Environmental, Social & Governance (ESG) Progress Report 2019/2020

MSD
INVENTING FOR LIFE

Contents

This is the Environmental, Social & Governance (ESG) Progress Report 2019/2020 of Merck & Co., Inc., Kenilworth, N.J., U.S.A., which is known as MSD outside the U.S. and Canada. This report is a supplement to our comprehensive online report, available at MSDresponsibility.com. Information on documents filed with the Securities and Exchange Commission (SEC), such as our Form 10-K and Proxy Statement, can be found on our corporate website, which is intended only for residents of the U.S. and Canada.

Highlights

Access to Health

100%

Top 20 global burdens of disease addressed by our products and pipeline.[1,2,3]

We are currently advancing two SARS-CoV-2/COVID-19 vaccine candidates.

Ebola

Our Ebola Zaire Vaccine, ERVEBO, has been prequalified by the WHO, approved by the U.S. FDA, and approved by the Government of the Democratic Republic of the Congo (DRC).[1]

344M

Treatments for the elimination of river blindness and lymphatic filariasis (LF) shipped to endemic countries.[1]

Employees

43%

Management roles held by women.[1]

Zero

Employees laid off in 2020 as the result of the pandemic, including our 500-person summer internship program.

Environmental Sustainability

25.4%

Purchased electricity from renewable sources.[1,4]
By 2040, our goal is 100%.

15%

Reduction in water use since 2015.[1]

Ethics & Values

$2.4B

Spend with minority-, women-, veteran-, LGBT- and disability-owned suppliers.[1]

[1] As of December 31, 2019.

[2] As defined by the Institute for Health Metrics and Evaluation (IHME) using GBD 2017 data; excluding road injury, self-harm, interpersonal violence and neonatal disorders.

[3] This number is slightly higher in 2019 than in years past due to our expanded collaboration with MSD-Welcome Trust Hilleman Laboratories and our acquisitions of Immune Design and Peloton, Tilos Therapeutics and Calporta in 2019.

[4] We have defined "purchased electricity" as electricity sourced from external suppliers as well as renewable electricity that was generated and utilized onsite where we retained the renewable attributes or where we have obtained renewable attributes through contract.

A message from our CEO

Dear Stakeholders,

As we launch our 2019/2020 Corporate Responsibility Report, the world continues to face a health crisis of proportions unprecedented in our lifetimes. With the COVID-19 pandemic persisting in communities across the globe, never has there been a moment when our mission—to save and improve lives—appears as clear and compelling.

For more than 125 years, our unwavering commitment to inventing new medicines and vaccines in the fight against infectious diseases means that we have the capability, capacity and expertise to help develop effective responses to the pandemic.

We are advancing two SARS-CoV-2/COVID-19 vaccines—one in partnership with IAVI and another through our acquisition of Themis Bioscience. In addition, we are collaborating with Ridgeback Bio to develop a novel antiviral candidate.

We are also proud to be a part of the global collaborations, joining research efforts with the Institute for Systems Biology as well as the ACTIV (Accelerating COVID-19 Therapeutic Interventions and Vaccines) consortium, led by National Institutes of Health. And we are collaborating with the Bill & Melinda Gates Foundation as well as other global stakeholders, on issues of access and the equitable deployment of pandemic vaccines.

We have also prioritized the health, safety and wellbeing of our employees. Recognizing both their passion to make a difference and the demand for frontline health care professionals, we introduced a new global program in March 2020 to enable our medically trained employees to volunteer time to aid their communities while maintaining their base pay. We are so grateful to our employees who heeded the call to serve—they exemplify our commitment to patients and to our mission to save and improve lives.

In addition, we have contributed or committed more than $30 million to global, national and local COVID-19 relief efforts to help strengthen health systems and address health disparities, including among Black and Latino Americans who have been disproportionately impacted by the pandemic.

We're also addressing these disparities through our social justice efforts, partnering to close the opportunity gap to diverse talent at all stages of their careers. We continue to advance economic inclusion through our 35-year-long effort to support small- and minority-owned business and support our workforce through a broad range of existing diversity and inclusion resources, including those aimed at eliminating unconscious bias, discrimination and exclusion.

Our stand against systemic racism and for health equity and economic inclusion along with our ability to respond with confidence to crises like this pandemic are underpinned by our core commitment to operating responsibly. What we do matters as much as how we work, which is why acting responsibly is embraced within our four key areas of corporate responsibility: Access to Health, Employees, Environmental Sustainability, and Ethics & Values.

In this report, we provide updates on our strategy and performance in these key areas, reflecting progress we made in 2019 as well as the first half of 2020.

One of our proudest achievements is our work to combat the latest Ebola outbreak in the Democratic Republic of the Congo (DRC). Since July 2018, over 300,000 patients have been vaccinated to-date with investigational doses of Ebola Zaire Vaccine (V920) that we donated to the World Health Organization (WHO) in support of outbreak response efforts. In November 2019, ERVEBO (Ebola Zaire Vaccine, Live) was prequalified by WHO, and in December 2019 it was approved by the FDA. While manufacturing efforts continue, we are committed to continuing to supply investigational doses as needed to support ongoing outbreak response efforts in the DRC and neighboring countries. These efforts help ensure that a vaccine will continue to be available in the fight against this deadly virus.

Our response to the Ebola outbreak is part of our long track record of making our vaccines

and medicines accessible and affordable, work that is guided by our Access to Health Guiding Principles. First introduced in 2010, the Principles ensure we fulfill our commitment to access as a core company value. Recognizing changing global access needs, we conducted a strategic reevaluation of our principles this past year. We're pleased to come forward with refreshed principles and Key Performance Indicators (KPIs) that measure and report on our progress and performance in a more meaningful way.

We have also recently increased the diversity of our Board of Directors, now comprising 46 percent women, up from 33 percent at the end of 2019. Our Board has long believed in the business value of having diverse perspectives and is committed to having the right mix of skills and expertise to address our current and future needs.

These, and many other examples of our progress this past year, are detailed in this report which uses widely recognized reporting frameworks, reflects our support for the 10 universally accepted principles of the UN Global Compact, and recognizes the important role we play in helping to address the UN Sustainable Development Goals (SDGs). Our primary focus as it relates to these global goals is SDG 3, Good Health and Wellbeing, which aligns with our core business and mission.

While 2020 has been, and will continue to be, challenging in unparalleled ways, the ingenuity, flexibility and perseverance of our more than 70,000 employees gives me hope. Throughout our history, we have been committed to a clear and compelling mission to save and improve lives.

We have every intention to continue on this path.

Sincerely,

Kenneth C. Frazier
Chairman and Chief Executive Officer

Our purpose

Operating responsibly as a business is at the very heart of our ability to deliver sustainable impact—driving long-term value for our company and society.

For more than a century, we have been inventing medicines and vaccines for many of the world's most challenging diseases, and we have built a company with the talent, tenacity and strength to take on some of the biggest threats to human and animal health.

We continue to focus our research on conditions that represent some of today's most significant health challenges—cancer, diabetes, HIV, HPV, hepatitis C, cardio-metabolic disease, antibiotic-resistant infection, Alzheimer's disease and others—and we are on the front lines in the fight against global pandemics, such as COVID-19 and Ebola.

Our approach to corporate responsibility is about the health, economic, social and environmental impact we have on individuals, communities and ecosystems around the world.

We hold ourselves accountable to our many stakeholders, including patients, employees, customers and shareholders, all of whom help to define our corporate responsibility priorities.

Our focus

Reflecting our commitment to managing environmental, social and governance (ESG) issues, we continue to focus our approach to corporate responsibility in four primary areas that are of greatest relevance to our business and society.

Access to Health

We aspire to improve access to health by discovering, developing and providing innovative products and services that save and improve lives.

Environmental Sustainability

A healthy planet is essential to human health and the sustainability of our business.

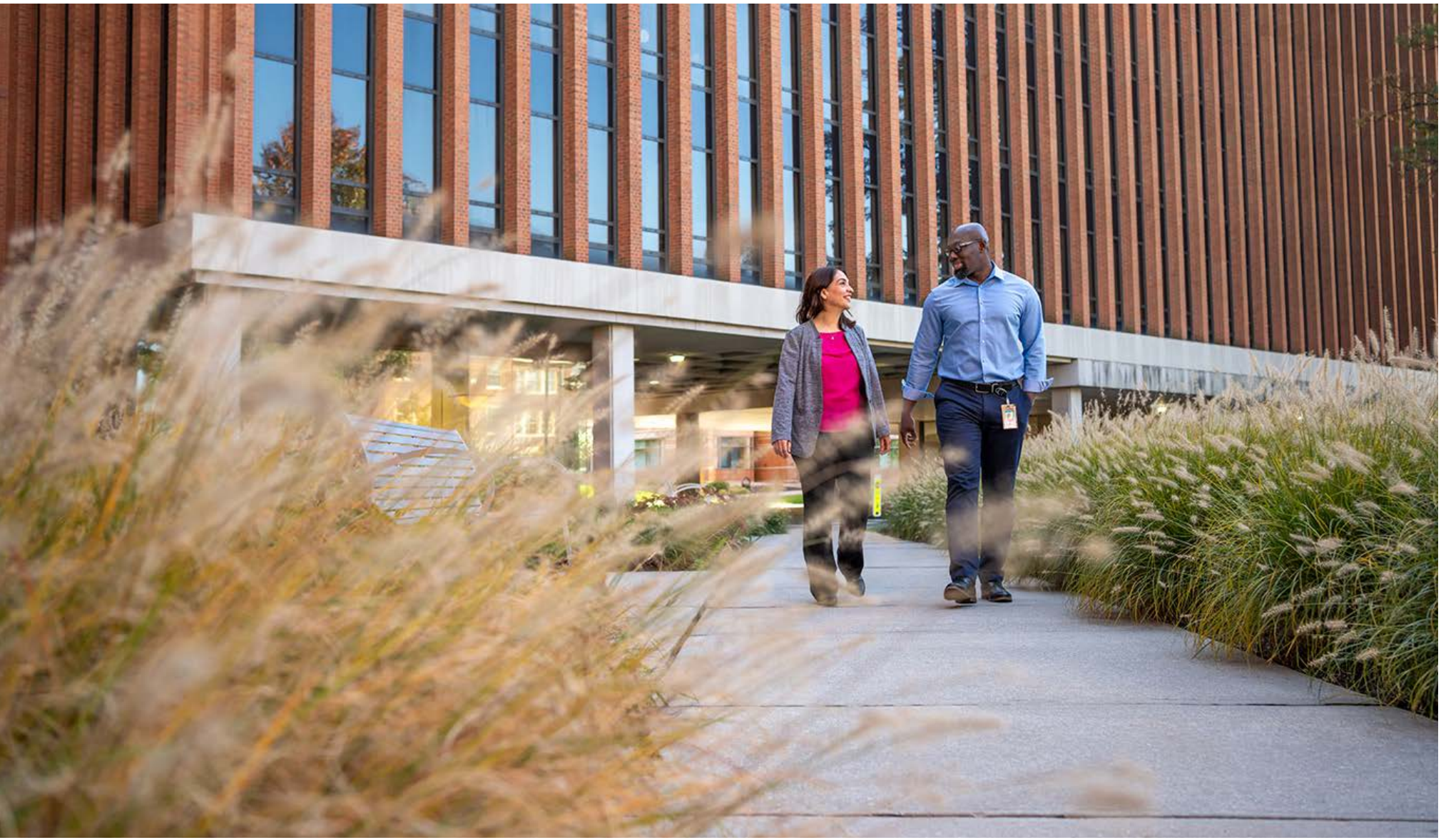
Employees

We recognize that our ability to excel depends on the integrity, knowledge, imagination, skill, diversity and teamwork of our employees.

Ethics & Values

Through our unwavering commitment to transparency, we earn the trust and confidence of our stakeholders.

GRI/SASB Disclosures



General Disclosures

Organizational Profile

GRI 102-1	**Organization name** (Core)
GRI 102-2	**Primary brands, products, and services** (Core)
GRI 102-3	**Headquarters location** (Core)
GRI 102-4	**Location of operations** (Core)
GRI 102-5	**Ownership and legal form** (Core)
GRI 102-6	**Markets served** (Core)

In the United States and Canada, we are known as Merck & Co., Inc., Kenilworth, NJ, USA. Elsewhere we are known as MSD.

We are a global health care company that delivers innovative health solutions through our prescription medicines, vaccines, biologic therapies and animal health products. The company's operations are principally managed on a products basis and include four operating segments, which are the Pharmaceutical, Animal Health, Healthcare Services and Alliances segments.

The Pharmaceutical segment includes human health pharmaceutical and vaccine products. Human health pharmaceutical products consist of therapeutic and preventive agents, generally sold by prescription, for the treatment of human disorders. The company sells these human health pharmaceutical products primarily to drug wholesalers and retailers, hospitals, government agencies and managed health care providers such as health maintenance organizations, pharmacy benefit managers and other institutions. Human health vaccine products consist of preventive pediatric, adolescent and adult vaccines, primarily administered at physician offices. The company sells these human health vaccines primarily to physicians, wholesalers, physician distributors and government entities.

The Animal Health segment discovers, develops, manufactures and markets a wide range of veterinary pharmaceutical and vaccine products, as well as health management solutions and services, for the prevention, treatment and control of disease in all major livestock and companion animal species. The company also offers an extensive suite of digitally connected identification, traceability and monitoring products. The company sells its products to veterinarians, distributors and animal producers.

The Healthcare Services segment provides services and solutions that focus on engagement, health analytics and clinical services to improve the value of care delivered to patients. The company has recently sold certain businesses in the Healthcare Services segment and is in the process of divesting the remaining businesses. While the company continues to look for investment opportunities in this area of health care, the approach to these investments has shifted toward venture capital investments in third parties as opposed to wholly owned businesses.

The Alliances segment primarily includes activity from the company's relationship with AstraZeneca LP related to sales of Nexium and Prilosec, which concluded in 2018.

In February 2020, we announced our intention to spin-off products from our women's health, trusted legacy brands and biosimilars businesses into a new, independent, publicly traded company (Organon) through a distribution of Organon's publicly traded stock to company shareholders.

Our U.S. commercial operations are headquartered in Upper Gwynedd, Pennsylvania. The company's U.S. pharmaceutical business is conducted through divisional headquarters located in Upper Gwynedd, Pennsylvania and Kenilworth, New Jersey. Our vaccines business is conducted through divisional headquarters located in Upper Gwynedd, Pennsylvania. The Animal Health headquarters is located in Madison, New Jersey. Principal U.S. research facilities are located in Rahway and Kenilworth, New Jersey; West Point, Pennsylvania; Palo Alto, California; Boston, Massachusetts; South San Francisco, California; and Elkhorn, Nebraska (Animal Health).

Principal research facilities outside the United States are located in Switzerland and China. Our manufacturing operations are headquartered in Whitehouse Station, New Jersey. We also have production facilities for human health products at nine locations in the United States and Puerto Rico. Outside the United States, through subsidiaries, we own or have an interest in manufacturing plants or other properties in Japan, Singapore, South Africa, and other countries in Western Europe, Central and South America, and Asia.

The principal market for trading of our Common Stock is the New York Stock Exchange (NYSE) under the symbol MRK. As of January 31, 2020, there were approximately 109,500 shareholders of record of the company's common stock.

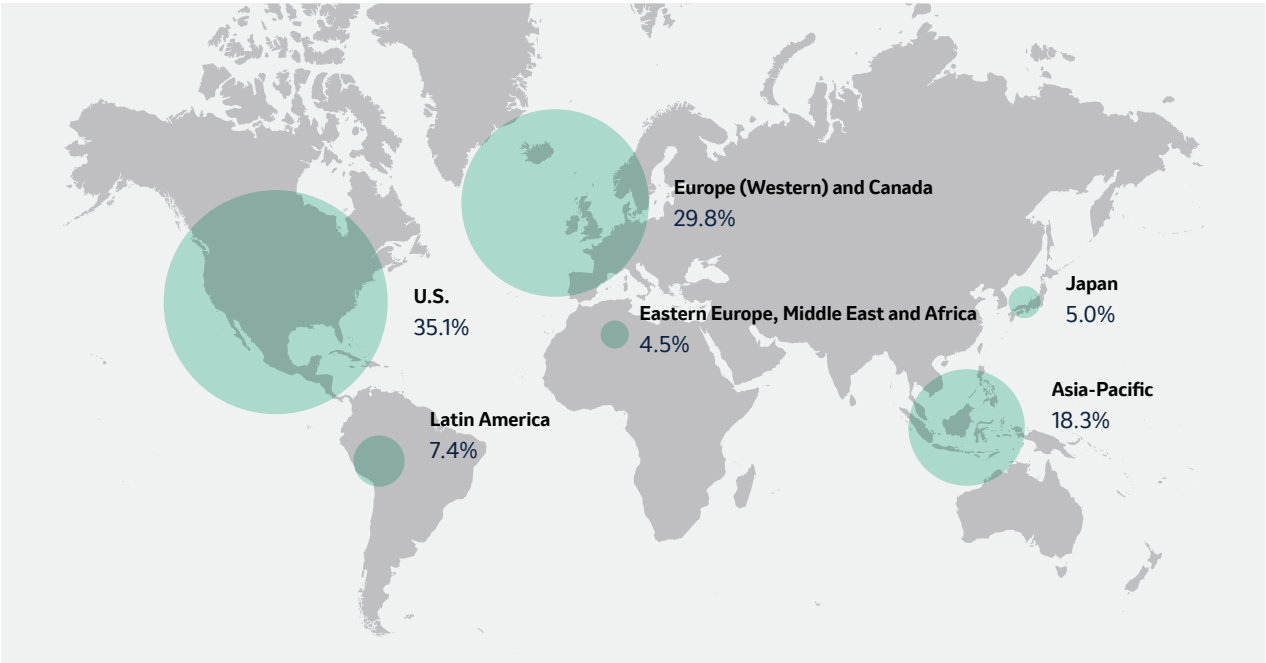
For more information, please see our 2019 Form 10-K on our corporate website.

GRI 102-7	**Scale of the organization** (Core)
GRI 102-8	**Information on employees and other workers** (Core)
SASB 000.A	**Patients treated** (#)

As of December 31, 2019, the company had approximately 71,000 employees worldwide, with approximately 26,000 employed in the United States, including Puerto Rico. Approximately 30 percent of worldwide employees of the company are represented by various collective bargaining groups.

For more information on our global impact, please visit our Diversity & Inclusion and Social Investments pages on MSDresponsibility.com.

Employees by region



Workforce	2015	2016	2017	2018	2019
Number of employees as of December 31, 2019 (approximate)	68,000	68,000	69,000	69,000	71,000
People reached through major programs and partnerships (estimate in millions)[1]	188	293	311	357	422

[1] Represents investments by our Office of Social Business Innovation, including our Office of Corporate Responsibility, MSD for Mothers and our company's Foundation.

GRI 102-9 **Supply chain** (Core)

SASB 260a.1 **Methods and technologies used to maintain traceability of products throughout the supply chain**

Our company manufactures, packages and distributes products to more than 140 markets around the world. Our facilities, along with our external contractors, suppliers and partners, make up an integrated, interdependent global manufacturing network that is committed to delivering compliant, reliable supply to customers and patients on time, all the time, and every time.

Our business goal is to achieve world-class supply in delivery, services and quality. We source from suppliers globally in the areas of capital equipment and services, direct materials and services, energy, professional services, site and commercial services, IT, marketing and research supplies and services.

We continue to support the Pharmaceutical Industry Principles for Responsible Supply Chain Management (the Principles). The Principles outline industry expectations for external manufacturers and licensees with regard to labor, health, safety, environment, ethics and management systems. The external manufacturers with which we contract are expected to understand and align with the Principles.

Furthermore, we are a signatory to the 10 Principles of the United Nations Global Compact.

The Global Sourcing & Procurement and Supplier Management function is responsible for maintaining the standards by which suppliers are identified, qualified and managed. Supplier selection and management follow a robust sourcing management process, in which environmental sustainability, economic inclusion and supplier diversity principles are integrated throughout each stage. Throughout the supplier life cycle, our company establishes expectations, assesses risk, supports supplier development and manages performance.

Our company's Processes Operations and Strategy (PO&S) Sustainable Sourcing Team is responsible for managing our Environmental Sustainable Sourcing program.

Utilizing a standardized survey template generated and maintained by the Pharmaceutical Supply Chain Initiative (PSCI), we collect information including but not limited to: greenhouse gas, energy, water, supplier sustainability programs and goals.

Goals	Progress	Indicator
By 2018, we will collect greenhouse gas (GHG) emissions and water use data from at least 90 percent of our strategic suppliers with the highest environmental impact.	GHG and water data collected from 96% of high-impact strategic suppliers	Achieved ■ ■ ■
By 2020, we will engage with those suppliers and request them to identify GHG emission and water use reduction opportunities.	On track	On track ■ ■ □
By 2025, at least 90 percent of our strategic suppliers with the highest environmental impacts will set their own GHG emission and water use reduction targets.	On track	On track ■ ■ □

Our analysis shows that a large portion of our water use and GHG emissions are generated upstream of our own operations in various tiers of our supply chain. We realize that in order to make a truly meaningful reduction in our overall environmental impact, we must engage with our suppliers to drive positive change. We have a focus on collaborating with our suppliers to accelerate and enhance environmental initiatives.

Programs and initiatives

We have also initiated a new program designed to evaluate our suppliers' environmental sustainability programs. The GREEN Supplier program requests that selected suppliers provide environmental metrics, environmental certificates and assurance that they can meet our GREEN Supplier requirements. Suppliers that are able to complete these three items in the associated database are certified as GREEN.

Our company's Economic Inclusion Leadership Council (EILC) is comprised of leaders across the Global Supplier Management and Global Workforce & Enterprise Services who are passionate about making our company the very best it can be. The role of the EILC members is to serve as peer-coaches and role models, each having made significant strides in managing supplier diversity to yield business results across their teams and the enterprise.

Supplier and third-party risk management

Supplier and third-party risk management is an enterprise-wide effort supported by Global Sourcing & Procurement, Supplier Management, the Office of General Counsel, Ethics & Compliance, Global Quality, Corporate Audit and Assurance, and Environmental Health & Safety. Representatives from each function meet regularly to discuss, assess and manage issues on a risk-driven basis.

We believe

in developing mutually beneficial relationships with our business partners, founded on trust and respect.

We conduct

business with integrity; we comply with all applicable laws, rules and regulations of the countries in which we operate.

We seek

to have a positive impact on the lives of our employees, their families and the communities in which we operate along with our suppliers in support of our customers.

We expect

companies in our business partner network to do the same.

Our Business Partner Code of Conduct, along with our company's Supplier Performance Expectations, are communicated to existing and potential third-party suppliers and are included in requests for information, proposals and quotes as well as in our purchase-order terms and conditions. We select suppliers that share our commitment to our values and principles, as defined in our Business Partner Code of Conduct and Supplier Expectations Letter. In addition, we participate in the Pharmaceutical Supply Chain Initiative's Pharmaceutical Industry Principles and are a signatory to the 10 Principles of the United Nations Global Compact.

We have a defined risk-management process, and our supply base is measured against the process criteria. Using a risk-based approach, supplier assessments and audits are conducted based on multiple factors (e.g., risk profile, engagement and activity type and geography). The assessments and audits evaluate a supplier's ability to meet both industry and our own standards for quality, safety and ethical business practices. Results are reviewed with senior management across the company.

Our supplier assessments include:

- Labor and human rights
- Anti-bribery and anticorruption
- Privacy and data protection
- Environmental, health and safety issues
- Quality
- Responsible sourcing of minerals
- Animal welfare
- Information technology
- Intellectual property
- Financial solvency
- Cyber resiliency

Where assessments and audits identify deficiencies or opportunities for improvement, we monitor suppliers to ensure that our concerns are addressed in a responsible and compliant manner. As part of our oversight and monitoring, we have established mechanisms to report, track and monitor supplier plans to address nonconformance and help drive continued improvement.

Protecting the privacy of personal information

Some of our suppliers and service providers, such as contract research organizations, market research agencies, information technology systems developers and other service providers, process personal information in connection with their performance of services for our company. We require these suppliers and service providers to provide appropriate privacy protection for personal information that they handle in accordance with our privacy policies and applicable privacy laws, regulations and guidelines.

Protecting against cyberattacks and assuring business continuity

We recognize that cybersecurity events at third parties pose an increased risk to our business continuity. In 2019, our company built a cyber resiliency supplier risk management program, including a Center of Excellence for Governance, assessments of key suppliers, and collaborative workshops, to review risks and remediation actions. The program fosters mutually beneficial partnerships with our top suppliers. We continue to enhance the program to improve operational excellence and continuous monitoring capabilities.

Supplier assessment for labor practices and human rights

We have a formal program to evaluate the risks for labor and human rights in our supply chain. Prior to contracting, all new direct suppliers (as well as certain new indirect and research suppliers in specific geographies) are required to complete and return a Supplier Self-Assessment Questionnaire (SAQ) for Ethics & Compliance. Pre-existing external manufacturing suppliers and contract manufacturing organizations also complete SAQs.

Our SAQ requires suppliers to answer a series of labor and human rights questions covering a range of subjects, including freely chosen employment, child labor, employment practices, employee disclosures, fair treatment, wages, benefits and working hours.

Each supplier's responses are used to judge whether that supplier has programs and/or procedures in place to address potential risks for labor and human rights related deficiencies.

Since implementing the Labor and Human Rights program in 2015, we have conducted 234 onsite audits in countries identified as high risk for potential human rights violations. We track audit-related corrective and preventative actions to completion.

No incidents of child labor and/or young workers exposed to hazardous work were reported.

Additionally, we maintain a "Speak Up" tool (MSDethics.com) for any employee, supplier or business partner to report concerns, including those related to labor and human rights issues.

Managing external manufacturers of our products

The company maintains strict quality standards — no matter where in the world our products are manufactured. Once we have decided to engage with an external manufacturer, that manufacturer is required to comply with our business requirements which are set forth in our contract with that supplier, regardless of geography.

Prospective external manufacturers of active pharmaceutical ingredients and finished products are screened for environmental, health and safety (EHS) compliance, in addition to quality and supply and technical competence requirements. The EHS screening includes a survey covering such topics as regulatory compliance, fatalities and major incidents.

Based on the screening results and activities undertaken by the supplier, certain external manufacturers are subject to a more detailed onsite assessment conducted by a multidisciplinary team, which may include our company's Quality, Environmental, Health & Safety, Global Technical Operations and Global Sourcing & Procurement representatives.

