000 patients in Europe have been treated with one of our anti-tumor necrosis factor (anti-TNF) biosimilars. We estimate that our anti-TNF biosimilars have contributed healthcare savings of approximately 1.8 billion Euros in Europe in 2019.

"One of the great healthcare challenges facing our society today is how to get patients on highly-effective treatments while also creating space for innovation," said Ian Henshaw, Vice President and Head of Global Biosimilars Unit at Biogen. "Biosimilars provide health systems with viable, cost-effective alternatives, thus allowing for investment in new technologies and treatments in other areas."

Through a new transaction, Biogen has the exclusive right to commercialize potential ophthalmology biosimilars referencing LUCENTIS® and EYLEA® across the U.S., Canada, Europe, Japan, and Australia. In addition, Biogen has the exclusive commercialization rights for its anti-TNF biosimilars in China.

Learn more about our leadership in biosimilars.



Building a Multi-Franchise Portfolio

Using pioneering science to strengthen our multi-franchise portfolio, we have made significant progress in expanding our extensive research pipeline. Our pursuit of multiple modalities may have the ability to slow or halt the progression of neurological diseases.

In our core growth area of Alzheimer's disease and dementia, we plan to file for U.S. Food and Drug Administration approval of aducanumab, an investigational treatment for early Alzheimer's disease that we are developing in collaboration with Eisai Co., Ltd. This decision was based on a new analysis of a larger dataset from the Phase 3 EMERGE and ENGAGE Phase 3 studies that had been discontinued in March 2019 following a prespecified futility analysis. One of the Phase 3 studies, EMERGE, met its prespecified primary and secondary endpoints by showing a significant reduction in clinical decline. We believe that results from a subset of patients from ENGAGE who received sufficient exposure to high dose aducanumab support the findings of from EMERGE, though ENGAGE did not meet its primary endpoint. If approved, aducanumab would be the first therapy to reduce clinical decline in the early stages of Alzheimer's disease.

We also exercised our option with Ionis Pharmaceuticals, Inc. and obtained a worldwide, exclusive, royalty-bearing license to develop and commercialize BIIB080, a tau-targeting antisense investigational treatment in early Alzheimer's disease.

This investigational drug is designed to cut down on the production of tau proteins, formally known as MAPT (microtubule-associated protein tau), in the central nervous system. These proteins can form tangles in the brain and are thought to cause neurodegenerative diseases, like Alzheimer's, and some other types of dementia.

This investigational treatment expands our broad Alzheimer's disease portfolio and pipeline, which includes two studies of anti-tau antibodies (Phase 1 and 2) in addition to BIIB080, BIIB076 and gosuranemab (BIIB092).

Our success in neurology gives our researchers insights into other diseases with shared commonalities, such as immunology. In our investigations of therapies to potentially treat lupus, our Phase 2 LILAC study results showed that BIIB059, a monoclonal antibody, demonstrated a statistically significant reduction of disease activity in people with cutaneous lupus erythematosus (CLE) and systemic lupus erythematosus (SLE) compared to those who received placebo. We are planning to advance BIIB059 to Phase 3.

Also in 2019 we completed several strategic acquisitions and partnerships to bolster our pipeline:

- In June, we acquired Nightstar Therapeutics plc, a clinical-stage gene therapy company focused on adeno-associated virus (AAV) treatments for inherited retinal disorders. As a result, we added two mid- to late-stage clinical assets, BIIB111 (timrepigene emparvovec) in choroideremia and BIIB112 (RPGR gene therapy) in X-linked retinitis pigmentosa, along with preclinical programs in other inherited retinal disorders (Stargardt's disease, Best disease and Retinitis Pigmentosa).

- In November, we completed enrollment in the global Phase 3 STAR study, which is evaluating BIIB111 for the potential treatment of choroideremia, a rare, degenerative, X-linked inherited retinal disorder that leads to blindness and currently has no approved treatments. Learn more about our expanded focus in Ophthalmology here.

- In December, we licensed an anti-C3 protease from Catalyst Biosciences, a compound in preclinical development for the potential treatment of geographic atrophy.

- Our continued collaborations with C4 Therapeutics (C4T) and Skyhawk Therapeutics, Inc. are showing great progress. Our strategic collaboration with C4T is focused on the use of its novel protein degradation platform for the discovery and development of potential new treatments for neurological conditions such as Alzheimer's disease and Parkinson's disease. Through our agreement with Skyhawk Therapeutics, the companies are leveraging Skyhawk Therapeutics' SkySTAR technology platform with the goal of discovering innovative small molecule treatments for patients with neurological diseases, including MS and SMA.

We will continue to pursue collaboration in 2020 and beyond that reinforce our leadership and strengthen our pipeline. In February 2020, Biogen and Sangamo Therapeutics announced a global collaboration to develop gene regulation therapies for Alzheimer's, Parkinson's, neuromuscular and other neurological diseases.

Making an impact beyond our portfolio

At Biogen, we are committed to understanding and addressing the issue of health disparities and inequity in the disease areas we treat. We support underserved, vulnerable and minority populations both now and in the future. We are proud to collaborate with the n-Lorem Foundation, a non-profit focused on creating individual treatments for patients with ultra-rare diseases caused by genetic mutations that affect approximately 1 to 10 patients in the world.

Learn more about our collaboration with n-Lorem Foundation.

Biogen launches Neurodiem

With the nonstop influx of scientific data in neurology, healthcare professionals often struggle to stay up to date on the latest developments. They simply don't have the time to search through multiple journals and pour through lengthy articles in search of new advances. To address this challenge, Biogen established Neurodiem – a single, online platform that aggregates high-quality scientific content in 18 neurology topics, all in a digestible format. The topics include: headaches, neuromuscular, critical care, genetics, pain, dementia, movement disorder, epilepsy, cognition and stroke. The service was developed by listening to neurologists' needs through extensive research, interviews, prototype testing and ongoing user feedback to ensure the service is relevant and constantly improving.

Neurodiem is a non-promotional digital platform from Biogen available in six languages and available in the U.S., France, Germany, the United Kingdom, Italy, Spain, Canada and Japan. The objective, scientific information on the platform is entirely independent from Biogen. It is selected, written, and published exclusively by independent scientific writers and editorial partners, who have ongoing relationships with faculty from academic institutes, and hospitals worldwide. In 2019 the platform featured over 3,000 daily summaries from key publications, exclusive content from over 400 key medical experts on emerging topics, 200 expert talks, real-time highlights from 12 international neurology conferences and access to over 800 full-text articles from renowned neurology journals.

"Neurodiem is a great resource that keeps neurologists well informed about the latest developments in our field, which ultimately benefits our patients," says Professor Frederik Barkhof, Professor of Neuroradiology within the UCL Institute of Neurology and UCL Institute of Healthcare Engineering. "I especially appreciate the independence of its content, the breadth of topics covered and the ease of use of the platform."

In 2019 Neurodiem was voted by neurologists as one of the top two preferred neurology websites across seven countries surveyed.* More than 7,000 healthcare professionals, including over 4,000 neurologists, registered to the platform in less than one year. In 2020 Biogen plans on expanding Neurodiem in more markets and adding a Neurodiem app to provide easy access to information on-the-go. Additionally, the digital team behind the platform is strongly focusing on improving the user experience through advanced personalization. These enhancements aim to provide healthcare professionals in neurology with the best and most convenient service to stay up-to-date in their ever-evolving field.

*According to Pascaleo survey of 496 neurologists in seven countries, December 2019

Learn more about Neurodiem and our scientific expertise

Biogen partners with n-Lorem Foundation to provide access for patients with ultra-rare diseases

Biogen is committed to addressing the unmet medical needs of patients who are underserved, vulnerable or underrepresented. This year, Biogen collaborated with n-Lorem Foundation – a nonprofit organization established to provide antisense oligonucleotides (ASOs) to potentially treat patients with ultra-rare diseases (conditions that affect 1 to 10 patients). Biogen invested an initial $1 million as one of the first corporate donors.

“It is important that we seek to address the needs of all patients with neurodegenerative diseases – in particular those with ultra-rare diseases,” said Cherié Butts, Medical Director, Digital & Qualitative Medicine at Biogen. “n-Lorem provides an opportunity to do what many organizations may not, for a variety of reasons, and Biogen is not only offering funding but also its expertise.”

ASOs are relatively new to the field of neurology and Biogen believes they hold great promise in treating some of the most challenging diseases of the brain. They are one of a few molecules that accesses the formidable blood-brain barrier – a divide which blocks approximately 95 percent of both oral and intravenous treatments. ASOs are also highly specific, and may have the potential to address genetically-based disorders directly in the brain.

Learn more about our scientific expertise

Expanding Biogen's focus in Ophthalmology

Seeking out new treatments that have the potential to transform care for patients with rare diseases is part of the pioneering spirit of Biogen. Last year, Biogen expanded its focus to help patients with rare diseases of the retina. The acquisition of Nightstar Therapeutics plc brought with it two mid- to late-stage gene therapies for the potential treatment of rare retinal diseases, BIIB111 (timrepigene emparvovec) and BIIB112 (RPGR gene therapy). These assets expand Biogen's focus in ophthalmology, a core growth area, as well as strengthen Biogen's foothold in gene therapy.

"Our focus is simple – to improve or preserve vision in patients with rare retinal diseases, empower patients to live independently and maintain hope for their future," said Samantha Vieira, Executive Director, Product Development and Commercial Lead at Biogen, and former Nightstar Therapeutics researcher. "Working now as part of the Biogen team, we have the combined expertise, resources and passion to deliver what we hope will be potentially transformative treatments to patients globally."

BIIB111 is in Phase 3 development for the potential treatment of choroideremia (CHM), which is a rare, degenerative, X-linked inherited retinal disorder that leads to blindness and which currently has no approved treatments. In November 2019 we announced that all patients had been enrolled in the pivotal Phase 3 STAR study which is evaluating BIIB111 as a potential first-in-class treatment for CHM.

"Imagine being told that you will go totally blind by a certain age – that your eyesight will deteriorate until it's gone and there are no treatments available," said Marina Feschenko, Director of Analytical Development for Gene Therapy at Biogen. "As a researcher, it's incredible to think we may be able to help these patients, help someone from going blind. I can't imagine anything more rewarding."

In early 2020 Biogen announced expanding into genomic medicines further, with a new collaboration with Sangamo Therapeutics to collaborate on gene regulation therapies for several neurological diseases. This latest collaboration bolsters Biogen's position as an emerging leader in gene therapy in neuroscience. Biogen's multi-franchise neuroscience pipeline stretches across complementary modalities, which now includes biologics, small molecules and antisense oligonucleotides along with potential gene therapies.

Learn more about our multi-franchise portfolio

Our Culture

Biogen attracts some of the world's leading innovative minds – people who have the courage to strive for what seems out of reach and people who are driven to transform patient care with the goal of improving brain health, mobility, vision and breathing.

Our people are passionate about making a global impact. They live their passion every day by working to help solve societal problems, supporting local communities and encouraging the next generation of scientists. We empower our people to build rewarding careers by encouraging colleagues to learn, take initiative and seek growth opportunities.

Our Culture & Talent

At Biogen, we're not afraid to go where others won't – not just because we can, but because we believe we must. We strive to create a workplace culture that fosters learning and development, where employees are empowered to own their careers and are motivated to grow.

Our employees are encouraged to take advantage of an array of professional development resources.

In 2019 we partnered with LinkedIn Learning as our new e-learning resource, providing our employees access to over 8,000 on-demand learning modules in English, French, German, Spanish, Japanese and Portuguese.

Additionally, we have a rich selection of courses and trainings that are offered both in person and virtually through Biogen University. Regardless of where our employees are in their careers or in the world, there is something for each and every one of them.

In 2019 Biogen broadened their collaboration with Everwise to offer a comprehensive mentoring solution to employees. Through this offering, employees are provided a year-long personalized learning experience to support their development. Everwise uses software solutions to extend learning beyond content to incorporate people and development experiences.

Using an algorithm, participants are matched with a dedicated mentor and Everwise Experience Manager to identify and work towards short-term professional goals for 6 months. The Everwise Platform and Community provides resources along the way for 12 months. 245 Biogen employees were enrolled in the program in 2019 as mentees while 115 enrolled to be mentors. Following its great success, the program will continue to expand in 2020 and beyond.

To create and sustain a workplace as diverse and inclusive as the patients we serve, we offer programs that invest in our talent pipeline and in our current leaders, including:

- **ARC** (Activate, Reflect and Co-Create): Preparing top talent for the rigors of executive roles
- **WLP** (Women's Leadership Program): Addressing the unique challenges faced by female leaders to increase influence and impact
- **ELR** (Executive Leadership Retreat): Immersing leaders in topics designed to help them shape culture and build resilience

In 2019 we also established a Research Fellow Program to attract top, early-career scientists and build a sustainable talent incubator for Biogen's research engine. To date, eight fellows have joined the program and we are planning to build the program into 15 fellows by the end of 2020. This program seeks high-caliber PhDs and Postdocs who are interested in gaining experience in the biotech industry, providing them the opportunity to contribute to our pipeline and portfolio projects as well as collaborate with some of our most accomplished scientists.

At Biogen, we believe that Diversity & Inclusion is essential to solving complex problems. We proactively serve as positive agents of change through our commitment to improving Diversity & Inclusion, by supporting the next generation STEM (Science, Technology, Engineering, Mathematics) workforce. We are proactively working to inspire students to become part of the future generation of innovators, healthcare professionals and researchers We hope that our culture will inspire those in our communities. We received the following recognition for our work in Diversity & Inclusion:

- Best Place to Work for Disability Inclusion: Received a score of 100 percent on the Disability Equality Index (DEI), presented by the American Association of People with Disabilities (AAPD) and Disability:IN
- Triangle Business Journal 2019 Leaders in Diversity: Recognized for our inclusive workforce and contribution to weaving a diverse fabric into the local community
- Forbes' Best Employers for Diversity: We were honored to be recognized again on the Forbes' list of Best Employers for Diversity

Throughout 2019 we continued to embrace the Biogen Elements: Customer Focused, Inclusive, Pioneering, Agile, Accountable and Ethical. The Biogen Elements give shape to our company's culture and guide who we are, how we work and what we strive to be. Our CEO Elements Awards celebrate employees who have made significant contributions to our strategy while embodying the Biogen Elements.

Additionally, our annual Environmental, Health & Safety (EHS) Awards recognize employee efforts in four areas: safety, health & wellness, sustainability and resiliency.

Workplace Community

We're especially proud to support families at Biogen. In 2019, we opened the Bright Horizons Care Center at our campus in North Carolina, where 1,500 Biogen employees work. The state-of-the-art center provides childcare support for up to 50 children and is open year-round with a variety of programs to support family needs. Read more about Bright Horizons Care Center.

Our teams are not only passionate about enhancing our workplace , but we're also engaged across a wide range of activities to support our local communities, such as Care Deeply Day, Giving Tuesday, the grants we make through the Biogen Foundation and our unique, hands-on Community Labs, which have provided more than nearly 55,000 students a hands-on introduction to science since 2002.

Awards and Recognition

We are honored to be recognized as a company of choice for employees. In 2019, we received the following recognition:

- Forbes list of the World's Best Employers: Ranked 85th
- Forbes list of America's 'Most JUST Companies': Ranked 30th overall, 1st among ranked pharmaceutical and biotech companies

Learn more about our workplace community and talent philosophy: Working at Biogen.

Diversity and Inclusion & Employee Engagement

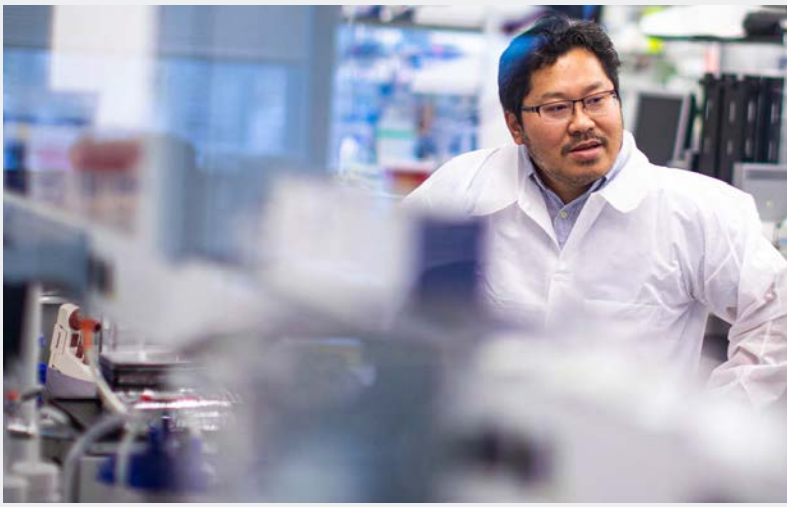
We believe that innovation is fueled by diversity and an inclusive workplace empowers us to achieve better business results, work more effectively with our providers and suppliers and transform patient care.

Our approach to Diversity and Inclusion (D&I)

At Biogen, we believe it's important to deploy an overarching D&I strategy that includes clear goals. To establish and progress this strategy, we rely on a cross-company governing body of employees known as the Diversity & Inclusion Strategic Council (DISC). In 2019 the DISC created a multi-year strategic focus that is centered on the following pillars:

- Building inclusive talent systems fully aligned with the Inclusive Biogen Element
- Creating a culture of ownership and accountability where "Everyone Owns D&I"
- Driving health equity for underserved populations in the disease areas we treat

Our CEO Michel Vounatsos pledged to sign The CEO Action for Diversity & Inclusion™, the largest CEO-driven business commitment to advance D&I within the workplace. Biogen is taking the necessary steps in preparation to meet all pledge requirements in 2020.



We strongly believe that our diverse workforce helps us better understand the complex and varied needs of our patients.

As an increasing body of evidence demonstrates, gender parity at all levels is also critical to innovation. As of December 31, 2019, women held **46 percent** of Biogen's director-level and above positions and comprised over half of our global employee population at **52 percent**.

We're continuing to support gender parity and mentor the next generation of female leaders through our Women's Leadership Program, which cultivates high-potential, entrepreneurial women for leadership roles. We were proud to sponsor the Global Summit of Women in Geneva, Switzerland, where we sent a delegation of nearly 50 women female leaders, as well as the Massachusetts Conference for Women.