The external manufacturers we contract with are periodically reassessed using a risk-based approach; higher-risk external manufacturers are subject to more frequent onsite assessments. We expect that observations made during the audit process will be remediated by our external manufacturers, and we monitor and track corrective actions through completion.

For more information on our supply chain, please visit our Manufacturing & Supply, Quality & Safety Standards, Vaccines, Oncology, Women's Health, and Sourcing & Supplier Relations pages on MSDresponsibility.com.

GRI 102-10 **Organizational changes during the reporting period** (Core)

While no significant organizational changes occurred in 2019, in February 2020, we announced our intention to spin-off products from our women's health, trusted legacy brands and biosimilars businesses into an independent, publicly traded company. The transaction is expected to be completed in the first half of 2021.

GRI 102-11 **Precautionary principle** (Core)

We take a precautionary approach when evaluating potential human exposures and environmental impacts resulting from our manufacturing processes. Conservative assumptions are made when data are limited, and safety factors are added to address uncertainty and variability in our assessments.

This type of approach is particularly relevant to our work in toxicology, industrial hygiene and environmental protection.

By using more efficient and innovative processing methods and technologies, we are reducing the amount of energy, water and raw materials we use to make our products, thereby minimizing the amount of waste we generate and lowering our production costs.

We go to great lengths to ensure that our products are designed, made and used in a safe, effective and environmentally sound manner. We deliver on this commitment by maintaining a highly trained and capable scientific staff and by actively pursuing manufacturing process improvements that minimize environmental impacts. We have set environmental sustainability goals to demonstrate this commitment with concrete targets and timelines. To ensure that our knowledge stays current with that of thought leaders and experts in the industry, we also collaborate with external resources and industry groups, such as the American Chemical Society and the European Federation of Pharmaceutical Industries and Associations.

For more information, please visit our Product Stewardship section on MSDresponsibility.com.

GRI 102-12 **External initiatives** (Core)

Though not an exhaustive list, below are examples of third-party principles and initiatives we have endorsed.

Water

We have endorsed the UN CEO Water Mandate, a public commitment to adopt and implement a comprehensive approach to water management, and we have aligned our water program with its principles. CEO Water Mandate endorsers have a responsibility to make water-resource management a priority and to work with governments, UN agencies, nongovernmental organizations, local communities and other interested parties to address global water challenges. We are working to identify partnerships that will help us advance our water stewardship priorities in the areas in which we operate. These projects also support the goals of SDG 15, which strives to "protect, restore and promote sustainable use of terrestrial ecosystems."

Human rights

Our company believes in the dignity of every human being and recognizes the international human rights principles embodied in the United Nations Global Compact and as defined in the United Nations Universal Declaration of Human Rights and its subsequent changes, the International Covenant on Economic, Social and Cultural Rights, the International Covenant on Civil and Political Rights, the Organization for Economic Cooperation and Development Guidelines for Multinational Enterprises and the core labor standards set out by the International Labor Organization.

Supply chain

Our human rights practices are informed and guided by the Pharmaceutical Supply Chain Initiative's (PSCI's) Pharmaceutical Industry Principles for Responsible Supply Chain Management which set the standard for ethics, labor, health, safety and the environment for our industry.

Diversity

In 2009, we signed onto the United Nations Women's Empowerment Principles. These principles reflect seven areas of focus designed to promote gender equality in business.

Clinical research

In accordance with our public policy position statement, all investigational studies in human subjects are conducted in a manner consistent with laws, regulations and guidelines for the protection of human subjects, including those issued by the International Council for Harmonisation Good Clinical Practice (ICH GCP).

Animal health

We encourage proactive vaccination of animals to prevent disease and support the responsible use of antibiotics to treat and improve the health of animals. As a global animal health company, we support the Antibiotic Commitment established by the animal health industry.

Privacy

We are a member of the International Pharmaceutical Privacy Consortium (IPPC), an association of research-based pharmaceutical companies formed in 2002 that has worldwide responsibility for the protection of personal health information and other types of personal data. We have been actively involved in the IPPC since 2006, in order to engage in a constructive dialogue with European data-protection authorities and other regulators on privacy standards for biomedical research.

For more information, please visit our Reporting Overview, Addressing Barriers to Health, Water, Global Diversity & Inclusion, Direct-to-Consumer Advertising, Engaging with Health Care Professionals, Sales & Marketing Practices, Sourcing & Supplier Relations, Ensuring Ethical Business Practices, and Human Rights pages on MSDresponsibility.com.

GRI 102-13 **Membership associations** (Core)

Our company is a member of numerous industry and trade groups. We work with these groups because they represent the pharmaceutical industry and business community in debates led by governments and other stakeholders, and because they help the industry reach consensus on policy issues.

Our top three trade associations in 2019:

- Pharmaceutical Research and Manufacturers of America (PhRMA)
- U.S. Chamber of Commerce
- Biotechnology Industry Organization (BIO)

When our trade associations actively lobby on our core business issues, we seek to align their positions with our own. There are times, however, when we may not share the views of our peers or associations — both on issues that are central to our business and on those that, while important, are not directly material to our mission. With representatives on the boards and committees of industry groups and trade associations, we can voice questions or concerns we may have about policy or related activities. We may even recuse ourselves from related trade association or industry group activities when appropriate.

The Corporate Secretary sends an annual report to our company's Board of Directors on trade association dues greater than $25,000 that were spent in the previous year on lobbying and political activity in the U.S. The Governance Committee of the Board of Directors has ongoing oversight of the company's membership in trade associations and grassroots lobbying activities.

For a list of industry and trade groups of which we are a member, and our trade association dues (those greater than $25,000) that are used for political purposes, please refer to our corporate website.

For more information, please visit our Public Policy page on MSDresponsibility.com.

Through our top three trade associations (listed on left), we engaged on the following policy issues in 2019:

In the U.S., the top issues at the federal level for which our company lobbied were:

- Medicare Part B
- Medicare Part D
- International Reference Pricing
- Medicaid Average Manufacturer Price (AMP) cap

In the U.S., our company lobbied at the state level to address these key issues:

- Market-based solutions for access to innovative pharmaceutical, vaccine, biologic and animal health products
- Meaningful price transparency
- A strong business environment for U.S. operations in the states
- Support for a strong immunization infrastructure
- Product stewardship/take-back of unused medicines

In Europe, our advocacy focused on:

- Addressing the European Commission's review of incentives for biopharmaceutical products
- Fostering frameworks for sound pricing and procurement regimes in and across diverse EU member state economies
- Supporting government vaccination, hepatitis and diabetes programs
- Advancing the dialogue for sustainable models to fund future cancer care
- Improving standards for health technology assessment and health literacy
- Ensuring science-based policies for biological medicines

Strategy

GRI 102-14 **CEO letter** (Core)

Please see the letter from our Chairman and CEO on page 4.

Ethics & Integrity

GRI 102-16 **Values, principles, standards, and norms of behavior** (Core)

GRI 102-17 **Mechanisms for advice and concerns about ethics**

SASB 510a.2 **Code of ethics governing interactions with health care professionals**

Our company's Office of Ethics is responsible for ensuring that employees are aware of and trained on the Code of Conduct and company policies.

The Office of Ethics serves as a channel for the receipt and investigation of ethics and compliance-related concerns. Employees are encouraged to raise their concerns to their management, Human Resources, Compliance, Legal or the Office of Ethics. Throughout 2018 and 2019, the Office of Ethics enhanced its global ethics program including the implementation of an improved reporting tool operated by an independent third party, named Speak Up at MSDethics.com. Speak Up at MSDethics.com (formerly theadviceline.com) is available 24/7 and allows employees and suppliers to raise concerns or ask questions confidentially (where permitted by law) in their preferred language via phone or internet.

In alignment with our priority to protect and enhance our company's reputation through safe, ethical and compliant behaviors, the Office of Ethics added three Regional Ethics Officers to their team and established a network of site-based volunteer Ethics Ambassadors outside of the United States.

For more information on our approach to ethics, please visit our Code of Conduct and Office of Ethics pages on MSDresponsibility.com.

Governance

GRI 102-18	**Governance structure of the organization** (Core)
GRI 102-19	**Delegation of responsibility**
GRI 102-20	**High-level accountability for sustainability topics**
GRI 102-21	**Access to the board**
GRI 102-22	**Composition of the board and its committees**
GRI 102-23	**Chair of the highest governance body**

Kenneth C. Frazier, our company's chairman of the Board and chief executive officer, is the only company executive serving on the Board.

The primary mission of our Board is to represent and protect the long-term interests of our company's shareholders. The Board meets, at minimum, six times per year to provide strategic direction and to review our progress on a wide variety of measures.

In overseeing the affairs of the company, including our governance, the Board has established four committees, each of which is composed solely of independent directors.

The four committees are:

- Audit
- Compensation and Benefits
- Governance
- Research

All of our standing committees are governed by Board-approved charters, which are available on our corporate website. Information on our company's board committees can be found in our company's 2020 Proxy Statement (pages 15, 20–21).

Six independent directors constitute our company's Governance Committee. Chaired by Leslie A. Brun, the company's lead independent director, the committee is responsible for advising the company's Board of Directors and management on company policies and practices that pertain to the company's responsibilities as a global corporate citizen, its special obligations as a health care company whose products and services affect health and quality of life around the world, and its commitment to the highest standards of ethics and integrity in all of its dealings.

The Governance Committee has responsibility for overseeing the company's corporate responsibility and public policy issues. Additional information on the Governance Committee's responsibilities can be found in our company's 2020 Proxy Statement (page 21) or in its committee charter available on the Corporate Governance page on MSDresponsibility.com.

In addition to the Governance Committee, other Board committees oversee issues indirectly related to corporate responsibility, such as audit and compliance, executive compensation and research.

The Office of Corporate Responsibility

The Office of Corporate Responsibility is responsible for raising the visibility of corporate responsibility issues and activities across the company and fosters connections across business units and functional areas to integrate our corporate responsibility principles into business policies, strategies and practices, including the enterprise risk management (ERM) process, and brings the voice of external stakeholders into decision-making processes.

The Office of Corporate Responsibility also coordinates the development, implementation and communication of our global approach and, with strategic guidance from the Public Policy and Responsibility Council (PPRC), Executive Committee and the Board Governance Committee, is responsible for publishing the annual corporate responsibility report.

Contacting the Board

The Board of Directors welcomes input from shareholders and other interested parties, and has established a process to receive these communications. Shareholders and interested parties may communicate directly with the Board, the independent Lead Director, the non-management or independent Directors as a group, or other members of the Board by writing to the following address:

Board of Directors
Merck & Co., Inc.
2000 Galloping Hill Road, K1-4157
Kenilworth, NJ 07033 U.S.A.

For more information on our approach to governance, please visit the Corporate Governance page on MSDresponsibility.com.

GRI 102-24	**Board nomination and selection processes**
GRI 102-25	**Board conflicts of interest**
GRI 102-26	**Board and executive roles**

For more information on our Board of Directors, please visit our 2020 Proxy Statement (pages 15–17), as well as the Corporate Governance page on MSDresponsibility.com.

GRI 102-29	**Board identification of ESG impacts, risks, and opportunities**
GRI 102-30	**Board ESG review of risk management process**
GRI 102-32	**Report review**
GRI 102-33	**Board communication**

For information on our board's involvement with our ESG strategy and reporting, as well as how to contact them, please see GRI 102-19 and GRI 102-20 on page 17. You may also visit our Corporate Governance page on MSDresponsibility.com.

GRI 102-35	**Remuneration policies for the board and senior executives**
GRI 102-36	**Process for determining remuneration**
GRI 102-37	**Remuneration shareholder resolutions**

Please see our 2020 Proxy Statement (pages 28, 38–41).

GRI 102-38	**CEO/employee pay ratio**

The median total annual compensation as calculated under the Summary Compensation Table requirements was $95,621 comprised of base salary, annual incentive, savings plan company match and change in pension value, all of which were annualized to reflect a full year of service. The total annual compensation for our CEO was $27,648,475. A reasonable estimation of the ratio of our CEO's compensation to our median compensation including the change in pension value is 289 to 1; excluding change in pension value the ratio is 246 to 1.

Under the SEC rules, companies may identify the median total annual compensation using a wide variety of methods including reasonable assumptions and estimations. It is therefore difficult to compare our ratio to the ratio of other companies.

For more information, please visit our 2020 Proxy Statement (pages 46, 57–60).

Stakeholder Engagement

GRI 102-40	**Stakeholder engagement** (Core)
GRI 102-41	**Union representation** (Core)
GRI 102-42	**Stakeholder identification** (Core)
GRI 102-43	**Approach to stakeholder engagement** (Core)

We engage with a diverse group of stakeholders to more fully understand their needs and expectations, and to gain insights that can inform our efforts to improve access to health care and foster progress toward solutions that benefit society and support our business.

Patients and caregivers

We embrace the opportunity to engage with individual patients, patient advocacy organizations, and caregivers to better understand their health care journeys, expected outcomes and decision-making considerations. For more information on our work with patient groups, please visit our Patient Engagement page on MSDresponsibility.com.

Health care professionals

We are committed to providing appropriate and balanced information to physicians and other health care providers about our medicines, vaccines and ongoing research. For more information, please visit the Engaging With Health Care Professionals page on MSDresponsibility.com.

Payers

We work with payers worldwide to inform their understanding of the relationship between the prices of our products and the true value they deliver to patients and health care systems.

Governments, multilateral organizations and regulators

We work with policy makers, legislators, multilateral organizations, and governments worldwide to ensure that policy and regulatory environments globally, nationally, and locally foster patient access to medicines and vaccines, and that they are conducive to ethical business practices, science and innovation. To learn more, please visit the Public Policy page on MSDresponsibility.com.

Shareholders

We strive to create shareholder value by identifying opportunities to meet customer needs and by managing our business responsibly to achieve superior financial results over the long term. To learn more, please visit the Stakeholder Engagement page on MSDresponsibility.com.

Local communities

We work toward developing culturally appropriate mechanisms to engage and build relationships with our local community stakeholders. To learn more, please visit the Supporting Our Communities page on MSDresponsibility.com.

Environmental stakeholders

We work to reduce the environmental effects of our operations and products and to promote sustainable environmental practices within the company, among our partners, and throughout our supply chain. To learn more, please visit the Environmental Sustainability Overview page on MSDresponsibility.com.

Employees

We strive to foster a positive and inclusive working environment for our employees by providing resources to improve their health and that of their families, opportunities to further their professional development, and ways to get more involved in the communities where they live. To learn more, please visit the Engaging Our Employees page on MSDresponsibility.com.

As part of our mission to maintain a satisfying and productive work environment, we routinely survey all employees to learn about their perspectives on the business and on how we are responding to the needs of our global workforce. The Voice Survey, our company's all-employee opinion survey, is our flagship employee feedback mechanism, and conducted on a biannual basis.

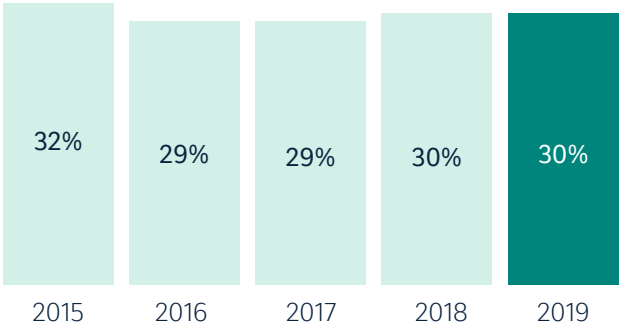
Employee survey	2015	2016	2017	2018	2019
Response rate to Voice Survey	NA	85%	NA	86%	NA
Engagement Index[1] (favorable response rate)	NA	82%	NA	83%	NA
Culture Index[2] (favorable response rate)	NA	72%	NA	74%	NA

NA: Not Administered; the Voice Survey is conducted on a biennial basis.

[1] The Engagement Index is a composite that averages scores measured from three aspects: "Engaged," "Enabled" and "Energized."

[2] The Culture Index is a composite that averages scores measured from three aspects: "Customer Focus," "Reputation and Trust" and "Innovation."

Union membership[1]



[1] Percentage of employees worldwide represented by an independent trade union or covered by a collective bargaining agreement (approximate)

Suppliers and business partners

We strive to engage a diverse supplier base and to encourage responsible approaches on the part of suppliers regarding labor, employment, human rights, health and safety, ethics, diversity, and protection of the environment. To learn more, please visit the Sourcing & Supplier Relations page on MSDresponsibility.com.

Trade and industry associations

We engage with stakeholders through membership in numerous organizations. Within these groups, we aim to inform relevant debates in ways that are constructive and that ultimately foster improved patient access to medicines and vaccines globally. To learn more, please visit the Public Policy page on MSDresponsibility.com.

SASB 240b.2 **Percentage change in: (1) average list price and (2) average net price across U.S. product portfolio compared to previous year**

SASB 240b.3 **Percentage change in: 1) list price and 2) net price of product with largest increase compared to previous year**

As part of our materiality assessment, we queried stakeholders on the topics that they felt were the most important for our company to be addressing going forward. A list of these topics can be found in this report under GRI 102-47 on page 21.

2019 U.S. Pricing Transparency Report

We have a long history of making our medicines and vaccines accessible and affordable through responsible pricing practices and industry-leading patient access programs. In 2017 we began disclosing information on our Corporate Responsibility website about the price of our medicines in the United States. This is our fourth consecutive report. It shows an average annual net price increase of 1.8 percent in 2019.

The report also shows that our annual average list price increases across our portfolio have gone down each year for the past five years. For example, in 2019, the average annual list price across our portfolio increased by 4.3 percent — the lowest increase since 2010 — as compared with a 5.5 percent increase in 2018. In 2019, the company's gross US sales were reduced by 43.7 percent as a result of rebates, discounts and returns.

For more information, please visit our Transparency Disclosures, Materiality and Affordability pages on MSDresponsibility.com.

U.S. product portfolio[1]	2015	2016	2017	2018	2019
Change vs. prior year[2]					
List price change (WAC)[3]	9.8%	9.6%	6.6%	5.5%	4.3%
Net price[4,5]	5.5%	5.5%	(1.9%)	2.99%	1.8%
Average discount[6]	38.2%	40.9%	45.1%	44.3%	43.7%

Note: The amount of rebates, discounts and returns is estimated by the company and methodologies used may differ from methodologies used by other companies. This data is not audited and should be read in conjunction with the company's filings with the Securities and Exchange Commission.

[1] U.S. Product Portfolio includes human health pharmaceutical and vaccine products marketed by the company, excluding partnered products. The product sales utilized in the analysis represent ~97% of the total US Product Portfolio in 2010 and approached 99.2% of coverage in 2019.

[2] Annual percent change vs. prior year was calculated at a product level and weighted across the company's US Product Portfolio.

[3] Represents the year-over-year change in the average list price or wholesale acquisition cost (WAC).

[4] Represents the year-over-year change in average net price, which is WAC less rebates, discounts and returns.

[5] In 2017, the average annual net price across our portfolio declined by 1.9 percent, reflecting specific in-year dynamics, including the impact of loss of patent protection for three major medicines.

[6] Weighted average annual discount is calculated by dividing annual rebates, discounts and returns by annual gross sales.

Reporting Practice

GRI 102-45 **Entities included in financial statements** (Core)

All of our company's global operations, including those of subsidiaries, are in scope unless stated otherwise. It includes activities at all facilities, owned and leased, over which we have operational control, unless otherwise noted.

The basis for reporting on other matters specific to the operations of our business — including joint ventures, subsidiaries, leased facilities, outsourced operations and other entities that can affect comparability from period to period — can be found in our 2019 Form 10-K, which is filed with the United States Securities and Exchange Commission and is also available in the "Financial Reports" section of our corporate website.

There have been no significant changes from previous reporting periods in the scope, boundary or measurement methods applied in this report. Data regarding employees who are part of underrepresented ethnic groups are provided for the U.S. only.

GRI 102-46 **Defining report content and topic boundaries** (Core)

GRI 102-47 **Material aspects included** (Core)

In 2018, in response to external expectations for increased levels of transparency in our reporting, we leveraged a third-party's business-intelligence tool that uses big data and artificial intelligence to conduct real-time materiality assessments. The materiality assessment process provided us an opportunity to listen and engage our many stakeholders, to improve as an organization, and provided insight into future trends, potential business risks and opportunities that influence our ability to create value.

We have engaged with our Enterprise Risk Management (ERM) team to integrate our CR Materiality process with the ERM approach with the goal to further integrate corporate responsibility into the overall business strategy.

The materiality matrix shown below represents the environmental, social and governance (ESG) issues that internal and external stakeholders have identified as having significant financial, operational or reputational impact on the company and illustrates where our company can have a significant impact on society and the environment.

All of the topics on the matrix below are within the boundaries of our responsibility. For more information, please visit the Materiality page on MSDresponsibility.com.

Our prioritized ESG issues

Importance to stakeholders

	MEDIUM	HIGH	VERY HIGH
VERY HIGH	• Labor relations	• Clinical trials • Data privacy and information security • Occupational health and safety	• Access to health • Ethics and compliance • Intellectual property • Product quality and safety • Research and development • Responsible sales and marketing
HIGH	• Climate change • Governance • Product stewardship • Water use and management	• Antimicrobial stewardship • Disease awareness and education • Human rights • Supply chain responsibility • Transparency and reporting • Waste management	• Diverse and inclusive workplace • Patient and caregiver engagement • Responsible pricing
MEDIUM	• Biodiversity and land stewardship • Bioethics • Community support and development • Energy efficiency	• Digital innovation • Counterfeit drugs • Employment practices • Talent recruitment, retention and development	• Employee wellbeing

Importance to business success

GRI 102-48 **Restatements** (Core)

Any restatements of information are included in the footnotes beneath the specific performance data tables.

GRI 102-49 **Reporting changes** (Core)

There were not significant changes from previous reporting periods. However, we updated our materiality analysis this past year, which is outlined in GRI 102-47 on page 21.

GRI 102-50 **Reporting period** (Core)
GRI 102-51 **Date of most recent report** (Core)
GRI 102-52 **Reporting cycle** (Core)
GRI 102-53 **Report contact** (Core)

We report on our corporate responsibility initiatives and progress annually. These disclosures cover the prior calendar year, from January 1 to December 31, 2019. To ensure that readers have the most up-to-date information, some of the narrative in the report is about decisions and initiatives that took place in the first half of 2020. Our last report was published in 2019.

We welcome your feedback on our Corporate Responsibility Report, as well as any other comments or questions you may have. You may contact us at the address below, or email us at corporate_responsibility@msd.com.

Office of Corporate Responsibility
2000 Galloping Hill Road
Kenilworth, N.J. 07033 USA.
908-740-4000

GRI 102-54 **Claims of reporting in accordance with the GRI Standards** (Core)
GRI 102-55 **GRI content index** (Core)

Our company's online corporate responsibility report was developed in alignment with the GRI Standards at the Core level. An index for all of our GRI disclosures, as well as those for the Sustainability Accounting Standards Board (SASB), can be found on page 86.

GRI 102-56 **External assurance** (Core)

WSP conducted an independent third-party review of our 2019 greenhouse gas and water inventories and provided limited assurance for the data that we submit to CDP and for inclusion the Corporate Responsibility Report.

While we did not obtain external verification, we did speak with numerous external stakeholders, representing a variety of constituencies, about the company's planned approach to reporting, our corporate responsibility materiality assessment process and the broad material areas upon which we planned to report. The company reflects these consultations, where feasible and appropriate, on our website, and will use the insights gained through these and continuing discussions with stakeholders to inform future reporting.

To view WSP's limited assurance letter for our environmental data, please visit our Climate Change & Energy Use page on MSDresponsibility.com.

Economic

Economic Performance

GRI 201-1 **Direct economic value generated and distributed**

We believe that corporate responsibility is critical to our business success and can provide us with new opportunities to create shared, or integrated, value—that is, addressing social issues through business solutions. At the most basic level of delivering integrated value, our principal economic contribution to society is made through the discovery, development, manufacturing and marketing of our products, which directly improve and maintain the health of individuals and communities around the world, helping them to lead more productive lives.

The effective income tax rates of 14.7 percent in 2019 and 28.8 percent in 2018 reflect the impacts of acquisition and divestiture-related costs, restructuring costs and the beneficial impact of foreign earnings, including product mix.

Financial information	2015	2016	2017	2018	2019
Sales	$39.5B	$39.8B	$40.1B	$42.3B	**$46.8B**
Research and development expenses[1]	$6.8B	$10.3B	$10.3B	$9.8B	**$9.9B**
Number of employees (approximate)	68,000	68,000	69,000	69,000	**71,000**
Number of stockholders of record	135,500	129,500	121,700	115,800	**110,023**
Annual cash dividend paid per share	$1.81	$1.85	$1.89	$1.99	**$2.26**
Global tax expense as reported on income statement	$0.94B	$0.72B	$4.1B	$2.5B	**$1.7B**

[1] Excludes restructuring and merger-related expenses.

For additional information about our business and economic performance, please see our Form 10-K for the year ended December 31, 2019, on our corporate website.

Impact investing

One of our growing innovative approaches is impact investing, through which we are advancing sustainable global health solutions in line with our company's overall objectives. Through impact investing, we are able to deploy financial resources in ways that may generate not only improved access to health care for underserved populations, but also financial returns and commercial opportunities—all while growing a sustainable global health ecosystem and attracting additional capital and partners.

Impact investing is led by our Office of Social Business Innovation with guidance from the Impact Investing Committee. Established in 2019, the Impact Investing Committee is a cross-functional team of senior company leaders that reviews and approves new investments in line with established policies and guidelines and monitors the financial and social returns of the impact portfolio. We are also members of the Global Impact Investing Network (GIIN), through which we can contribute to and benefit from the growing body of expertise in the impact investing ecosystem.

For more information, please visit our Social Investments page on MSDresponsibility.com.

GRI 201-2 **Financial implications and other risks and opportunities due to climate change**

SDG 13 **Climate action**

We believe that climate change could present risks to its business. Some of the potential impacts of climate change to its business include increased operating costs due to additional regulatory requirements, physical risks to the company's facilities, water limitations and disruptions to its supply chain. These potential risks are integrated into the company's business planning including investment in reducing energy, water use and greenhouse gas emissions.

We have made it a priority to reduce our demand for energy and have established internal policies and practices focused on reducing energy use at all of our sites and minimizing greenhouse gases (GHG) generation throughout the company. By taking these steps, we are not only minimizing GHG emissions but also reducing our operating costs and mitigating the business impacts expected to be associated with future climate change requirements.

We have an established Energy Capital Fund of up to $12 million per year in order to transition to more energy-efficient technology and to better position the company to respond to energy demands in the future. The Energy Capital Fund supports the implementation of projects with a simple four-year payback averaged over the entire portfolio.

Since 2015, our sites have completed more than 70 projects through the Capital Fund. This has saved over $6 million per year, averaging a payback of only three years and avoiding the production of 23,000 metric tons of carbon per year.

In 2019, we allocated approximately $6.4 million to energy projects. The completed projects will result in $2 million in annual savings and a reduction of more than 12,000 metric tons of carbon dioxide from our facilities. For 2020, we have over 60 projects in progress that, when completed, will reduce carbon dioxide emissions from our facilities by over 36,000 metric tons.

For more information, please see the Climate Change & Energy Use page on MSDresponsibility.com, as well as our response to the CDP Climate Change questionnaire.

GRI 201-3 **Benefit plan coverage**

Worldwide, our company offers retirement benefits that are competitive with those of our peers and the general industry in each market we serve. In the U.S., for example, we offer a defined benefit pension plan as well as a 401(k) plan with company matching contributions.

To assist in financial decision making, we offer all U.S. employees comprehensive financial education and guidance through Ernst & Young at no cost. U.S.-based employees who are at least age 55, and those who have at least 10 years of service after age 40[1], are eligible for subsidized medical benefits at retirement.

Outside the U.S., we have more than 80 pension plans (including defined benefit, cash balance, and defined contribution plans) in over 40 countries. These plans often supplement government-sponsored social security pension benefits to improve employees' financial security through added retirement income. While benefits may vary by region and country, we offer health, life and injury, disability and business travel insurance, along with retirement income benefits. In addition, in many countries, where legally permitted, including the U.S., we extend health care and various insurance benefits to employees' domestic partners and their partners' eligible dependent children.

For more information, please visit the Compensation & Benefits page on our website, or our 2019 Form 10-K (pages 108–114).

[1] For certain employees, service before 40 also counts.

Indirect Economic Impacts

(CR material topic: Responsible pricing)

Management approach

We are working to bring our medicines and vaccines to more people around the world in ways that are as accessible and affordable as possible for the patients who need them.

While each individual situation varies based on factual circumstances and market dynamics, generally, we consider:

- Value provided to patients
- Value provided to health care systems
- Unmet need
- Access
- R&D sustainability
- Competition

As part of our commitment to transparency, in 2017 we started disclosing information on our Corporate Responsibility website about the price of medicines across our portfolio in the U.S. through our U.S. Pricing Transparency Report.

For more information, please see the Affordability page on MSDresponsibility.com.

GRI 203-1 **Infrastructure investments and services supported**

SDG 3 **Good health and wellbeing**

We support capacity building for health systems and care delivery where our support can make a meaningful difference. We provide this support in several ways, including through philanthropic social investments, key initiatives, and impact investing.

Philanthropic social investments

Our social investments through philanthropy address underlying barriers to access to health and help advance health equity around the world. Our approach to these investments is guided by several key principles: addressing critical global health needs where we can have a meaningful impact; promoting health equity by addressing health disparities in vulnerable, underserved communities; collaborating with diverse partners to build healthier, stronger communities; and leveraging our range of resources (financial, product, and expertise) to achieve greater impact on population health outcomes.

In addition to our targeted philanthropy, we have made substantial contributions to strengthening health systems through long-standing key initiatives that address significant gaps and barriers to health care access. Two prominent examples are *MSD for Mothers* and the MECTIZAN® Donation Program.

Key initiatives

MSD for Mothers is our company's $500 million global initiative focused on strengthening health systems to sustain the delivery of high-quality maternity care services that benefit women and their communities. With our partners, we are improving health systems for women today and for the long term by advancing quality standards, helping make life-saving products available and generating evidence.

The MECTIZAN Donation Program is the longest-running disease-specific drug donation program and public-private partnership of its kind and is widely regarded as one of the most successful public-private health collaborations in the world. In addition to providing direct access for communities in need of treatment, the program has made significant impacts on health systems in some of the hardest to reach communities. The development of CDTI (community-directed treatment with ivermectin) programs has trained community volunteers to distribute medicines and the system now is also used to distribute other health interventions.

Impact investing

Impact investing is one of our core approaches to strengthening health systems. Through impact investing, we are able to deploy financial resources in ways that may generate not only improved access to health care for underserved populations, but also financial returns and commercial opportunities—all while growing a sustainable global health ecosystem and attracting additional capital and partners.

For more information, please visit the Social Investments, *MSD for Mothers*, Addressing Barriers to Health, and MECTIZAN Donation Program pages on MSDresponsibility.com.

Addressing barriers to health	2015	2016	2017	2018	2019
Health care workers trained through major programs and partnerships (estimate)[1]	19,000	32,000	74,000	67,000	68,000
Annual investment in partnerships, programs and impact investments that support health care capacity-building and address underlying barriers to access to health (in millions)[1]	$21	$28	$40	$37	$63
People reached through investment in partnerships, programs and impact investment that support health care capacity-building and address underlying barriers to access to health[1] (estimate in millions)	188	293	311	357	422
Percentage of investment in partnerships and programs to strengthen health care capacity and address barriers to access, that is allocated to impact evaluation[2]	NR	NR	NR	NR	10%
Investment in patient- and provider-education programs (in millions)	$80	$80	$90	$115	$102

NR: Not reported

[1] Represents investments by our Office of Social Business Innovation, including our Office of Corporate Responsibility, *MSD for Mothers* and our company's Foundation.

[2] Percentage calculated based on total investments in partnerships and programs to strengthen health care capacity and address barriers to access supported through our company's Foundation.

GRI 203-2	**Indirect economic impacts**
SASB 240a.1	Access to health care for priority diseases and in priority countries
SASB 240a.2	Products on WHO's List of Prequalified Medicinal Products
SDG 3	**Good health and wellbeing**

While the primary responsibility for managing a health system that ensures the health of its citizens resides with government, pharmaceutical companies have a substantial role to play in working with governments to ensure the health of their citizens. As we pursue our core mission of inventing, developing and delivering medicines and vaccines, we have an ethical duty to support governments in their efforts to protect the right to health by "doing no harm."

We do this in several ways, including:

- Monitoring and reporting on the safety of our products
- Providing health care workers and consumers with important information on the benefits and side effects of our products
- Safeguarding the health, safety and privacy of patients involved in our clinical trials

In addition, we are helping to improve access to new medicines and vaccines, address deep-rooted and multifaceted barriers to access, and, through partnerships and public policy, advocate for health care capacity strengthening in ways that are aligned with our business mission and core capabilities.

Our enterprise-wide approach to access is guided by our Access to Health Guiding Principles and is responsive to internationally recognized standards and priorities. Recognizing the significant access barriers that exist within sub-Saharan African countries in particular, we are also committed to a specific set of principles to guide our strategy in the region.

Strategies and actions to enable access are embedded across our company. Our Access to Health Guiding Principles span the areas of research and development, manufacturing, marketing and commercialization, and philanthropic investments.

In low- and middle-income countries, in particular, we recognize access to and funding for health care can be limited. While major public health programs in these countries that focus on health priorities such as HIV/AIDS, malaria, tuberculosis and routine immunization are heavily subsidized by the government through international organizations and private funding, health insurance programs often do not exist or are limited. As a result, patients in these countries frequently must pay the price of medicines out of pocket, a particularly daunting ask for families living near or below the poverty line.

Therefore, we develop and support various sustainable strategies to improve access in low- and middle-income countries, including directing differential pricing to patient sub-segments, either directly through national or local programs or indirectly through third-party health care funding sources that demonstrate reasonable and secure product distribution to intended patient segments and subject to applicable legal requirements.

Affordability	2019
Number of countries where dedicated affordability solutions have been initiated*	40
People reached globally through product donation and patient assistance programs and partnerships[1] (estimate)*	404M
Number of patents filed in low-income countries, as defined by The World Bank in its country and lending groups classifications (annual)*	0

* New key performance indicators (KPI) reported in 2019 to support refreshed Access to Health Guiding Principles.

[1] Estimate includes product donations through our company's Office of Corporate Responsibility and patient assistance programs.

Grants and contributions	2015	2016	2017	2018	2019
Grants and contributions (total cash, in-kind and product)	$1.8B	$2.2B	$2.7B	$2.8B	**$3.1B**
Cash grants and contributions	$133M	$117M	$94M	$84M	**$82M**
Product donations through U.S. Patient Assistance Programs	$567M	$798M	$1.1B	$1.2B	**$1.5B**
Product donations for ex-U.S. programs and U.S. disaster relief[1]	$1.1B	$1.3B	$1.5B	$1.4B	**$1.5B**

[1] Includes our Medical Outreach Program (including U.S. disaster relief), the African Comprehensive HIV/AIDS Partnerships (2015-2016 only), the MECTIZAN® Donation Program, and MSD division and subsidiary donations.

[2] Includes valuation of volunteer time for only those employees who participated in the MSD Fellowship for Global Health program and our company's Pro Bono Legal and other skills-based volunteer programs.

Women's health

We are committed to making our contraceptive products available to women around the world. We take a comprehensive approach to access that includes high-quality manufacturing and supply chain management, extensive registration and WHO prequalification for a variety of our family-planning products, responsible commercialization that promotes training and capacity-building, policy advocacy and community investment.

In developing countries that have high rates of maternal mortality and low rates of contraceptive prevalence, we have created a sustainable public-private partnership model, with first-quality products made available at access pricing to promote access to contraceptive health programs. These activities are focused primarily on sub-Saharan Africa and countries in Asia and Latin America with high unmet need.

The following metrics are for our family-planning products intended for underserved segments of the world's poorest countries (defined as Family Planning 2020 [FP2020] countries) that are supplied through the public sector and social-marketing organizations.

For World Bank country classifications, please visit the World Bank website.

Though the numbers of product supplied are substantial, the impact of these supplies are even more significant. As an example, the potential impact of the volumes of IMPLANON NXT supplied to FP2020 countries in 2019 are reflected by the following table (data reflects estimates, based on the MSI Impact 2 v5 tool).

Women's health products	IMPLANON NXT®	EXLUTON®	MARVELON 28®
Product is WHO prequalified	Yes	Yes	Yes
FP2020 countries where product is registered[1,2]	43	26	23
FP2020 countries in which we supplied product[1]	32	6	6
Women reached in FP2020 countries[1,3]	5,246,000	4,921,000	1,816,000

[1] Family-planning products intended for underserved segments of the world's poorest countries—Family Planning 2020 countries
[2] There are additional unregulated markets where our products may be available that are not represented by these numbers.
[3] Number represents potential number of women who could be reached based on number of products provided.

IMPLANON NXT in FP2020 Markets[1,2]	2019
Demographic impacts	
Unintended pregnancies averted	6M
Live births averted	3M
Abortions averted	2.2M
Health impacts	
Maternal deaths averted	14,000
Child deaths averted	111,000
Unsafe abortions averted	1.7M

[1] The figures above are estimates, based on the full-service lifespan (2.7 years) impacts. These estimates are based on 2019 supplies (5,053,090 units), using the Impact 2 v5 tool (2016) provided by Marie Stopes International (MSI).
[2] Family-planning products intended for underserved segments of the world's poorest countries—Family Planning 2020 countries

Product registration

In addition to having our medicines and vaccines approved by stringent regulatory authorities, when relevant to enhancing access in low- and middle-income countries, we also work to have certain medicines and vaccines prequalified through the World Health Organization (WHO) prequalification process.

WHO prequalification can facilitate product procurement by international procurement agencies. WHO's prequalification program covers medicines for HIV, tuberculosis (TB), malaria, neglected tropical diseases, influenza, reproductive health and diarrhea, in addition to vaccines. In the absence of reliable national medicine authorities that can certify health care products meet required quality, safety and efficacy standards, stringent regulatory authority and WHO prequalification can serve as a basis for quality assurance for procurement by international agencies and national programs in lower-income countries.

We have made efforts to address the unique needs of low-income countries where the infrastructure and personnel to deliver immunization services can be severely limited. A specific emphasis has been on making improvements to products in a way that make them compatible to the Programmatic Suitability Criteria for vaccines candidates for WHO Prequalification (PSPQ). These features include vaccine vial monitors (VVMs), the acceptability of a two-dose regimen for HPV vaccines and use in controlled-temperature-chain conditions.

In order to make our products available to the people who need them throughout the world, we registered 97 products and devices in 2019. The majority of these products were registered in low- and middle-income countries in the Asia-Pacific, Central and Eastern Europe, Middle East and Africa, and Americas regions.

In November 2019, ERVEBO, our Live Ebola Zaire Vaccine, was prequalified by the WHO. ERVEBO's prequalification was the fastest vaccine prequalification process ever conducted by WHO and a critical step in providing access to our vaccine to individuals in countries most at risk of Ebola outbreaks.

Below is a list of products that have been prequalified by WHO as of April 15, 2020.

Product	International Nonproprietary Name (INN)	Date of prequalification
Family planning		
MARVELON 28®	Ethinylestradiol + Desogestrel	October 2010
EXLUTON®	Lynestrenol	June 2010
IMPLANON NXT®	Etonogestrel	May 2013
Vaccines		
MMR-II®	Measles, Mumps, Rubella Virus Vaccine Live	December 2008
ROTATEQ®	Rotavirus Vaccine, Live, Oral, Pentavalent	October 2008
GARDASIL®	Human Papillomavirus Quadrivalent (Types 6, 11, 16, 18) Vaccine, Recombinant (including a VVM)	May 2009
GARDASIL®	Human Papillomavirus Quadrivalent (Types 6, 11, 16, 18) Vaccine, Recombinant (two-dose regimen to support its programmatic feasibility in developing countries)	October 2014
GARDASIL®	Human Papillomavirus Quadrivalent (Types 6, 11, 16, 18) Vaccine, Recombinant (compatibility for use in a controlled temperature chain to facilitate its administration in high-temperature, low-cold-chain infrastructure areas of developing countries)	May 2016
GARDASIL®9	Human Papillomavirus Quadrivalent (Types 6, 11, 16, 18) Vaccine, Recombinant (including a two-dose-regimen variation)	February 2018
VARIVAX®	Varicella Virus Vaccine Live (first varicella vaccine to receive WHO prequalification)	February 2018
ERVEBO®	Ebola Zaire Vaccine, Live	November 2019
HIV/AIDS treatments		
STOCRIN®	Efavirenz (600mg tablet, Oral Solution 30mg) Efavirenz (50mg tablet, 200mg tablet)	May 2006 May 2008

Product registration	2015	2016	2017	2018	2019
New product and device registrations (annual) [1,2,3]	156	143	143	124	97
Products submitted that have achieved WHO prequalification (cumulative) [4]	11	11	13	13	13
Number of patent applications filed in low-income countries[5]	NR	NR	NR	NR	0

NR: Not reported

[1] Data include new products and new indications.

[2] For information on new registrations by region, visit our Clinical Research section.

[3] Data for all years have been updated based on a tracking system upgrade that corrected miscounts in prior years.

[4] CRIXIVAN® (indinavir sulfate) was removed from our product list in 2019 and is no longer included in the total number of products that have achieved WHO.

[5] Countries classified as low-income countries in the 2019 World Bank Country and Lending Group classifications.

Medicine Assistance Tool

As a demonstration of our commitment to helping low-income, uninsured patients gain access to our medicines and adult vaccines, we also participate in PhRMA's Medicine Assistance Tool (MAT), formerly known as the Partnership for Prescription Assistance (PPA). MAT is a search engine designed to help patients, caregivers and health care providers learn more about access resources available through the various biopharmaceutical industry programs.

MAT helps eligible patients get free or nearly free brand name medicines through a single website that provides information for and access to more than 500 public and private patient assistance programs, including approximately 200 programs offered by biopharmaceutical companies. To date, this tool has helped millions of Americans get free or reduced-cost prescription medicines.

For more information, please visit our Women's Health, Product Registration, U.S. Patient Assistance Programs, Vaccines, HIV/AIDS and Product Pricing pages on MSDresponsibility.com.

Patient assistance programs summary	2015	2016	2017	2018	2019
Patients utilizing our U.S. Patient Assistance Programs[1]	293,000	306,000	244,000	233,000	239,000
30-day prescriptions filled	1.6M	1.7M	2.1M	2.1M	2.2M

[1] Totals represent 2015–2019 volumes of our U.S. Patient Assistance Program.

GRI 205: Anticorruption

(CR material topic: Ethics and compliance)

Management approach

As part of our long-standing commitment to ethics and good corporate citizenship, we adopt policies and procedures that facilitate compliance with the laws and regulations that govern the way we market and sell our medicines, vaccines and other products.

We have a well-established global ethics and compliance program that is consistent with the International Federation of Pharmaceutical Manufacturers & Associations (IFPMA) Code of Practice requirements, as well as with other applicable regional or country industry codes of conduct, including those issued by the Pharmaceutical Research and Manufacturers of America (PhRMA) and the European Federation of Pharmaceutical Industries and Associations (EFPIA).

Our company's Board of Directors and senior management, including the Chief Ethics and Compliance Officer and members of the Corporate Compliance Committee, provide the foundational elements of leadership, accountability and structure to oversee the company's global ethics and compliance program.

The Chief Ethics and Compliance Officer reports directly to our company's CEO and provides regular updates to the Audit Committee of the Board of Directors on key indicators of ethical culture. This reporting structure supports open communications with senior leadership regarding important developments that relate to ethics and compliance.

Our company's robust anti-bribery/anticorruption program and corporate prevention of bribery and corruption policy give our employees the awareness and knowledge to comply with applicable laws and regulations, and to understand that the company will not tolerate any act of impropriety. Our activities must comply with company policies as well as applicable laws, including the laws of the U.S. and other countries in which we do business.

Our program prohibits the offer, promise or giving of any payment or benefit at any time to an individual or entity for the purpose of improperly influencing decisions or actions with respect to our business. This policy applies to direct engagements (e.g., those conducted by our company) as well as to indirect engagements (e.g., those managed through a third-party intermediary or partner).

We conduct anti-bribery/anticorruption training across the company. Supplemental training is also provided for employees who engage with non-U.S. government officials.

Office of Ethics

Our company's Office of Ethics was established over 20 years ago to protect and promote the company's values and standards on a global basis by developing and overseeing initiatives designed to deter illegal, unethical and improper behavior related to the company's business. The Office of Ethics is responsible for ensuring that employees are aware of and trained on the Code of Conduct and company policies.

Throughout 2018 and 2019, in alignment with our priority to protect and enhance our company's reputation through safe, ethical and compliant behaviors, the Office of Ethics added three Regional Ethics Officers to its team and established a network of site-based volunteer Ethics Ambassadors outside of the United States.

Additionally, the Office of Ethics implemented an improved reporting tool operated by an independent third party. The tool, named Speak Up (formerly theadviceline.com), is available at MSDethics.com, can be accessed 24/7, and allows employees to raise concerns or ask questions confidentially (where permitted by law) in their preferred language via phone or internet.

GRI 205-2 Communications and training on anticorruption

The Office of Ethics and the Office of Global Investigations are responsible for oversight of the global processes for managing investigations into potential ethics and compliance concerns to ensure consistent and timely resolution of potential concerns and implementation of remediation actions.

It is our company policy to maintain a work environment where all employees are expected to report concerns that are potentially inconsistent with the company's Code of Conduct and policies. Our company maintains and communicates regularly to employees about the multiple channels (i.e., management, Human Resources, Compliance, Legal, Speak Up tool at MSDethics.com) that are available. Employees are encouraged, prepared and empowered to raise concerns.

We are committed to maintaining a process for escalation and investigation of potential compliance-related concerns. The process is designed to ensure that we promptly investigate all reports of behavior that violate our company's policies, values or standards and take appropriate remedial action in response to such concerns.

When we substantiate allegations of ethical misconduct, we take appropriate disciplinary actions to ensure that those who were responsible are held accountable.

Disciplinary actions can include dismissal from the company, issuance of final written warning letters or financial penalties. In addition, we take appropriate steps to address any needed improvements in organizational and process controls.

Retaliation against employees who report such concerns is a violation of corporate policy and will not be tolerated.

We also maintain a policy that will give our company the discretion to recoup incentive payments made to employees in certain instances. This policy will apply when a senior leader engages in misconduct or fails to reasonably supervise an employee who engages in misconduct that results in a material policy violation relating to the research, development, manufacturing, sales or marketing of company products where the policy violation causes significant financial or reputational harm to the company.

Annual ethics and policy certification

An important component of our corporate ethics and compliance program is our annual ethics and policy certification. The annual review process requires selected company employees to certify adherence to corporate policies on preventing bribery and corruption, antitrust-law compliance, and conflict of interest and insider trading. These employees are also expected to regulate their outside activities to avoid any conflicts of interest, and to certify, in writing, whether actual or potential conflicts of interest exist.

Where potential conflicts are identified, the Office of Ethics will work with management to take actions to mitigate the potential conflict. In addition, all U.S.-based employees must certify compliance with our corporate policy on the effects of exclusions, debarments, suspensions and health care-related criminal convictions, reporting and screening.

Ethics and compliance training is an important part of creating a strong culture, and our program is reflective of the Code of Conduct and corporate policies tailored to meet the needs of different groups of employees within the organization.

Training on our Code of Conduct is designed as an annual training series that is assigned to all employees worldwide. All employees are required to complete the assigned ethics and compliance courses. The series is focused on our core values: Patients First, Ethics & Integrity, Respect for People, and Innovation & Scientific Excellence.

The 2019 series consisted of three modules including Code of Conduct, Anti-Bribery and Anticorruption, and Social Media.

Ethics and compliance content is also integrated into business and leadership development courses for managers and senior leaders on an ongoing basis. Ethics and integrity are key leadership competencies that are assessed as part of annual performance reviews and play an integral role in our decisions about employee advancement within the company.

Ethics and conflicts of interest	2015	2016	2017	2018	2019
Employees trained on the Code of Conduct training series	99%	100%	100%	99%	99%
Employees who responded to the disclosure statement on the Conflicts of Interest form	100%	100%	100%	100%	100%

For more information, please visit the Code of Conduct, Compliance, and Engaging With Health Care Professionals pages on MSDresponsibility.com.

Continuing Medical Education (CME) and Continuing Education (CE) programs

Our CME/CE Grant Program supports independent educational programs whose purpose is to maintain, develop or enhance the knowledge, skills and/or professional performance that health care professionals rely on to provide services for patients, the public or the profession. We are committed to ensuring that our CME/CE programs are educational and not promotional. Through them, we seek to increase physicians' knowledge about the latest scientific data and health care topics, thereby improving patient care.

The environment in which we sponsor or support educational programs worldwide is complex, governed by a multitude of laws, regulations and medical or industry association guidelines. We are committed to honoring them in the countries in which we operate.

CME programs that we support or sponsor are governed by an internal policy that is aligned with the appropriate standards and regulations to which the programs are held including, among other things, independence and financial disclosure.

U.S. Medical Forums

We deliver balanced medical and scientific information to health care professionals within the U.S. through our company's Medical Forums, which are conducted by external speakers. Speakers are selected on the basis of their expertise in the relevant subject matter. By attending one of our Medical Forums, health care professionals participate in interactive learning on therapeutic and health care industry topics. The goal of these interactions is to help attendees achieve improved medical results for their patients.

With our strict standards for conducting these Medical Forums, we comply with the PhRMA Code on Interactions with Health Care Professionals as well as with U.S. Food and Drug Administration (FDA) regulations, which assure that any product presentation is appropriately balanced with information regarding both the product's potential benefits and its risks, and is consistent with approved product labeling.

GRI 206: Anti-Competitive Behavior

(CR material topic: Responsible sales and marketing)

Management approach

We adhere to strict ethical sales and marketing practices in all our businesses, whether pharmaceuticals, vaccines or animal health.

One of the ways we provide product information is by maintaining informative and ethical professional relationships with health care providers.

Our interactions with providers, other customers and consumers are governed by laws and regulations, and by our long-standing global Code of Conduct, *Our Values & Standards*. We enforce these external and internal standards through our ethics and compliance program.

We recognize that both our reputation for integrity and the trust that our stakeholders place in us are dependent on our ethical practices. Consequently, we want to make certain that the ways in which we market and sell our products to our customers—health care professionals, health insurers and governments—include accurate, balanced and useful information so that prescribers can make the best decisions for their patients.

Our high ethical sales and marketing standards require that scientific information is the predominant factor in prescribing decisions, reinforcing our reputation for providing high-quality products and for contributing to improvements in public health.

Our professional sales representatives and other employees inform our customers about our medicines and vaccines and their appropriate use. To respond to increasing requests for on-demand information, in certain countries we offer resources and product information to health care providers on company websites and other digital platforms.

In some countries, where permitted by law, we may directly inform patients and other consumers about diseases and available treatments that they may wish to discuss with their doctors. We believe direct-to-consumer advertising contributes to greater awareness about conditions and diseases, which can benefit public health by increasing the number of patients appropriately diagnosed and treated.

Fostering ethical practices

We believe that our marketing, sales and advertising activities make an important contribution to medicine by informing our customers of treatment options based on the most recent scientific information and findings from rigorous clinical studies.

Our sales and marketing practices are governed by external laws and regulations and industry codes of conduct, and by our own global Code of Conduct, our corporate policies and procedures, and our ethics and compliance program.

Our ethics and compliance program seeks to address and prevent inappropriate practices, and we evaluate our policies and practices as appropriate. Our practices are monitored, and compliance is enforced to ensure that our interactions with customers and consumers help inform their decisions accurately and in a balanced manner. We believe that compliance with all policies governing scientific, business and promotion-related activities, in letter and spirit, is a corporate and individual responsibility of the highest order. Through our ethical behavior, we strive to ensure that scientific information predominates in prescribing decisions.

Our Guiding Principles for Ethical Business Practices Involving the Medical and Scientific Community include the following:

- We provide current, accurate and balanced information about our products; we share sound scientific and educational information; and we support medical research and education
- Our employees are prohibited from offering health care professionals items of personal benefit, such as tickets to sporting events, support for office social events or gift certificates for stores or golf outings. Where permitted, we may occasionally provide health care professionals with approved educational items that are not of substantial monetary value and that are intended primarily for educational purposes. Such materials may include medical textbooks, medical journals and anatomical models.
- Our employees and others speaking on behalf of the company may give presentations specifically designed to provide the type of information that practicing health care professionals have indicated is needed and most useful in the treatment of their patients, in accordance with U.S. Food and Drug Administration (FDA) regulations and the regulations of other countries in which the presentations or discussions are taking place
- A company representative may offer occasional modest meals to health care professionals in connection with an informational presentation; however, such meals must be in accordance with local codes and regulations

For more information, please visit the Sales & Marketing Practices page on MSDresponsibility.com.