Moreover, as of April 1, 2020, **26 percent** of Biogen's director-level and above positions were held by ethnic or racial minorities. To continue to bolster our talent pipeline with a rich and diverse mix of leaders, we encourage high potential, mid-career, underrepresented minorities to participate in The Partnership In c.'s BioDiversity Fellows Program, a program we helped create. In 2019 we had 10 employees participate in the Fellows Program, which is tailored to focus on underrepresented professionals in the life sciences industry. We also piloted a Black and Latinx Mentorship program, with 10 mentors and 10 mentees, to invest in the development of Black and Hispanic/Latinx colleagues at managerial levels and above. This program actively integrates mentoring as a part of our workplace culture as well as provides mentees the opportunity to meet with an external coach with expertise in promoting success for minority executives and professionals.

We are actively promoting diversity, equity and inclusion within the Venture Capital community and recently hosted a forum that marked the launch of a new Biotech VC Leadership Council. Biogen actively seeks to address the stark financial disparities that currently exist in the Venture Capital industry, particularly for women and minority women, who receive disproportionately less money. Biogen partnered with the New England Venture Capital Association and Third Rock Ventures to address financial disparities and to create a Leadership Council with the goal of advancing diversity and inclusion in the Venture Capital community

In 2019 we were proud to host our first Intersectionality Conference in Cambridge. The Conference focused on the concept of intersectionality, defined as "the interconnected nature of our various identities, such as race, gender, sexual orientation, and more. The overlap of these various identities shapes our life experiences." The conference provided a platform for colleagues to share their personal experiences and perspectives on intersectionality, and how Biogen can seek to understand others' experiences through empathy and awareness. Our aim is for intersectionality to become woven into Biogen's DNA, with our employees feeling confident to bring their whole selves to work every day.

At Biogen we are committed to employing people with disabilities, with the hopes of breaking down barriers and leveraging inclusion to drive positive behavioral and cultural change. We scored 100 percent on the 2019 Disability Equality Index (DEI) for the second year in a row and are one of the DEI Best Places to Work for the third consecutive year, reinforcing our status as one of America's best places to work for disability inclusion. For the seventh consecutive year, we've been recognized as the 'Best Place to Work' for LGBTQ Equality in the U.S. by the Human Rights Campaign, scoring 100 percent on the Human Rights Campaign (HRC) 2019 Corporate Equity Index.

Additionally, Advance Switzerland recognized us in its 2019 Gender Intelligence Report.

Just as promoting equity and equality within our own workforce is a priority, we are committed to addressing disparities and inequities that exist within the patient populations for whom we seek to develop therapies. Learn more about our approach to Health Equity.

Employee Engagement

Our Employee Resources

Our Employee Resource Networks (ERNs) provide invaluable opportunities for employees to share knowledge and build connections. Allies, supporters and all those interested in helping to advance inclusion are welcome to join any ERN. In 2019 membership in these groups increased, by more than **30 percent from the previous year.**

Our Employee Resources

- **IGNITE:** Brings together early-career professionals and their advocates (launched in 2019)
- **AccessAbility:** Supports employees with disabilities and employees who are caretakers of individuals with disabilities
- **Biogen Veterans Network (BVN):** Encourages veterans and allies of veterans to connect and support one another
- **Mosaic:** Fosters awareness and appreciation of different cultural backgrounds, in addition to promoting networking and development opportunities for members
- **ReachOUT:** Supports a best-in-class working environment for LGBTQ employees and embraces all LGBTQ employees and their allies
- **Women's Innovation Network (WIN):** Creates networking, mentoring and learning opportunities for women and allies worldwide

Employee and family solutions

At Biogen, we view our people as our most important asset. We aim to provide all employees around the globe with consistent and convenient access to a robust set of resources to help them improve and sustain all phases of their well-being. To this end, we introduced "Employee and Family Solutions," a new global employee assistance program that offers legal services, financial consultations, behavioral health care and child and elder care referral services. Employee and Family Solutions is available to all employees and family members around the world, and is accessible 24 hours a day, seven days a week.

In caring deeply about the health and wellbeing of our employees, we understand their needs to effectively manage personal and professional responsibilities. We have various programs in place to ensure a culture that embraces trust and flexibility.

Employee and family solutions

- **Telecommuting:** A work arrangement that allows for employees to regularly work at home or at an approved alternative worksite up to three days per week
- **Flextime:** A work arrangement that allows for employees to regularly work at home or at an approved alternative worksite up to three days per week
- **Part-time:** A less than full-time schedule, receiving a pro-rated salary and benefits
- **Job Share:** Two part-time employees share responsibilities of a full-time position, each receiving pro-rated salary and benefits

Our maternity and parental leave policy supports parent bond with their newborns or adopted child. Biogen provides paid maternity leave benefits including 100% of base pay for up to 12 weeks and four weeks of paid time off from work after the birth or adoption of a new child for mothers and fathers.

Employee sabbaticals

We strive to create an environment where our employees can flourish, both in and out of the office. Our employee sabbatical program is an opportunity for those who have been with us for at least six years to participate in a paid sabbatical. Since the program's launch in 2014, nearly 3,000 employees have participated, using this unique opportunity to give back to their communities, travel, spend time with family, and so much more.

Employee surveys

In 2019 we implemented a new, modern employee survey program to more effectively pulse employees through email and mobile apps as well as provide an opportunity for richer commentary and facilitate feedback to questions. We care deeply about employee feedback and are building an analytics community across HR to bring more rigor and sophistication to the collection and analysis of employee opinions. We use their perspectives to guide us to take actions that improve engagement and support, maintaining Biogen's reputation as a great place to work for all of our employees. Through the more sophisticated platform, survey participation reached almost 75 percent, helping us better understand overall engagement and shape the direction of culture.

Learn more about our D&I approach and our current networks at Diversity & Inclusion

Workspace Health and Safety

Biogen takes the wellbeing of our employees very seriously, and we believe each and every employee plays a role in creating a safe and healthy workplace. Our employees have varied roles and functions, which is why we empower each of them to promote a safe working environment, regardless of whether work happens in the lab, in an office or in a manufacturing plant. Our policies and practices are crafted to protect not only our employees, but also the surrounding communities in which we operate.

In 2019 Biogen continued to make significant progress integrating Human Performance (Hu) into our Environment, Health and Safety (EHS) programs. Hu is founded on the principle that, when it comes to safety, workers are part of the solution. Hu encourages employees to collaboratively engage in proactive problem solving through practices such as Open Reporting and Work Observation and Risk Conversations (WORCs). By engaging and empowering our employees through such programs, we believe that we can help change how the entire industry approaches safety performance and risk management.

For the past several years, we've made significant progress in our efforts to track Biogen's health and safety performance. In 2018 we implemented new, leading indicators towards measuring safety as a capacity, not a result. For example, we're now evaluating proactive versus reactive activity trends. We're also changing the way we monitor high-risk training completion and tracking the age/completion of actions tied to higher risk events.

Our Days Away Case Rate (DACR) continues to track the frequency of work-related illnesses and injuries that lead to an absence from work. We're proud to say that in 2019, our DACR and our Total Recordable Injury Rate (TRIR) were both below the industry average. For 2019 Biogen's DACR was 0.11 (U.S. industry average at 0.4 in 2018) and TRIR was 0.28 (U.S. industry average at 1.6 in 2018).

Biogen exceeded expectations in its 2019 DACR target of being in the top quartile in a peer group of 15 pharmaceutical/biotechnology leaders, achieving second place in the group.

Building on progress in the implementation of Hu and our DACR, which is below average and exceeds expectations, Biogen will begin a focused effort to reduce employees' risk of a serious incident or fatality (SIF). A SIF is defined as any incident that results in or has the potential to result in a fatality, life-altering or life-threatening injury. We [know/understand] that potential SIFs are not discrete events. The conditions, practices and other factors that lead to or contribute to the causation of a SIF are present before the event.

In 2020 Biogen will begin these efforts by first identifying those activities that present the highest risk of a SIF to employees. The next phase will involve evaluating these activities and identifying high value controls to reduce or eliminate the risk. Our target in 2020 will be to reduce the number of Critical Tasks by 30 percent using High Value Controls.

Learn more about our Manufacturing.

Biogen opens Bright Horizons Child Care Center in RTP

In October 2019 Biogen celebrated the grand opening of the Bright Horizons Child Care Center at Biogen's campus in Research Triangle Park (RTP), North Carolina. The 6,034 sq. ft. state-of the-art facility features a STEM lab, an open-door policy allowing parents to drop in anytime and a flexible schedule to accommodate a variety of working hours. Biogen also introduced a limited number of partial tuition scholarships for eligible RTP employees.

Building on the success of Biogen's childcare facility in Cambridge, Massachusetts, Biogen felt there was an opportunity to support its RTP colleagues, as market data revealed that there was a high demand for childcare services in the area.

"Our highly talented and diverse employees work tirelessly to meet the needs of our patients, and our role is to ensure they do so seamlessly," said Justin Fossbender, VP Compensation and Benefits at Biogen. "That's why providing onsite childcare services is paramount to our pioneering work."

The grand opening featured facility tours and a program of speakers from Biogen leadership and external stakeholders. North Carolina Representative Robert Reives and Bright Horizons leaders provided comments on the importance of this opening.

Learn more about Working at Biogen.

> Our highly talented and diverse employees work tirelessly to meet the needs of our patients, and our role is to ensure they do so seamlessly.
>
> — Justin Fossbender

AccessAbility Network hosts Disability Summit

Last Fall, the AccessAbility Employee Resource Network (ERN) group hosted a Disability Summit, focused on, "Working Beyond Barriers: Leveraging Inclusion to Drive Behavior & Cultural Change." The Summit brought together various Biogen leaders, employees and external individuals from local companies in Research Triangle Park (RTP), North Carolina to share best practices, thought-partner and create a blueprint for engaging with hiring managers to increase employment for people with disabilities.

"The Summit was an opportunity to share best practices with companies in the area," said Eugene Lofton, senior learning associate in the Pharmaceutical Operations & Technology (PO&T) learning department and co-global lead for the AccessAbility Network. "It's very important for companies to hire people with disabilities because that's a talented group that's being left out. There are so many talented people who want to work and we have the opportunity at Biogen to employ them."

The speakers for the day included John Register, professional speaker and motivator, Danielle Zielonka, SAS, Neurodiversity Internship Program, and Beth Butler, JD and Executive Director at Disability:IN North Carolina. The speakers shared insights and recommendations for identifying opportunities for disability inclusion in the workplace and reinforced the message that companies who concentrate on disability inclusion have 28 percent higher revenue and 30 percent better performance on economic profit margins.

About AccessAbility

The AccessAbility network is the network for employees with disabilities, those who are caretakers of individuals with a disability and their allies. The network's mission is to foster a culture of awareness, advocacy and inclusion to empower employees with disabilities and care partners to bring their best selves to work in order to make the biggest impact for those we serve. The network focuses on building disability awareness and creating timely resources for employees with a disability, as well as providing resources for employees who are caregivers. The network has two chapters: one for Alzheimer's disease and one for multiple sclerosis.

Learn more about AccessAbility and Biogen's other Employee Resource Networks and our commitment to being an Equal Opportunity Employer at the Diversity & Inclusion page.

Our Commitment to Patients

Our commitment to patients is at the core of who we are as a company. Each day, we are pioneering science that takes us deep into the body's nervous system to help patients with serious neurological and neurodegenerative diseases, their families and caregivers, as well as society as a whole.

We are driven by a desire to help restore what neurological diseases can take away - the very essence of what makes us human - how we move, how we think, our very sense of self. We strive to transform patient care with treatments that have the potential improve, among other things, brain health, mobility and vision. But our commitment goes beyond scientific research and development. We work hand-in-hand with patients and caregivers to better understand their needs and identify how we may be able to help them achieve better health outcomes, together.

We also acknowledge that the pricing of treatments is a key concern for patients, providers, payers and policymakers, and we actively engage in discussions around pricing models.

Although the challenges in developing new treatments in neuroscience are vast, at Biogen, we are not afraid to go where others won't. We are driven by an unwavering quest to enhance the lives of individuals impacted by neurological diseases.

Learn more about Biogen's commitment to prioritizing patient access.

Prioritizing Patient Access

Biogen is committed to continuously adapting our thinking and approaches to pricing and access. Our pioneering work in neuroscience requires us to keep pace with an increasingly ambiguous and changing environment to ensure that patients have access to our breakthrough therapies.

Access to Treatments

To ensure that new, innovative therapies are commercially available to the patients who need them, we comply with government regulations. After pivotal clinical trials are completed, therapies with positive results must then be approved by a regulatory authority – such as the U.S. Food and Drug Administration (FDA) or the European Medicines Agency (EMA). Working towards expanding access to treatments both before and after a therapy's potential regulatory approval is one of our top priorities. We create broader access to our therapies through both public and private healthcare systems.

Affordability Access: Biogen may offer financial assistance or help to secure reimbursement in public and private healthcare programs for patients who are otherwise unable to access our medications.

We employ an access and pricing philosophy that allows us to determine the value of our therapies in terms of clinical outcomes, improvements in daily living and quality of life, and whether the medicine advances clinical practice and/or addresses a high unmet medical need.

Pharmacovigilance

Biogen is committed to the safety of our patients and safe use of our products in all countries we serve. We support patients by monitoring the safety of Biogen investigational and marketed products, over the lifecycle of the products, through the science of Pharmacovigilance (PV).

PV refers to the monitoring, reviewing, evaluating and communicating of information on the safety of pharmaceutical products. PV is conducted through a comprehensive and rigorous set of activities focused on the detection, assessment, understanding and prevention of adverse effects or other product-related problems. PV activities are conducted in collaboration with team members located around the world, who provide expertise regarding regional and country-specific regulatory requirements.

Clinical Trials

While clinical trials are an essential part of the drug development process because they are designed to answer specific research questions related to the safety and efficacy of a potential drug, all patients are encouraged to carefully consider the risks prior to participation. In most cases, the drugs being investigated in clinical trials are not yet approved by regulatory agencies. We are grateful to the patients, healthy volunteers, healthcare providers, hospitals and clinics that participate in testing our investigational drugs.

Learn more about patient safety and our approach to clinical trials and hear directly from a patient involved in a clinical trial.

Expanded Access Programs

To provide patients with access to drugs that have not yet become commercially available, we have occasionally been able to offer Expanded Access Programs (EAPs). These programs are intended to help provide access to investigatitional drugs for patients who have unmet medical needs while regulatory approval processes and reimbursement negotiations are still underway.

By the end of 2019, SPINRAZA was approved in over 50 countries with formal reimbursement in 40 countries, including China. Prior to commercial availability, in order to bridge the gap between positive data readout and formal reimbursement, Biogen offered an Expanded Access Program to treat 800+ patients in over 40 countries to provide patients with the earliest access possible to this innovative therapy.

Biogen continues to support patients in countries without formal reimbursement via our Expanded Access Programs today.

At Biogen, we're deeply inspired by the courage and resilience of all of our patients, and we will continue to work tirelessly to solve societal problems and create access to innovation.

Our Approach to Pricing and Access

Our pricing and access actions are guided by a clear and transparent series of principles:

- Value to patients
- Present and future benefits to society
- Fulfilling our commitment to innovation
- Evolution towards value-based health care
- Affordability and sustainability

Finding solutions to improve the affordability of innovations is one of our key priorities. We believe all healthcare stakeholders have a shared responsibility to ensure that patients have equitable access to new, innovative medicines. We recognize that geographic location and economic circumstances can greatly affect a patient's ability to pay for medicines, which is why we work with local healthcare systems that can deliver breakthrough therapies quickly and efficiently to patients everywhere. To accomplish this, we may alter our approach to accessibility and pricing depending on a country's economic situation and healthcare infrastructure.

Two key examples of such approaches include:

- Launching an SMA-focused individual patient access program in lower-middle- and lower-income countries to bring medical education and treatment to SMA patients in need. Although the initial focus is in India, we hope to expand the pilot program to other countries in the future.
- Collaborating with the Brazilian Ministry of Health to implement an inaugural risk-sharing agreement to ensure broad access to SMA Patients. Learn more about the Pioneering Access Program in Brazil.

Product Stewardship

We comply with all applicable regulations and minimize adverse health, safety, environmental and social impacts of our products while maximizing their benefits and value through their full life cycle. To this end, we are investing in serialization technology to protect our products from counterfeits and improve patient safety. To ensure that patients are receiving safe, quality products, Biogen has instituted anti-counterfeiting policies and guidelines in place to protect patients.

Biogen believes transparency is an important part of our ongoing collaboration with the healthcare community, helping to build a community of trust and respect with healthcare professionals, patients, industry peers, stockholders and the public. Learn more about our Transparency Reporting.

Supply Chain Responsibility

Biogen's Code of Business Conduct, Human Rights Position Statement and Anti-Slavery and Human Trafficking Statement establish the principles and practices of ethical business to which we expect all of our suppliers, business partners and employees to adhere.

Biogen's Code of Business Conduct, Human Rights Position Statementand Anti-Slavery and Human Trafficking Statement establish the principles and practices of ethical business to which we expect all of our suppliers, business partners and employees to adhere. In addition, our commitment to inclusive sourcing and procurement practices is represented in our supplier diversity program.

Health Equity

At Biogen, we are committed to understanding and addressing the issue of health disparities and inequity in the disease areas we treat for underserved patient populations. We advanced health equity goals for our clinical trials and maintained our expanded access program to treat patients in over than 40 countries to help better meet the needs of underserved patients globally. Our approach to Health Equity is a multi-pronged strategy, focusing on the following strategic pillars:

- Patient Engagement & Education
- Increasing Underserved Patient Representation in Clinical Trials
- Expanding Medical Publications for Underserved Patients
- Engagement of Key Medical Experts
- Access to Our Therapies for Underserved Patients

We're committed to supporting underserved and vulnerable populations both now and in the future, and we have made it a priority to support underserved populations throughout the entire product lifecycle. Being a pioneer in health equity means doing much more than simply translating our product information into different languages, but rather developing an understanding of how culture and history affect healthcare decisions and access.