GRI 206-1 Anti-competitive behavior

As a condition of employment, all of our sales and marketing employees are required to be certified periodically on sales and marketing practices.

In the U.S., for example, employees who do not satisfactorily meet these training requirements may not conduct specific activities on their own and must repeat the training until they meet the requirements.

All new employees receive training and testing and must be certified on relevant policies and our company's ethical operating standards. And although many of

our employees who market and sell our medicines and vaccines have advanced scientific or medical degrees and backgrounds, all of our sales representatives must complete general sales and product training. Training is specific to the country where an employee is based and covers the scope of the employee's responsibilities in ensuring compliance with applicable laws and regulations.

Sales representatives are trained on anti-bribery and anticorruption laws such as the U.S. Foreign Corrupt Practices Act and the UK Bribery Act. Sales representatives in the U.S. are also required to understand, among other things, their responsibilities under the Anti-Kickback Statute, the U.S. Prescription Drug Marketing Act, and all applicable FDA promotional regulations.

After this initial training, we require periodic training aimed at recertifying employees on relevant policies and practices in accordance with local and functional requirements.

We stress that if our employees are unsure about the appropriateness of the conduct that they ask for help. There are several places employees can turn for assistance. The first option is to talk with their manager. If they do not feel comfortable with that course of action, the other resources they may contact are:

- Divisional Compliance Departments
- Office of Ethics
- Privacy Office
- Office of General Counsel
- Human Resources Department
- MSDethics.com

In addition to mandatory training on our Code of Conduct, employees receive training on other levels of business practice and compliance, according to their roles and responsibilities. We evaluate and update the content for all marketing and sales training periodically to ensure that it remains relevant and current.

Industry codes of conduct

Our sales representatives must provide truthful, non-misleading information in their interactions with the medical and scientific community. Our compliance program is consistent with applicable laws and regulations, and is aligned with the International Federation of Pharmaceutical Manufacturers & Associations (IFPMA) Code of Pharmaceutical Marketing Practices, as well as with regional and country industry codes, such as the Pharmaceutical Research and Manufacturers of America (PhRMA) Code and the Compliance Program Guidance for Pharmaceutical Manufacturers, published by the Office of the Inspector General, U.S. Department of Health and Human Services.

The pharmaceutical industry as a whole recognized that more needed to be done to address concerns raised by public officials and stakeholders in the health care community. Self-regulating industry codes of conduct such as the IFPMA, the European Federation of Pharmaceutical Industries and Associations (EFPIA) and PhRMA codes set the standards that govern the industry's sales and marketing practices and ensure that companies have adequate policies and procedures in place to comply with the codes.

Among PhRMA's Code on the Interactions with Healthcare Professionals (the Code) key components is an annual requirement for company CEOs and Chief Compliance Officers to certify personally that they have processes in place that foster compliance with the Code. The Code also encourages companies to obtain third-party verification of their compliance policies and procedures. We complete PhRMA Code certification every year in compliance with the Code.

Other requirements of the Code have previously been incorporated into our already strong ethical business practices. For example, our company follows the standards for commercial support of continuing medical education established by the Accreditation Council for Continuing Medical Education, and our ethics and compliance program requires that company representatives be periodically assessed to make sure they comply with relevant company policies and standards of conduct.

Sales and marketing	2015	2016	2017	2019	2019
Number of warning letters or untitled letters from OPDP[1] or APLB[2] in the U.S.	0	0	0	0	0

[1] OPDP: Since September 2011, the Division of Drug Marketing, Advertising and Communication (DDMAC) is now the Office of Prescription Drug Promotion (OPDP).

[2] APLB: Advertising and Promotional Labeling Branch (APLB) of the FDA Center for Biologics Evaluation and Research.

Direct-to-consumer (DTC) advertising

We believe that direct-to-consumer (DTC) advertising can be an important and helpful way to inform patients about diseases that may be relevant to them and about therapeutic options they may want to discuss with their physicians.

Our company has a long-standing policy of voluntarily submitting new U.S.-based DTC advertising campaigns to the FDA for its review and comment before running them. Under our DTC policies and practices, the information provided in our DTC advertising must:

- Contain appropriate product benefit and risk information
- Be appropriately balanced, consistent with FDA regulations, and use appropriate "taste and tone"
- Be approved by our company's Promotion Review Team, a governing body consisting of a team of reviewers (including the job owner, an attorney, a physician, a representative from the Office of Promotion and Advertising Review, and a product scientific specialist) who ensure that promotional material is clinically and scientifically accurate, compliant with applicable laws and regulations, and compliant with company policy

We try to help consumers achieve better health outcomes by delivering accurate, relevant and understandable information on disease prevention, identification and potential treatment. To remain true to this goal, we adhere to the letter and spirit of U.S. Food and Drug Administration (FDA) regulations and guidelines governing DTC promotion, meet or exceed all Pharmaceutical Research and Manufacturers of America (PhRMA) guidelines on DTC advertising, and follow a comprehensive set of internal policies and practices when engaging in DTC advertising within the U.S.

We adhere to updated 2019 PhRMA guidelines that all DTC television advertising that identifies a medicine by name should include direction as to where patients can find information about the cost of the medicine, such as a company-developed website, including the list price and average, estimated, or typical patient out-of-pocket costs, or other context about the potential cost of the medicine. In addition, we include information on our U.S. Patient Assistance Program in all new U.S.-based DTC print and television advertisements for eligible products.

We inform and educate health care professionals about our products before we advertise them to consumers. We implement comprehensive programs to educate physicians and other prescribers about a new product for an appropriate period of time before starting product-specific DTC broadcast advertising in the U.S.

These principles and our practices are reflected in the PhRMA Guiding Principles on Direct-to-Consumer Advertisements about Prescription Medicines.

For more information, please visit the Sales & Marketing Practices and Direct-to-Consumer Advertising pages on MSDresponsibility.com.

Environmental

GRI 301: Materials

The materials we use for our finished products serve a range of important purposes; the foremost purpose is to protect the purity, efficacy and physical integrity of the product. Packaging also provides the customer with information and convenience, the pharmacist or provider with accurate dispensing information at the point of purchase, and our business with marketing value. For some products, packaging also serves safety functions such as child resistance and tampering evidence.

In addition to these critical functions that packaging must perform, there is the consideration of the environmental impact of the materials we use. After it has served its critical function(s), packaging becomes our customer's waste, and therefore we must take this into account in our designs.

We continue to monitor global trends around material use such as the New Plastics Economy, and around how we might incorporate "circular economy" concepts into the critical functions of packaging for pharmaceuticals. It is unclear how these trends will ultimately impact our mission to deliver medicines, however, these are important signals of a changing external approach to the use and recovery of specific materials like fiber-based products, plastics such as PVC, metals and others.

Governance

Packaging and design is managed by the Global Pharmaceutical Commercialization area of the company and with oversight from the Environmental Health and Safety Council.

Goal	Progress	Indicator
Materials and packaging		
100 percent of the packaging for our new human health products will be reviewed for environmental impact and improvement.	100% of products launched in 2019	Achieved

Packaging

We have adopted "Design for Environment" guidelines that help our engineers design new product packages that are better for the environment by minimizing package sizes and using more environmentally friendly materials, where possible.

We have set a target to review all of our new human health packaging designs prior to launch to understand and minimize environmental impacts as much as possible, while still providing adequate protection of our products.

To help us evaluate the differences in environmental impacts between packaging options, we use a simplified life-cycle assessment (LCA) tool that provides information on the environmental impacts generated by the materials used in our packaging. The tool helps us to make informed decisions as to which materials are better for the environment.

Solvent use

Solvents play a key role in the manufacturing of our products, as well as in equipment cleaning. Because of their significance to our business and the life-cycle impact they represent, we focus on designing our processes to minimize or avoid their use where practical. Where we do use solvents, we maximize efficiency, and control them in our emissions, effluents and waste.

We have an active Green & Sustainable Science program to design our new processes using fewer solvents and other hazardous materials, and to reuse and recycle more of the solvents we do use.

For cleaning our manufacturing equipment, we use water-based methods where they are as effective as solvents. At each of our manufacturing sites, we have engineers who are responsible for identifying and driving process-improvement projects. When it is not practical to reuse regenerated solvents in our own production processes, we either work with suppliers who recover the spent solvents for resale to other industries, or safely burn them as a source of energy. Any used solvents that leave our site as hazardous waste are managed at offsite facilities that are on our list of approved waste management sites.

Chemical management

A comprehensive and effective chemical management program is critical to the safety and protection of our employees, the communities in which we operate and the environment.

We have put procedures, systems and processes in place to manage the approval, procurement, inventory, receipt, transfer, storage, use and disposal of chemicals at all of our sites. We provide our employees and others with information about the identities and potential hazards of the chemicals in our operations and final products through proper labeling of chemicals and the creation of safety data sheets.

For more information, please visit the Materials & Packaging, Waste Management, Product Stewardship, Pharmaceuticals in the Environment and Nanotechnology pages on MSDresponsibility.com.

GRI 302: Energy

As a global biopharmaceutical company, we recognize the important role we play in identifying, adapting and responding to the public health risks associated with climate change, such as threats to clean air and water, insufficient food supplies and the spread of disease. We believe our long-standing support of stronger health systems in underserved areas is even more important given the evidence that certain disease patterns are associated with changing climate conditions.

Our Energy Management Standard requires responsible and efficient energy management and associated greenhouse gas (GHG) emission reductions.

Energy demand reduction and efficiency will always be part of our energy management strategy and will positively impact our efforts to reduce our global footprint.

Utilization of renewable energy is a growing expectation of industry. The advance in renewables technology, incentives through legislation and comparison with conventional technology and fuel prices have grown the industry and created a robust renewable energy market.

Programs and initiatives

We have made it a priority to reduce our demand for energy and have established internal policies and practices focused on reducing energy use at all our sites, and minimizing GHG generation throughout the company. By taking these steps, we are not only minimizing GHG emissions, but also reducing our operating costs and mitigating the business impacts expected to be associated with future climate change requirements.

Energy-efficiency and demand-reduction projects will continue to contribute to lowering our energy consumption and reducing our direct GHG emissions.

In addition, we will continue to optimize systems, consolidate excess facility space when possible, shift power supplies to combined heat and power systems and utilize renewable energy sources.

Our company has launched initiatives around the world to improve energy use, reduce GHG emissions from our operations and understand our supply chain-related impacts.

Our Energy Center of Excellence (CoE) identifies, shares and standardizes best practices, and prioritizes the funding of energy projects to reduce energy use across the company. Our manufacturing facilities, warehouses, laboratories, major offices and vehicle fleet are the primary targets of our energy-demand-reduction programs, as they represent the majority of our energy consumption.

We have an established Energy Capital Fund of up to $12 million per year in order to transition to more energy-efficient technology and to better position the company to respond to energy demands in the future. The Energy Capital Fund supports the implementation of projects with a simple four-year payback averaged over the entire portfolio.

- Since 2015, our sites have completed more than 70 projects through the Capital Fund. This has saved over $6 million per year, averaging a payback of only three years and avoiding the production of 23,000 metric tons of carbon per year.
- In 2019, we allocated approximately $6.4 million to energy projects. The completed projects will result in $2 million in annual savings and a reduction of more than 12,000 metric tons of carbon dioxide from our facilities.
- For 2020, we have over 60 projects in progress, that when completed will reduce carbon dioxide emissions from our facilities by over 36,000 metric tons

Facilities

We continuously strive to make our facilities energy-efficient. Our Energy CoE has created an “energy road map” to help our facilities reduce energy demand and associated GHG emissions. The energy road map’s foundation includes large-scale metering and monitoring to assess and identify opportunities for continuous improvement. As facility energy management programs mature, energy savings are sought by improving the reliability of the equipment, by the efficient operation of utility systems and by building efficiencies into systems design.

All our new facilities are required to comply with our Energy Design Guide and Energy Conservation Planner. If we purchase a facility, it is evaluated for energy efficiency and assessed against our energy scorecard as part of its integration into our company.

All new laboratories, offices and major renovations are built following cost-effective and energy-efficient practices and are designed to meet Leadership in Energy and Environmental Design (LEED) Silver certification at a minimum or the comparable country standard.

- Our China Head Office is certified as LEED Gold
- Our new South San Francisco, CA office was certified LEED Gold in 2020 and is pursuing WELL Building Standard (WELL) certification
- An operations support facility at our facility in Durham, North Carolina is certified as LEED Silver
- Our lab in Carlow, Ireland received both LEED Gold and Excellence in Energy Efficiency Design (EXEED) certification in 2019
- Development labs in both New Jersey and Pennsylvania are pursuing LEED Silver certification

We require our facilities to have a plan to manage their energy use.

- Four sites in Ireland, three sites in Germany, one site in Spain and one site in the UK maintained their certification of ISO50001:2018 for energy management to comply with the EU Energy Efficiency Directive audit requirements; and a fourth German site transitioned successfully to the ISO certification
- The EU Energy Efficiency Directive (EED) Phase Two compliance assessment was completed for all entities in the EU Region and all qualifying sites are undertaking energy audits to ensure compliance
- Our Energy CoE has provided tools for facility managers to identify opportunities to reduce energy use and eliminate waste. These tools include facility-wide, three-day Energy Treasure Hunts, half-day utility-system assessments (Energy Kaizens), and online Energy Treasure Hunts, which allow for best-practice sharing.
- All our employees have access to a training curriculum that allows them to learn more about energy management and energy systems. Through this program, employees can earn an Energy Manager Certification. Site energy managers from more than 70 of our facilities are expected to complete the basic energy efficiency training curriculum.

Work practices and recognition

Our company takes advantage of technological advances to save energy, time and money while also reducing emissions. The strategies we employ include:

- Site energy use is tracked monthly by our Energy CoE through a centralized system. A global energy scorecard is issued monthly, and sites receive a letter grade based on an internal assessment of their energy intensity and performance. Our companywide average score has consistently been a top-level grade of "A-."
- A rollout of Energy Utility Analytics Technology for multiple sites that will enable continuous commissioning, energy efficiency improvements and reliability of assets
- We developed an energy management strategy that seeks to achieve energy savings through continuous improvement, reliability, operations and design
- A rail-travel option is included in our online business-travel booking tool to make it easier to travel by train when appropriate. Train travel has a smaller carbon footprint than traveling by either airplane or personal vehicle.

We worked with our three largest long-range freight carriers and even though the amount of material shipped by weight increased in 2019 vs. 2018, our transportation-related GHG emissions decreased by shifting away from air freight to ocean and overland ground freight whenever practical.

In 2019, our company awarded an "Energy Project of the Quarter" and showcased each project throughout our company in our quarterly "Eco Smart" newsletter. These projects were also featured in our internal sustainability communication sites. The winning projects included:

- Overdelivered on energy reduction commitments at a site in the Netherlands, through a series of initiatives such as addressing lighting, better management and utilization of more efficient air handlers and insulation upgrades
- Acknowledgement of the start-up of our first large scale Virtual Power Purchase Agreement (VPPA) facility in Texas
- The startup of a new quality lab and certification as LEED Gold and EXEED at a site in Ireland
- Started the "Green by Choice" program at a site in the Netherlands to create a hands-on culture in areas of energy, water and waste reductions

Renewable energy

Our company has set bold renewable energy targets. We have committed to sourcing 100 percent of our purchased electricity from renewable energy sources by 2040, with an interim goal of 50 percent by 2025.[1] Photovoltaic arrays, wind turbines and other renewable-energy installations avoid emissions, help reduce energy-demand peaks and postpone or preclude adding new power plants.

We continually analyze our sites to look for opportunities for new onsite installations, power-purchase contracts, vendor-supplied renewable energy through the electrical grid and VPPA projects.

Several sites have incorporated renewable energy installations over the past several years. In 2019, sites in Italy, Germany and South Africa installed new solar arrays or expanded their on-site solar capacity. In September 2019, one of our manufacturing sites in Virginia signed an agreement to utilize renewables for 100 percent of their purchased electricity.

In January 2018, our company signed a VPPA with Invenergy Wind Development LLC that adds 60 megawatts (MW) of renewable energy to the Electric Reliability Council of Texas (ERCOT) market and provides us with the associated renewable energy credits. This new wind asset, Santa Rita East, will reduce our company's greenhouse gas emissions by more than 100,000 metric tons per year over the life of the 12-year agreement. This agreement will help us reach approximately 50 percent of our 2025 goal and 25 percent of our 2040 goal. The Santa Rita East wind farm came on-line in July 2019.

[1] We have defined "purchased electricity" as electricity sourced from external suppliers as well as renewable electricity that was generated and utilized onsite where we retained the renewable attributes or where we have obtained renewable attributes through contract.

Vehicle fleet

Approximately nine percent of our total Scope 1 and 2 GHG emissions are associated with our vehicle fleet. We calculate our fleet's GHG emissions based on estimated fuel economy and actual total miles driven.

- In an ongoing effort to improve fuel efficiency, we have converted our U.S. sales fleet from cars with six-cylinder engines to cars with four-cylinder engines, replaced eight-cylinder-engine trucks with six-cylinder-engine trucks, and introduced an all-wheel-drive (AWD) sedan option to replace AWD sport utility vehicles. This has resulted in fuel efficiency improvements from an average of 22 miles per gallon (mpg) in 2008 to an average of 27 mpg in 2019.
- 40 percent of the U.S. fleet are now partial zero emission vehicles (PZEV)
- Our European fleet continued to convert to the use of more fuel-efficient vehicles and we conducted a plug-in hybrid pilot in the UK
- Over 50 percent of the vehicles being utilized in Japan are hybrids and we are looking to expand their use in other Asia/Pacific markets where the infrastructure is supported to "charge" the vehicles
- In 2019 in Mexico, we have implemented three-cylinder vehicles until hybrids become more available. Our fleet in Mexico consists of 17 percent three-cylinder vehicles and five percent hybrids.

GRI 302-1 **Energy consumption within the organization (Scopes 1 + 2)**

GRI 302-4 **Energy reductions**

Total energy use	2015	2016	2017	2018	2019
Total energy use (GJ)	21,303,600	20,936,400	19,370,300	19,258,500	18,577,900

Note: GHG figures have been changed from our 2018/2019 report, due to a collection methodology update since our last report.

Scope 1 and location-based Scope 2 energy use (% of total)[1]	2015	2016	2017	2018	2019
Natural gas (Scope 1)	60%	61%	59%	62%	62%
Fleet fuel (Scope 1)	11%	12%	12%	10%	9%
Fuel oil (Scope 1)	2%	2%	2%	2%	2%
Bio-Fuel (Scope 1)	0.3%	0.4%	0.6%	0.6%	0.6%
Renewable energy generated and used onsite (Scope 1)[2]	0.01%	0.04%	0.04%	0.05%	0.05%
Spent solvents (Scope 1)	0.1%	0.1%	0.0%	0.0%	0.0%
Coal (Scope 1)	0.0%	0.0%	0.0%	0.0%	0.0%
Purchased electricity (Scope 2)[3, 4]	24%	23%	23%	23%	24%
Purchased steam (Scope 2)	3%	2%	3%	3%	3%

[1] May not add to 100 percent due to rounding.

[2] Includes solar, wind and other renewables generated onsite where renewable energy credits or guarantees of origin have been retained or retired.

[3] Reported using Scope 2 location-based value in accordance with the Greenhouse Gas Protocol.

[4] Includes solar, wind and other renewables generated onsite where renewable energy credits (RECs) have been sold.

Scope 1 and market-based Scope 2 energy use (% of total)[1]	2015	2016	2017	2018	2019
Natural gas (Scope 1)	60%	61%	59%	62%	62%
Fleet fuel (Scope 1)	11%	12%	12%	10%	9%
Renewable energy generated and used onsite or purchased (Scope 1)[2]	0.01%	0.3%	1.1%	3.1%	6.1%
Fuel oil (Scope 1)	2%	2%	2%	2%	2%
Bio-Fuel (Scope 1)	0.3%	0.4%	0.6%	0.6%	0.6%
Spent solvents (Scope 1)	0.1%	0.1%	0.0%	0.0%	0.0%
Coal (Scope 1)	0.0%	0.0%	0.0%	0.0%	0.0%
Purchased electricity (Scope 2)[3, 4]	24%	23%	22%	20%	18%
Purchased steam (Scope 2)	3%	2%	3%	3%	3%

[1] May not add to 100 percent due to rounding.

[2] Includes solar, wind and other renewables generated onsite where renewable energy credits or guarantees of origin have been retained or retired.

[3] Reported using Scope 2 location-based value in accordance with the Greenhouse Gas Protocol.

[4] Includes solar, wind and other renewables generated onsite where renewable energy credits (RECs) have been sold.

In March 2020, the U.S. EPA again recognized our company with our 13th consecutive Sustained Excellence Award. This is also the 15th consecutive year in which we have been recognized by ENERGY STAR for excellence in energy management.

In 2019, our company continued to successfully use ENERGY STAR benchmarking tools such as the ENERGY STAR Portfolio Manager to obtain the ENERGY STAR Certified Building label for four buildings including:

- A data center in New Jersey that obtained a perfect score of 100
- A research office in Pennsylvania for the 9th consecutive year
- Two office buildings in Pennsylvania for the 2nd consecutive year

Our Puerto Rico facility was awarded the ENERGY STAR Pharma Energy Performance Indicator (EPI) for superior energy efficiency and environmental performance among U.S. pharmaceutical manufacturing plants for the 11th consecutive year.

For more information, please see GRI 305-5 on page 47, the Climate Change & Energy Use page on MSDresponsibility.com, and our CDP Climate Change Questionnaire.

GRI 303: Water

As we strive to meet the health needs of our patients, we are increasingly operating in regions of the world where access to clean water and proper sanitation is under great pressure. Even in established markets, our business faces water-related risks.

Our global water strategy aims to achieve sustainable water management within our operations and our supply chain, which supports UN Sustainable Development Goal (SDG) 6, "Clean Water and Sanitation." To achieve these strategic objectives, we are focusing on the following commitments:

- Ensuring that our wastewater discharges comply with local and national standards, as well as internal company requirements
- Understanding and controlling our operational water footprint
- Managing water risk at our facilities and in our supply chain
- Reporting publicly on our water use and goals

We have established water goals to help us manage water-related risks in our operations and supply chain:

Goals	Progress	Indicator
Internal operations		
By 2020, we will develop water conservation plans for sites in "high water risk" locations.	On track	On Track
By 2025, we will maintain global water use at or below 2015 levels.	3.6 million m^3 below 2015 levels (15% reduction)	On Track
Supply Chain		
We will collect greenhouse gas emissions and water use data from at least 90 percent of our strategic suppliers with the highest environmental impact.	GHG and water data collected from 96% of high-impact strategic suppliers	Achieved
By 2020, we will engage with those suppliers and request them to identify GHG emission and water use reduction opportunities.	On track	On Track
By 2025, at least 90 percent of our strategic suppliers with the highest environmental impacts will set their own GHG emission and water use reduction targets.	On track	On Track

GRI 303-1 Water as a shared resource

Water use and risk by region (million m^3)	Extremely High	High	Med to High	Low to Med	Low	N/A	% of Total	Total
North America	0.00	2.55	2.97	9.88	0.43	0.05	78%	**15.87**
Europe, Middle East and Africa	0.14	0.88	0.13	0.24	1.32	0.23	14%	**2.93**
Asia Pacific	0.02	0.05	0.12	0.00	0.78	0.24	6%	**1.20**
Latin America	0.05	0.11	0.00	0.00	0.08	0.08	2%	**0.32**
Total[1]	0.21	3.59	3.21	10.12	2.61	0.59	–	**20.32**

[1] All values above are rounded. As a result, the total values shown are not equal to the sum of the individual source totals.

Water use and risk by region (%)	Extremely High	High	Med to High	Low to Med	Low	N/A
North America	0%	16%	19%	62%	3%	**0%**
Europe, Middle East and Africa	5%	30%	4%	8%	45%	**8%**
Asia Pacific	1%	4%	10%	0%	65%	**20%**
Latin America	15%	34%	0%	0%	26%	**25%**
Total[1]	1%	18%	16%	50%	13%	**3%**

[1] May not add to 100 percent due to rounding.

Water use in areas of high to extremely high water risk by region (million m^3)	Groundwater	Surface Water	Purchased Water	Total
North America	0.45	0.00	2.11	2.55
Europe, Middle East, and Africa	0.23	0.13	0.66	1.02
Asia Pacific	0.00	0.00	0.07	0.07
Latin America	0.04	0.00	0.12	0.15
Total	0.71	0.13	2.95	3.80

Water use by source (million m^3)[1]	2015	2016	2017	2018	2019
Groundwater	12.2	10.4	10.2	10.5	10.4
Surface water	3.9	3.2	2.7	2.4	2.7
Purchased water	7.7	7.1	6.6	7.7	7.3
Total[2]	23.9	20.6	19.6	20.5	20.3

[1] In accordance with the Greenhouse Gas Protocol, prior-year data have been adjusted to add or remove facilities that have been acquired and sold. Adjustments also reflect changes in methodology to ensure consistency from year to year.

[2] All values above are rounded to one decimal place. As a result, the total values shown are not equal to the sum of the individual source totals.

In 2019, we used 20.3 million cubic meters of water globally, versus 23.9 million cubic meters in 2015, representing a 15 percent reduction in water use.

Approximately 64 percent of the total water we used in 2019 was supplied from nearby surface water and groundwater resources, with the balance sourced from municipal water supplies. Many of our facilities employ water reuse and recovery strategies, including recirculation of water in cooling towers and condensate recovery.

We use the World Resources Institute's (WRI's) Aqueduct water-risk-assessment tool to measure and map our water risks. Sites are categorized using the "Baseline Water Stress" indicator, which is the ratio of total annual water withdrawals to total available annual renewable supply, and accounts for up-stream consumptive use. Higher stress values indicate more competition among water users. A new version of the Aqueduct tool (version 3.0) was launched in August 2019. The following upgrades to the tool have resulted in changes to the baseline water stress rating and scoring:

- Inclusion of both surface and groundwater in the model
- Modifications to the scoring scale
- Changes to the indicators
- Hydrological model underpinning the indicators
- Hydrological sub-basins

In 2019, we operated five manufacturing and/or research facilities in areas with "extremely high" Baseline Water Stress, according to the WRI's Aqueduct 3.0 tool. The reduction from 11 in 2018 is directly related to the changes in the tool identified above. We are also assessing water risk status of sites brought into the network through recent acquisitions.

The facilities that use the most water in our network are U.S.-based. Of these, two are in areas of "high" Baseline Water Stress.