In 2019, Biogen created an internal, cross-functional Advisory Council focused on reaching underserved patient populations to ensure alignment before starting new projects. Biogen also created a new goal, above the industry average, to increase representation of Black and Latinx patients in clinical trials. Biogen also worked with trusted organizations to participate in six community health events drawing over 1,700 attendees across the U.S. The focus of these community events was to engage directly with the general public, listen to their level of understanding and awareness, and provide resources to support education. Attendee survey data indicated the majority of participants are somewhat or very interested and willing to participate in a clinical trial, indicating an opportunity to further engage, educate and drive underrepresented patients to clinical trials sites.

Additionally, this year Biogen worked with an MS Advisory Board of neurologists from across the U.S., many of whom have found that the majority of patients that come to them are from underserved populations. We have worked closely with our partners to identify how best to raise awareness and education for the specific demographics they are seeing, with the goal to create a more equitable and health literate MS population.

By taking a holistic and contextualized approach to health equity, we continue to strive to be nimble and adaptable to rapidly changing patient populations. Through our work with advocacy groups we are continuously partnering, learning and sharing best practices.

Learn more about our access programs, financial assistance and pricing principles.

Patient Advocacy

Biogen Government Affairs was active in a number of initiatives in 2019 to support patient access. The Massachusetts state team worked to increase the number of other states participating in newborn screening (NBS) implementation for SMA. Three more states – Kansas, Mississippi and Wisconsin – recently began screenings, bringing the total number to 13. Four more states expected to begin screening by early 2020 (Connecticut, New Hampshire, Colorado and Wyoming).

Also in 2019, Biogen's own Cherié Butts, Medical Director in Digital & Quantitative Medicine, was appointed by the Baker Administration to serve on Massachusetts' Economic Development Planning Council (EDPC), comprised of 36 appointees including state legislators, Executive Secretariats, and municipal leaders, along with small business owners and entrepreneurs, leaders from business sectors and higher education. Biogen is the sole large biopharma company on the Council and brought together a cross-functional group to generate specific recommendations for the state to consider. Cherié was also recognized by BioSpace on their 10 Prominent African American Life Science Leaders List.

Optimizing Patient Outcomes

By prioritizing dialogues, programs and interactions with the patient community, we strive to help achieve better health outcomes for those struggling with devastating neurological and neurodegenerative diseases. We believe neuroscience is the next frontier in treatment – and where the risk of failure keeps others away, we stand unafraid to go where others won't.

In listening to and learning from patient advocacy groups, we hope to better understand how to meet patient needs. These critical collaborations provide us with first-hand perspectives about the unique challenges that many of our patients face, enabling us to better represent their interests. As part of our efforts, we recently created an SMA experience café located in Munich's city center. Co-created by Biogen, in collaboration with patient assistance groups in Germany, this café was built in order to raise awareness of SMA in the country.

Not only do we consult with members of the patient community, but we also prioritize regular patient engagement so we can identify opportunities for improvement. We actively engage in ongoing communications with global, regional and local patient groups for all therapeutic areas, constantly seeking to gain a better understanding of the patient experience.

Aby and Cleo

After only 18 months on the market, our mobile MS applications Aby and Cleo are now available in 10 countries – the U.S., Germany, France, Italy, the United Kingdom, Canada, Japan, Spain, Belgium and Austria.

By taking a holistic approach to patient support, Aby and Cleo provide real-time access to nurse educators, who are available to answer questions and provide tailored tips to help manage symptoms and reduce stress. At present, the apps are used by 1 in 10 MS patients (roughly 100,000 people) across these global markets, which is a major milestone in digital technology support for individuals struggling with this disease.

SMA Identified

In 2018, we launched SMA Identified, a program in collaboration with genetics company Invitae Corporation to offer no-charge genetic testing to individuals suspected of having, or those who have been clinically diagnosed with, SMA.

In 2019, we announced SMA STAT, a new, rapid-turnaround genetic test for SMA, offered at no charge to individuals in the U.S. as part of the SMA Identified program. The SMA STAT test reduces the time needed for genetic testing from 21 days to 4 days to help confirm a definitive diagnosis of SMA, which enables individuals and physicians to plan and begin treatment earlier for what is often a life-threatening disease. Clinical studies have demonstrated that early diagnosis and treatment of SMA may prevent the development of severe symptoms, improve motor function and slow the progression of the disease.

We have also been working closely with those affected by SMA through the disease education website Together in SMA™. This program provides information about SMA and its symptoms, insight into care options and perspectives on a range of topics – such as nutrition and adaptive equipment – from experienced caregivers and healthcare professionals.

Pioneering access program begins in Brazil

The Brazilian Ministry of Health, working in partnership with Biogen, has initiated an inaugural Risk Sharing agreement to assure broad access to all spinal muscular atrophy (SMA) individuals – with no age or type restriction. This type of agreement has never occurred before in the country's history, for any disease.

"We are so proud of our team in Brazil who collaborated with the Ministry of Health to get this innovative agreement in place. Enabling sustainable access to the first disease-modifying treatment for SMA meets clinical and social needs. It is an achievement for the Brazilian SMA community and we are proud to be part of this moment," said Christiano Silva, General Manager. "Also, as pioneers, Biogen is taking part in the development of this new public policy, that in the future might be the alternative route to patients' access treatments, which can have a real impact for them and their families."

While Type 1 patients will follow the traditional access route, the risk-sharing agreement sets an alternative that enables Type 2 and Type 3 SMA patients to get treatment while assuring the efficiency of public expenditures. Under the agreement, pre-determined real-life outcomes shall be measured over the next three years. If patients meet or exceed them, SPINRAZA will be covered through the National Healthcare System as normal.

If physicians, along with patients, determine patients are not sufficiently responding to treatment and make the decision to discontinue it, Biogen will be responsible for reimbursing the government. Despite the innovative approach to balance access and efficiency of public budget, the decision to stop treatment will be at the sole discretion of the patient and healthcare provider.

The Risk Sharing Agreement remains under negotiation; details must still be defined. Over the next three years, the agreement will function as a pilot program, after which the government will decide on potentially updating clinical guidelines.

Learn more about our access programs.

Novel Instagram campaign in Japan shows MS in a new light

Biogen launched the first multiple sclerosis (MS) campaign attracting Instagram users in Japan to boost awareness and understanding of MS using beautiful imagery of patients. The program, which shows the many faces of MS patients, launched on World MS Day on May 30 in 2019, and was initiated to counter the low awareness level of the disease throughout the country.

Biogen worked with a renowned local photographer and Instagram influencer to create and share beautiful, engaging photos of women in Japan living with MS. The impressive photos aimed to educate and inspire women in their 20s to 40s to learn more about MS through the patient stories as well as through the Biogen MS support website. The program resulted in triple the number of searches for MS information through Biogen's disease awareness website, MS Support Navi, and triple the number of average MS app (Cleo) downloads.

The program will continue into 2020, along with additional efforts in the latter half of the year.

Building Trust and Diversity in Clinical Trials

At Biogen, we are committed to understanding and addressing the issue of health disparities and inequity in the diseases we treat. In order to support that commitment, Biogen is dedicated to increasing patient engagement and education around diversity in clinical trial participation through its partnerships with the Center for Information and Study on Clinical Research Participation (CISCRP) and the National Minority Quality Forum (NMQFH).

In 2019, Biogen participated in conversations at CISCRP Aware for ALL, a free program hosted in Atlanta, GA and Phoenix, AZ that brought people of diverse backgrounds together to learn about the clinical research process. Additionally, Biogen was proud to help CISCRP plan community education programs aimed to empower the public to make informed decisions about clinical research participation. Biogen colleagues also hosted booths at four NMQFH Community Health Events throughout the year in Albuquerque, NM, Sacramento, CA, Chicago, IL, and Brooklyn, NY, where they engaged in candid dialogues with attendees about our work in expanding clinical trial diversity. These community outreach events drew over 1700 attendees across the US in 2019. Attendee survey data indicated the majority of participants are somewhat or very interested and willing to participate in a clinical trial, indicating an opportunity to further engage, educate and refer underrepresented patients to clinical trials sites.

Biogen is also focused on fostering relationships and building trust within African American and Hispanic/Latinx communities, with the objective of increasing the representation of minority groups and underserved populations in US clinical trials. As part of this concentrated effort, we formed a Global Clinical Operations (GCO) UP Champions team, a group of Biogen employees who support our diversity in clinical trial participation awareness and work cross-functionally within Biogen.

Working closely with our partners maximizes opportunities for Biogen colleagues to engage in open and honest discussions surrounding clinical trial participation with external stakeholders and the general public, which enable our colleagues to continuously learn, share best practices, and create more equitable and health-literate patient populations.

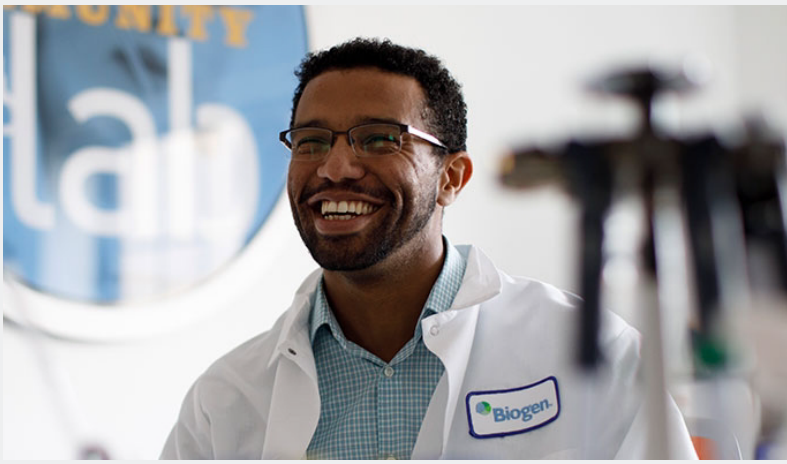
Our Dedication to Communities and the Environment

The core of Biogen's philosophy – Caring Deeply – can be seen in the ways we engage with the communities where we work, as well as our commitment to address environmental challenges.

Community engagement

The Biogen Foundation supports access to science education for diverse populations and to essential human services for children and their families. The Foundation is dedicated to inspiring the next generation of scientists through support of science, technology, engineering and mathematics (STEM) education. Since 2002 the Foundation has supported bringing more than 55,000 middle and high school students into Biogen's two Community Labs for a hands-on introduction to science. In 2019 54% of the students that participated in the Community Labs were from underrepresented and/or low-income household groups, Alazar Ayele, head of the Cambridge Community Lab, was honored as one of The National Minority Quality Forum's 2019 40 Under 40 Leaders in Minority Health. These honorees represent the next generation of thought leaders in reducing health disparities.

In 2019 the Foundation's STAR program completed its first full year. The program – which stands for Science, Teacher support, Access and Readiness – is designed to strengthen and support the educational landscapes in Cambridge and Somerville, Massachusetts.



It aims to increase access to STEM resources and opportunities for middle and high school students most underrepresented in STEM college or career pathways. Learn more about how the program is already creating future science stars in our communities in its first full year.

Through a collaboration with Massachusetts General Hospital (MGH) Neurology, the Biogen Foundation launched the MGH Youth Neurology Education and Research Program, a groundbreaking partnership that aims to foster interest and access in neurology for historically underrepresented youth.

The Biogen Foundation and MGH Neurology aim to Inspire, Equip and Empower underrepresented youth to pursue neurology and neuroscience careers through this program.

In addition to STEM activities, our employees aim to be a positive presence in a variety of volunteerism efforts, such as Care Deeply Day. Since 2011 we have set aside this annual global day of volunteer service enabling all employees to have an impact in their local communities. In 2019 more than 3,000 employees volunteered in 30+ countries. Learn more about our Community Engagement efforts or the Biogen Foundation.

Stakeholder engagement

Throughout the year we engage a variety of external stakeholders to ensure we understand and incorporate their perspectives and input into our decision-making. Stakeholder groups we engage include:

- Biotech/Pharmaceutical Industry Associations
- Community and Non-Governmental Organizations
- Government Bodies and Regulators
- Healthcare Organizations & Professionals
- Investors and Venture Capital
- Local and Regional Business Associations
- Patient Advocacy Organizations
- Universities, Research Institutions and Centers of Higher Learning

Environmental sustainability

Our commitment to or our communities includes recognizing our responsibility as stewards of the natural environment. We utilize a science-based approach to reduce our environmental footprint. Since 2014 we've taken responsibility for our impact on climate change by sourcing 100% of our electricity from renewable sources, driving efficiency initiatives internally and working with our suppliers.

Green chemistry is embraced throughout our company, continually exploring new ways to make our drug development processes safer, more efficient and more sustainable while also saving resources. Learn more about our commitment to Green Chemistry.

In 2019, we implemented several initiatives to raise awareness of environmental impact as well as steps that employees can take, both big and small, including:

- Sustainable Cafeteria Campaign: Conducted an awareness campaign to drive down plastic usage at our Baar, Switzerland site. Sourced from a local company, we supplied free reusable bags for items such as veggies and fruits that are made from recycled polyethylene terephthalate (PET). We also partnered with reCIRCLE, to implement a reusable system for take-away dishes at our Switzerland cafeterias with boxes and coffee cups that could be taken away, returned, washed and reused, with the ultimate objective of supporting a circular economy.
- LED project: Replaced 8,000 fluorescent light fixtures in the Cambridge campus with energy efficient LED fixtures reducing our electricity usage per year by over 2,000 MWh and spend on electricity and lamps by $400,000 (the average U.S. household uses approximately 10 MWh according to the U.S. Energy Information Administration).

We aim to be a catalyst for positive change by encouraging our partners to adopt responsible policies leading to both improved environmental and business performance. We are currently working to incorporate these considerations into our procurement strategy and will provide an update next year.

Biogen respects and complies with all local, regional, national and international environmental laws and norms in both their letter and spirit. Learn more about our approach to environmental sustainability and our climate change position.

Supporting Local Communities

Our commitment to making a positive impact in the world includes locations that are close to home: the communities in which we operate.

Supporting youth and education

The Biogen Foundation is deeply committed to sparking a passion for science and discovery, supporting effective science education initiatives and strengthening efforts to make science education and science careers accessible to diverse populations. Most of all, we want young people to know that through science they have the ability to change the world.

The Biogen Foundation's Community Lab gives middle and high school students a hands-on introduction to science. Students conduct biotechnology experiments at our state-of-art facilities and interact with scientists and other biotechnology professionals. While the Community Lab aims to inspire students, the STAR program aims to strengthen support for local educational landscapes. More details about the first full year of the STAR program can be found here.

The Biogen Foundation collaboration with MGH Neurology is a unique opportunity as it inspires by immersing participants in interactive learning with a diverse group of neuroscientists, equipping them with mentored research opportunities, and empowering them by facilitating the translation of participating youth's experiences into scientific abstracts, publications, awards, and community service. As per National Institutes of Health and American Association of Medical Colleges data, Female, Black,

Latino, American Indian, and low-income populations have a large burden of neurologic disorders and remain underrepresented in the neurology and neuroscience workforce. Hand-in-hand with MGH Neurology, we hope to bridge these gaps by developing a youth STEM education and research program that actively engages with underrepresented youth, who have been missing the opportunity to contribute to building a more diverse neurology and neuroscience workforce. This program aims to influence the workforce for years to come by engaging high school and undergraduate students. By proactively working to build a diverse community of future neuroscientists and neurologists with strong leadership skills, the MGH Youth Neurology Education and Research Program hopes for a greater chance of meaningful discoveries and innovations while advancing equity and reducing health disparities.

Amidst COVID-19, we've worked to adjust the program to still inspire, equip and empower, through STEM Career Interactive chats and virtual projects with Neurology and Neuroscience Professionals. Mentors at MGH and Biogen will utilize interactive video experiences to keep equipping youth with meaningful mentored academic experiences related to basic, translational, clinical and health services research.

Additionally, the Biogen Foundation has both a U.S. Grants Program and international Grants Program. In 2019 the Biogen Foundation gave just over $6.5 million in community grants to a range of nonprofit organizations.

Learn more about the Biogen Foundation, the STAR program and Community Lab.

Caring Deeply

Giving Tuesday is a global generosity movement that unleashes the power of people and organizations to transform their communities. In 2019, 265 Biogen employees donated close to $300,000 to nearly 300 organizations including food banks, cancer centers and children's programs in the U.S.

Biogen works with Food for Free, a well-established non-profit organization which collects and donates fresh produce, dry goods, canned foods and breadstuffs from local stores to help feed Boston's hungriest families. To date, Biogen volunteers have produced over 20,000 meals in the Biogen Family Meals kitchen. Their efforts have reached over 25 different agencies and schools in the Greater Boston area, including 7 K-12 schools and 4 Community Colleges.

In recognition of our efforts in the community we were listed in the JUST Capital Top 100 for Healthy Communities. Just Capital recognizes U.S. companies doing the best job supporting healthy communities.

Learn more about our Community Engagement efforts.

Fulfilling our Commitment to Sustainability

We use a science-based approach to reduce our environmental footprint in our day-to-day business operations. Our goal is to operate within the boundaries of what is sustainable for our communities, which extends to what we consume, emit and leave behind.

Climate Strategy

Biogen is committed to utilizing a science-based approach when it comes to managing environmental resources, demonstrated by our Science Based Targets Initiative approved target, an absolute greenhouse gas (GHG) reduction of 35 percent by 2030 as compared to 2013.

Biogen believes businesses must take action to address the GHG emissions from their own operations and their suppliers. Our efforts include:

- Emitting zero net carbon emissions from our own operations since 2014. To achieve this, Biogen has matched 100% of its electricity use with electricity produced from renewable sources and financially supported carbon offset projects. Biogen acknowledges that carbon offsets are no longer sufficient to meet the challenge of climate change and is currently realigning its strategy with solutions that best adhere to what scientists are telling us is required.

We are committed to engaging with all our stakeholders and will provide updates.

- Reducing fossil fuel and energy usage through both incremental and major improvements in manufacturing, investing in more efficient and healthier buildings and ensuring our existing facilities operate at peak performance. This continuous improvement approach has generated a 76 percent reduction in our operational carbon intensity since 2006

- Engaging with the highest climate-impacting supply chain partners to advocate for direct climate reductions in the products and services Biogen purchases.

- Replacing the Biogen Portugal fleet with fully electric and plug-in hybrid electric vehicles to eliminate the harmful impacts of fossil fuel combustion. Importantly, the electricity used by these vehicles is also 100% renewable. Learn more here.

We received the following awards for our environmental work:

- SAM Gold Medal: Awarded a Gold Medal in the 2020 SAM Sustainability Yearbook
- Dow Jones Sustainability Indices (DJSI) World Index: Named the No.1 biotechnology leader on the DSJI World Index
- SEAL Sustainability Awards: Honored for our work in

Biogen acknowledges the call from its investors to better understand Biogen's climate-related financial risks. Biogen is taking steps to align with the four recommendations outlined by the Task Force on Climate-related Financial Disclosures (TCFD). Disclosure of our progress as well as climate-related financial risks and opportunities can be found in our 2019 CDP Climate Change disclosure. In alignment with the TCFD, Biogen will begin incorporating material risks and opportunities into this integrated report in future years.

Water

With a deep understanding that our water use can impact local communities, we strategically situate our manufacturing sites in water rich areas. As a result, water scarcity is not a significant risk to our business nor do our operations impose undue burdens on the communities where we live and work.

However, water remains a precious commodity as well as a business cost. Therefore, we continuously look for ways to reduce use – for instance, by making our processes and equipment more efficient and when possible, reusing water. We are also committed to ensuring our wastewater treatment practices consistently meet quality and safety regulations and standards.

To understand the impact of our water use on the communities surrounding our facilities, we have committed to utilizing a context-based water approach for our major facilities. This makes it possible to assess water withdrawal relative to the local watershed's sustainable water supply. Biogen achieved its goal of assessing all of its major facilities using this context-based approach in 2019. The assessments determined that our water withdrawal at each facility was within our fair, just and proportional share of local water resources, meaning our level of water use is sustainable. Biogen will re-assess these facilities when warranted by facility growth or climate impacts on the watershed to ensure we maintain a sustainable level of water withdrawal.

We also maintain a water intensity metric1 to drive and communicate operational efficiency. In 2019, we recorded a 67% reduction compared to 2006.

Learn more about our approach to environmental sustainability and our climate change position.

Our goals and commitments

As Biogen grows, we remain committed to reducing our environmental footprint by eliminating harmful emissions and by minimizing resources used to manufacture our products. We are committed to:

- Continue to match 100% of our electricity use (including power for electric vehicles) with electricity produced from renewable sources. Our public commitment to the RE100 initiative since 2014.
- Reduce by 35% our absolute GHG footprint – across Scopes 1, 2 and 3 – by 2030 (compared to our 2013 footprint)
- Assessing our water use and keep use within our determined fair share (what the Center for Sustainable Organizations calls “fair, just and proportional share” of local water resources)
- Maintain Zero Waste to Landfill status for our manufacturing facilities
- Continue to leverage our 2020 intensity-based metrics for internal operational excellence and benchmarking
- Engage with our highest climate impacting suppliers to lower GHG emissions in our supply chain

Footnote:
1. Metric: cubic yards used per million dollars USD of revenue

Creating future science stars in our communities

The Biogen Foundation's STAR Initiative (Science, Teacher Support, Access & Readiness) has completed its first full year. The mission of the four-year, $10M program is to strengthen the STEM (Science, Technology, Engineering, Math) education ecosystems for public school students in Cambridge and Somerville, Massachusetts.

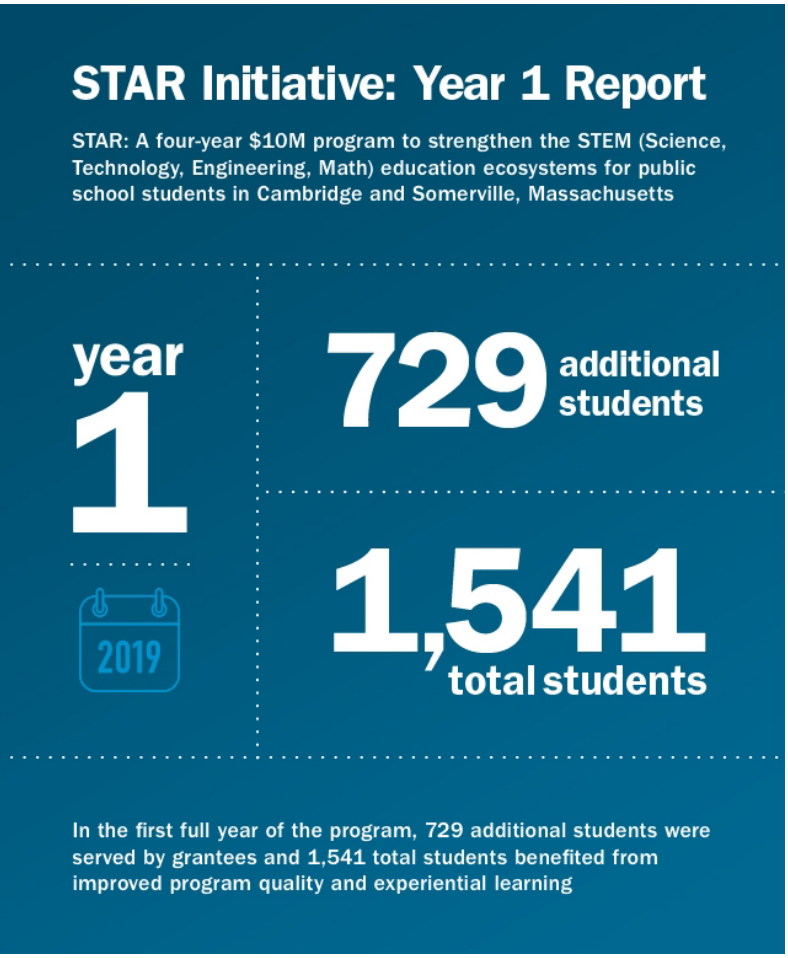
In 2019, the initiative partnered with six high-performing nonprofit organizations to help them work together to expand and strengthen STEM learning opportunities for students, with a focus on serving individuals historically underrepresented in STEM –notably, students of color. STAR grantees launched new pilot programs, expanded their services to reach additional students, and enhanced and deepened existing programming. The STAR Initiative also established connections with local projects and programs to further grow the quality and capacity of STEM learning in the community.

In the first full year of the program, 729 additional students served by grantees and 1,541 total students benefited from improved program quality and experiential learning. Additional accomplishments include:

- Teachers throughout Cambridge and Somerville Public Schools learned how to deploy new and enhanced STEM curricula

- Math teachers in Somerville worked with Lesley University to create hands-on classroom activities that support the district's new curriculum
- STAR grantees launched new programs and opened new program sites
- STAR grantees developed common goals for students and teachers participating in the STAR Initiative

"When we saw … that Biogen was making such a deep investment in such an important area, we were thrilled that Somerville and Cambridge would both benefit," said Mary Skipper, Superintendent, Somerville Public Schools. "This really is going to help us prepare our students for a future that we don't even know what looks like, but we do know that STEM is going to be at the center of it."



Plans for the second year include continually assessing and refining the STAR model, fostering growth and development of Cambridge and Somerville STEM ecosystems while building others, and strengthening the network to maximize STEM opportunities for historically underrepresented students.

Learn more about the STAR Initiative.

Utilizing Green Chemistry to Improve Environmental Performance of our Products

At Biogen, while we strive each day to produce ground-breaking treatments, we also aim to do it while improving our environmental performance. This focus on integrating more sustainable processes into our drug development has had a positive impact on the production of clinical assets.

For example, between 2017 and 2019, we reduced by 90 percent the environmental impact for the production of a Phase 1 compound while reducing the cost of production by more than 85 percent. As stewards of our communities and the environment, we continue to look for opportunities to apply green chemistry principles to every treatment we develop.

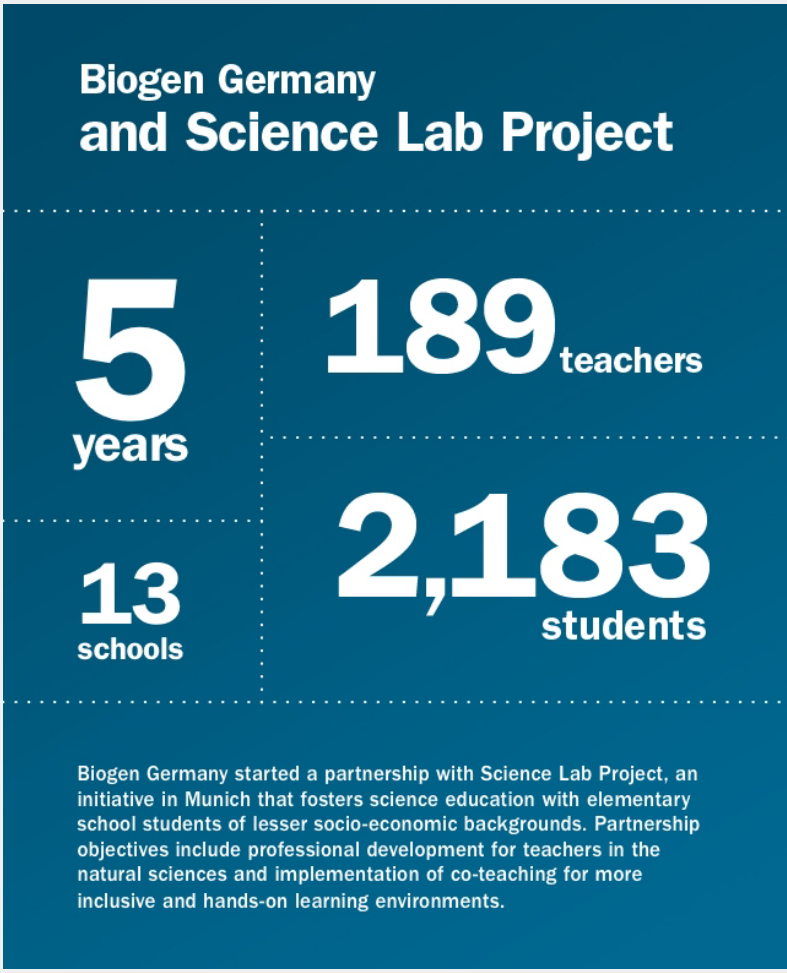
Our efforts extend beyond our own lab benches. We are part of multiple industry efforts to promote green chemistry including the ACS Green Chemistry Institute Pharma Roundtable. As a member of the roundtable, Biogen works with other pharmaceutical companies to promote the development and use of sustainable chemical technologies.

Learn more about our Climate Strategy.

Investing in science education in Germany

In 2015 Biogen Germany started a collaboration with the Science Lab Project, an initiative in Munich that fosters science education with elementary school students of lesser socio-economic backgrounds. In order to bridge the gap, the initiative utilizes a dual-pronged approach: professional development for teachers in the field of natural sciences and the implementation of co-teaching in order to create more inclusive and hands-on learning environments.

In the past five years, the program has reached more than 13 schools, 189 teachers and 2,183 students from underrepresented communities around Munich. Biogen will continue this successful program in 2020 and by working closely with the city of Munich, we aim to deepen our community ties and be a source for engagement and collaboration. The program will help young children to not only form an interest in the natural sciences but also develop skills with respect to experimenting and communication and critical thinking.



Implementing sustainable transportation in Portugal

To support Biogen's commitment to establishing a science-based greenhouse gas (GHG) reduction target, Biogen Portugal has been working to implement a sustainable transportation strategy for our workers in the field. In 2018 Biogen Portugal had a vision of having a fleet of completely electric vehicles (EV) and in 2019 the team began implementation. This initiative serves as a pilot to help us understand how to expand our transition to a fossil fuel free fleet.

With the goals of decreasing carbon emissions, contributing to positive environmental change and providing sustainable, cost-saving, best-in-class employee benefits, the Portuguese team conducted a thorough analysis of the current EV market, identifying cars that would aid in achieving these objectives.

"While we still have progress to make in transitioning our fleet to be 100% fossil fuel free, we are incredibly proud of the progress we've made so far to transition our fleet to plug-in hybrid and battery electric vehicles. This initiative is a crucial step in implementing a sustainable transportation strategy, in line with the company values," said Anabela Fernandes, Country Director, Biogen Portugal.

By the end of 2019, the Portuguese Biogen fleet transitioned 80 percent of its fleet to plug-in hybrid and battery electric vehicles, reducing its fleet emissions by 50 metric tons of CO2e.

While plug-in hybrid electric vehicles provide significant emission reductions compared to vehicles with internal combustion engines, emitting 1.3 tons of CO2 annually compared to 3.2-3.8 tons CO2/annually, the ultimate goal is a fleet of electric vehicles which, when powered with renewable energy, produce zero CO2e emissions. As the team looks ahead to 2020, we will continue to look for ways to achieve the ultimate goal of carbon neutrality.

Biogen helps address urgent needs brought on by the COVID-19 pandemic

The current COVID-19 pandemic has presented a substantial public health and economic challenge around the world. As governments, businesses and other organizations take unprecedented measures to help mitigate the spread of the outbreak, we want to reinforce our deep commitment to our employees, our patients and the communities where we live and work.

That's why we have mobilized all our resources to address urgent needs brought on by COVID-19, expand testing and help ease the burden of health systems across Massachusetts, North Carolina, the U.S. and across the globe. Consistent with our commitment, the Biogen Foundation has committed $10 million to support global response efforts and communities around the world impacted by the COVID-19 pandemic. We also take the vital role we play in ensuring an uninterrupted supply of our medicines to patients very seriously.

"These are challenging times," said Biogen CEO Michel Vounatsos. "But one thing is clear: we must support our community and those most in need. We can – and will – get through this together."

In Massachusetts, Biogen provided medical equipment and supplies to Partners HealthCare, one of the largest providers of healthcare services in the Boston area, with the goal of improving the diagnostic process for those tested for COVID-19 in the area.

Biogen has also been supporting Massachusetts General Hospital and Brigham and Women's Hospital as they work on the front line to treat and contain the virus.

As food insecurity becomes a growing problem, the Biogen Foundation has provided additional support to our communities, such as the Greater Boston Food Bank, Food Bank of Central & Eastern North Carolina and Feeding America, as well as other organizations that help those in need. The donation has supported 46 nonprofit organizations so far, including 14 in Massachusetts, 12 in North Carolina, 2 across the broader United States, 1 internationally (IMC) and 17 to affiliates in 15 countries.

We're also collaborating with the Broad Institute of MIT and Harvard and Partners HealthCare to build and share a COVID-19 biobank. The biobank will host a large collection of de-identified biological and medical data for scientists to study and search for potential vaccines and treatments. Biogen will help employees who wish to volunteer connect with the project. The volunteers are among the first people in Massachusetts to be diagnosed with and recover from COVID-19, as well as close contacts of those individuals, including people who were not tested or who may not have had symptoms.

> "These are challenging times, but one thing is clear: we must support our community and those most in need. We can – and will – get through this together.
>
> — Michel Vounatsos
> Chief Executive Officer

"The COVID-19 pandemic has had a very direct, very personal impact on our Biogen community," said Maha Radhakrishnan, M.D., Chief Medical Officer at Biogen. "We are uniquely positioned to contribute to advancing COVID-19 science in an organized and deliberate way so we can all gain a better understanding of this virus. Many Biogen colleagues have been eager to find ways to help others during this pandemic, and it is our hope that this biobank will provide hope and essential information during this difficult time."

We are also pursuing a process development and manufacturing collaboration with Vir Biotechnology, Inc., which is developing potential antibody therapies for COVID-19.

Our Biogen Healthcare Solutions (BHS) team has also made it a top priority to ensure that the global users for Aby and Cleo (our global MS applications) and Neurodiem (an online, independent platform that aggregates high-quality scientific content in neurology) are receiving current, relevant content relating to COVID-19. For healthcare providers and patients around the world, COVID-19 has sparked many questions, concerns, and the need for quality information. Creating these updates enables healthcare providers and neurologists to have information at their fingertips, and also allows for more time to care for patients. Specifically, the Neurodiem app now provides the following:

- **A dedicated section on COVID-19**, featuring relevant updates and expert commentary with a special focus on neuroscience
- **Continuous congress coverage** through summaries and expert commentary when possible and despite international conference cancellations or virtual sessions

Learn more about Aby and Cleo and Neurodiem.

Learn more about our COVID-19 efforts at the Biogen COVID-19 Information Center.

Reporting

About this Report

Since 2009 Biogen has conducted materiality assessments every two to three years to identify and prioritize the corporate responsibility topics and issues most important to the company and its stakeholders. These assessments have been informed by the Global Reporting Initiative (GRI) Principles for Defining Report Content. In 2019 we conducted a new materiality assessment as part of the review of our global corporate responsibility (CR) strategy. The results of this assessment are detailed below.

The 2019 Year in Review contains data from calendar year 2019. In some instances, we include information on initiatives or activities that may have begun in 2019 but have continued into 2020. This report was prepared in accordance with the GRI Standards "core" option" and aligns Sustainable Accounting Standards Board (SASB) guidelines. We have also employed additional internationally recognized guidelines and frameworks such as the Task-Force on Climate-related Financial Disclosures (TCFD) and the Sustainable Development Goals (SDGs) to inform our reporting. Please refer to the GRI and SASB Content Indices below to see which material aspects and relevant indicators are reported and how we track our efforts in alignment with the United Nations' Sustainable Development Goals (SDGs).

The SDGs comprise 17 goals and 169 associated targets that incorporate the economic, social and environmental dimensions of sustainable development. At Biogen we support all 17 goals and encourage all businesses to consider how they may also contribute. We continue to refine our CR strategy to align with the SDGs that are most relevant to our business.

Data in this report covers our worldwide operations, including consolidated subsidiaries but excluding joint ventures. Our operations in 2019 encompassed our major facilities in North Carolina, Denmark, Switzerland and Massachusetts. In August 2019 we completed the sale of all of the outstanding shares of our subsidiary that owned our biologics manufacturing operations in Hillerød, Denmark to FUJIFILM Corporation. The boundaries also include our global offices and our commercial fleet operations. With regard to environmental data presented in this report, the scope includes operations over which we have operational control.