We assess high-water-use facilities that are experiencing water interruptions or are located in areas of "extremely high" and "high" Baseline Water Stress according to the WRI Aqueduct tool, and develop water management plans as needed. We work with a thirdparty water use expert to evaluate opportunities for water use reductions at these sites, resulting in sitespecific water management plans. We are also working to identify "hot spots" of water use within our supply chain so that we can engage with our suppliers on the issue of water risk.

GRI 303-2 Water discharge-related impacts

Our facilities are required to implement an internal EQC program that evaluates potential human health and environmental impacts of active pharmaceutical ingredients (APIs) in waterbodies where we discharge wastewater. These standards are based on criteria established in accordance with stringent product regulatory filing review process (as per our Pharmaceutical in the Environment Public Policy statement). Each facility uses the internal EQC standards to:

- Assess the potential risk from its operations using science-based and industry-accepted risk assessment methods
- Minimize environmental impacts from wastewater discharges in the local watershed
- Establish procedures for managing, treating, or controlling APIs in wastewater prior to discharge where needed

Our production facilities have, or will be provided with, API-treatment technology where needed, so that our wastewater discharges meet both regulatory requirements and these internal standards.

We also provide EQC information to suppliers that manufacture pharmaceutical compounds for us and have initiated detailed assessments of our suppliers to better understand and address potential impacts.

In addition, as a member of the Antimicrobial Resistance (AMR) Industry Alliance and signatory to the Industry Roadmap for Progress on Combating AMR, we are working to deliver on our commitments to reduce the environmental impacts from antibiotic residues in wastewater. We have reviewed the operations of our third-party suppliers to assess their wastewater treatment controls and have recommended improvements where needed, which we will follow through to completion.

Wastewater from our facilities is managed and treated to meet regulatory standards and minimize environmental impacts prior to discharge. On-site wastewater treatment facilities are operated at many of our production and research facilities. Where on-site treatment is not provided, wastewater is discharged to local municipal wastewater treatment facilities that have the technology and capacity to treat our wastewater.

For more information, please visit the Water and Sourcing & Supplier Relations pages on MSDresponsibility.com, or review our response to the CDP Water Security questionnaire.

GRI 303-3 Water withdrawal

Our sites employ a variety of technologies and techniques aimed at reducing our water footprint and improving operational performance. Closed-loop cooling systems, which reduce freshwater use, are employed at more than half of our facilities worldwide. Reverse osmosis (RO) "reject water" is reused for non-potable and non-process applications such as cooling-tower feed water and fire water. In all, 1.1 million cubic meters of water was recovered, reused or recycled at our facilities in 2019, which is equivalent to five percent of our total water use.

Our water-use-reduction initiatives include:

- Consideration of water use in process design
- Cooling-system optimization
- Prompt repairs and maintenance of steam-distribution systems and traps
- Recovery and reuse of steam condensate and "reject water"
- Process-water purification system optimization
- Avoiding the use of water in mechanical seals, such as those in pumps

For more information, please visit the Water page on MSDresponsibility.com.

For information on the specific water sources affected in areas experiencing high and extremely-high water risk, please see our CDP Water Security response.

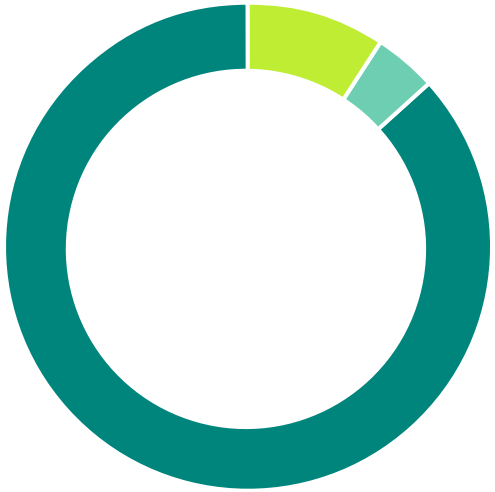
GRI 305: Emissions

Scientific data support that climate change is occurring, and we are taking action to reduce the economic and public health risks associated with a changing climate.

We report our GHG emissions as required by regulations in certain countries and annually through CDP (formerly Carbon Disclosure Project). In 2019, the CDP graded our disclosure as a "B" or a rating of "management", indicating that we are "taking coordinated action on climate issues." "This is higher than the North America regional average of C, and same as the Biotech & pharma sector average of B."

We have committed to reducing our Scope 1 and market-based Scope 2 absolute GHG emissions by 40 percent between 2015 and 2025. This goal is designed to meet the science-based criteria to limit the global temperature increase to below 2°C.

The World Resource Institute's Greenhouse Gas Protocol defines Scope 1 GHG emissions as emissions from owned or controlled sources such as onsite fuel combustion and fleet vehicles. Scope 2 emissions are those from indirect sources such as purchased electricity. Scope 3 includes indirect emissions in a company's value chain.



GHG emissions in 2019

	Scope 1	755,340 MT CO_2e
	Scope 2	316,630 MT CO_2e
	Scope 3	6,965,600 MT CO_2e

Note: Scope 2 is the market-based value in accordance with the Greenhouse Gas Protocol.

We have adopted a set of environmental sustainability goals to help position our company to succeed in an increasingly resource-constrained world.

These were developed to address the rising expectations of our customers, investors, external stakeholders and employees regarding the environmental impact of our operations and supply chain.

We have made progress toward our environmental sustainability goals and remain on track to achieve them. We continue to find ways to decrease energy demand and have increased the amount of renewable energy we purchase. Our procurement team has started to engage our strategic suppliers in our efforts to reduce the environmental footprint outside of our operations.

Goals	Progress	Indicator
GHG emissions		
By 2025, we will reduce global Scope 1 and market-based Scope 2 GHG emissions by at least 40 percent from 2015 levels.	26.5% reduction	On Track
Renewable energy		
By 2025, at least 50 percent of our purchased electricity will come from renewable sources. By 2040, 100 percent of our purchased electricity will come from renewable sources.[1]	25.4% of our purchased electricity comes from renewables	On Track

[1] We have defined "purchased electricity" as electricity sourced from external suppliers as well as renewable electricity that was generated and utilized onsite where we retained the renewable attributes or where we have obtained renewable attributes through contract.

Goals	Progress	Indicator
Since 2018, we have been collecting GHG emissions and water use data from at least 90 percent of our strategic suppliers with the highest environmental impact.	GHG and water data collected from 96% of high-impact strategic suppliers	Achieved
By 2020, we will engage with those suppliers and request them to identify GHG emission and water use reduction opportunities.	On track	On Track
By 2025, at least 90 percent of our strategic suppliers with the highest environmental impacts will set their own GHG emission and water use reduction targets.	In progress	On Track

Note: Scope 2 is the market-based value in accordance with the WRI Greenhouse Gas Protocol.

Governance

Our climate strategy is overseen globally by our Environmental Sustainability Center of Excellence (CoE) in partnership with our Energy CoE and Energy Procurement CoE. The CoEs review and report data, monitor progress, and provide assistance as needed, to support sites' work towards these goals and review possible above-site renewable energy projects.

Each site is responsible for the management of their energy use. In many cases, our company partners with our third-party Integrated Facility Management (IFM) providers to manage energy use and work toward the corporate goals.

For information regarding our environmental management and governance, please see our EHS Management & Compliance on MSDresponsibility.com.

GRI 305-1	**Direct GHG emissions (Scope 1)**
GRI 305-2	**Indirect GHG emissions (Scope 2)**
GRI 305-3	**Other indirect GHG emissions (Scope 3)**
GRI 305-5	**Reduction of GHG emissions**

Total GHGs (MT CO_2e)[1]	2015	2016	2017	2018	2019
Scope 1 and location-based Scope 2 GHGs	1,416,900	1,365,000	1,258,900	1,225,600	1,168,900
Scope 1 and market-based Scope 2 GHGs	1,459,000	1,401,700	1,274,500	1,191,100	1,072,000
Scope 3 GHGs	5,586,300	7,975,100	6,586,100	6,239,800	6,965,600

[1] In accordance with the Greenhouse Gas Protocol, prior-year data have been adjusted to add or remove facilities that have been acquired or sold. Adjustments also reflect changes in methodology to ensure consistency from year to year.

Scope 3 GHGs details (MT CO_2e)	2015	2016	2017	2018	2019
Purchased goods and services[1]	3,864,900	6,204,000	4,997,600	4,595,600	**5,155,100**
Capital goods[1]	112,700	224,000	192,900	229,200	**339,900**
GHG emissions from fuel and energy-related activities not included in Scopes 1 & 2[2,3]	276,200	304,500	262,100	243,400	**240,700**
Upstream transportation and distribution[1]	222,200	255,500	267,100	274,100	**271,200**
Waste generated in operations (excluding recycled & composted waste)[4,5]	20,600	16,800	16,000	18,200	**19,500**
GHG emissions related to employee business travel[6,7]	283,300	265,400	218,200	301,100	**340,400**
Employee commuting	302,400	301,500	262,200	264,400	**272,000**
Downstream transportation and distribution[8]	211,000	118,000	121,900	120,800	**133,200**
GHG emissions from use of sold products[9]	255,000	248,400	205,800	148,100	**142,100**
End-of-life treatment of sold products[10]	38,000	37,000	42,200	44,900	**51,500**
Total[11]	5,586,300	7,975,100	6,586,100	6,239,800	**6,965,600**

Note: Limited Data Assurance was granted for emissions calculated from primary travel vendor data and employee reimbursable travel mileage data. The total reported here includes non-primary travel vendor data emissions which were based on our 2019 third-party spend data and an Economic Input-Output Model performed by Climate Earth, Inc.

NA: Not available.

[1] Based on third-party spend data and an economic input-output model performed by Climate Earth, Inc.

[2] Emission factors from Argonne National Laboratory's GREET Model (https://greet.es.anl.gov/) were used in conjunction with primary fuel and energy-use data.

[3] Data as reported historically, not baseline adjusted.

[4] Primary-waste data were used with the U.S. EPA's WARM Model (https://www.epa.gov/warm).

[5] Including recycled and composted waste in these calculations, would result in negative emissions in), 2015 (-40,200 MT CO_2e), 2016 (-60,200 MT CO_2e), 2017 (-41,200 MT CO_2e), 2018 (-43,700 MT CO_2e) and 2019 (-62,400).

[6] Based on primary travel vendor data, employee-reimbursable mileage and UK Defra factors (https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting#conversion-factors-2015).

[7] Emissions are based on primary vendor data where available and economic input-output modelling performed by Climate Earth, Inc., using spend data.

[8] Emissions were calculated using our "Upstream transportation and distribution" spend data as a worst-case estimate entered into the WRI Quantis tool. We assumed that all "downstream" material would first have been stored, transported and handled "upstream."

[9] Assumes that all HFC-containing devices shipped for sale were consumed. The amount and identity of HFC in each product is calculated and multiplied by the appropriate global warming potential (GWP) to determine the CO_2e released as a result of product use.

[10] Calculated assuming that all primary, secondary and tertiary packaging purchased was disposed of by our customers. Packaging material data was used with the U.S. EPA's WARM Model.

[11] May not add up to total due to rounding.

Reduction of GHG emissions

From 2018 to 2019, we reduced our year-over-year Scope 1 and Scope 2 market-based GHG emissions by 10 percent due to our continued focus on energy efficiency and an increased utilization of renewable energy.

We have analyzed and reported our Scope 3 impacts using primary operating data, accepted emission factors, and an economic input-output model based on our third-party spend. In 2019, our Scope 3 GHG emissions remained roughly the same as in 2018.

Our analysis shows that our Scope 3 GHG emissions impacts are nearly three times greater than our combined Scope 1 and Scope 2 emissions. We are working to reduce those impacts through activities such as reducing waste in our operations, reducing fuel use and looking for opportunities to shift from air shipping to ocean transport when practical. We are also starting to engage with our strategic suppliers to identify ways to reduce GHG emissions in our supply chain. These actions not only reduce our environmental impact but benefit the business by reducing costs.

For more information on our initiatives, policies and accomplishments, please see the Climate Change & Energy Use page on MSDresponsibility.com.

GRI 305-6 **Ozone-depleting substances (ODS)**

GRI 305-7 **NOx, SOx and other emissions**

We are committed to controlling air emissions from our facilities to reduce local, regional and global environmental impacts.

Air emissions are generated by our manufacturing and research operations, as well as by burning fuel in on-site equipment and fleet vehicles. Our Air Management Standard requires our facilities to quantify and control air emissions to comply with applicable regulations and emission standards.

Any increase in production can negatively impact our emissions trends. Though there are efforts to minimize solvent use in production, solvents are needed for cleaning and disinfecting purposes. As the company transforms from manufacturing of pharmaceuticals to biopharmaceuticals, mandatory cleaning and disinfection protocols associated with biologics and vaccines are increasing solvent based emissions.

The Montreal Protocol mandates phase-out of refrigerants that are ozone depleting substances (ODS) per schedules approved for individual countries. Our facilities ensure compliance with applicable regulatory requirements that have been established in accordance with each country's commitments.

Our company's Air Center of Excellence (CoE) provides assistance as needed to our facilities to obtain appropriate environmental permits, and to quantify and control air emissions to comply with applicable regulations and emission standards.

Production and research emissions

Many of our pharmaceutical manufacturing processes, cleaning/disinfection operations and research laboratories require the use of solvents. Evaporation of solvents into the air is the primary source of volatile organic compound (VOC) emissions. In an effort to reduce VOC emissions, reduction in solvent usage has been incorporated as an element of our Green & Sustainable Science program.

Key elements of the program include designing efficient processes that use fewer and less-hazardous organic solvents and using water-based methods for cleaning our process equipment where they are as effective as solvent-based methods. To reduce emissions from processes where organic solvents are used, we use pollution-control technologies such as conservation vents, carbon filters, thermal oxidizers, condensers and scrubbers.

Fossil fuel combustion emissions

Air emissions are also generated by burning fuel in our boilers and power-generation turbines (for heat and energy), and by other combustion processes, such as thermal oxidizers (for treating air emissions) and incinerators (for destroying waste). Our fleet vehicles and aircraft also burn fuel and generate air emissions. These combustion processes result in emissions of carbon dioxide (CO_2), nitrogen oxides (NOx), sulfur oxides (SOx) and volatile organic compounds (VOCs). We strive to make our facilities more energy-efficient through our energy-management programs and to improve the fuel efficiency of our fleet vehicles. By making these improvements, we also reduce emissions of CO_2, NOx, SOx and VOCs from our operations.

Air pollutant emissions by type (MT)[1]	2015	2016	2017	2018	2019
Nitrogen oxides (NOx)	494	455	481	495	384
Sulfur oxides (SOx)	48	37	37	30	27
Volatile organic compounds (VOCs)	455	440	380	405	418
Ozone-depleting substances (ODS)	0.1	0.7	0.1	0.3	0.6

Note: Previously reported data have been restated per our methodology, which includes adding facilities that have been acquired and removing facilities that have been sold as operating sites.

[1] Data are estimated using conservative assumptions and factors, not measured or weighed.

Our NOx emissions significantly decreased from 2018 to 2019 due to the discontinuation of the use of emergency generators at our Puerto Rico facility that were required during an extended power outage caused by Hurricane Maria. Energy-conservation programs also helped reduce emissions.

VOC emissions increased from 2018 to 2019 due to increases in production and because of continuous data collection improvements with the adoption of more accurate emission-tracking methods.

The decrease in SOx emissions from 2018 to 2019 can be attributed to the use of fuel with a lower sulfur content and our energy-conservation programs.

Emissions of ozone-depleting substances are the result of non-routine releases from temperature-control and fire-suppression systems and can vary from year to year.

For more information, please see our Air Emissions and EHS Management & Compliance pages on MSDresponsibility.com.

GRI 306: Effluents & Waste

The proper management of waste from our facilities is important for the communities where we operate and is the focus of our environmental permits and other regulatory requirements.

Our waste management standard requires our facilities to comply with applicable generation, management and disposal regulations and standards.

To minimize our environmental footprint, and align with the U.N. Sustainable Development Goals (SDGs), we look for opportunities to avoid the use of hazardous materials, to reuse or recycle materials, and to prevent the generation of waste. When prevention, reuse and recycling are not practical, we apply controls and treatment technologies to prevent human health impacts and minimize environmental impacts.

The amount of waste we generate reflects the efficiency of our manufacturing processes. Our facilities track and report the amount of operational waste they generate and how it is managed.

We continuously strive to reduce the amount of operational waste we generate and to maximize the use of environmentally beneficial disposal methods such as recycling, composting and waste-to-energy.

Governance

Waste management is overseen globally by the Waste and Dangerous Goods Center of Excellence (CoE). This CoE reviews waste data to monitor sites' progress, and provides assistance as needed to support the sites' work towards these goals.

Each site is responsible for the management of its waste. In many cases, we partner with our third-party Integrated Facility Management (IFM) partners to manage site waste and work toward the corporate waste goals.

For information regarding our environmental management and governance, please see our EHS Management & Compliance page on MSDresponsibility.com.

Goals	Progress	Indicator
By 2025, no more than 20 percent of our global operational waste will be sent to landfills and incinerators (without energy recovery).	26% to landfills and incinerators (without energy recovery)	On Track
By 2025, we will maintain global water use at or below 2015 levels.	46% of sites	On Track

Waste minimization begins with the upfront evaluation of our product designs and manufacturing processes. Through our Green and Sustainable Science program, we design processes that use safer chemicals, consume less energy, use less water and other resources and generate less waste. Our process development biologists, chemists and engineers have the expertise to create more sustainable ways to make our products.

To ensure our waste is managed in an environmentally responsible manner, we use only approved waste disposal facilities. Approved facilities demonstrate that they have the systems, technologies and practices to manage our waste streams responsibly and in compliance with all applicable requirements. We routinely audit these facilities to verify the acceptability of their systems and practices.

Waste types are defined differently in various parts of the world. For this report, we have divided our operational waste into two categories:

Hazardous waste: Heavily regulated or high-risk waste streams that need to be neutralized, treated or destroyed to address a particular hazard such as toxicity, flammability, corrosivity, radioactivity, pharmaceutically active or infectious.

Non-hazardous waste: This includes all other operational waste. The amount of construction project related waste can vary significantly from year to year based on the number and size of projects. Therefore, our definition of operational waste does not include construction or demolition waste from projects.

Over the past year, a number of countries in Asia have passed legislation restricting the acceptance of solid waste from other countries. Historically, a large percentage of recyclable waste collected in the United States has been shipped to Asia for recycling, so this change had and continues to have the potential to affect the percentage of our non-hazardous waste sent for recycling. However, this change did not negatively impact our recycling rates in the past year. The percentage of our non-hazardous waste sent for recycling increased from 38 percent to 40 percent from 2018 to 2019.

GRI 306-2 **Waste by type and disposal method**

SASB 250a.4 **Amount of product accepted for takeback, reuse, or disposal**

Global operational waste	2015	2016	2017	2018	2019
Incinerated (without energy recovery)	13%	20%	19%	24%	**19%**
Landfilled	15%	10%	10%	9%	**7%**
Total	28%	30%	29%	33%	**26%**

Hazardous waste (MT)	2015	2016	2017	2018	2019
Incinerated (without energy recovery)	7,928	13,186	13,462	17,639	**14,035**
Energy recovery	11,089	9,871	9,538	10,300	**13,655**
Recycled	5,944	6,135	7,979	6,827	**8,034**
Other	2,299	2,425	2,423	2,221	**1,865**
Reused	1,428	2,132	1,505	695	**1,147**
Landfilled	1,652	1,492	745	731	**938**
Composted	5	5	0	0	**0**
Total	30,345	35,246	35,652	38,413	**39,674**

Non-hazardous waste (MT)	2015	2016	2017	2018	2019
Recycled	15,811	14,636	15,188	12,975	14,188
Energy recovery	9,706	10,342	8,576	9,273	10,030
Composted	3,018	3,771	4,668	4,798	4,843
Landfilled	8,459	5,826	6,633	5,684	4,603
Other	304	445	212	209	1,025
Reused	970	972	1,071	2,204	660
Incinerated (without energy recovery)	1,243	1,361	426	374	477
Total	39,511	37,353	36,774	35,517	35,826

Hazardous and non-hazardous waste (MT)	2015	2016	2017	2018	2019
Recycled, energy recovery, reused or composted	47,971	47,864	48,525	47,072	52,557
Landfilled and incinerated (without energy recovery)	19,282	21,865	21,265	24,428	20,053
Incinerated (without energy recovery)	9,171	14,547	13,887	18,013	14,512
Landfilled	10,111	7,318	7,378	6,415	5,541
Other	2,603	2,870	2,635	2,430	2,890
Total	69,856	72,599	72,426	73,930	75,500

In 2019, we managed approximately 75,500 metric tons of waste from our operations, a two percent increase from 2018. Of this, 39,674 metric tons were hazardous waste.

Of the hazardous waste we generated in 2019, 58 percent was beneficially reused in some way (reused, recycled, composted or sent for energy recovery), up from 46 percent in 2018. Approximately 20 percent of our hazardous waste was sent offsite for recycling and was either returned to us for reuse or sold to other industries. Another 34 percent was burned to generate power, up from 27 percent in 2018. Regarding the hazardous waste that could not be recycled or beneficially reused, 36 percent of the total hazardous waste generated was incinerated without energy recovery, down from 46 percent in 2018. Approximately two percent was sent to hazardous-waste landfills.

We beneficially reused 83 percent of the 35,826 metric tons of non-hazardous waste we generated in 2019. We are evaluating and refining the programs in place at our manufacturing, research and office sites to reduce waste generation and increase recycling.

An evaluation of the method we had been using to calculate the number of our sites that were zero waste to landfill determined that our definition was not aligned with the majority Zero Waste to Landfill certification programs, which make allowances for small amounts of waste that have no legal alternative to landfill disposal. To be consistent with these certification programs, we revised our definition of zero waste to landfill in 2019 from no shipments of waste to landfill to less than one percent of waste, by weight, going to landfill. As a result of this alignment of our definition of zero waste to landfill, 46 percent of our facilities sent zero operational waste to landfill in 2019, up from 38 percent in 2018.

We continue to work to identify alternate methods of waste management that will reduce the amount of waste sent to incinerators (without energy recovery) and landfills.

For more information, please visit the Waste Management page on MSDresponsibility.com.

GRI 306-3 Significant spills

A "significant environmental event" is defined as an environmental release that results in environmental harm to humans, aquatic organisms or wildlife, or any environmental release that requires reporting to the U.S. Securities and Exchange Commission.

We experienced no significant environmental events in 2019.

GRI 307: Environmental Compliance

Protecting our people, our communities and the environment is fundamentally important to the way our company operates.

Our company strives every day to conduct business in a safe and environmentally responsible manner. We are committed to providing a safe and healthy workplace for our employees and to reducing the environmental impact of our operations around the world. Our core values are focused around promoting the health and safety of our employees and respect for the environment. For more information, please visit the EHS Management & Compliance page on MSDresponsibility.com.

In addition to complying with all applicable country, regional, state, provincial and local safety and environmental laws, we strive for Environmental, Health and Safety (EHS) performance that is among the best in the pharmaceutical industry.

We also adhere to the following key operating principles:

- Maintain a safe and healthy working environment for all employees, contractors and guests
- Foster a culture of EHS excellence that is built on science, integrity, accountability, personal responsibility, collaboration and active employee participation
- Seek to continuously improve our EHS systems, processes and standards
- Minimize our impact on the environment by identifying and implementing approaches to reduce the resources we use during the design, development and manufacture of our products
- Understand the potential hazards associated with our products and take action to minimize any potential risks or adverse impacts
- Promote EHS excellence in our supply chain by entering into business relationships with partners that share our commitment to responsible EHS stewardship

The Global Safety and Environment (GSE) department is responsible for the global EHS Management System which is based on the "Plan, Do, Check, Act" model. This enables us to assess and continually improve our practices over time. The model is implemented globally through a set of interwoven business processes that span the corporation:

- Our planning process includes developing goals, objectives and metrics based on a review of our company's performance, EHS programs, applicable regulations and external factors that may impact our business (PLAN)
- Activities are performed by using standards, guidelines and tools that are integrated into the EHS Management System and include specific expectations for sites and operating organizations (DO)
- Governance committees, from the executive-level EHS Council through site-based compliance committees, review business unit performance and progress against objectives throughout the year. EHS audits are also performed throughout the year. (CHECK)
- Corrective actions and continuous-improvement initiatives are established to resolve EHS concerns that have surfaced during periodic assessments, audits and routine surveillance of the regulatory landscape. We track our corrective actions centrally to ensure proper oversight. (ACT)

We have robust programs and initiatives to address global challenges and opportunities related to achievement of our short and long-term environmental management and compliance objectives.

Training

Training is critical to building worldwide employee competencies that will improve compliance, reduce risks and drive continuous performance improvement.

We have a global standard that defines the EHS training expectations for employees in three categories:

- Manager training covers specific management responsibilities with regard to safety and environmental compliance and promoting a "safety first" culture
- EHS professional training is designed to expand technical expertise and improve our EHS capabilities around the world
- Employee training covers the specific information our employees need to perform their jobs in a safe and environmentally compliant manner, focusing on hazards they encounter on the job and the corresponding control measures

Site EHS professionals complete an assessment of the activities performed at their sites and ensure that relevant topics are included in their site training plans. They develop employee training curricula to comply with internal and regulatory training requirements specific to their country. These training programs are reviewed periodically to ensure that they remain current. Our EHS training program materials are available in both instructor-led and e-learning formats. We also conduct periodic web-based seminars to inform EHS professionals of changes in regulations, standards and company practices.

EHS governance

Our commitment to the environment and employee health and safety begins with the company's Executive Committee, which has established the corporate EHS Council.

The EHS Council is composed of senior-level executives representing all business units, and is responsible for overall EHS governance, as well as for leading and driving enterprise-wide excellence in EHS management and performance. In 2019 the EHS Council formally met four times, with additional off-cycle communications as needed.

The Council's responsibilities include:

- Establishing EHS strategy, policy and business risk mitigation controls
- Ensuring cross-divisional engagement in the design and implementation of EHS business processes
- Sponsoring and implementing a sustainability strategy
- Monitoring the EHS performance of the company and establish continuous improvement targets
- Enhancing visibility and transparency of EHS risks, processes and issues

An EHS Standards Committee has been chartered by the Council to provide stewardship over the standards and enable business engagement in the development of new or revised standards. Each area of the business is responsible for executing against the standards, contributing to the development of programs, supporting internal audits and communicating significant EHS events. Divisional EHS compliance committees have also been established to manage, execute and resolve EHS issues as they arise.