ERM Certification and Verification Services, Inc. (ERM CVS) assured the 2019 data for a number of indicators, including Scope 1 and Scope 2 GHG emissions and select environmental and social indicators. See the ERM CVS Assurance Statement below for full details of the assurance scope, assurance standards used, work undertaken and conclusions, and see the Data Table below for data that was assured (when a 2019 data point is printed in bold, that means that data point was assured).

GRI Materiality Approach & Process

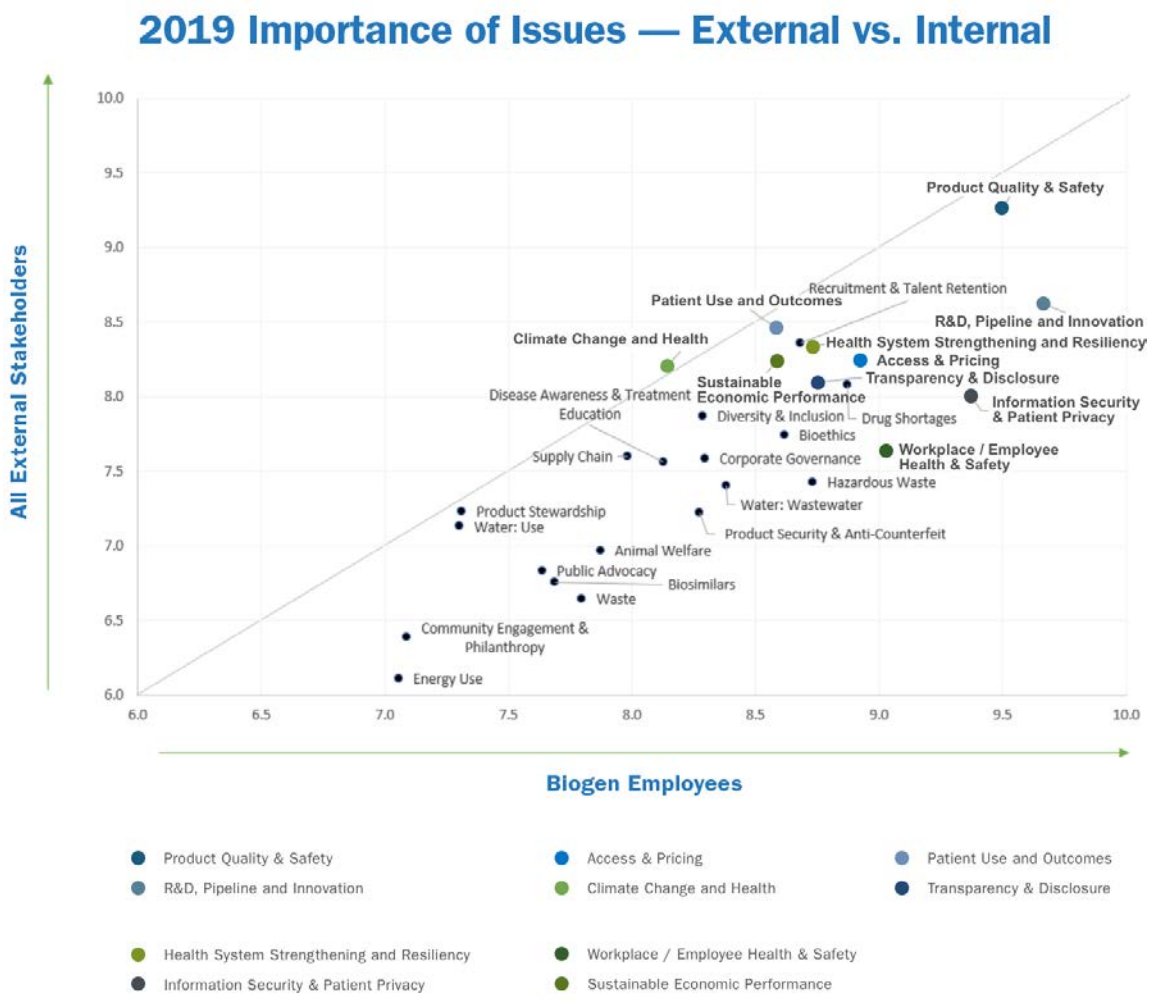
In 2019 we conducted a new materiality assessment as part of the review of our global CR strategy.

After reviewing the entire list, a set of tier one priorities was agreed upon for immediate attention, including: access to treatments and pricing, investments in R&D to ensure a robust pipeline and improving patient outcomes. Throughout this 2019 Year in Review, we explain how Biogen is addressing these issues and measuring performance.

GRI Materiality Assessment Process

At Biogen, our ethos of caring deeply is reflected in the ways we listen to our stakeholders and use their input to help inform our strategies. While we have always conducted our materiality assessment in a globally accepted, GRI-compliant way, we also challenge ourselves to go further than standards require.

We went much further than standards require, engaging a far broader range of stakeholders, taking a new approach to questions, and engaging in deeper analysis to identify and prioritize the environmental, social and governance (ESG) issues at the intersection of stakeholder and company concern.



Our Guiding Principless

Our commitment is grounded in our Code of Business Conduct (Values in Action), our Sustainability Policy and our other related policies and position statements. These principles and policies outline our focus on ethical business conduct, compliance, accountability and transparency, among other topics. To review the full list of our commitments, visit Our Guiding Principles.

2019 Supplier Environmental & Social AssessmentsStatement

Our stakeholders expect that we understand the environmental, social and governance (ESG)-related risks and impacts across our supply chain, and that we take steps to manage these risks and impacts. Biogen has developed evaluation processes to fulfill this expectation with the objective of identifying any potential at-risk suppliers that could warrant further evaluation. Overall, Biogen has a low ESG-related risk profile due to the current geographical spread of suppliers and the nature of the goods and services purchased. Our evaluation processes include:

- ESG risk screens for critical supplier sites
- Water risk basin-level screen for a subset of critical supplier sites
- Human rights country-level risk screen against our entire procurement spend
- Monitoring compliance with new requirements around the world (e.g. human trafficking legislation)

Critical suppliers are defined as approved Good Manufacturing Practice (GMP) supplier sites that supply products and services directly related to the safety and integrity of our products.

High-volume and any non-substitutable suppliers are often GMP suppliers.

ESG Risk Screen: In 2019 we evaluated 989 critical suppliers sites (751 Tier I supplier sites representing 81 percent of total procurement spend and 238 Tier II supplier sites). This evaluation assesses each supplier against five factors – criticality of the service or good being supplied (30 percent); the level of financial spend (35 percent); the social risk profile (11 percent); the environmental risk profile (12 percent); and the governance risk profile, including potential for corruption (12 percent).

Six Tier I supplier sites and 11 Tier II supplier sites were screened as potentially higher risk requiring further internal evaluation of the supplier's practices and service/goods provided. The conclusion of the internal evaluation deemed zero of the seven supplier sites to present a high risk to Biogen operations.

Water Risk Screen: In 2019 we evaluated 175 of the most critical GMP supplier sites using the Water Risk Filter Tool developed by WWF and DEG. Zero supplier sites were screened as potentially higher risk requiring further internal evaluation.

Human Rights Risk Screen: In 2019 we evaluated 99.9 percent of procurement spend against the country-level risk profiles developed by the U.S. State Department's 2019 Trafficking in Persons Report. Our procurement system registered a total of 13,348 unique supplier country-level locations (i.e., Biogen may purchase goods or services from a single supplier in multiple countries, where each is included in the screen) with aggregate purchases equal to or greater than $1,000:

- 11,057 unique supplier locations (83 percent of spend) were in Tier 1 countries
- 269 unique supplier locations (16 percent of spend) were in Tier 2 countries
- 109 unique supplier locations (<0.1 percent of spend) were in Tier 2 Watch List countries
- 144 unique supplier locations (0.2 percent of spend) were in Tier 3 countries

The supplier locations in Tier 2 Watch and Tier 3 countries were further evaluated in a similar manner as described in the ESG risk screen. The evaluation determined zero of these supplier locations to be high risk.

To support the continual improvement of Biogen's ability to assess risk within its supply chain, two targets have been set:

- Expand ESG risk screening of Tier I suppliers to 75 percent of spend by 2020
- Expand ESG risk screening of Tier II supplier sites to 500 sites by 2020.

Report Archive

- 2018 Report
- 2017 Report
- 2016 Report
- 2015 Report
- 2014 Report
- 2013 Report

Safe Harbor

This Annual Report contains forward-looking statements, including statements made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995, relating to: our strategy and plans; corporate strategy update; pipeline potential and progress; potential of our commercial business and pipeline programs; the prospects of our product portfolio; capital allocation and investment strategy; clinical development programs, clinical trials and data readouts and presentations; regulatory filings and the timing thereof; risks and uncertainties associated with drug development and commercialization; the potential benefits, safety and efficacy of our products and investigational therapies; anticipated benefits and potential of investments, collaborations and business development activities; our future financial and operating results; and the potential impact of the COVID-19 pandemic on our business and operations. These forward-looking statements may be accompanied by such words as “aim,” “anticipate,” “believe,” “could,” “estimate,” “expect,” “forecast,” “goal,” “intend,” “may,” “plan,” “potential,” “possible,” “will,” “would” and other words and terms of similar meaning. Drug development and commercialization involve a high degree of risk, and only a small number of research and development programs result in commercialization of a product. Results in early stage clinical trials may not be indicative of full results or results from later stage or larger scale clinical trials and do not ensure regulatory approval. You should not place undue reliance on these statements or the scientific data presented.

These statements involve risks and uncertainties that could cause actual results to differ materially from those reflected in such statements, including: our dependence on sales from our products; difficulties in obtaining and maintaining adequate coverage, pricing and reimbursement for our products; failure to protect and enforce our data, intellectual property and other proprietary rights and the risks and uncertainties relating to intellectual property claims and challenges; uncertainty of long-term success in developing, licensing or acquiring other product candidates or additional indications for existing products; failure to compete effectively due to significant product competition in the markets for our products; failure to successfully execute or realize the anticipated benefits of our strategic and growth initiatives; the risk that positive results in a clinical trial may not be replicated in subsequent or confirmatory trials or success in early stage clinical trials may not be predictive of results in later stage or large scale clinical trials or trials in other potential indications; risks associated with clinical trials, including our ability to adequately manage clinical activities, unexpected concerns that may arise from additional data or analysis obtained during clinical trials, regulatory authorities may require additional information or further studies or may fail to approve or may delay approval of our drug candidates; the occurrence of adverse safety events, restrictions on use with our products or product liability claims; risks relating to technology failures or breaches; our dependence on collaborators, joint venture partners and other third parties for the development, regulatory approval and

commercialization of products and other aspects of our business, which are outside of our full control; risks associated with current and potential future healthcare reforms; risks relating to management and key personnel changes, including attracting and retaining key personnel; failure to comply with legal and regulatory requirements; the risks of doing business internationally, including currency exchange rate fluctuations; risks relating to investment in our manufacturing capacity; problems with our manufacturing processes; risks related to commercialization of biosimilars; fluctuations in our operating results; fluctuations in our effective tax rate; risks related to investment in properties; the market, interest and credit risks associated with our portfolio of marketable securities; risks relating to share repurchase programs; risks relating to access to capital and credit markets; risks related to indebtedness; environmental risks; risks relating to the distribution and sale by third parties of counterfeit or unfit versions of our products; risks relating to the use of social media for our business; change in control provisions in certain of our collaboration agreements; the impact related to the effect of COVID-19 or other public health epidemics on our sales and operations, including employees; and the other risks and uncertainties that are described in the Risk Factors section of our most recent annual or quarterly report and in other reports we have filed with the U.S. Securities and Exchange Commission.

These statements are based on our current beliefs and expectations and speak only as of April 10, 2020. We do not undertake any obligation to publicly update any forward-looking statements, except as required by law.

GAAP to Non-GAAP Reconciliation

Diluted EPS and net income attributable to Biogen Inc.

(Unaudited, $ in millions, except per share amounts)	2019	2018	2017[1]	2016	2015
GAAP Diluted EPS	**$31.42**	**$21.58**	**$11.92**	**$16.93**	**$15.34**
Adjustments to net income attributable to Biogen Inc.	2.15	4.62	9.89	3.29	1.67
Non-GAAP Diluted EPS	**$33.57**	**$26.20**	**$21.81**	**$20.22**	**$17.01**
GAAP Net Income Attributable to Biogen Inc.	**$5,889**	**$4,431**	**$2,539**	**$3,703**	**$3,547**
Amortization of acquired intangible assets[A,B]	490	747	815	374	365
TECFIDERA litigation settlement charge[B]	–	–	–	455	–
Acquired in-process research and development	–	113	120	–	–
Research and development	–	10	–	–	–
(Gain) loss on fair value remeasurement of contingent consideration[C]	(64)	(12)	63	15	31
Premium paid on purchase of Ionis common stock[D]	–	162	–	–	–
(Gain) loss on equity security investments	(200)	(128)	–	–	–
Net distribution to noncontrolling interests[E]	–	44	132	–	–
Restructuring, business transformation and other cost saving initiatives:					
2017 corporate strategy implementation[F]	3	11	18	–	–
Restructuring charges[F]	2	12	1	33	93
Cambridge manufacturing facility rationalization costs	–	–	–	55	–
Hemophilia business separation costs	–	–	19	18	–
Gain on deconsolidation of variable interest entities	–	–	–	(4)	–
Loss on divestiture of Hillerød Denmark manufacturing operations[G]	55	–	–	–	–
Stock option expense[H]	26	–	–	–	–
Acquisition-related transaction and integration costs	28	–	–	–	–
Accelerated share-based compensation expense	7	–	–	–	–
Income tax effect related to reconciling items	31	(147)	(236)	(225)	(104)
Elimination of deferred tax asset	–	11	–	–	–
Swiss Tax reform[I]	(54)				
U.S. Tax reform[J]	–	125	1,174	–	–
Amortization included in Equity in loss of investee, net of tax[K]	78	–	–	–	–
Non-GAAP Net Income Attributable to Biogen Inc.	**$6,291**	**$5,378**	**$4,645**	**$4,423**	**$3,932**

Free Cash Flow Reconciliation

Net Cash Flows Provided by Operating Activities[2]	**$7,079**	**$6,188**	**$4,551**	**$4,522**	**$3,716**
Purchases of property, plant and equipment (Capital Expenditures)	(515)	(771)	(867)	(616)	(643)
Contingent consideration related to Fumapharm AG acquisition	(300)	(1,500)	(1,200)	(1,200)	(850)
Free Cash Flow	**$6,264**	**$3,917**	**$2,484**	**$2,706**	**$2,223**

1 On February 1, 2017, we completed the spin-off of our hemophilia business. Our consolidated results of operations reflect the financial results of our hemophilia business through January 31, 2017.

2 Does not reflect the reclassification of amounts for 2016 and 2015 pursuant to the adoption of Accounting Standards Update No. 2016-09, *Compensation - Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting.*

A) Amortization and impairment of acquired intangible assets for the twelve months ended December 31, 2019, reflects the impact of a $215.9 million impairment charge related to certain in-process research and development (IPR&D) assets associated with the Phase 2b study of BG00011 (STX-100) for the potential treatment of idiopathic pulmonary fibrosis, which was discontinued during the third quarter of 2019.

Amortization and impairment of acquired intangible assets for the twelve months ended December 31, 2018, includes the impact of impairment charges related to certain IPR&D assets associated with our vixotrigine (BIIB074) program totaling $189.3 million that were recognized during the third quarter of 2018. During the third quarter of 2018 we completed a Phase 2b study of vixotrigine for the potential treatment of painful lumbosacral radiculopathy (PLSR). The study did not meet its primary or secondary efficacy endpoints and we discontinued development of vixotrigine for the potential treatment of PLSR. As a result, we recognized an impairment charge of approximately $60.0 million during the third quarter of 2018 to reduce the fair value of the IPR&D intangible asset to zero. In addition, we delayed the initiation of the Phase 3 studies of vixotrigine for the potential treatment of trigeminal neuralgia (TGN) as we awaited the outcome of ongoing interactions with the U.S. Food and Drug Administration (FDA) regarding the design of the Phase 3 studies, a more detailed review of the data from the Phase 2b study of vixotrigine for the potential treatment of PLSR and insights from the Phase 2 study of vixotrigine for the potential treatment of small fiber neuropathy. We reassessed the fair value of the TGN program using reduced expected lifetime revenues, higher expected clinical development costs and a lower cumulative probability of success. As a result of that reassessment, we recognized an impairment charge of $129.3 million during the third quarter of 2018 to reduce the fair value of the TGN IPR&D intangible asset to $41.8 million.

B) In January 2017 we entered into a settlement and license agreement among Biogen Swiss Manufacturing GmbH, Biogen International Holding Ltd., Forward Pharma A/S (Forward Pharma) and certain related parties, which was effective as of February 1, 2017. Pursuant to this agreement, we obtained U.S. and rest of world licenses to Forward Pharma's intellectual property, including Forward Pharma's intellectual property related to TECFIDERA. In exchange, we paid Forward Pharma $1.25 billion in cash, of which $795.2 million was recognized within intangible assets in the first quarter of 2017.

We had an intellectual property dispute with Forward Pharma in the U.S. concerning intellectual property related to TECFIDERA.

In March 2017 the U.S. intellectual property dispute was decided in our favor. Forward Pharma appealed to the U.S. Court of Appeals for the Federal Circuit. We evaluated the recoverability of the U.S. asset acquired from Forward Pharma and recorded a $328.2 million impairment charge in the first quarter of 2017 to adjust the carrying value of the acquired U.S. asset to fair value reflecting the impact of the developments in the U.S. legal dispute and continued to amortize the remaining net book value of the U.S. intangible asset in our consolidated statements of income utilizing an economic consumption model. The U.S. Court of Appeals for the Federal Circuit upheld the U.S. Patent and Trademark Office's March 2017 ruling and in January 2019 denied Forward Pharma's petition for rehearing. We evaluated the recoverability of the U.S. asset based upon these most recent developments and recorded a $176.8 million impairment charge in the fourth quarter of 2018 to reduce the remaining net book value of the U.S. asset to zero.

We have an intellectual property dispute with Forward Pharma in the European Union concerning intellectual property related to TECFIDERA.

In March 2018 the European Patent Office (EPO) revoked Forward Pharma's European Patent No. 2 801 355. Forward Pharma has filed an appeal to the Technical Boards of Appeal of the EPO and the appeal is pending. Based upon our assessment of this ruling, we continue to amortize the remaining net book value of the rest of world intangible asset in our consolidated statements of income utilizing an economic consumption model. The remaining net book value of the TECFIDERA rest of world intangible asset as of December 31, 2019, was $36.1 million.

For the twelve months ended December 31, 2019, compared to the prior year period, the decrease in amortization of acquired intangible assets, excluding impairment charges, was primarily due to a net overall decrease in our expected rate of amortization for acquired intangible assets. This decrease was primarily due to lower amortization subsequent to the impairment in the fourth quarter of 2018 of the U.S. license to Forward Pharma's intellectual property, including Forward Pharma's intellectual property related to TECFIDERA, and higher expected lifetime revenues of TYSABRI.

C) (Gain) loss on fair value remeasurement of contingent consideration for the twelve months ended December 31, 2019, reflects our adjustment to the value of our contingent consideration obligations related to the BG00011 asset, resulting in a gain of $61.2 million during the third quarter of 2019.

(Gain) loss on fair value remeasurement of contingent consideration for the twelve months ended December 31, 2018, reflects our adjustment to the fair value of our contingent consideration obligations related to our vixotrigine program for the potential treatment of TGN. In the third quarter of 2018 we decided to delay the initiation of the Phase 3 studies of vixotrigine for the potential treatment of TGN. As a result of that decision, we adjusted the value of our contingent consideration obligations related to the TGN program to reflect the lower cumulative probabilities of success resulting in a gain of $89.6 million in the third quarter of 2018.

In the fourth quarter of 2018 we received feedback from the FDA regarding the design of the Phase 3 studies of vixotrigine for the potential treatment of TGN. Following this feedback, we adjusted the fair value of our contingent consideration obligations related to our vixotrigine program for the potential treatment of TGN to reflect the increased probabilities of success and recognized a loss of $80.6 million in the fourth quarter of 2018.

D) In June 2018 we closed a 10-year exclusive collaboration agreement with Ionis Pharmaceuticals, Inc. (Ionis) to develop novel antisense oligonucleotide drug candidates for a broad range of neurological diseases (the 2018 Ionis Agreement) for a total payment of $1.0 billion, consisting of an upfront payment of $375.0 million and the purchase of approximately 11.5 million shares of Ionis common stock at a cost of $625.0 million.

The 11.5 million shares of Ionis common stock were purchased at a premium to their fair value at the transaction closing date. The premium consisted of acquiring the shares at a price above the fair value based on the trailing 10-day weighted-average close price prior to entering into the 2018 Ionis Agreement in April 2018 and the effect of certain holding period restrictions. We recorded an asset of $462.9 million in investments and other assets in our condensed consolidated balance sheets reflecting the fair value of the common stock as of the purchase date and a charge of $162.1 million to research and development expense in our condensed consolidated statements of income in the second quarter of 2018 reflecting the premium paid for the common stock.

E) Net distribution to noncontrolling interests reflects the $50.0 million payment to Neurimmune SubOne AG (Neurimmune), net of Neurimmune's tax, to further reduce the previously negotiated royalty rates payable on products developed under our amended collaboration and license agreement with Neurimmune, including royalties payable on potential commercial sales of aducanumab, by an additional 5%.

F) 2017 corporate strategy implementation and restructuring charges are related to our efforts to create a leaner and simpler operating model.

G) In August 2019 we completed the sale of all of the outstanding shares of our subsidiary that owned our biologics manufacturing operations in Hillerød, Denmark to FUJIFILM Corporation (FUJIFILM).

Upon the closing of this transaction, we received approximately $881.9 million in cash, which may be adjusted based on contractual terms, which are discussed below. We determined that the operations disposed of in this transaction did not meet the criteria to be classified as discontinued operations under the applicable guidance.

As part of this transaction, we have provided FUJIFILM with certain minimum batch production commitment guarantees. There is a risk that the minimum contractual batch production commitments will not be met. Based upon current estimates we expect to incur an adverse commitment obligation of approximately $74.0 million associated with such guarantees. We may adjust this estimate based upon changes in business conditions, which may result in the increase or reduction of this adverse commitment obligation in subsequent periods. We also may be obligated to indemnify FUJIFILM for liabilities that existed relating to certain business activities incurred prior to the closing of this transaction.

In addition, we may earn certain contingent payments based on future manufacturing activities at the Hillerød facility. For the disposition of a business, our policy is to recognize contingent consideration when the consideration is realizable. We currently believe the probability of earning these payments is remote and therefore we did not include these contingent payments in our calculation of the fair value of the operations.

As part of this transaction, we entered into certain manufacturing services agreements with FUJIFILM pursuant to which FUJIFILM will use the Hillerød facility to produce commercial products for us, such as TYSABRI, as well as other third-party products.

In connection with this transaction we recognized a total net loss of approximately $164.4 million in our consolidated statements of income. This loss included a pre-tax loss of $95.5 million, which was recorded in loss on divestiture of Hillerød, Denmark manufacturing operations. The loss recognized was based on exchange rates and business conditions on the closing date of this transaction, and included costs to sell our Hillerød, Denmark manufacturing operations of approximately $11.2 million and our estimate of the fair value of an adverse commitment of approximately $114.0 million associated with the guarantee of future minimum batch production at the Hillerød facility. The value of this adverse commitment was determined using a probability- weighted estimate of future manufacturing activity. We also recorded a tax expense of $68.9 million related to this transaction. During the fourth quarter of 2019 we recorded a $40.2 million reduction in our estimate of the future minimum batch commitment utilizing our current manufacturing forecast, which reflects the impact of forecasted batches of aducanumab, resulting in a reduction in the pre-tax loss on divestiture from $95.5 million to $55.3 million.

H) Stock option expense reflects the accelerated vesting of stock options previously granted to Nightstar Therapeutics plc (NST) employees as a result of our acquisition of NST in the second quarter of 2019.

I) During the third quarter of 2019 a new taxing regime in the country and certain cantons of Switzerland was enacted and we refer to this as Swiss Tax Reform. As a result of the impact of Swiss Tax Reform, we recorded an income tax benefit of approximately $54.3 million resulting from a remeasurement of our deferred tax assets and liabilities in the third quarter of 2019.

J) The Tax Cuts and Jobs Act of 2017 (2017 Tax Act) resulted in significant changes to the U.S. corporate income tax system. These changes include a federal statutory rate reduction from 35% to 21%, the elimination or reduction of certain domestic deductions and credits and limitations on the deductibility of interest expense and executive compensation. The 2017 Tax Act also transitions international taxation from a worldwide system to a modified territorial system, which has the effect of subjecting certain earnings of our foreign subsidiaries and collaborations to immediate U.S. taxation as global intangible low-taxed income (GILTI) or Subpart F income, and includes base erosion prevention measures on U.S. earnings and the reduced effective tax rate on income that comes from U.S. exports, called Foreign Derived Intangible Income. During the fourth quarter of 2018 we elected to recognize deferred taxes for the basis differences expected to reverse as GILTI is incurred and have established initial deferred tax balances, as of the enactment date of the 2017 Tax Act.

U.S. tax reform amounts for the twelve months ended December 31, 2018, reflects the effect of an expense of $135.8 million related to the establishment of GILTI deferred taxes.

Tax reform amounts for the twelve months ended December 31, 2018, reflects the effect of a net reduction of $34.6 million to our 2017 preliminary estimate associated with a one-time mandatory deemed repatriation tax on accumulated foreign subsidiaries' previously untaxed foreign earnings, an expense of $12.7 million for the remeasurement of our deferred tax balances and an $11.0 million expense to reflect other aspects of the 2017 Tax Act.

K) Amortization included in equity in loss of investee, net of tax reflects the amortization of the differences between the fair value of our investment in Samsung Bioepis Co., Ltd. and the carrying value of our interest in the underlying net assets of the investee. These basis differences are amortized over their economic life.

NOTES: Our “Non-GAAP net income attributable to Biogen Inc.” and “Non-GAAP diluted earnings per share” financial measures exclude the following items from “GAAP net income attributable to Biogen Inc.” and “GAAP diluted earnings per share”: (1) purchase accounting, merger-related and other adjustments, (2) hemophilia business separation costs, (3) restructuring, business transformation and other cost saving initiatives, (4) (gain) loss on equity security investments, (5) stock option expense, (6) other select items and (7) their related tax effects. “Free Cash Flow” is defined as net cash flows provided by operating activities less purchases of property, plant and equipment and contingent consideration related to our acquisition of Fumapharm AG as disclosed within our Annual Report on Form 10-K. We believe that the disclosure of these Non-GAAP financial measures provides additional insight into the ongoing economics of our business and reflects how we manage our business internally, set operational goals and form the basis of our management incentive programs. These Non-GAAP financial measures are not in accordance with generally accepted accounting principles in the United States and should not be viewed in isolation or as a substitute for reported, or GAAP, net income attributable to Biogen Inc., GAAP diluted earnings per share and net cash flows provided by operating activities. Numbers may not foot due to rounding. Additional reconciliations of our Non-GAAP financial measures can be found in the Investors section of www.biogen.com..

GRI Materiality Assessment

At Biogen, our credo of caring deeply is reflected in the ways we engage our stakeholders and use their input to help inform our strategies. While we conduct our materiality assessments according to the globally accepted, GRI standards, we also challenge ourselves to go further than standards require.

We believe that a more rigorous approach to materiality enables us to more effectively anticipate and address important issues as we evolve our viewpoints and develop our overall CSR strategy.

Our approach

In 2019, we engaged a broader range of audiences, listened to a greater number of stakeholders, and asked new questions. Our analysis helped us identify and prioritize the environmental, social and governance (ESG) issues at the intersection of stakeholder and company concern.

Enhanced and broader

In 2019, we requested input from a wide range of internal and external stakeholders including categories that have not been previously included in Biogen assessments:

- Employees
- Suppliers
- Investors
- Industry associations
- Patient advocacy organizations
- Ratings organizations
- Researchers
- NGOs
- Competitors

This approach enabled us to look at issues from multiple diverse perspectives, and to consider key themes in the context of the trends shaping our industry, communities, and the world. We also made a point of seeking feedback from leaders in sustainability and corporate responsibility, who track environmental, social, and governance (ESG) issues, provide additional insight into emerging issues and expectations.

A comprehensive approach to questions

We invited input on an expanded range of issues, from our core business to the broader health system. We asked precise questions, and considered.

- **Priorities and performance**: We asked stakeholders what they thought should be our top priority issues, as well as encouraged candid feedback on how we are doing in each area.

- **Stakeholder expectations:** We probed for insights to help us understand, in an expanded range of issues, where they see us exceeding expectations and where they see us currently underperforming.

- **Level of confidence:** We not only asked for opinions, but also gauged how confident various respondents were about their thinking. This new approach enabled us to correlate stakeholder confidence with opinions of Biogen. For example, if respondents who have more negative views are less confident in their opinion, it suggests an opportunity for us to equip them with additional information that may better inform their views. Conversely, if they are very confident, it is more likely to indicate an issue that would benefit from additional Biogen review.

Our Analysis

Our approach surfaced additional data and gained practical insights by examining:

- **Internal vs external perspectives:** where are there similarities or major discrepancies between stakeholder groups? For example, we considered whether employees see Biogen differently, and whether their expectations for us are higher.

- **Themes by stakeholder group:** we looked for significant similarities and differences in how each category of stakeholder sees our company and priority issues. For example, we considered whether investors or suppliers expect different things from Biogen than NGOs or researchers do.

- **Levels of stakeholder engagement:** we considered the perspectives and expectations of stakeholders who have more robust relationships with us versus those who have more casual or occasional interaction.

Results

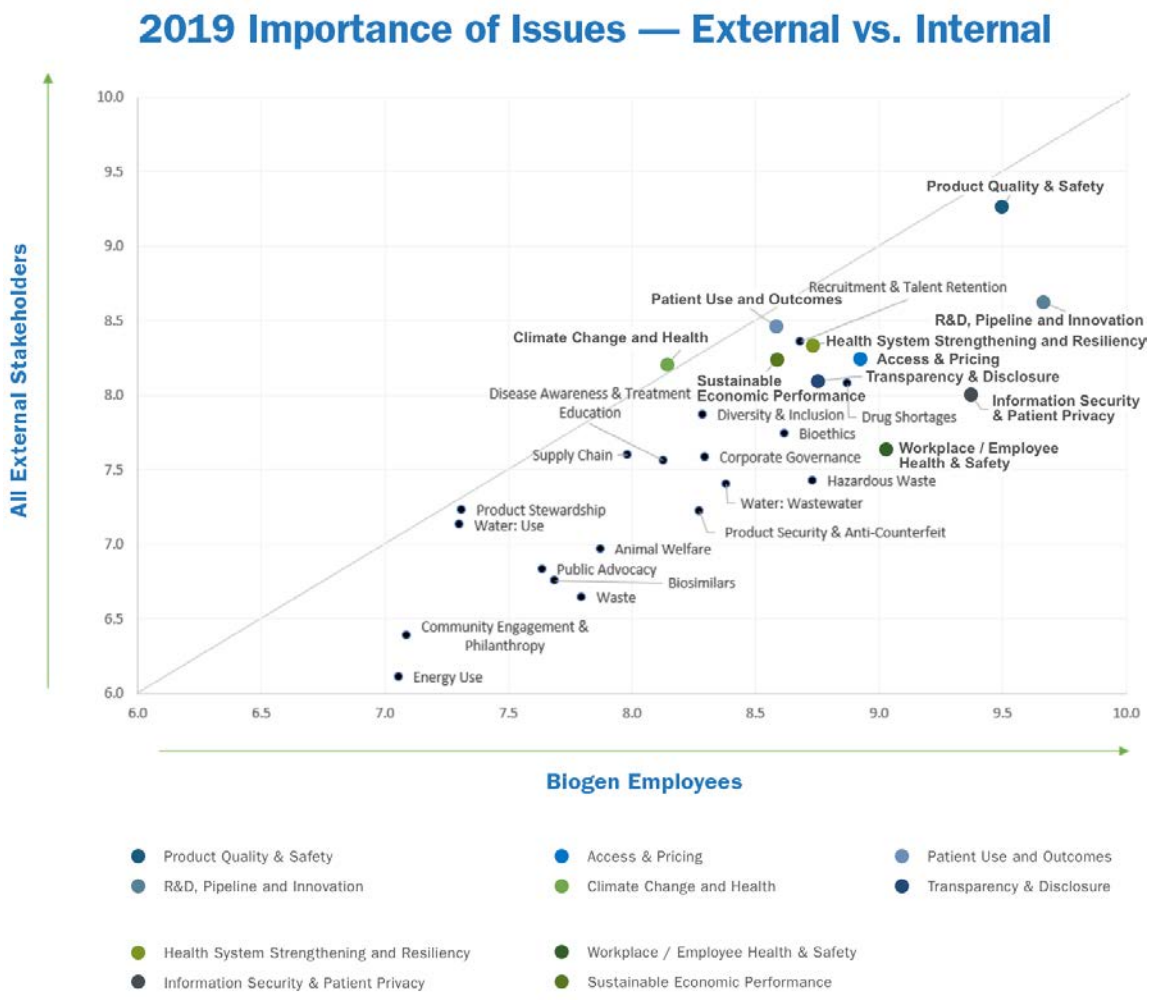
Based on the combined and cross-referenced responses from internal and external stakeholders, out of 28 potential material issues, 10 rose to the top. These areas (defined below) were ranked among the top 10 most material issues for Biogen by at least two of our three key stakeholder groups:

1) Internal stakeholders
2) All external stakeholders
3) Corporate responsibility and sustainability leaders

As a result of this comprehensive analysis, Biogen is prioritizing the following critical issues:

- Product Quality & Safety
- R&D, Pipeline and Innovation
- Access & Pricing
- Climate Change and Health
- Patient Use and Outcomes
- Transparency & Disclosure
- Health System Strengthening and Resiliency
- Information Security & Patient Privacy
- Workplace / Employee Health & Safety
- Sustainable Economic Performance

We also continue to recognize the importance of the remaining issues to our business and the need to address them as part of our corporate responsibility. These top ten material issues will receive additional attention as part of both our CR reporting and our corporate responsibility strategies and programs.



Definitions of Material Topics

- **Product Quality & Safety:** Pursuing high standards in product safety and product quality, including corresponding management systems and auditing, that always meet or exceed regulatory requirements.

- **R&D, Pipeline and Innovation:** Developing innovative products that treat systemic, challenging, and complex medical issues and address the unmet medical needs of patients around the globe.

- **Access & Pricing:** Expanding the availability of affordable medicines for patients, including the world's poor, by improving the obtainability of medicines and developing appropriate pricing models. This also encompasses working with patient advocacy organizations.

- **Climate Change and Health:** Reducing anthropogenic greenhouse gas (GHG) emissions along the entire value chain, avoiding the most severe consequences to human health and planetary well-being.

- **Patient Use and Outcomes:** Ensuring that patients are properly and effectively informed regarding medicine usage and the continuous improvement in health outcomes as occurring as a result of usage. Outcomes may be measured clinically (physical examination, laboratory testing, imaging), self-reported, or observed.

- **Transparency & Disclosure:** Timely and accurate disclosure of material matters concerning the corporation, including its financial situation, spending, relationships and results.

- **Health System Strengthening and Resiliency:** Helping strengthen health systems and reducing cost burdens.

- **Information Security & Patient Privacy:** Policies and practices that safeguard the privacy of patient information and protect data from unintended intruders.

- **Workplace / Employee Health & Safety:** The efforts undertaken by Biogen to assess and mitigate potential risks that could impact the health, safety or welfare of workers and the activities or programs to provide employees with a safe and healthful workplace.