The vice president (VP) of GSE is responsible for communicating to the company's Board of Directors, Executive Committee and the EHS Council regarding progress on goals, objectives and metrics, as well as other material issues. In addition, the VP of GSE partners with business leaders to establish long- and short-term goals and performance metrics to drive EHS excellence.

Safety and environmental performance targets are included in divisional management objectives.

Learn more about corporate governance at our company.

Our corporate EHS organization is responsible for:

- Developing corporate policies, procedures, guidelines, standards, tools and programs to set expectations and to support EHS compliance
- Providing technical and regulatory support to site-based EHS staff and operating organizations
- Managing and implementing an internal audit program charged with understanding the current state of compliance and identifying potential issues
- Tracking and communicating internal and external trends that should be addressed
- Anticipating, tracking and commenting on new regulations affecting our business and, where appropriate, developing plans to address them
- Tracking EHS performance of sites, divisions and the company as a whole, and communicating performance versus targets

Our site-based safety and environmental professionals around the world support the EHS needs of their business areas, which include manufacturing, research operations, sales and administrative activities by:

- Ensuring that line management fully understands EHS requirements, including applicable regulations, permit requirements and company EHS Standards
- Establishing, assessing and improving programs
- Providing regulatory and technical support to employees and the operating areas
- Routinely assessing performance against our company standards, regulatory requirements and performance targets
- Acting as the primary liaison with local regulators and inspectors
- Investigating incidents and near-miss events to identify root causes and developing corrective and preventive actions to prevent recurrence

Internal auditing

We have a detailed and rigorous EHS audit program.

Our global corporate EHS audit program is one way in which we identify and resolve compliance and performance issues within the company.

- Our audit leaders are full-time professional EHS auditors with extensive experience in auditing a broad range of EHS programs applicable to the company. The individual audit teams consist of EHS professionals with extensive site and subject-matter expertise. In many cases, particularly outside of the United States, our internal auditors work with independent consultants who have regulatory expertise in the laws of the host country.

- All audit findings are addressed through the development of corrective and preventive action plans (CAPA), which are reviewed, approved by the audit leader and regional EHS leader, and tracked to completion. This process includes senior management oversight.
- Findings from our audit program are communicated to appropriate parts of the organization so that learnings may be shared, and actions can be taken
- Audit performance and key program metrics are reviewed as part of our governance process

We use multiple factors to determine the audit frequency for our facilities, including facility size, operational complexity, compliance status and performance history. Our most complex operations are audited every year, and all manufacturing and research operations are audited at least every two years. Less complex facilities, such as sales and business offices are audited less frequently. In 2019, we performed 55 corporate EHS audits of our facilities, covering 76 percent of our manufacturing and research locations and involving 693 auditor days of onsite review activities.

An internal Quality Assurance Review of the EHS Auditing program was conducted in 2018/2019 by Corporate Audit and Assurance Services. As a result of this internal review, the EHS auditing program was rated “Effective,” with controls and practices deemed to be in line with company requirements and expectations. These results were consistent with the third-party review of our program in 2017.

In addition to our corporate EHS audit program, our sites regularly perform self-inspections, and annually complete self-assessments of selected regulatory requirements and company standards, with all programs being evaluated at least once every three years.

Certification

Our company is certified in the Responsible Care® Management System Technical Specification RC101.04.2013. The RCMS® recertification occurred on December 4, 2019.

Additionally, our corporate EHS management system is generally aligned with the requirements of the International Standards Organization (ISO), but we do not pursue certification under the Environmental (ISO 14001) or Safety (ISO 45001) frameworks at the global level. Some of our facilities have individually achieved ISO 14001 certification to meet customer requirements.

Remediation

Environmental management practices have evolved significantly over the past 30 years.

With research and manufacturing operations dating back more than 100 years, some of our facilities operated at a time when there were few regulations and little understanding of good environmental practices. Because our company has responsibility for remediation of these sites, we have launched investigations, developed science-based remediation plans and implemented cleanup projects to protect the health and safety of our neighbors, communities, employees and the environment, and comply with all applicable requirements.

Over time, we have acquired properties and manufacturing facilities that may not have been subject to the same EHS management standards that we have in place today. We are also investigating and remediating those properties where necessary.

We spent $19.5 million in 2019 for remediating and environmental liabilities, including those at formerly owned and operated sites. Our company has an environmental liability reserve of approximately $62.5 million to fund the continued remediation of these sites into the future. In addition, we are a potentially responsible party at 15 multi-party Superfund sites in the U.S.

GRI 307-1 **Non-compliance with environmental laws and regulations**

Our centralized EHS information system allows us to collect, manage, learn from and share our safety and environmental performance data more efficiently.

We collect and analyze data in both leading and lagging metrics to look for potential trends and identify opportunities that can help drive performance improvement. We continuously explore new ways to learn from and report on our performance.

Notices of violations, fines and settlements

We report all forms of EHS compliance notices using the term Notices of Violation (NOVs), which includes citations, letters of warning and notices of noncompliance from environmental and safety-focused regulatory agencies.

In 2019, we had 163 EHS-related regulatory agency inspections of our facilities around the world. We received four safety-related and nine environmental-related NOVs and paid $17,690 in fines in 2019.

Significant environmental events

A "significant environmental event" is defined as an environmental release that results in environmental harm to humans, aquatic organisms or wildlife, or any environmental release that requires reporting to the U.S. EPA or equivalent entities globally. We experienced no significant environmental events in 2019.

Notices of violations (NOVs) and citations	2015	2016	2017	2018	2019
Environmental	16	12	5	6	9
Safety	2	2	3	1	4

Fines	2015	2016	2017	2018	2019
Environmental fines paid	$92,270	$33,906	$0	$0	$17,690
Number of environmental fines	6	2	0	0	3
Safety fines paid	$0	$0	$0	$0	$0
Number of safety fines	0	0	0	0	0

Safety and environmental performance targets are included in divisional management objectives. In addition, all employees are eligible for special recognition for innovative ideas and projects related to improving EHS aspects of our operations.

For more information on our initiatives, policies and accomplishments, please visit the EHS Management & Compliance page on MSDresponsibility.com, or our 2019 Form 10-K (page 105).

GRI 308: Supplier Environmental Assessment

GRI 308-1 **New suppliers screened using environmental criteria**

The company maintains strict quality standards—no matter where in the world our products are manufactured. Once we have decided to engage with an external manufacturer, that manufacturer is required to comply with our business requirements which are set forth in our contract with that supplier, regardless of geography.

Prospective external manufacturers of active pharmaceutical ingredients and finished products are screened for environmental, health and safety (EHS) compliance, in addition to quality and supply and technical competence requirements. The EHS screening includes a survey covering such topics as regulatory compliance, fatalities and major incidents.

Based on the screening results and activities undertaken by the supplier, certain external manufacturers are subject to a more detailed onsite assessment conducted by a multidisciplinary team, which may include our company's Quality, Environmental, Health & Safety, Global Technical Operations and Global Sourcing & Procurement representatives.

The external manufacturers we contract with are periodically reassessed using a risk-based approach; higher-risk external manufacturers are subject to more frequent onsite assessments. We expect that observations made during the audit process will be remediated by our external manufacturers, and we monitor and track corrective actions through completion.

Global sustainable sourcing

We partner with PSCI and the Pharmaceutical Environmental Group (PEG) to benchmark, engage and share environmental sustainability best practices with peers and suppliers. We lead the Supplier Environmental/Sustainability Engagement teams within both of these organizations.

Our main focus to date has been to generate and update the PSCI Environmental Sustainability Survey template for members to utilize in conjunction with their survey efforts. We are now collectively developing supplier engagement tools and resources.

This initiative ensures a consistent message and approach with our suppliers across the industry. Working together with PSCI, we provide these tools and resources on PSCI LINK platform and webinars.

External manufacturing EHS assessments	2015	2016	2017	2018	2019
Prospective external manufacturers	50	34	37	65	43
Current external manufacturers	69	85	53	61	48
Total	119	119	90	126	91

PSCI Environmental Survey response rate (includes GHG and water usage)	2017	2018	2019
Response rate	87%	96%	96%

For more information, please visit the Sourcing & Supplier Relations page on MSDresponsibility.com.

Social

GRI 401: Employment

Management approach

We recognize that our ability to excel depends on the integrity, knowledge, imagination, skill, diversity and teamwork of our employees.

A positive, inclusive and high-performing work environment is essential for employees to feel welcomed and valued, and to fully achieve their business objectives.

Harnessing the knowledge and insights of a globally diverse workforce requires leadership, a corporate culture of respect and full engagement, and a thoughtful and strategic approach to workplace inclusion and employee development and wellbeing—physical, emotional, social and financial.

We value global diversity and inclusion at every level of the organization and strive for inclusiveness in every aspect of work.

We are:

- Committed to fostering development and rewarding talent
- Dedicated to diversity and inclusion at every level of the organization
- Adept at recognizing unique skill sets and nurturing employees' talents

Throughout 2019, we invested in programs to drive positive cultural and talent changes at our company. Five pillars of our culture are critical for the advancement and success of our strategy:

Culture pillar	Description
Innovation	We meet the needs of our patients and customers through continuously inventing and pursuing new ideas and the most promising science.
Purpose-driven	We are dedicated to the highest level of innovation and scientific excellence. Our research is guided by a commitment to improving health and the quality of life. We strive to identify and meet the most critical needs of patients and customers through continuous innovation.
Patient-focused	We aspire to improve the health and wellness of people and animals worldwide, and to expand access to our medicines and vaccines.
Diverse and inclusive	Drive a globally diverse and more inclusive workforce for our employees by creating an environment of belonging, engagement, equity, and empowerment to support our mission of developing innovative medicines and vaccines to save and improve lives.
Ethical and high integrity	We are committed to the highest standards of ethics and integrity. We are responsible to our customers, to our competitors, to distributors and suppliers, to shareholders, and to the communities we serve worldwide. In discharging our responsibilities, we do not take professional or ethical shortcuts.

In order to assess the pillars of our culture, we use a three-pronged approach that provides insight into our deeply held beliefs and values, and how those are manifested through our allocation of resources and the actions we take as an organization:

Beliefs and values	Includes our mission, our goals and shared understanding of behaviors and expectations across the organization
Purposeful investments	How the company and employees choose to invest our resources that exemplify our beliefs and values
Decisions and actions	Underlying assumptions that affect how we make decisions and the behaviors we demonstrate in the company

For more information on our initiatives, policies and accomplishments, please visit the Employees Overview, Employee Wellbeing, Compliance, Engaging Our Employees, Global Diversity & Inclusion, Human Rights, and Learning & Development pages on MSDresponsibility.com.

GRI 401-1 New employee hires and turnover

SASB 330a.1 Talent recruitment and retention efforts for R&D personnel

SASB 330a.2 Voluntary and involuntary turnover rate for: executives and senior managers, midlevel managers, professionals and all others

Turnover (global)	2015	2016	2017	2018	2019
Overall turnover rate[1]	14.8%	11.1%	10.7%	11.8%	9.9%
Voluntary turnover rate	7.4%	6.3%	6.5%	6.8%	6.9%

[1] Includes all types of turnover of regular employees.

Turnover by region (2019)	Asia Pacific	Latin America	EEMEA	Japan	EUCAN	U.S.
Overall turnover rate[1]	21.3%	14.7%	13.2%	3.5%	6.4%	6.5%
Voluntary turnover rate	16.0%	4.5%	8.8%	1.9%	4.3%	5.5%

[1] Includes all types of turnover, including restructuring.

Turnover distribution by gender and region (2019)	Female	Male
Overall	48%	52%
Asia Pacific	48%	52%
EEMEA (Eastern Europe, Middle East and Africa)	52%	48%
Latin America	42%	58%
EUCAN (Europe and Canada)	49%	51%
Japan	33%	67%
U.S.	49%	51%

Employee hires by region	2015	2016	2017	2018	2019
Asia Pacific					
Number of hires	2,104	1,732	1,909	3,071	2,727
Hire rate[1]	17.7%	14.8%	16.1%	24.4%	20.8%
EEMEA (Eastern Europe, Middle East And Africa)					
Number of hires	384	382	378	505	605
Hire rate[1]	12.8%	13.5%	13.7%	16.7%	18.8%
Latin America					
Number of hires	509	380	1,246	714	558
Hire rate[1]	9.8%	8.0%	23.8%	13.1%	10.5%
Eucan (Europe And Canada)					
Number of hires	1,427	1,636	1,865	2,495	2,624
Hire rate[1]	7.8%	8.9%	9.8%	12.3%	12.3%
Japan					
Number of hires	101	196	109	153	121
Hire rate[1]	2.7%	5.0%	2.8%	4.3%	3.4%
U.S.					
Number of hires	1,909	1,937	2,173	3,019	2,654
Hire rate[1]	8.3%	8.3%	9.1%	12.4%	10.5%

[1] Percentage of new hires in the total onboard head count; regular employees only.

The talent of our scientists, combined with scientific and technological advances that enable the rapid invention of expanding classes of therapeutics and higher resolution translational medicine studies, are transforming the way we conduct research.

We have strategically located discovery centers in regions with active biomedical research communities including South San Francisco, California, Boston and Cambridge, Massachusetts and London, UK. These centers allow us to recruit talented local scientists and facilitate collaboration with local academic institutions and companies. These discovery sites complement and connect with our strong research and development capabilities and expertise based at our New Jersey and Pennsylvania sites.

GRI 401-2 Benefits provided to full-time employees

In the U.S., we offer a defined benefit pension plan as well as a 401(k) plan with company matching contributions. U.S.-based employees who are at least age 55, and those who have at least ten years of service after age 40, are eligible for subsidized medical benefits at retirement.

Outside the U.S., we have more than 80 pension plans (including defined benefit, cash balance, and defined contribution plans) in over 40 countries. These plans often supplement government-sponsored social security pension benefits to improve employees' financial security through added retirement income.

Also in the U.S.:

- Financial planning through Ernst & Young (EY), a valuable benefit that can help employees when trying to decide which benefit options are right for their families, from a financial perspective
- Educational assistance, which provides financial support for higher education and access to student loan consolidation and refinancing options
- Banking through our company's credit union, which offers competitive interest rates on savings accounts and lending

Other programs to support wellbeing (U.S.)

Our company offers many programs to help make it easier for employees to balance their various responsibilities. The following is a non-exhaustive sampling:

- Transportation services
- Backup dependent care
- Child-care support
- K–12 educational guidance
- Special-needs counseling
- Adoption assistance

For U.S.-based employees who are subject to a collective bargaining agreement, work-life benefits may be offered in accordance with the agreement. For employees based outside the U.S., the work-life benefits offered differ by location and may be subject to a collective bargaining agreement or local legal requirements.

Global flexible work arrangements

We believe flexible work arrangements offer a different way of working and have the potential to enhance employees' commitment to the company, foster teamwork, increase productivity and support work-life effectiveness. The company has had a global flexible work arrangement policy since 2008.

In developing our global flexible work arrangement policy, we've challenged traditional assumptions about where and how work can and must be done. Flexibility reflects our belief that job effectiveness is determined by employee performance and results, not by the number of hours one is seen in the office. What is produced or accomplished is more important than when or where the work is done.

For more information, please visit the Employee Wellbeing and Compensation & Benefits pages on MSDresponsibility.com.

GRI 401-3 Parental leave

We provide employees up to six weeks of paid parental time off for the birth, adoption or foster placement of a child. Paid parental time off is available to both birth and non-birth parents.

In addition to parental leave, employees receive separate, unpaid, job-protected leave to care for a newborn child, adopted child or child placed in foster care within six months (182 days) following the child's birth, adoption or foster-care placement.

GRI 403: Occupational Health & Safety

(CR material topic: Occupational health and safety)

Management approach

As a global health care company, we strive to provide a safe and healthy workplace.

We seek to eliminate work-related injuries, illnesses and unplanned events from our operations through comprehensive safety programs that are part of our environmental, health and safety (EHS) management system.

Each year we set targets for leading and lagging safety metrics, including safety observations, near-miss reporting, peer safety audits, recordable injury rates and days away, reassignment or transferred (DART) rate.

Everyone who works at our sites (i.e., all employees and non-employees) must follow the standards and requirements of our EHS management system. Compliance with these requirements is measured through the site audit processes for employees and non-employees, and through peer reviews for construction.

Protecting our people, our communities and the environment is fundamentally important to the way our company operates.

Our company strives every day to conduct business in a safe and environmentally responsible manner. We are committed to providing a safe and healthy workplace for our employees and to reducing the environmental impact of our operations around the world. Our core values are focused around promoting the health and safety of our employees and respect for the environment. For more information, please visit the EHS Management & Compliance page on MSDresponsibility.com.

In addition to complying with all applicable country, regional, state, provincial and local safety and environmental laws, we strive for Environmental, Health and Safety (EHS) performance that is among the best in the pharmaceutical industry.

We also adhere to the following key operating principles:

- Maintain a safe and healthy working environment for all employees, contractors and guests
- Foster a culture of EHS excellence that is built on science, integrity, accountability, personal responsibility, collaboration and active employee participation
- Seek to continuously improve our EHS systems, processes and standards
- Minimize our impact on the environment by identifying and implementing approaches to reduce the resources we use during the design, development and manufacture of our products
- Understand the potential hazards associated with our products and take action to minimize any potential risks or adverse impacts
- Promote EHS excellence in our supply chain by entering into business relationships with partners that share our commitment to responsible EHS stewardship

EHS governance

Our commitment to the environment and employee health and safety begins with the company's Executive Committee, which has established the corporate EHS Council.

The EHS Council is composed of senior-level executives representing all business units, and is responsible for overall EHS governance, as well as for leading and driving enterprise-wide excellence in EHS management and performance. In 2019 the EHS Council formally met four times, with additional off-cycle communications as needed.

The Council's responsibilities include:

- Establishing EHS strategy, policy and business risk mitigation controls
- Ensuring cross-divisional engagement in the design and implementation of EHS business processes
- Sponsoring and implementing a sustainability strategy
- Monitoring the EHS performance of the company and establish continuous improvement targets
- Enhancing visibility and transparency of EHS risks, processes and issues

An EHS Standards Committee has been chartered by the Council to provide stewardship over the standards and enable business engagement in the development of new or revised standards. Each area of the business is responsible for executing against the standards, contributing to the development of programs, supporting internal audits and communicating significant EHS events. Divisional EHS compliance committees have also been established to manage, execute and resolve EHS issues as they arise.

The vice president (VP) of GSE is responsible for communicating to the company's Board of Directors, Executive Committee and the EHS Council regarding progress on goals, objectives and metrics, as well as other material issues. In addition, the VP of GSE partners with business leaders to establish long- and short-term goals and performance metrics to drive EHS excellence.

Safety and environmental performance targets are included in divisional management objectives.

International standards

We are committed to providing a safe and healthy workplace for our employees and contractors, and to complying with all applicable safety laws and regulations. In addition, we aim for EHS performance that is among the best in the pharmaceutical industry.

Our company has processes in place that are consistent with the International Labour Office (ILO) Code of Practice on Recording and Notification of Occupational Accidents and Diseases (the Code) where governments have adopted the Code. In countries that have not adopted the Code, we report to governments as required by applicable law.

For consistency across the company, and to enable us to compare our injury rates with those of other multinational companies, we use the U.S.-based OSHA record-keeping criteria for recording and tracking work-related injuries and illnesses. We require all injuries, illnesses and incidents involving our employees to be reported and investigated to determine their cause. We also require that actions be taken to prevent recurrence.

We have reviewed the ISO 18001 Standard but have not pursued certification at the corporate level because we believe that our current EHS management systems are robust and will help us to drive continuous improvement in our EHS programs and achieve our desired levels of EHS performance.

Internal auditing

We have a detailed and rigorous EHS audit program.

Our global corporate EHS audit program is one way in which we identify and resolve compliance and performance issues within the company.

- Our audit leaders are full-time professional EHS auditors with extensive experience in auditing a broad range of EHS programs applicable to the company. The individual audit teams consist of EHS professionals with extensive site and subject-matter expertise. In many cases, particularly outside of the United States, our internal auditors work with independent consultants who have regulatory expertise in the laws of the host country.
- All audit findings are addressed through the development of corrective and preventive action plans (CAPA), which are reviewed, approved by the audit leader and regional EHS leader, and tracked to completion. This process includes senior management oversight.
- Findings from our audit program are communicated to appropriate parts of the organization so that learnings may be shared, and actions can be taken.
- Audit performance and key program metrics are reviewed as part of our governance process.

We use multiple factors to determine the audit frequency for our facilities, including facility size, operational complexity, compliance status and performance history. Our most complex operations are audited every year, and all manufacturing and research operations are audited at least every two years. Less complex facilities, such as sales and business offices are audited less frequently. In 2019, we performed 55 corporate EHS audits of our facilities, covering 76 percent of our manufacturing and research locations and involving 693 auditor days of onsite review activities.

Our most complex operations are audited every year, and all manufacturing and research operations are audited at least every two years.

Certification

Our company is certified in the Responsible Care® Management System Technical Specification RC101.04.2013. The RCMS® recertification occurred on December 4, 2019.

Additionally, our corporate EHS management system is generally aligned with the requirements of the International Standards Organization (ISO), but we do not pursue certification under the Environmental (ISO 14001) or Safety (ISO 45001) frameworks at the global level. Some of our facilities have individually achieved ISO 14001 certification to meet customer requirements.

For more information on our initiatives, policies and accomplishments, please visit the Employee Safety and EHS Management & Compliance pages on MSDresponsibility.com.

GRI 403-1 **Occupational health and safety management system**

The Global Safety and Environment (GSE) department is responsible for the global EHS Management System which is based on the "Plan, Do, Check, Act" model. This enables us to assess and continually improve our practices over time. The model is implemented globally through a set of interwoven business processes that span the corporation:

- Our planning process includes developing goals, objectives and metrics based on a review of our company's performance, EHS programs, applicable regulations and external factors that may impact our business (PLAN)
- Activities are performed by using standards, guidelines and tools that are integrated into the EHS Management System and include specific expectations for sites and operating organizations (DO)

- Governance committees, from the executive-level EHS Council through site-based compliance committees, review business unit performance and progress against objectives throughout the year. EHS audits are also performed throughout the year. (CHECK)
- Corrective actions and continuous-improvement initiatives are established to resolve EHS concerns that have surfaced during periodic assessments, audits and routine surveillance of the regulatory landscape. We track our corrective actions centrally to ensure proper oversight. (ACT)

We seek to eliminate work-related injuries, illnesses and unplanned events from our operations through comprehensive safety programs that are part of our EHS management system. We also work to minimize the frequency and severity of safety and environmental incidents by focusing on proper facility design, process controls, operation and maintenance procedures, protection systems and emergency-response capabilities.

Our global safety program is designed to drive a proactive safety culture and reinforce the link between our leadership behaviors and our safety and environmental objectives. We believe that through visible management, leadership and employee engagement, we can increase the awareness of hazards and help employees make the right choices when it comes to safety, health and the environment—both on and off the job.

We address the following areas in our approach to employee and contractor safety:

- Process safety
- Non-routine hazardous work
- Industrial hygiene
- Biological safety
- Motor-vehicle safety
- Ergonomics
- Emergency preparedness and response
- Loss prevention
- Capital projects construction safety
- Safety for non-company personnel

GRI 403-2 **Hazard identification, risk assessment, and incident investigation**

We work to minimize the frequency and severity of safety and environmental incidents by focusing on proper facility design, process controls, operation and maintenance procedures, protection systems and emergency response capabilities.

Our global safety program is designed to drive a proactive safety culture and reinforce the link between our leadership behaviors and our safety and environmental objectives. We believe that through visible management, leadership and employee engagement, we can increase the awareness of hazards and help employees make the right choices when it comes to safety, health and the environment—both on and off the job. One example of leadership and employee engagement is our active site safety committees that drive program implementation and address safety issues collaboratively between management and employees.

Our injury and illness data are consolidated into a central system, enabling us to analyze trends and focus our efforts to continually improve. We communicate significant incidents, near-miss events and workplace conditions that could represent risks to our operations and sites around the world. We also proactively share corrective and preventive actions across our operating locations to allow all sites to learn from the improvements we make.

Process safety

Our process safety program identifies and controls risks associated with manufacturing our human and animal health products. The program applies not only to operations that are subject to process safety regulations, but also to our pilot plants, manufacturing operations and utility areas where process hazards may exist. In addition, we have implemented a structured chemical-reaction-hazard review program for our research laboratories.

In the early stages of product development, we conduct chemical reaction and thermal testing of our intermediate materials and products to identify potential reactivity, fire and explosion hazards and environmental risks. This testing continues throughout each product's life cycle to assure that we are aware of and can appropriately manage process risks. Global process safety professionals work with operations and engineering personnel to conduct process-hazard analyses and hazard and operability studies to thoroughly evaluate our operations. These structured reviews take place during process design, initial start-up and throughout the life of the process to ensure that our facility design, equipment, operating controls and maintenance procedures are effective in controlling process-related hazards.

Non-routine hazardous work

In recognition of industrial safety trends and our own internal assessments, we have refined our global approach to managing safety during non-routine maintenance and repair activities, as these work activities are a leading cause of serious and fatal injuries across industries. We have developed global safety standards to minimize the potential for serious incidents when our employees are working at heights, entering confined spaces and working on or near machinery, piping and electrical systems. This global effort is focused on creating a rigorous, error-free and safe approach to performing these non-routine high-hazard work activities.

Capital projects construction safety

We have a strong construction safety program with a focus on zero harm to people, property and the environment. Our Global Engineering Solutions (GES) group oversees hundreds of contractors and thousands of skilled craftworkers on our construction projects worldwide. Safety is integrated into all stages of our construction projects, beginning with the concept and design phases and carried through to detailed design and construction.

Our construction safety program mandates pre-job planning, hazard assessments and daily safety audits. We also conduct monthly peer reviews by bringing together in-house engineers, contractors, EHS and other partners to conduct thorough project safety evaluations and sharing of best practices. We completed 97 peer safety reviews in 2019, covering 92 percent of our active projects.

Within the last two years the construction industry has seen a negative trend related to availability of contractor and craft resources. The impacts of this trend are management of resource availability issues, varied levels of experience, and safety competencies. GES uses a hyper-care program adding additional supervision and safety oversight to new contractors, high risk work scope contractors and less experienced contractor craft.

Additionally, GES uses a rigorous pre-qualification program through ConstructSecure (external prequalification service/program) to evaluate, score and prequalify every contractor and subcontractor evaluating their safety program, past performance, incident rates, experience modifier rate (EMR), training verification of craft and review any regulatory citations prior to allowing them to bid on any projects.