- **Sustainable Economic Performance:** Promote the long-term economic health and performance of the company, with a focus on revenue, profitability, costs, appeal to investors, stock performance and long-term financial sustainability.

GRI Data Table

	Units	2016	2017	2018	2019
ABOUT BIOGEN					
Revenue	**Million USD**	11,449	12,274	13,453	**14,378**
R&D Spend	**Million USD**	1,973	2,254	2,597	**2,281**
No. of Employees	**#**	7,400	7,300	7,800	**7,400**
Corporate Equality Index[1]	**%**	100	100	100	**100**
CDP Climate Change[1]	**Score**	B	A	A-	**A-**
CDP Water[1]	**Score**	B	A	B	**B**
Dow Jones Sustainability Index[1,2]	**Score**	80	80	83 (Industry Leader)	**83** (Industry Leader)
ENVIRONMENTAL IMPACT					
Climate					
Scope 1 (fossil fuels and refrigerants)	**Metric Tons (MTCO2e)**	61,926	61,577	68,448	**67,031**
Scope 2 Location-based method (electricity and steam)	**MTCO2e**	45,919	41,108	36,248	**36,802**
Scope 2 Market-based method (electricity and steam)	**MTCO2e**	155	59	61	**106**
Scope 3[3]	**MTCO2e**	254,791	482,465	436,353	**424,537**
Purchased goods and services (category 1)	**MTCO2e**	191,599	396,280	325,928	**334,954**

	Units	2016	2017	2018	2019
Capital goods (category 2)	MTCO2e	16,664	35,424	51,635	**32,759**
Upstream/downstream energy and water-related activities (category 3)	MTCO2e	9,321	10,533	11,048	**10,515**
Waste generated in operations (category 5)[4]	MTCO2e	637	573	758	**645**
Business travel (category 6)	MTCO2e	17,542	21,111	27,277	**24,083**
Employee commuting (category 7)	MTCO2e	8,549	8,106	8,133	**9,516**
Upstream leased assets (category 8)	MTCO2e	0	0	0	**0**
End of life treatment, sold products (category 12)	MTCO2e	10,479	10,438	11,574	**12,065**
Total Value Chain (Scopes 1, 2 Market and 3)	MTCO2e	0	0	0	**0**
Absolute Value Chain Reduction from 2013 (Target: 35% by 2030)	MTCO2e	%	-17	33	**30**
Carbon Neutrality					
Renewable Electricity Certificates Retired[5] (for Biogen operations)	MWh	142,988	130,532	129,570	**141,669**
Renewable Electricity Certificates Retired[5,6] (for Suppliers operations)	MWh	227,015	9,652	0	**0**
Carbon Offsets[7]	MTCO2e	316,91	69,783	76,642	**76,667**
Net Operational Emissions (Scopes 1 & 2)[7]	MTCO2e	0	0	0	**0**
Net Value Chain Emissions (Scopes 1, 2 & 3)[7]	MTCO2e	-44	474,317	428,220	**415,007**
Energy					
Total Energy	MWh	465,007	451,253	491,194	**497,496**
Renewable Electricity Certificates Retired[5,6] (for Suppliers operations)	MWh	322,019	320,721	358,443	**352,559**
Fossil Fuels (gas, oil, diesel, gasoline)	MWh	321,37477	320,480	358,198	**352,158**

	Units	2016	2017	2018	2019
District Steam	MWh	644	239	236	**316**
Electricity (non-renewable)	MWh	0	2	10	**85**
Electricity (renewable)[5]	MWh	142,988	130,532	132,751	**144,937**
Renewable Energy (% of Total Electricity)	%	100	100	100	**100**
Renewable Energy (% of Total Energy)	%	31	29	27	**29**
Fleet Efficiency (US Only)	g CO2e / mile	375	397	409	**415**
Water					
Total Net Water Use	Million Cubic meters (m3)	1.107	0.985	1.310	**1.272**
Reused/Recycled Water[8]	MWh	8	8	6	**5**
Water Withdrawal	Million m3	1.026	1.306	1.629	**1.511**
Municipal Supply (potable & grey water)	Million m3	1.016	0.901	1.217	**1.207**
Fresh Surface Water	Million m3	0.008	0.404	0.411	**0.303**
Rainwater	Million m3	0.001	0.001	0.001	**0.001**
Water Discharges	Million m3	0.600	0.935	1.214	**0.990**
Fresh Surface Water	Million m3	0.000	0.392	0.400	**0.303**
Wastewater	Million m3	0.600	0.543	0.815	**0.687**
Assessment of Water Withdrawal[9] (Target: 100% by 2019)	% of Major Facilities	50	50	40	**100**
Major Facilities with Fair Share of Water Withdrawal (Target: Maintain 100%)	% of Major Facilities	50	50	40	**100**

	Units	2016	2017	2018	2019
Waste[5]					
Non-hazardous Waste[10]	**Metric Tons**	7,961	7,606	8,161	**7,561**
Waste Reused	**Metric Tons**	48	31	11	**6**
Waste Recycled	**Metric Tons**	1,123.4	1,012.3	932.4	**1,732**
Waste Composted	**Metric Tons**	3,543	3,461	3,334	**2,997**
Energy Recovery via Anaerobic Digestion	**Metric Tons**	57	76	70	**43**
Waste to Energy	**Metric Tons**	1,195	1,014	1,309	**1,206**
Incineration	**Metric Tons**	1,929	1,990	2,472	**1,544**
Waste to Landfill	**Metric Tons**	66	21	33	**32**
Waste to Landfill Diversion (Target: Maintain 100%)	**%**	99	100	100	**100**
Recovery & Recycling Rate (Reuse, Compost, Recycle)	**%**	60	60	53	**63**
Hazardous and Biohazardous Waste	**Metric Tons**	227	211	233	**219**
SOCIAL IMPACT					
Community Engagement					
Total Grants[11]	**Million USD**	4.9	4.5	4.9	**4.7**
Matching Gifts Program	**Million USD**	1.3	1.7	1.4	**1.7**
Volunteer Hours[12]	**Hours**	12,000	11,000	12,200	**16,560**

	Units	2016	2017	2018	2019
Health & Safety					
Total Recordable Injury Rate (TRIR)[20]	**Cases / 200,000 working hours**	0.39	0.22	0.23	**0.28**
Days Away Case Rate (DACR)[21]	**Cases / 200,000 working hours**	0.19	0.05	0.11	**0.11**
3-Year Average DACR Industry Rank[20] (Target: 1st Quartile by 2019)	**Rank**	7	5	2	**2**
Contractor DACR[22]	**Cases / 200,000 working hours**	0.42	0.30	0.20	**0.87**
Number of Fatalities	**#**	0	0	0	**0**
Collisions per Million Miles (US Fleet)	**Collisions / million miles**	4.6	5.6	5.0	**3.7**

Footnotes for 2019 Data Table

N/A = Data was not collected in reporting year.
All prior environmental data was adjusted with the most recent emission factors available, as applicable.

1. Year of the result is based on the ranking publication year, which may use data from other time periods per the publication's methodology.
2. A major scoring methodology update occurred in 2018. For year on year comparison, only 2017 results have been recalculated.
3. Scope 3 categories 4, 9, 10, 11, 13, 14 and 15 were determined to not be relevant to our value chain or are aggregated into other categories.
4. Waste generation at affiliate offices, excluding Weston, Massachusetts, is considered de minimis and excluded. However, waste generation is estimated for the purposes of calculating Scope 3 carbon emissions from Waste Generated in Operations – Category 5.
5. Renewable electricity certificates retired include bundled and unbundled Green-e certified Renewable Energy Certifications, Guarantees of Origin, Green Power Certificates, Australian RECs, I-RECs to match Biogen's electricity usage in the U.S./Canada, Europe, Japan, Australia and South America/China/Mexico, respectively.
6. Carbon emissions generated for the goods and services and capital goods we purchase are based on a proprietary EEIO model and actual supplier data, which can estimate the portion derived from electricity usage. Between 2014 and 2016, Biogen matched 100% of our share of supplier's electricity usage with renewable electricity certificates.

7. Carbon offsets purchased and retired in 2019 originate from the New Bedford Landfill Gas project in Massachusetts. Biogen acknowledges that carbon offsets will no longer be sufficient to achieve carbon neutrality and will cease accounting for them in this manner starting in 2020.
8. Data reflects percentage of reclaimed water on-site, harvested rainwater and municipal grey water compared to total water use.
9. Percent of major sites assessed for water withdrawal using a context-based methodology. Fair, just and proportionate share of locally available renewable supplies is defined as a ratio of less than 1.0 using the Center for Sustainable Organization's Corporate Water Gauge tool, a context-based water metric.
10. Data includes non-hazardous solid waste and trucked off wastewater from our routine operations only. Waste derived from construction and demolition debris, incinerator ash and other contractor activities is not included.
11. Includes all grants awarded by the Biogen Foundation exclusive of the Employee Matching Gifts Program.
12. 146 hours were performed during paid working hours. Total monetary value of philanthropic contributions associated with Community Labs, Biogen Foundation and Medical Grants include: $19.9 million cash contributions; $12,500 employee volunteering time; $175,000 in-kind giving; and $1.4 million management oversight.
13. The STAR Initiative is a coordinated funding strategy designed to help catalyze the development of local STEM ecosystems in Cambridge, Massachusetts and Somerville, Massachusetts. STAR stands for Science, Teacher support, Access and Readiness and is intended to strengthen and support the educational landscapes in these cities by helping increase access to STEM resources and opportunities for students most underrepresented in STEM college or career pathways.
14. 2017, 2018, and 2019 diverse supplier spend and related percentage is limited to Tier I direct spend, while 2016 includes both Tier I and Tier II direct spend. Excluding Tier II spend, 2017, 2018 and 2019 were similar to 2016.
15. Inclusive of all management levels, consisting of manager+ level employees.
16. Revenue generating functions include Pharmaceutical Operation ad Technology, Commercial, and Research and Development.
17. The annual people survey question for which our employee satisfaction metric is derived changed in 2018 to help us better assess our overall employee engagement. The employee satisfaction value for 2018 and 2019 are in line with global industry benchmarks.
18. Defined as People Managers completing at least one course in the manager training curriculum.
19. In August 2019 Biogen completed the sale of all of the outstanding shares of its subsidiary that owned its biologics manufacturing operations in Hillerød, Denmark to FUJIFILM Corporation. 2019 total turnover data does not include the 800 employees who continued employment under Fujifilm ownership.
20. Includes permanent and contracted employees, excludes contractors (e.g. construction, janitorial, food services). TRIR values prior to 2016 exclude affiliate office employees.
21. Industry composed of 15 leading pharmaceutical company peers.
22. Contractor DACR: Includes construction-related contractors only.

GRI Content Index

GRI Indicator	Description	Reference	SDG Alignment
GRI 102: GENERAL DISCLOSURES 2016			
Organizational Profile 2019			
102-1	Name of the organization	Biogen Inc.	
102-2	Activities, brands, products, and services	Message from the CEO– 2019 Year in Review Item 1., Business, 2019 Form 10-K, pages 1-28	
102-3	Location of headquarters	Corporate Headquarters: Cambridge, Massachusetts (U.S.)	
102-4	Location of operations	Pharmaceutical Operations & Technology Item 2., Properties, 2019 Form 10-K, pages 48-49	
102-5	Ownership and legal form	Board of Directors Corporate Governance Documents	
102-6	Markets served	Item 1., Business, 2019 Form 10-K, pages 9-11	
102-7	Scale of the organization	Highlights – 2019 Annual Report Item 1., Business, 2019 Form 10-K, pages 1-28 Item 6., Selected Financial Data, 2019 Form 10-K, pages 52-54	

GRI Indicator	Description	Reference	SDG Alignment
102-8	Information on employees and other workers	Item 1., Business, 2019 Form 10-K, pages 29-32	
102-9	Supply chain	Item 1., Business, 2019 Form 10-K, pages 27-28	Goal 12
102-10	Significant changes to the organization and its supply chain	Item 1., Business, 2019 Form 10-K, pages 2-3	
102-11	Precautionary Principle or approach	Biogen applies the precautionary approach by achieving carbon neutrality, ensuring the safety of patients, and performing detailed risk analyses related to its operations.	
102-12	External initiatives	Our Guiding Principles Advocacy Engagement Community and Environment Section – 2019 Year in Review	
102-13	Membership of associations	Community and Environment Section – 2019 Year in Review Biogen membership associations: RE100 Company – Global initiative uniting more than 100 influential businesses committed to 100% renewable electricity Pharmaceutical Supply Chain Initiative (PSCI) – Organization of leading global pharmaceutical companies focused on increasing the capabilities and responsibility of our supply chains Pharmaceutical Product Stewardship Work Group – Association for drug and sharp manufacturers and marketers formed to address the disposal of unused and unwanted pharmaceutical products.	

GRI Indicator	Description	Reference	SDG Alignment
102-14	Statement from senior decision-maker	Message from the CEO–2019 Year in Review	
102-15	Key impacts, risks, and opportunities	Item 1A., Business, 2019 Form 10-K, pages 33-35 Two important long-term emerging risks identified are regulatory movement on product pricing and the ability to obtain adequate coverage, pricing and reimbursement from third-party payors. In light of these risks, Biogen has increasingly engaged with Health Technology Assessment (HTA) authorities around the world early in the drug development process. These formal scientific advice programs have yielded great insights into the perceived value of the products in Biogen's development pipeline and the types of evidence needed to help increase their potential for reimbursement. Additional Biogen conducts assessments to quantify the healthcare value our products provide to the communities for which it operates.	
Ethics and Integrity			
102-16	Values, principles, standards, and norms of behavior	Code of Business Conduct (Values in Action) Our Guiding Principles	
102-17	Description of internal and external mechanisms for: seeking advice	Code of Business Conduct (Values in Action)	

GRI Indicator	Description	Reference	SDG Alignment
102-18	Governance structure	Executive Leadership Board of Directors Corporate Governance Documents	
102-30	Highest governance body's role	Code of Business Conduct (Values in Action) Sustainability Policy Environmental Health and Safety Policy	
102-33	Process for communicating critical concerns to the highest governance body.	Code of Business Conduct (Values in Action)	
Stakeholder Engagement			
102-40	List of stakeholder groups	GRI Materiality Assessment	
102-41	Collective bargaining agreements	Approximately 2.2 percent of Biogen's employees are under a collective bargaining agreement using a time-weighted average basis. All of these employees worked in the Hillerød, Denmark, manufacturing facility. In August 2019 Biogen completed the sale of all of the outstanding shares of its subsidiary that owned its biologics manufacturing operations in Hillerød, Denmark to FUJIFILM Corporation.	
102-42	Identifying and selecting stakeholders	GRI Materiality Assessment	
102-43	Approach to stakeholder engagement	GRI Materiality Assessment	

GRI Indicator	Description	Reference	SDG Alignment
102-44	Key topics and concerns raised	GRI Materiality Assessment	
Reporting Practice			
102-45	Entities included in the consolidated financial statements	All major entities are included in the boundaries of this report. See the 2019 Form 10-K	
102-46	Defining report content and topic Boundaries	GRI Materiality Assessment Reporting Section – 2019 Year in Review	
102-47	List of material topics	GRI Materiality Assessment	
102-48	Restatements of information	No restatements were made	
102-47	List of material topics	GRI Materiality Assessment	
102-49	Changes in reporting	No significant changes from the previous reporting period	
102-50	Reporting period	Data covers fiscal year 2019; ending December 31, 2019. Some activities from 2020 are also included	
102-51	Date of most recent report	April 20, 2020	
102-52	Reporting cycle	We report on an annual basis	
102-53	Contact point for questions regarding the report	Corporate Social Responsibility contact: public.affairs@biogen.com	
102-54	Claims of reporting in accordance with the GRI Standards	This report has been prepared in accordance with the GRI Standards: Core option	

GRI Indicator	Description	Reference	SDG Alignment
102-55	GRI content index	GRI Content Index	
102-56	External assurance	ERM CVS Independent Assurance Statement to Biogen Inc.	

GRI 103: TOPICS AND TOPIC BOUNDARIES

103-1	Explanation of the material topic and its Boundary	GRI Materiality Assessment Reporting Section – 2019 Year in Review	
103-2	The management approach and its components	Purpose and Performance Section 2019 Year in Review	
103-3	Evaluation of the management approach	Consolidated Financial Statements, 2019 Form 10-K, pages F-80-82 2019 Annual Report	

GRI 200-400: TOPIC-SPECIFIC DISCLOSURES 2016

Economic

Economic Performance

201-1	Direct economic value generated and distributed	GAAP to Non-GAAP Reconciliation Section 2019 Annual Report Item 6., Selected Financial Data, 2019 Form 10-K, page 52, F-75	
201-2	Financial implications and other risks and opportunities due to climate change	Biogen acknowledges the desires of its investors to better understand Biogen's climate-related financial risks.	

GRI Indicator	Description	Reference	SDG Alignment
		Biogen is taking steps to align with the four recommendations outlined by the Task Force on Climate-related Financial Disclosures (TCFD). Disclosure of Biogen's progress as well as climate-related financial risks and opportunities can be found in its 2019 CDP Climate Change disclosure. In alignment with the TCFD, Biogen will look to incorporate material risks and opportunities into our reporting in future years.	
201-3	Defined benefit plan obligations and other retirement plans	Consolidated Financial Statements, 2019 Form 10-K, page F-75	
Indirect Economic Impacts			
203-2	Significant indirect economic impacts	2019 Year in Review GRI Materiality Assessment	Goal 3 Goal 4 Goal 8
Procurement Practices			
204-1	Proportion of spending on local suppliers	Not applicable Biogen discloses this information only on a global level Our Guiding Principles Supplier Diversity – Working With Us	Goal 5 Goal 8
Environment			
Water and Effluents			

GRI Indicator	Description	Reference	SDG Alignment
303-1	Interactions with water as a shared resource	Community and Environment Section – 2019 Year in Review Data Table – 2019 Year in Review 2020 CDP Water Security disclosure	Goal 6
303-3	Water withdrawal	Community and Environment Section – 2019 Year in Review Data Table – 2019 Year in Review 2020 CDP Water Security disclosure	Goal 6
303-4	Water discharge	Community and Environment Section – 2019 Year in Review Data Table – 2019 Year in Review 2020 CDP Water Security disclosure	Goal 6
303-5	Water consumption	Community and Environment Section – 2019 Year in Review Data Table – 2019 Year in Review 2020 CDP Water Security disclosure	Goal 6
Emissions			
305-1	Direct (Scope 1) GHG emissions	Community and Environment Section – 2019 Year in Review Data Table – 2019 Year in Review Biogen 2020 CDP Climate Change disclosure	Goal 7 Goal 13

GRI Indicator	Description	Reference	SDG Alignment
305-2	Energy indirect (Scope 2) GHG emissions	Community and Environment Section – 2019 Year in Review Data Table – 2019 Year in Review Biogen 2020 CDP Climate Change disclosure	Goal 7 Goal 13
305-3	Other indirect (Scope 3) GHG emissions	Community and Environment Section – 2019 Year in Review Data Table – 2019 Year in Review 2020 CDP Water Security disclosure	Goal 7 Goal 13
305-5	Reduction of GHG emissions	Community and Environment Section – 2019 Year in Review Data Table – 2019 Year in Review Biogen 2020 CDP Climate Change disclosure	Goal 7 Goal 13
Effluents and Waste			
306-2	Waste by type and disposal method	Community and Environment Section – 2019 Year in Review Data Table – 2019 Year in Review	Goal 12
Environmental Compliance			
307-1	Non-compliance with environmental laws and regulations	CThere were no significant instances of non-compliance in 2019 Our Guiding Principles Item 1A., Risk Factors, 2019 Form 10-K, page 47	Goal 12

GRI Indicator	Description	Reference	SDG Alignment
Supplier Environmental Assessments			
308-1	New suppliers that were screened using environmental criteria	Community and Environment Section – 2019 Year in Review Reporting Section – 2019 Year in Review	Goal 12
308-2	Other indirect (Scope 3) GHG emissions	Community and Environment Section – 2019 Year in Review Reporting Section – 2019 Year in Review Item 1A., Risk Factors, 2019 Form 10-K, page 47	Goal 12
Social			
Employment			
401-1	New employee hires and employee turnover	Data Table – 2019 Year in Review Break down by age group, gender is not shared publicly.	
Occupational Health and Safety			
403-1	Occupational health and safety management system	Our People Section – 2019 Year in Review Environmental, Health and Safety Policy Statement	Goal 3 Goal 8
403-2	Hazard identification, risk assessment, and incident investigation	Our People Section – 2019 Year in Review Environmental, Health and Safety Policy Statement	Goal 3 Goal 8

GRI Indicator	Description	Reference	SDG Alignment
403-4	Worker participation, consultation, and communication on occupational health and safety	Our People Section – 2019 Year in Review Environmental, Health and Safety Policy Statement	Goal 3 Goal 8
403-9	Work-related injuries	Our People Section – 2019 Year in Review Data Table – 2019 Year in Review Environmental, Health and Safety Policy Statement	Goal 3 Goal 8
Diversity and Equal Opportunity			
405-1	Diversity of governance bodies and employees	Our People Section – 2019 Year in Review Data Table – 2019 Year in Review Board of Directors	Goal 5
405-2	Ratio of basic salary and remuneration of women to men	Confidentiality constraints Biogen does not disclose externally any salary and wages related data except the Executive Compensation of the Executive Committee and Board of Directors	
Local Communities			
413-1	Operations with local community engagement, impact assessments, and development programs	Our People Section – 2019 Year in Review Community and Environment Section – 2019 Year in Review Grants Management and Strategic Giving	Goal 3 Goal 4

GRI Indicator	Description	Reference	SDG Alignment
		Biogen also supports local communities through grants provided through the Biogen Foundation. Recipients of grants equal to or greater than $100,000 in 2019 include: • Dana-Farber Cancer Institute East End House • Friends of North Carolina Museum of Natural Sciences • North Carolina State University Foundation • University of North Carolina at Chapel Hill	
Supplier Social Assessment			
414-1	New suppliers that were screened using social criteria	Our People Section – 2019 Year in Review Reporting Section – 2019 Year in Review Supplier Diversity – Working With Us Code of Business Conduct (Values in Action)	Goal 5 Goal 8 Goal 12
414-2	Negative social impacts in the supply chain and actions taken	Supplier Diversity – Working With Us Code of Business Conduct (Values in Action) Reporting Section – 2019 Year in Review	Goal 5 Goal 8 Goal 12
Public Policy			

GRI Indicator	Description	Reference	SDG Alignment
415-1	Political contributions	Our Guiding Principles Political Contributions Policy Political Contributions Disclosure 2019 Form 10-K	Goal 16
Customer Health and Safety			
416-1	Assessment of the health and safety impacts of product and service categories	Patients Section – 2019 Year in Review Pioneering Science Section – 2019 Year in Review 2019 Annual Report Our Guiding Principles Patient Safety Product Stewardship	Goal 3
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	There were no significant instances of non-compliance in 2019 Pioneering Science Section – 2019 Year in Review 2019 Annual Report Patient Safety Product Stewardship	Goal 3
Marketing and Labeling			
417-1	Requirements for product and service information and labeling	Our Guiding Principles Patient Safety	Goal 3

GRI Indicator	Description	Reference	SDG Alignment
		Product Stewardship	Goal 16
417-2	Incidents of non-compliance concerning product and service information and labeling	There were no significant instances of non-compliance in 2019 Our Guiding Principles	Goal 3
417-3	Incidents of non-compliance concerning marketing communications	There were no significant instances of non-compliance in 2019 Our Guiding Principles	Goal 3
Customer Privacy			
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	There were no significant instances of breaches of customer privacy or losses of customer data in 2019 Our Guiding Principles Global Privacy Program	

*Assessed using the SDG Compass: Linking the SDGs and GRI Standards available on the GRI website's resource library.

SASB Content Index

Code	Accounting Metric	Disclosure
Safety of Clinical Trial Participants		
HC-BP-210a.1	Discussion, by world region, of management process for ensuring quality and patient safety during clinical trials	Biogen has a Global Pharmacovigilance (PV) team comprised of medical and scientific professionals with extensive safety and/or clinical or healthcare experience who are trained in PV and worldwide health authority regulations relevant to medicinal product safety. Biogen's safety signal management processes, combined with our robust safety governance framework, allow Biogen to determine if new safety information on our products (a 'signal') poses a risk to patients and how best to manage, mitigate and communicate the risk. All safety and benefit/risk decisions for marketed and investigational products are made at the Safety Monitoring Committee (SMC). The Safety team collaborates with Regulatory Affairs to communicate product information in a timely, transparent, and accurate manner to regulatory agencies across the globe. In addition to complying with our company's global standards, the conduct of our clinical trials adheres to the International Council for Harmonisation Good Clinical Practice (ICH GCP) standards and to the principles that have their origin in the Declaration of Helsinki. Each country has its own regulatory authority with its own regulations, or laws, for conducting a clinical trial. The regulatory authority reviews and approves the protocol and ensures that the clinical trial follows national regulations. An Institutional Review Board (IRB)or Ethics Committee (EC) is an independent committee that includes medical, scientific, and non-scientific

Code	Accounting Metric	Disclosure
		members, whose responsibility is to protect the rights, welfare, safety, and well-being of clinical trial participants. Each clinical trial location is monitored by a specific IRB / EC. It is responsible for reviewing all clinical trials, as well as conducting ongoing reviews of active clinical trials. For more information please visit our clinical trials webpage
HC-BP-210a.2	Number of FDA Sponsor Inspections related to clinical trial management and pharmacovigilance that resulted in: (1) Voluntary Action Indicated (VAI) and (2) Official Action Indicated (OAI)	Biogen is committed to transparent ESG reporting and intends expand its SASB disclosure in the following year.
HC-BP-210a.3	Total amount of monetary losses as a result of legal proceedings associated with clinical trials in developing countries	Biogen did not sustain any monetary losses in the reporting period as a result of legal proceedings associated with the conduct as described. Biogen discloses all material legal and regulatory proceedings in its Annual Report on Form 10-K and Quarterly Reports on Form 10-Q.
Access to Medicines		
HC-BP-240a.1	Description of actions and initiatives to promote access to health care products for priority diseases and in priority countries as defined by the Access to Medicine Index	See our 2019 Year in Review Patients Section for description of our expanded access program and spinal muscular atrophy (SMA)-focused individual patient humanitarian access program, which enable access to SPINRAZA in priority countries.
HC-BP-240a.2	List of products on the WHO List of Prequalified Medicinal Products as part of its Prequalification of Medicines Programme (PQP)	Biogen has no products on the WHO List of Prequalified Medicinal Products.

Code	Accounting Metric	Disclosure
Affordability & Pricing		
HC-BP-240b.1	Number of settlements of Abbreviated New Drug Application (ANDA) litigation that involved payments and/or provisions to delay bringing an authorized generic product to market for a defined time period	Biogen does not comment on confidential legal matters
HC-BP-240b.2	Percentage change in: (1) average list price and (2) average net price across U.S. product portfolio compared to previous year	We regularly review our pricing strategy and prioritize patient access to our therapies. We have a value-based contracting program designed to align the price of our therapies to the value our therapies deliver to patients. We also work with regulators, clinical researchers, ethicists, physicians and patient advocacy organizations and communities, among others, to determine how best to address requests for access to our investigational therapies in a manner that is consistent with our patient-focused values and compliant with regulatory standards and protocols. Additional information is available here: • 2019 10-k • Biogen Pricing Principles
HC-BP-240b.3	Percentage change in: (1) list price and (2) net price of product with largest increase compared to previous year	We regularly review our pricing strategy and prioritize patient access to our therapies. We have a value-based contracting program designed to align the price of our therapies to the value our therapies deliver to patients. We also work with regulators, clinical researchers, ethicists, physicians and patient advocacy organizations and communities, among others, to determine how best to address requests for access to our investigational therapies in a manner that is consistent with our patient-focused values and compliant with regulatory standards and protocols. Additional information is available here: • 2019 10-k • Biogen Pricing Principles

Code	Accounting Metric	Disclosure
Drug Safety		
HC-BP-250a.1	List of products listed in the Food and Drug Administration's (FDA) MedWatch Safety Alerts for Human Medical Products database	There were no listings relevant to Biogen's products on the FDA's MedWatch Safety Alerts for Human Medical Products database in 2019. Tecfidera (dimethyl fumarate) was listed on the April – June 2019 Potential Signals of Serious Risks/New Safety Information Identified report from the FDA Adverse Event Reporting System (FAERS).
HC-BP-250a.2	Number of fatalities associated with products as reported in the FDA Adverse Event Reporting System	Biogen is committed to transparent ESG reporting and intends expand its SASB disclosure in the following year.
HC-BP-250a.3	Number of recalls issued; total units recalled	Biogen did not issue any drug product recalls in 2019.
HC-BP-250a.4	Total amount of product accepted for takeback, reuse, or disposal	Due to the low volume of its products, at this time, Biogen does not manage a formal product takeback, reuse or disposal program. Per regulatory requirements, Biogen participates in several product takeback programs across various U.S. states or counties, and several other countries. In addition, Biogen provides guidance on disposal methods of its products.
HC-BP-250a.5	Number of FDA enforcement actions taken in response to violations of current Good Manufacturing Practalsoices (cGMP), by type	The FDA issued Biogen 11 Form 483 observations in 2019. Biogen did not receive any FDA enforcement actions associated with warning letters, seizures, recalls or consent decrees in 2019. • Our former Hillerod facility received six (6) observations. • Our RTP Drug Substance facility received five (5) observations. Corrective actions were nearly all procedural update driven that also optimized the processes, however, did not implicate the processes as being ineffective.

Code	Accounting Metric	Disclosure
Counterfeit Drugs		
HC-BP-260a.1	Description of methods and technologies used to maintain traceability of products throughout the supply chain and prevent counterfeiting	Counterfeit medicines – a multi-billion dollar annual illegal industry, estimated by the World Customs Organization – put patients at risk and pose an ever growing concern for the biopharmaceutical industry. Biogen takes the issue of counterfeit, adulterated and compromised drugs very seriously. As part of Biogen's comprehensive supply chain security strategy, we aim to disrupt diversions, counterfeiting, theft and other nefarious activities through the following: • Implementing sophisticated technology into our product packaging • Auditing current supply chain partners to ensure industry best practice requirements are met regarding product security • Monitoring program across value stream to identify potential threats to supply chain resiliency and robustness In addition, Biogen has a Global Serialization Program to meet the increasing global regulatory requirements for managing supply chain operations in a secure and traceable way. These regulations are built on the concepts of serialization and "track and trace." Serialization is the use of globally unique codes that are printed on individual medicine packs and communicated to supply chain partners for the purpose of authentication, and in some cases, improved product management, such as preventing dispensation of expired product or managing processes for returns and recalls. We are also investing in packaging operations, distribution sites and information technology infrastructure across the supply chain to support serialization and assure compliance to serialization requirements in an increasing number of markets, including the U.S. and the European Union (EU).
HC-BP-260a.2	Discussion of process for alerting customers and business partners of potential or known risks associated with counterfeit products	The Global Serialization Program allows EU pharmacists to check a medication against a unique list of numbers to be certain that the products they are dispensing were

Code	Accounting Metric	Disclosure
		manufactured by Biogen and not swapped out by someone else between the time they left the manufacturing facility and arrived at a pharmacy or hospital. The serial numbers are highly randomized, rendering them extremely difficult for counterfeiters to imitate.
HC-BP-260a.3	Number of actions that led to raids, seizure, arrests, and/or filing of criminal charges related to counterfeit products	Biogen did not take any actions in the reporting period that led to raids, seizure, arrests, and/or filing of criminal charges related to counterfeit products.

Ethical Marketing

HC-BP-270a.1	Total amount of monetary losses as a result of legal proceedings associated with false marketing claims	Biogen did not sustain any monetary losses in the reporting period as a result of legal proceedings associated with the conduct as described. Biogen discloses all material legal and regulatory proceedings in its Annual Report on Form 10-K and Quarterly Reports on Form 10-Q.
HC-BP-270a.2	Description of code of ethics governing promotion of off-label use of products	Please visit here for a description of Biogen's approach to off-label use.

Employee Recruitment, Developing & Retention

HC-BP-330a.1	Discussion of talent recruitment and retention efforts for scientists and research and development personnel	See our 2019 Year in Review Our People Section for further information on our recruitment, retention and development efforts.
HC-BP-330a.2	(1) Voluntary and (2) involuntary turnover rate for: (a) executives/senior managers, (b) midlevel managers, (c) professionals, and (d) all others	See our 2019 Year in Review GRI Data Table for total voluntary and involuntary turnover rates.

Code	Accounting Metric	Disclosure
Supply Chain Management		
HC-BP-430a.1	Percentage of (1) entity's facilities and (2) Tier I suppliers' facilities participating in the Rx-360 International Pharmaceutical Supply Chain Consortium audit program or equivalent third-party audit programs for integrity of supply chain and ingredients	See our 2019 Year in Review Reporting Section
Business Ethics		
HC-BP-510a.1	Total amount of monetary losses as a result of legal proceedings associated with corruption and bribery	Biogen did not sustain any monetary losses in the reporting period as a result of legal proceedings associated with the conduct as described. Biogen discloses all material legal and regulatory proceedings in its Annual Report on Form 10-K and Quarterly Reports on Form 10-Q.
HC-BP-510a.2	Description of code of ethics governing interactions with health care professionals	We comply with the Pharmaceutical Research and Manufacturers of America's (PhRMA) Code on Interactions with Healthcare Professionals. See our Code of Business Conduct section on Interactions with Healthcare Professionals.
Activity Metrics		
HC-BP-000.A	Number of patients treated	In 2019 we remained a global market leader in MS with an approximately 34% market share of the approximately one million MS patients being treated worldwide. Additional information is available in our 2019 Annual Report

Code	Accounting Metric	Disclosure
HC-BP-000.B	Number of drugs (1) in portfolio and (2) in research and development (Phases 1-3)	The number of drugs actively on the market is ten. We closed 2019 with a pipeline that included 27 clinical programs: • Number in Phase 1 = 9 • Number in Phase 2 = 12 • Number in Phase 3 = 6 More information on our product portfolio and pipeline is provided on our website. Values are as of December 31, 2019.

Biogen 2019 Sustainability Accounting Standard Board (SASB) Disclosure

Biogen is committed to providing meaningful sustainability information to stakeholders. We disclose information about our sustainability and governance, social and environmental practices via our Annual Report, Proxy Statements, CDP disclosures and Biogen's website, found at www.biogen.com.

We continue to enhance our sustainability reporting and in 2019 we published our first integrated report and began disclosure aligned with the **SASB Biotechnology & Pharmaceuticals industry standard, version 2018-10**, which can be found online here. This is an initial step in our evolution towards greater integration of sustainability disclosure in our financial reporting.

As we are currently in the process of developing robust sustainability disclosure processes, some metrics are not available for disclosure this year. We look forward to providing additional reporting in subsequent disclosures.

All data in this SASB disclosure is as of, or for the year-ended December 31, 2019 unless otherwise noted.

The inclusion of information contained in this disclosure should not be construed as a characterization regarding the materiality or financial impact of that information. Please also see our 2019 Annual Report on Form 10-K filed on February 6, 2020, and other publicly filed documents available at https://biogen.gcs-web.com/investor-relations.

This report contains information about Biogen and may contain forward-looking statements within the meaning of the Private Securities Litigation Reform Act. All statements, other than statements of historical facts, may be forward -looking statements. Biogen cautions that forward-looking statements are subject to numerous assumptions, risks and uncertainties, which change over time. Forward-looking statements speak only as of the date they are made, and Biogen assumes no duty to and does not undertake to update forward-looking statements. Actual results could differ materially from those anticipated in forward-looking statements and future results could differ materially from historical performance. Factors that can cause results to differ, as well as additional factors that can affect forward-looking statements, are discussed in Biogen's Annual Report on Form 10-K and Quarterly Reports on Form 10-Q, accessible on the SEC's website at www.sec.gov and on Biogen's website at www.biogen.com.