Safety for non-company personnel

We frequently work with integrated facility management (IFM) partners whose employees perform work at our sites. These contractors are required to follow their organization's safety procedures but must ensure they are consistent with our company's EHS standards and procedures. Additionally, they are required to identify and monitor compliance activities associated with their scope of services and meet safety-related performance objectives.

Our IFM partners pre-qualify the contractors that they use at our sites, provide those contractors with safety training, perform EHS inspections and monitor EHS performance.

Contractors are required to report and investigate all incidents and near-miss events. They also work with site-based EHS contacts to identify and implement corrective and preventive actions, which are tracked to completion. Our internal facility managers monitor IFM partner compliance with all EHS requirements.

Contractors working at our sites that are not managed by our IFM partners are pre-qualified using the same process as our embedded contractors, including verification of safety training. These contractors are assigned internal company liaisons who monitor safety and environmental compliance, perform observations of their work and verify that necessary corrective actions are taken.

GRI 403-3 Occupational health services

Global Health Center of Excellence

We established the Global Health Center of Excellence (CoE) in 2019 that includes our company's Industrial Hygiene, Biosafety, and Ergonomics programs. By integrating these disciplines into a single organization, the company can more effectively manage worker safety and promote employee health. The Global Health CoE improves worker safety and employee health by focusing on four vital areas:

- Governance
- Risk management
- Implementation and operation
- Program management

Through the Global Health CoE, we protect employees, customers, vendors, partners, and neighboring communities by identifying chemical, physical, and biological hazards; assessing exposures; and properly controlling risks. By systematically maintaining rigorous attention to sustainable risk management principles and controls, we can do a better job of protecting our stakeholders worldwide, enabling the organization to focus on discovering, developing, and providing innovative products and services that save and improve human and animal lives around the world.

To accomplish this, we challenge our stakeholders, executive team, and ourselves to anticipate hazards, evaluate risks, and provide effective and sustainable solutions to control both.

GRI 403-5 Worker training on occupational health and safety

Training is critical to building worldwide employee competencies that will improve compliance, reduce risks and drive continuous performance improvement.

We have a global standard that defines the EHS training expectations for employees in three categories:

- Manager training covers specific management responsibilities with regard to safety and environmental compliance and promoting a "safety-first" culture
- EHS professional training is designed to expand technical expertise and improve our EHS capabilities around the world

- Employee training covers the specific information our employees need to perform their jobs in a safe and environmentally compliant manner, focusing on hazards they encounter on the job and the corresponding control measures

Site EHS professionals complete an assessment of the activities performed at their sites and ensure that relevant topics are included in their site training plans. They develop employee training curricula to comply with internal and regulatory training requirements specific to their country. These training programs are reviewed periodically to ensure that they remain current. Our EHS training program materials are available in both instructor-led and e-learning formats. We also conduct periodic web-based seminars to inform EHS professionals of changes in regulations, standards and company practices.

GRI 403-6 **Promotion of worker health**

Industrial hygiene

Our industrial hygiene program protects employee health throughout all stages of research and manufacturing. Our professionals identify chemical, physical, and biological hazards to assess exposures and control risks. Based on industry-leading best practices, we accomplish this through a hierarchy of controls.

These are:

1. Prevention
2. Substitution
3. Engineering
4. Administrative
5. Personal protective equipment (PPE)

For example, when designing new processes and facilities, we build safety into our designs organically, by eliminating risks, substituting less hazardous processes or materials, and installing effective engineering and operational controls. We also confirm the ongoing effectiveness of these controls after installation through a robust monitoring program.

When dealing with existing processes and facilities, we use a similar approach. First, we seek to eliminate hazardous materials and processes. When impossible, we use less hazardous substitutes and then evaluate potential engineering controls to mitigate the remaining risk. Where engineering controls are insufficient or not feasible, we establish effective work practice controls including those that may require selected types of PPE.

Biological safety

Our biological safety program professionals protect our employees, customers, vendors, partners, and neighboring communities by systematically identifying, assessing, and controlling biological risks associated with the research, development, and manufacture of our vaccines and therapeutic proteins.

Our biological risk management team drives safety by setting high performance expectations for governance, controls, strategy, planning, management, reporting, policies, processes, and corporate culture.

GRI 403-9 Work-related injuries

Global safety performance[1]	2015	2016	2017	2018	2019
Workplace safety					
Recordable Injury Rate (RIR)	0.48	0.35	0.33	0.30	**0.30**
RIR percentage change	-17%	-27%	-6%	-9%	**0%**
Lost-Time Injury Rate (LTIR)	0.22	0.13	0.13	0.10	**0.11**
Fatalities[2]	1	0	0	2	**0**
Motor vehicle safety					
Collisions per million miles (CPMM)[3]	12.41	9.48	7.29	6.93	**7.01**

Cases by business area (#)	Lost-time cases	Recordable cases
Facility Management	1	6
Global Human Health (GHH)	39	79
Global Support Functions (Legal, HR, IT, S&E, et al.)	3	5
Animal Health	5	15
Manufacturing (MMD)	35	110
Research (MRL)	8	25
Total	91	240

Note: Injury rates are subject to change over time, as new cases are added and case classifications change in accordance with our own requirements and applicable regulatory requirements.

[1] LTIR/RIR: Calculated per OSHA methodology.

[2] All fatalities were transportation-related, except for one high-risk work fatality in 2018.

[3] CPMM: Reflects both personal and business use of company-owned or -leased vehicles.

Capital projects construction safety[1,2]	2015	2016	2017	2018	2019
RIR	0.87	0.53	0.59	0.73	0.42
DART[3]	0.38	0.26	0.32	0.28	0.15
Fatalities	0	0	0	0	0

Facility management contractor safety[4]	2015	2016	2017	2018	2019
RIR	NA	NA	NA	0.71	0.55
LTIR	NA	NA	NA	0.47	0.42
Fatalities	NA	NA	NA	0	0

NA: Not Available.

Note: Injury rates are subject to change over time, as new cases are added and case classifications change in accordance with our own requirements and applicable regulatory requirements.

[1] LTIR/RIR: Calculated per OSHA methodology.

[2] Primarily reflects capital projects over $100,000 managed by our global engineering group.

[3] DART: days away, reassigned or transferred, calculated per OSHA 300 methodology.

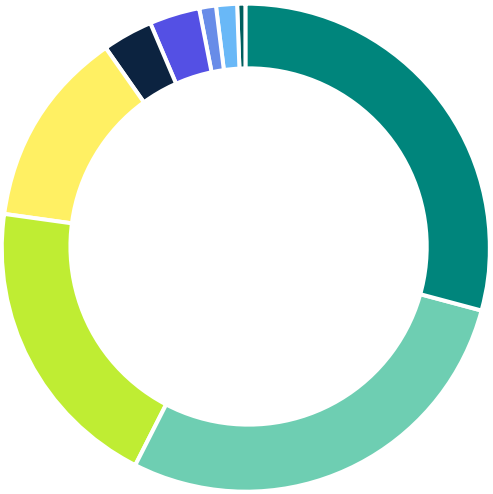
[4] Injury rates for IFM partners; reporting initiated in 2018.

In 2019, we placed additional emphasis on proactively assessing existing processes and equipment that presented ergonomic risks. Formal plans drove risk assessments and an engineering control feasibility process was established to better mitigate risk factors following the hierarchy of control principles.

We have worked steadily to drive down our workplace injury rates.

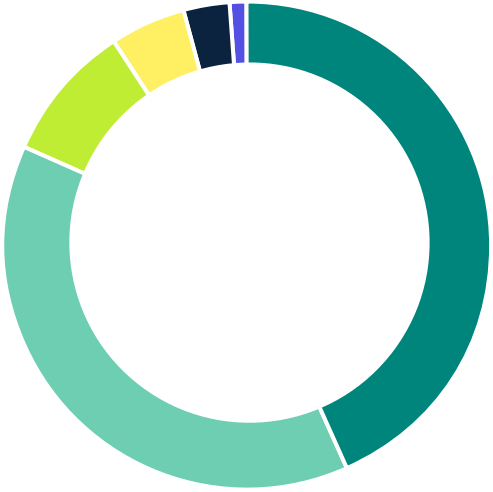
In 2019, our lost-time injury rate was 0.11, a ten percent increase from 2018. Our recordable injury rate was 0.30, the same rate as the prior year. This is our third consecutive year in the first quartile when compared against our pharmaceutical industry peers. There were no fatalities in 2019.

Last year, 30 percent of our recordable injuries were related to slips, trips and falls, with “struck-by/caught-in” and ergonomic-related injuries accounting for 28 and 13 percent of the total number of injuries, respectively. We continue to focus our efforts on reducing these types of injuries. In addition to our focus on the safe design of new facilities, we proactively address existing risks through the hierarchy of controls, focusing on eliminating high-risk tasks and improving engineering controls.



Recordable injuries by causal factors (2019)[1]

- **Slips-trips-falls** 29.6%
- **Struck-caught** 28.5%
- **Motor vehicle** 19.6%
- **Ergonomic** 13.3%
- **Other** 3.3%
- **Chemical exposure** 3.3%
- **Non-ergonomic** 1.3%
- **Physical/environmental exposure** 1.3%
- **Biological exposure** 0.4%



Lost-time injuries by business area (2019)[1]

- **Global Human Health** 43%
- **Manufacturing** 38%
- **Research** 9%
- **Animal Health** 5%
- **Global Support Functions** 3%
- **Facilities Management** 1%

In 2019, 20 percent of our company's recordable injuries were related to motor vehicle collisions. While we had a 1.1 percent increase in the number of collisions, normalized for miles traveled in 2019 versus the prior year, it is still significantly lower than previous years. Our global vehicle safety program includes a standard duty of care by holding both employees and managers accountable for achieving safe driving expectations.

Construction

In 2019, we received one safety excellence award and one runner up award for two of our projects safety management program from the construction user round table (CURT). CURT is a global organization that provides an international forum for the exchange of information and expertise to improve safety, productivity and competitive advantage for the construction industry.

In 2019, we logged 9.3 million construction hours globally and achieved zero injuries on 96 percent of our capital construction projects. Our 2019 construction safety recordable injury rate (RIR) of 0.42 reflects a decrease over our 2018 rate of 0.73 and achieving a dart rate of 0.15 almost half of last year's 0.28, showing a drop in the severity of contractor injuries.

In 2019, we had a significant increase in the number of construction hours and capital projects being implemented outside the U.S., where contractor safety cultures and performance can be less stringent. Even so, our injury rates continue to improve and be significantly better than construction industry averages.

In 2019, we had no high consequence work-related ill health, as we have had none of these over the past 12 years. In 2019, 90 percent of injuries in 2019 were injuries suffered in low risk/routine tasks. The top two injury categories included slips, trips and falls from the same elevation, and hand and finger cuts requiring stitches.

Non-employee

In 2019, our IFM partners had a total recordable injury rate (RIR) of 0.55 and a lost-time injury rate (LTIR) of 0.42. Our major IFM providers' injury rates continue to be significantly better than industry averages.

For more information, please visit the Employee Safety page on MSDresponsibility.com.

[1] May not total 100% due to rounding.

GRI 404: Training & Education

Whether it's helping invent the next breakthrough treatment or simply challenging and supporting one another for ongoing development, our culture is about applied curiosity.

The Global Learning and Development organization drives business performance by preparing our workforce to find ways to help the company serve patients. The primary focus is boosting our employee's ability to accelerate growth, reimagining ways of working and improving operating model economics. This is accomplished by building the skills and capabilities of our workforce to accelerate talent, improve performance and mitigate risk through relevant continuous learning experiences. This includes, but is not limited to, building leadership and management skills, as well as providing technical and functional training to all employees.

The skill sets needed to continue supporting the company's vision, mission and future are constantly evolving. Additionally, how our employees learn is continually changing. As a result, we continuously evaluate our organizational capability development needs aligned to our corporate strategy, as well as trends in employee development that are proven to drive business impact.

This allows us to focus on fostering a culture of continuous learning that leads to higher levels of performance. We are evolving how we design learning experiences, leveraging the science of learning. We are focusing on what the experience is like for the learner, ensuring it places them at the center and addresses their needs. This includes evaluating and leveraging new technologies that allow employees to share best practices and learn from each other, in addition to providing opportunities for hands-on learning.

For more information on our initiatives, policies and accomplishments, please visit the Learning & Development page on MSDresponsibility.com.

GRI 404-1 **Average hours of employee training**

GRI 404-2 **Programs for upgrading employee skills and transition assistance programs**

Training and education	2016	2017	2018	2019
Total course completions for all employees (in millions)	4.2	5.3	4.4	5.3
Hours of training for all employees (in millions)[1]	2.1	2.6	2.2	2.7
Average course completions per employee	60	48	43	55

[1] Based on average of 30 minutes per course.

Tools and resources

Our current talent management system supports company-wide performance management, development, talent reviews and succession planning. It helps ensure that our workforce is aligned with company objectives and focused on their ongoing professional development. The system allows managers and employees to keep track of business and development priorities, performance ratings, career aspirations, job experiences, skills, language proficiency, certifications and education.

Managers and employees meet throughout the year to discuss progress and accomplishments against their priorities. Emphasis is placed on creating a culture of ongoing coaching and future-focused feedback. At year-end, colleagues assess the impact employees have had on the organization, their team and their own development. This leads to annual performance reviews of employees at all levels (except those subject to collective bargaining agreements) to guide company decisions relating to development, compensation and rewards.

Employee performance is measured, in part, by how well employees demonstrate our leadership behaviors. We seek to emphasize not just what an employee achieves, but also how he or she achieves it. It is critical to our company that the annual incentive bonus is determined, in part, by demonstration of our leadership behaviors.

Throughout the year, managers discuss with each of their employees his or her strengths and development opportunities to align on ways to grow capabilities and skills.

Build the Best Teams & Talent

This global program is intended to help the organization learn, grow and achieve. Based on neuroscience, it gives employees practical strategies and tools they can use to effectively share and receive more frequent feedback from diverse stakeholders and increase the quality of performance conversations.

Management and leadership programs

Management Foundations is a comprehensive program that focuses on building core, common and critical knowledge and skills for new managers. Using a variety of learning methods, new managers are trained on what they need to know and do to be effective in their role and to establish foundational management skills.

In addition, we offer programs for experienced managers focused on areas like strategic planning, innovation and influencing others.

Team and individual development

We have programs that provide skill trainings and tools that support building and maintenance of effective teams, including Leading High Performing Teams, Virtual Teaming, Assessing Team Performance, Teaming Fundamentals and Insights Discovery.

In addition, individual developmental assessments may be used to identify strengths and developmental areas as a way to prepare employees for higher-level positions or changes in their current job. These assessments prioritize developing leaders that will create a positive work environment and motivate other employees to contribute to the company goals. Based on the employees' behavior, personality or skills, and feedback, these assessments are used to create an action plan and individual development goals.

Key talent focus

We advance the learning and development of our global key talent at all levels of the organization to support the advancement of our talent pipeline and diversity and inclusion strategy.

The learning experiences include:

- General Management Acceleration Program
- The Business Leadership Program
- MSD Leadership Pathway
- The Women's Leadership Program
- Emerging Women's Leadership Conference
- Women in Manufacturing Management
- Diverse Leader Program (U.S. only)
- Enterprise Leadership Program
- Executive Acceleration Experience
- Leadership Development Center

Our partners

Through careful consideration, partnerships have been formed with global diverse thought leaders to support the Key Talent Portfolio. We work with these external partners to provide the highest quality and impactful learning experience.

Examples of our partnerships include:

- General Management Acceleration Program: ?What If! consulting, part of (Accenture) and Duke Corporate Education
- Business Leadership Program: Duke Corporate Education
- MSD Leadership Pathway: Saïd Business School and the University of Oxford
- Women's Leadership Program: Cornell University
- Diverse Leader Program: Center for Creative Leadership
- Executive Acceleration Experience: ?What If! consulting part of (Accenture)

For more information on our training and education programs, please visit the Learning & Development page on MSDresponsibility.com.

GRI 404-3 **Percentage of employees receiving regular performance reviews**

Performance reviews	2015	2016	2017	2018	2019
Executives[1]	100%	100%	100%	100%	100%
Middle management	100%	100%	100%	100%	100%
Line supervisors	100%	100%	100%	100%	100%
Non-managers[2]	94%	94%	93%	94%	94%

[1] "Executives" refers to the first two levels below the chief executive officer.

[2] All "non-managers" (previously "individual contributors") including those who are subject to a collective bargaining agreement (unions).

Our current talent management system supports company-wide performance management, development, talent reviews and succession planning. It helps ensure that our workforce is aligned with company objectives and focused on their ongoing professional development. The system allows managers and employees to keep track of business and development priorities, performance ratings, career aspirations, job experiences, skills, language proficiency, certifications and education.

Managers and employees meet throughout the year to discuss progress and accomplishments against their priorities. Emphasis is placed on creating a culture of ongoing coaching and future-focused feedback. At year-end, colleagues assess the impact employees have had on the organization, their team and their own development. This leads to annual performance reviews of employees at all levels (except those subject to collective bargaining agreements) to guide company decisions relating to development, compensation and rewards.

Employee performance is measured, in part, by how well employees demonstrate our leadership behaviors. We seek to emphasize not just what an employee achieves, but also how he or she achieves it. It is critical to our company that the annual incentive bonus is determined, in part, by demonstration of our leadership behaviors.

Throughout the year, managers discuss with each of their employees his or her strengths and development opportunities to align on ways to grow capabilities and skills.

For more information on our training and education programs, please visit the Learning & Development page on MSDresponsibility.com.

GRI 405: Diversity & Equal Opportunity

(CR material topic: Diverse and inclusive workplace)

Management approach

Technology provides unprecedented access to information and enables many patients to make better, informed health care decisions. Despite this, some patient groups—especially diverse populations—experience greater health care disparities, lower health literacy and are disproportionately impacted by chronic illnesses.

By cultivating a diverse and inclusive workforce that is gender-balanced and richly represented across race, ethnicity, faith, disability, veteran and LGBT status, we promote the discovery of the broadest range of possible medical solutions to address the needs of all patients.

We empower our people to drive business performance and we elevate the next generation of leaders—gender balanced and globally diverse—to solve complex business problems that support our patients' needs.

Through Global Diversity & Inclusion (GD&I) industry-leading best practices, we surround our highly coveted employees with an inclusive environment enriched through psychological safety, empowerment, principles of belonging and empathy. Employees feel valued and respected and know that they are critical to business performance.

By leveraging the strength of our diverse employee talent throughout the enterprise in a holistic manner, we drive greater synergy and impact throughout the lifeline of each business unit. This produces a ripple effect with powerful outcomes, such as advances in diversity in clinical trials, strong customer relationships, enhanced commercialization strategies, drug discovery and development practices, corporate reputation and trust, and shareholder value.

Our company's business objectives for diversity and inclusion are fully aligned to drive long-term, sustainable business performance.

In addition, our objectives are aligned with the Global Reporting Initiative (GRI) standards for diversity and equal opportunity and with the United Nations Sustainable Development Goals (SDGs) of advancing gender equality, providing work and economic growth, reducing inequalities within and among countries and strengthening global partnerships.

Our GD&I strategic framework focuses on the following priorities:

- Strengthen the foundational elements of diversity
- Ensure accountability to drive an inclusive culture
- Continue to leverage diversity and inclusion to ensure business value
- Transform the environment, culture and business landscape

Governance

Our commitment to GD&I begins in the boardroom and is reinforced by our Chairman and CEO.

Our Board of Directors has a clearly stated Diversity Policy, which recognizes that maintaining a truly diverse membership, including educational and professional background, gender, race, age, sexual orientation, ethnic and national background and other differentiating personal characteristics promotes inclusiveness, enhances the Board's deliberations, and contributes to the Board's overall effectiveness to better represent the long-term interests of the company and its shareholders.

Our company's CEO publicly advocates for diversity and inclusion as a strategic business imperative through the following commitments:

- Approving diversity metrics and reviewing progress against aspirational talent goals for women and under-represented ethnic groups (UEGs)
- Driving accountability through meetings with the company's leaders to review key strategic initiatives centered on GD&I
- Conferring with the company's Vice President of Human Resources and Chief Diversity Officer on innovation opportunities and business solutions
- Participating in company-wide events, town halls and fireside chats that provide platforms for sharing leadership perspectives and for energizing and building engagement among employees around the importance of diversity and inclusion

Our GD&I Center of Excellence (CoE) oversees diversity and inclusion across all business practices. We deploy five diversity ambassador teams to ensure integration into our business and people strategies.

These teams are as follows:

The Global Disability Inclusion Strategic Council

The Council recognizes and values the importance of a disability-confident workforce and understands how full inclusion of people with disabilities increases creativity and innovation for its employees, customers, external partners and suppliers.

The GD&I Extended Human Resources Leadership Team

This group of Human Resources professionals supports the global organization by ensuring the successful adoption and integration of diversity and inclusion capabilities into all practices, procedure and systems. A key outcome is to enable a diverse & inclusive culture—one that attracts, engages, develops, motivates and retains top talent globally.

Employee Business Resource Group (EBRG) Executive Leadership Council

With ten EBRGs representing different constituencies and 19,000 members worldwide, the Council strengthens and diversifies the global leadership pipeline and provides culturally relevant insights that drive our success.

GD&I Business Consortium

This Consortium, comprised of members from Business Strategy, Supplier Diversity, Clinical Trials and other key business functions, enhances our business performance through GD&I best practices—creating a competitive business advantage and driving shareholder value. Our company's Chief Finance Officer acts as the Consortium's executive sponsor.

GD&I Line Advisory Council

Serving as an advisory role to the Vice President, GD&I CoE, the Council provides input and feedback on the GD&I strategy and key initiatives and offers perspectives on areas of progress, as well as opportunity, in relation to integrating GD&I into the company's business and people strategies.

Our company has made meaningful commitments to diversity and inclusion and pledges support to the following organizations:

United Nations Women's Empowerment Principles

In 2009, we signed onto the United Nations Women's Empowerment Principles. These principles reflect seven areas of focus designed to promote gender equality in business. Research shows that at the current rate of progress, it will take 202 years for women to achieve economic parity. The full economic participation of women in the workforce will generate $12 trillion to $28 trillion in GDP. We remain committed to equity across gender, race and ethnicity as a strategy to drive business results and advance our mission. We continue to establish leadership programs to promote equality and publicly report on our progress to achieve gender equality.

The International Labour Organization (ILO) Global Business and Disability Network (GBDN)

We are a member of the ILO Global Business and Disability Network, a partnership of multinational companies, national employers' organizations, business networks and advocacy groups working in collaboration to promote the inclusion of persons with disabilities in the workplace. We believe that disability-inclusive companies provide a better workplace for all their employees. We strengthen our ability to maximize the full potential of our workforce and we are better positioned to respond to diverse patient needs through this partnership.

One Mind at Work—Mental Health

Our company's CEO signed the One Mind at Work Charter pledging to make mental health a priority by protecting, supporting and enhancing employee wellbeing in the workplace.

CEO ACT!ON for Diversity and Inclusion®

Our company's CEO signed a pledge outlining a specific set of actions to cultivate a trusting environment where employee ideas are welcomed, employees feel comfortable and safe, and all are empowered to advance work in D&I. Because of this commitment, the company has rolled out Unconscious Bias education to all 70,000 employees worldwide and has participated in several closed-door sessions with other CEOs and Chief Diversity Officers to engage in dialog to drive meaningful change.

In addition, we establish clear, measurable goals with our leaders and throughout the business enterprise in the following areas.

A commitment to fair and equitable pay is longstanding

Pay equity across gender, race and ethnicity is a very important principle at our company and we continuously monitor and evaluate our pay practices and policies to ensure that we are paying equitably.

We approach the issues of pay equity holistically through in-depth analysis of employee compensation as well as analysis of our pay practices. We also promote awareness and education of people managers to prevent unconscious bias in our pay practices. We chartered a Pay Equity Council which is chaired by our Chief Diversity and Inclusion Officer and our SVP of Global Compensation and Benefits and is comprised of leaders across GD&I, Compensation and Benefits, and Employment Legal.

We will continue our focus on pay equity in the future. By doing so, we believe it furthers our goal of being the employer of choice for employees of diverse backgrounds, supports our efforts to attract and retain the best talent and supports our efforts to reward performance consistent with our Leadership Standards.

Women and under-represented ethnic group (UEG) representation

Leaders and managers have clear diversity and inclusion goals included as part of their annual performance reviews. In addition, we utilize specific, time-bound action plans with targets to increase the representation of women globally and UEGs in the U.S. leadership positions. We have diversity metrics and review progress against aspirational talent goals for women and UEGs at the most senior levels of the organization.

Fostering a culture of inclusion

Leaders and managers are held accountable for maintaining an inclusive culture across the business enterprise. We acknowledge those who excel in demonstrating inclusive behavior through the company's INSPIRE Awards. Launched in 2019, INSPIRE fosters a culture of recognition and engagement by empowering all employees to recognize others. By the end of 2019, INSPIRE recorded 359,000 recognition moments across 85 countries. Learn more about how we engage with employees.

U.S. clinical operations

We have set goals to ensure appropriate diversity representation of patients participating in clinical trials in relevant therapeutic areas. Learn more about our commitment to diversity in clinical trials on MSDresponsibility.com.

Health literacy

Our company made significant improvements in reducing health care disparities and improving health literacy among patients, globally. Learn more about our commitment to addressing health literacy on MSDresponsibility.com.

For more information on our initiatives, policies and accomplishments, please visit the Global Diversity & Inclusion page on MSDresponsibility.com.

GRI 405-1 Diversity of governance bodies and employees

Gender and ethnicity	2015	2016	2017	2018	2019
Women in the workforce	48%	48%	48%	49%	**49%**
Women in the workforce in the U.S.	NR	NR	NR	NR	**50%**
Employee base that is multi-cultural women (U.S.)	NR	NR	NR	NR	**15%**
Women on the Board	21%	23%	23%	23%	**33%**
Women in executive roles[1]	34%	31%	32%	32%	**36%**
Women on the senior management team[2]	34%	36%	39%	41%	**43%**
Women in management roles[3]	38%	39%	40%	41%	**43%**
Members of underrepresented ethnic groups on the Board	21%	23%	23%	15%	**17%**
Members of underrepresented ethnic groups in executive roles (U.S.)	20%	23%	23%	21%	**26%**
Members of underrepresented ethnic groups on the senior management team (U.S.)	18%	18%	17%	19%	**21%**
Members of underrepresented ethnic groups in the workforce (U.S.)	26%	26%	26%	27%	**29%**
Members of underrepresented ethnic groups in management roles (U.S.)	23%	23%	23%	25%	**27%**
New hires that were female	50%	51%	49%	51%	**50%**
New hires that were members of underrepresented ethnic groups (U.S.)	33%	37%	36%	36%	**33%**

Note: Our company has publicly disclosed EEO-1 information since 1999.

NR: Not reported.

[1] "Executive" is defined as the chief executive officer and two structural levels below.

[2] "Senior management team" is defined as the fourth structural level below the CEO.

[3] "Management role" is defined as all other managers with direct reports not reflected in notes 1 or 2.

GRI 412: Human Rights Assessment

Management approach

We expect appropriate standards of conduct and respect for human rights, consistent with our own, from our suppliers, contractors, vendors and external partners. We are committed to doing business with those that share our commitment to human rights and to the principles outlined in our Business Partner Code of Conduct.

Our practices are informed and guided by the Pharmaceutical Supply Chain Initiative's (PSCI's) Pharmaceutical Industry Principles for Responsible Supply Chain Management, which set the standard for ethics, labor, health, safety and the environment for our industry.

GRI 412-2	**Employee training on human rights policies and procedures**
GRI 412-3	**Investment agreements and contracts that include human rights clauses or underwent screening**

Within our supply chain, we work to meet our responsibility to respect human rights by:

Selection

Selecting suppliers that are socially responsible and who share our company's commitment to ethics and integrity. We strive to obtain the goods and services we need to further our mission in a way that is lawful, efficient and fair.

Expectations

Setting and communicating our expectations of suppliers. We use our Business Partner Code of Conduct to communicate our expectations for Human Rights, Labor & Employment, Health, Safety & Environment and Ethical Business Practices. We make it available in 26 languages.

Training

Training our company sourcing professionals on how to mitigate human rights related risks in our supply chain, including human trafficking and modern slavery risks, as well as general awareness training on our company's Business Partner Code of Conduct.

Due diligence

Conducting appropriate due diligence and determining the risks — including those related to human rights, prior to entering a business relationship with a supplier — to determine that they can meet all our company's expectations.

Contracts

Seeking commitment from suppliers to respect and abide by the principles set forth in our company's Business Partner Code of Conduct through our contracts and agreements. Our standard contract templates contain an ethical business practice compliance clause.

Auditing

Performing Labor & Human Rights Audits and Environmental Health & Safety Audits at selected supplier facilities to verify their compliance with our company's expectations, and by working with them to address identified compliance gaps in a responsible manner. In 2019, we performed over 30 Labor & Human Rights Audits.

Managing and monitoring

Managing and monitoring suppliers to ensure that they continue to meet our company's expectations. We hold them accountable for meeting their contractual obligations and take appropriate action to address those that do not. Termination clauses are included in contracts.

Responsible sourcing

Implementing procedures to ensure responsible sourcing of minerals. As stated in our Conflict Minerals Policy found on our corporate website, we endeavor to avoid the purchase of minerals (e.g., tin, tantalum, tungsten and gold) that directly or indirectly finance or benefit armed groups or perpetrators of serious human rights abuses.

We have a formal program to evaluate the risks for labor and human rights in our supply chain. Prior to contracting, all new direct suppliers (as well as certain new indirect and research suppliers in specific geographies) are required to complete and return a Supplier Self-Assessment Questionnaire (SAQ) for Ethics & Compliance. Pre-existing external manufacturing suppliers and contract manufacturing organizations also complete SAQs.

Our SAQ requires suppliers to answer a series of labor and human rights questions covering a range of subjects, including freely chosen employment, child labor, employment practices, employee disclosures, fair treatment, wages, benefits and working hours.

Each supplier's responses are used to judge whether that supplier has programs and/or procedures in place to address potential risks for labor and human rights related deficiencies.

Since implementing the Labor and Human Rights program in 2015, we have conducted 234 onsite audits in countries identified as high risk for potential human rights violations. We track audit-related corrective and preventative actions to completion.

No incidents of child labor and/or young workers exposed to hazardous work were reported.

Additionally, we maintain a "Speak Up" tool (MSDethics.com) for any employee, supplier or business partner to report concerns, including those related to labor and human rights issues.

For more information, please visit the Human Rights and Sourcing & Supplier Relations pages on MSDresponsibility.com.

GRI 414: Supplier Social Assessment

GRI 414-1 **New suppliers screened using social criteria**

Please see GRI 412-2 and GRI 412-3 on pages 79 and 82.

GRI 415: Public Policy

GRI 415-1 **Political contributions**

We are committed to participating constructively and responsibly in the political process, and to providing clarifying analysis and information regarding the issues that affect our business and patient care.

In 2019, we contributed a total of $734,250 to support the campaigns of 339 candidates for state-level offices in 21 states plus the District of Columbia. We also supported state legislative leadership committees of both parties, industry-affiliated PACs, and national organizations representing elected state officials that meet periodically to discuss policy issues. Our representatives involved in state-government-affairs activities made the recommendations for specific contributions based on the budget and priorities approved by the Contributions Committee.

Outside legal counsel conducted a thorough review of all proposed contributions to ensure that they were permitted under state law. Final approval was provided by the Corporate Secretary.

The only other country we provide corporate contributions to candidates or political parties is Australia. These contributions are subject to the same policies and governance procedures discussed above.

For more information, please visit the Public Policy page on MSDresponsibility.com.

GRI 416: Customer Health & Safety

(CR material topic: Product quality and safety)

Management approach

Our quality strategy is focused on ensuring that we maintain a reliable, compliant supply of products to our customers and that we have an engaged and capable workforce ready to deliver and sustain success.

We operate in a highly complex and ever-changing regulatory landscape driven by many different factors, including novel scientific discoveries, technological advancements, natural disasters, global pandemics and cybersecurity events. However, we strive to ensure the overall quality and continuous supply of products by aiming for two simple objectives: zero market actions and zero unsatisfactory inspection outcomes.

Patient safety is at the forefront of what we do. We are using and exploring new technological advancements such as integrated IT tools, artificial intelligence (AI) and streamlined digital platforms to further enhance how we manufacture high-quality products.

We apply and adhere to a strict set of quality standards, and we have policies and procedures in place to identify, measure, control and sustain product-quality excellence.

Our Global Quality Compliance organization is responsible for establishing the standards that ensure that all of our company's products are manufactured, tested, released and distributed in full compliance with regulatory requirements.

We continuously strive to improve these standards in order to enhance procedures and ensure ongoing compliance with Current Good Manufacturing Practices (CGMPs).

We provide appropriate and ongoing training on CGMPs for our employees, so they are prepared to perform their duties effectively. Our system not only ensures that all applicable employees are trained, but also monitors the effectiveness of the training provided.

Our company's medicines and vaccines are widely tested before they are approved for marketing. This testing is governed by a comprehensive regulatory scheme and by our research policies. We assess the safety of our products in rigorous nonclinical and clinical trials prior to seeking regulatory approval. Following approval of our drugs, vaccines or devices, the company continues to monitor their safety profiles.

Our company's chief medical officer holds overall responsibility for the benefits and risks of our pipeline and marketed products, provides medical oversight for all clinical programs, supervises the development and implementation of medical policies (including those related to data transparency and the sharing of clinical data), and has responsibility for the design, execution and implementation of pre-registration expanded access ("compassionate use") programs.

Our company's Global Clinical Safety and Pharmacovigilance (GCS&PV) function manages a global system for the collection, review and reporting of Adverse Experience (AE) reports received by our company worldwide, and for the continuous assessment of product safety. Our company's chief safety officer holds overall responsibility for the safety of our products.

To learn more, please visit the Product & Patient Safety and Quality & Safety Standards pages on MSDresponsibility.com.

GRI 416-2	**Incidents of non-compliance concerning the health and safety impacts of products and services**
SASB 210a.1	**Management process for ensuring quality and patient safety during clinical trials globally**
SASB 210a.2	**FDA Sponsor Inspections related to clinical trial management and pharmacovigilance that resulted in: (1) Voluntary Action Indicated (VAI) and (2) Official Action Indicated (OAI)**
SASB 250a.1	**Products listed in the FDA's MedWatch Safety Alerts for Human Medical Products database**
SASB 250a.2	**Fatalities associated with products as reported in the FDA Adverse Event Reporting System**
SASB 250a.3	**Recalls issued, and total units recalled**
SASB 260a.1	**Methods and technologies used to maintain traceability of products throughout the supply chain**
SASB 260a.2	**Process for alerting customers and business partners of potential or known risks associated with counterfeit products**

Our industrial hygiene risk assessments require evaluation of the effectiveness of control measures. Risk-based exposure monitoring is also conducted to verify the effectiveness of installed engineering controls, and improvements are made as needed. We use conservative safety factors to set low de minimis levels for environmental releases until we have sufficient data to fully understand their impacts on aquatic organisms. Levels are reviewed and updated as new data become available.

Quality and product safety	2015	2016	2017	2017	2019
Number of product recalls in the United States[1]	3	1	0	2	1
Percentage of sold units recalled during a given year (recall rate globally)[1]	0.07%	0.01%	0.01%	0.14%	0.01%

[1] Definition of Recall Classifications: http://www.fda.gov/ForConsumers/ConsumerUpdates/ucm049070.htm#RecallClassifications.

GCP/PV inspections	2015	2016	2017	2018	2019
GCP/PV inspections by regulatory agencies of the company or clinical trial investigators that led to significant fines, penalties, warning letters or product seizures[1]	0	–	0	0	0

[1] Complete response letter received for Sugammadex (MK-8616) in 2013; complete response letter received for Januvia (sitagliptin; MK-0431) in 2016.

Please visit the U.S. Food & Drug Administration's (FDA) MedWatch website for more information on product safety alerts. You may visit the FDA's Adverse Event Reporting System (FAERS) website for up-to-date information on fatalities associated with product use.

Our company has long been committed to sharing the results of our clinical trials, regardless of their outcome, in a timely manner. If a clinical trial of a marketed product is terminated early for safety reasons, we will promptly disclose medically important information to regulatory authorities and the public, update the status on clinical trials.gov within 30 days, and submit a manuscript to a journal (or post a summary online) within 12 months after the last patient's last visit occurs. If the trial was terminated for efficacy reasons, the results will be disclosed within 12 months after the last patient's last visit occurs. Summaries of terminated trials will provide information about patient disposition, safety and adverse experiences, as well as an explanation as to why the trial was terminated early.

We comply with all applicable laws and regulations associated with the registration of clinical trials in publicly accessible registries and subsequent posting of the results from these trials. We have put into place the processes necessary for compliance with the Food and Drug Administration Amendments Act of 2007 and the European Clinical Trial Directive 2001/20/EC, including those related to clinical trial registration and posting results.

For those who analyze, report or publish the results of clinical trials, a clinical trial registry also provides information on trials in progress and the ability to track such trials over the course of development. Company-sponsored and -conducted clinical trials involving patients assigned treatment with investigational and marketed products are registered at trial initiation on www.clinicaltrials.gov, www.clinicaltrialsregister.eu and www.encepp.eu.

In accordance with our public policy position statement, all investigational studies in human subjects are conducted in a manner consistent with laws, regulations and guidelines for the protection of human subjects, including those issued by the International Council for Harmonisation Good Clinical Practice (ICH GCP). However, individual country regulations and guidelines should remain the primary determinant of specific requirements for the conduct of medical research.

We have a commitment, where appropriate, to the study of diverse patient populations, including minorities, women and children, in our clinical trials in all regions of the world. As a result, we strive to obtain information among diverse populations, ensuring a thorough evaluation of the safety and efficacy of our medicines and vaccines. These efforts allow us to seek regulatory approvals throughout the world and thereby offer our medicines globally to patients who need them.

Clinical trial site monitoring, design, conduct and oversight

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 standards and to the principles that have their origin in the Declaration of Helsinki.

When appropriate, an internal standing Data-Monitoring Committee (DMC) of our research laboratories' senior managers reviews unblinded data from ongoing trials in a pre-specified, scientifically acceptable manner. The goals of the DMC are to protect the safety of trial participants and assess whether the risk/benefit profile is favorable.

The DMC's recommendations are communicated internally to relevant scientists and can be distributed externally to clinical investigators, review boards or regulatory agencies, as appropriate.

Counterfeit products

Our efforts in the area of advocacy, engagement and awareness involve raising public and stakeholder awareness of the risks posed by counterfeits, and advocate for increased enforcement to shape relevant regulatory requirements. In 2019, we continued our commitment to increasing our focus in this area and have strategically enhanced our ability to make a long-term impact on patient safety through various education campaigns.

We are committed to cooperating with relevant government agencies, other pharmaceutical manufacturers, wholesalers, distributors, health professionals, consumer groups and key related organizations in fighting the problem of counterfeit pharmaceutical products and in educating the public about the risks of counterfeit products and how to protect against them.

This effort includes a multipronged approach to communicating the threat that counterfeit medicines pose and to mitigating this threat as effectively as possible, while recognizing that it cannot be entirely eliminated.

Collaboration and information-sharing in order to raise public and stakeholder awareness of the issue and risks are a crucial focus of our product integrity program. Through active partnerships with other pharmaceutical companies, and with organizations focused on security, patient safety and public health, we provide effective advocacy on high-priority anti-counterfeiting policy initiatives.

For more information, please visit the Product & Patient Safety, Quality & Safety Standards, Product Integrity, and Sales & Marketing pages on MSDresponsibility.com.

GRI 417: Marketing & Labeling

GRI 417-1	**Requirements for product and service information and labeling**
GRI 417-2	**Incidents of non-compliance concerning product and service information and labeling**

The label in our product packaging contains information on possible side effects and, if appropriate, how to avoid some potential health problems. We include contact details on our corporate website for patients, caregivers and health professionals to report adverse experiences in the United States. Outside the United States, adverse events are reported in accordance with any additional local country laws and practices.

Depending on label changes and their context, we may determine, in consultation with regulatory authorities, that more extensive communications are appropriate. In those situations, we work with regulatory authorities to communicate to health care professionals in a timely manner so that they can inform patients through appropriate mechanisms. Communications to health care professionals may include "Dear Health Care Provider" letters and media statements.

Product label reviews

The ongoing oversight and monitoring of our product labels are a major focus of our safety efforts. Our label review teams monitor information on our products and work with our product RMS teams to develop or update product labeling. We regularly communicate relevant information to regulatory authorities worldwide.

Health literacy

There are many examples of health literacy in action across our company's product lifecycle, including our early clinical trials, informed consent, diversity in trials, patient labeling, instructions for use, packaging and patient education. Beginning in 2019, new clinical trials included teach-back and cultural competence as part of their investigator training. Early in 2020, our commercial organization launched a process to integrate health literacy reviews more consistently across all therapeutic areas.

In 2019, the FDA approved our sixth health literate patient label which was developed with iterative patient input. There are two more health literate labels currently in development, including one vaccine label.

U.S. Medical Forums

We deliver balanced medical and scientific information to health care professionals within the U.S. through our company's Medical Forums, which are conducted by external speakers. Speakers are selected on the basis of their expertise in the relevant subject matter. By attending one of our Medical Forums, health care professionals participate in interactive learning on therapeutic and health care industry topics. The goal of these interactions is to help attendees achieve improved medical results for their patients.

With our strict standards for conducting these Medical Forums, we comply with the PhRMA Code on Interactions with Health Care Professionals as well as with U.S. Food and Drug Administration (FDA) regulations, which assure that any product presentation is appropriately balanced with information regarding both the product's potential benefits and its risks, and is consistent with approved product labeling.

Sales and marketing	2015	2016	2017	2018	2019
Number of warning letters or untitled letters from OPDP[1] or APLB[2] in the U.S.	0	0	0	0	0

[1] OPDP: Since September 2011, the Division of Drug Marketing, Advertising and Communication (DDMAC) is now the Office of Prescription Drug Promotion (OPDP).

[2] APLB: Advertising and Promotional Labeling Branch (APLB) of the FDA Center for Biologics Evaluation and Research.

For more information, please see the Product & Patient Safety, Health Literacy, and Sales & Marketing Practices pages on MSDresponsibility.com.

GRI 417-3	**Incidents of non-compliance concerning marketing communications**
SASB 270a.1	**Monetary losses as a result of legal proceedings associated with false marketing claims**
SASB 270a.2	**Code of ethics governing promotion of off-label use of products**

We believe that our marketing, sales and advertising activities make an important contribution to medicine by informing our customers of treatment options based on the most recent scientific information and findings from rigorous clinical studies. Our sales and marketing practices are governed by external laws and regulations and industry codes of conduct, and by our own global Code of Conduct, our corporate policies and procedures, and our ethics and compliance program.

For more information, please see our answers to GRI 417-1 and GRI 417-2 on page 82 as well as visit the Product & Patient Safety, Health Literacy and Sales & Marketing Practices pages on MSDresponsibility.com.

GRI 418: Customer Privacy

(CR material topic: Data privacy and information security)

Management approach

Information about our company, products and people is one of our most valuable assets. We are committed to ethical use, management and protection of information.

Our commitment applies not only to our company's information, but also to the information entrusted to us by others. Our tools, processes and procedures ensure that we appropriately use and safeguard information throughout its life cycle to ensure integrity of information and to prevent unauthorized access and disclosure. We have developed and continue to improve upon a comprehensive, global, state of the art information security and cyber resiliency program to enable our company to fulfill its mission: inventing for life.

There is increased pressure for companies to adopt the EU general data protection regulation compliance (GDPR) as the basis for their own privacy laws and regulations. Our company is well positioned in that we have based our global program on the GDPR.

In addition, there is increased regulatory scrutiny and interest in companies that seek to collect and monetize personal information without full transparency and permission from data subjects. Regulators will continue to tighten up requirements in these areas and levy large fines. Again, we are well positioned for these changes due to the deployment of a comprehensive closed-loop privacy program and our active engagement with regulators around the world.

The global privacy office reports into the company's Chief Ethics & Compliance Officer who reports directly to our CEO. Oversight of the privacy program is conducted within the privacy and data protection board (PDPB). This is a cross functional board that connects to the corporate compliance committee. The PDPB meets quarterly.

Global privacy program

Over the past 19 years, we have developed and continually improved a comprehensive global privacy program that promotes organizational accountability for privacy, data governance and data protection across our business and with our collaborative partners and suppliers.

We were the first company in the world to obtain regulatory approval in the European Union (EU) for Binding Corporate Rules (BCRs) based in part on our existing Asia Pacific Economic Cooperation (APEC) Cross-Border Privacy Rules (CBPRs) certified program.

This achievement demonstrates that organizations can rely on common internal standards and processes to govern international data transfers across both the EU and APEC regions to simplify their ability to address the growing regulatory challenges in this area.

Our holistic approach to privacy has its origins in biomedical research ethics and the protection of participants in the research studies that we sponsor and conduct. We have adapted human subject research ethics standards for risk-benefit analysis, transparency, anonymization, coding and prior review to other activities and processes involving data about people.

Privacy values

We have established a set of privacy values to guide all of our privacy, data stewardship and data protection decisions. These core tenets serve as the foundational ethical framework for our comprehensive global privacy program and our compliance with the continually evolving legal and regulatory standards for privacy and data protection.

For more information, please visit the Privacy, Cybersecurity and Clinical Research pages on MSDresponsibility.com.

Our global privacy values

Respect

We recognize that privacy concerns often relate to the essence of who we are, how we view the world and how we define ourselves, so we strive to respect the perspectives and interests of individuals and communities and to be fair and transparent in how we use and share information about them.

Trust

We know that trust is vital to our success, so we strive to build and preserve the trust of our customers, employees, patients and other stakeholders in how we respect privacy and protect information about people.

Prevent harm

We understand that misuse of information about people can create both tangible and intangible harm for individuals, so we seek to prevent physical, financial, reputational and other types of privacy harm to individuals.

Comply

We have learned that laws and regulations cannot always keep pace with the rapid change in technologies, data flows, and associated shifts in privacy risks and expectations, so we strive to comply with both the spirit and the letter of privacy and data protection laws and regulations in a manner that drives consistency and operating efficiency for our global business operations.

GRI 418-1 Substantiated complaints regarding breaches of customer privacy and losses of customer data

Global privacy program	2015	2016	2017	2018	2019
Number of countries in which we conduct privacy compliance verification and risk assessment	137	137	137	137	137
Number of concerns regarding privacy practices, breaches of privacy and losses of personal data that were substantiated[1]	143	227	123	315	29
Number of privacy breaches requiring notification by Merck & Co., Inc., Kenilworth, N.J., U.S.A., to individuals or government authorities	0	1	0	2	2

[1] Privacy concerns include all concerns about our privacy practices escalated to our company's Privacy Office. Concerns are evaluated to determine if they are a potential privacy incident or not. Those that are a potential privacy incident are investigated against our own privacy policies. In 2015, because of the scope of lost or stolen devices known to be encrypted, we ceased inclusion of lost or stolen MSD devices in our incident metrics. Reporting in 2017 was impacted by the Not-Petya cyber-incident. Increase in substantiated concerns in 2018 due to changes in reporting practices stemming from new requirements in the EU (GDPR). In 2019, because of a change in our incident reporting methodology, we removed non-privacy quality issues, and this is the reason for the decrease between 2018 and 2019.

GRI Index

The GRI Standards represent global best practices for reporting publicly on a range of economic, environmental and social impacts.

The table below summarizes where these disclosures can be found throughout this report.

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405-1	Diversity of governance bodies and employees	Page 78
GRI 412: Human Rights Assessment		
Management approach	Explanation of the material topic, its boundary, how the topic is managed, and mechanisms for evaluating the effectiveness of the company's strategy.	Page 79
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412-3	Investment agreements and contracts that include human rights clauses or underwent screening	Page 79
GRI 414: Supplier Social Assessment		
414-1	New suppliers screened using social criteria	Page 80
GRI 415: Public Policy		
415-1	Political contributions	Page 80
GRI 416: Customer Health and Safety		
Management approach	Explanation of the material topic, its boundary, how the topic is managed, and mechanisms for evaluating the effectiveness of the company's strategy.	Page 80
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	Page 81
GRI 417: Marketing and Labeling		
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417-2	Incidents of non-compliance concerning product and service information and labeling	Page 82
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GRI 418: Customer Privacy		
Management approach	Explanation of the material topic, its boundary, how the topic is managed, and mechanisms for evaluating the effectiveness of the company's strategy	Page 83
418-1	Substantiated complaints regarding breaches of customer privacy and losses of customer data	Page 85

SASB Index

The Sustainability Accounting Standards Board (SASB) is dedicated to improving the effectiveness and comparability of corporate disclosure on environmental, social and governance (ESG) factors.

The table below are the SASB Standards for the Health Care sector, and Biotechnology & Pharmaceuticals industry, with page numbers where that information can be found throughout this report.

Safety of Clinical Trial Participants		
210a.1	Management process for ensuring quality and patient safety during clinical trials globally	Page 81
210a.2	FDA Sponsor Inspections related to clinical trial management and pharmacovigilance that resulted in: (1) Voluntary Action Indicated (VAI) and (2) Official Action Indicated (OAI)	Page 81
210a.3	Monetary losses as a result of legal proceedings associated with clinical trials in developing countries	Not reported
Access to Medicines		
240a.1	Access to health care for priority diseases and in priority countries	Page 26
240a.2	Products on WHO's List of Prequalified Medicinal Products	Page 26
Affordability & Pricing		
240b.1	Settlements of Abbreviated New Drug Application (ANDA) litigation that involved payments and/or provisions to delay bringing an authorized generic product to market	Not reported
240b.2	Percentage change in: average list price and average net price across U.S. product portfolio compared to previous year	Page 20
240b.3	Percentage change in: list price and net price of product with largest increase compared to previous year	Page 20
Drug Safety		
250a.1	Products listed in the FDA's MedWatch Safety Alerts for Human Medical Products database	Please visit the FAERS MedWatch page for more information.
250a.2	Fatalities associated with products as reported in the FDA Adverse Event Reporting System	Please visit the FAERS MedWatch page for more information.
250a.3	Recalls issued, and total units recalled	Page 81

250a.4	Amount of product accepted for takeback, reuse, or disposal	Not reported
250a.5	FDA enforcement actions taken in response to violations of current Good Manufacturing Practices (cGMP)	Not reported
Counterfeit Drugs		
260a.1	Methods and technologies used to maintain traceability of products throughout the supply chain	Page 81
260a.2	Process for alerting customers and business partners of potential or known risks associated with counterfeit products	Page 81
260a.3	Actions that led to raids, seizure, arrests, and/or filing of criminal charges related to counterfeit products	Not reported
Ethical Marketing		
270a.1	Monetary losses as a result of legal proceedings associated with false marketing claims	Page 83
270a.2	Code of ethics governing promotion of off-label use of products	Page 83
Employee Recruitment, Development, and Retention		
330a.1	Talent recruitment and retention efforts for R&D personnel	Page 61
330a.2	Voluntary and involuntary turnover rate for: executives/senior managers, mid-level managers, professionals, and all others	Page 61
Supply Chain Management		
430a.1	Facilities and Tier I suppliers participating in the Rx-360 International Pharmaceutical Supply Chain Consortium audit program, or equivalent	Not reported
Business Ethics		
510a.1	Monetary losses as a result of legal proceedings associated with corruption and bribery	Not reported
510a.2	Code of ethics governing interactions with health care professionals	Page 16
Activity Metrics		
000.A	Patients treated (#)	Page 11
000.B	Number of drugs (1) in portfolio and (2) in R&D (Phases 1-3)	Pipeline

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This website of Merck & Co., Inc., Kenilworth, N.J., USA (the "company") includes "forward-looking statements" within the meaning of the safe harbor provisions of the U.S. Private Securities Litigation Reform Act of 1995. These statements are based upon the current beliefs and expectations of the company's management and are subject to significant risks and uncertainties. There can be no guarantees with respect to pipeline products that the products will receive the necessary regulatory approvals or that they will prove to be commercially successful. If underlying assumptions prove inaccurate or risks or uncertainties materialize, actual results may differ materially from those set forth in the forward-looking statements.

Risks and uncertainties include but are not limited to, general industry conditions and competition; general economic factors, including interest rate and currency exchange rate fluctuations; the impact of the recent global outbreak of novel coronavirus disease (COVID-19); the impact of pharmaceutical industry regulation and health care legislation in the United States and internationally; global trends toward health care cost containment; technological advances, new products and patents attained by competitors; challenges inherent in new product development, including obtaining regulatory approval; the company's ability to accurately predict future market conditions; manufacturing difficulties or delays; financial instability of international economies and sovereign risk; dependence on the effectiveness of the company's patents and other protections for innovative products; and the exposure to litigation, including patent litigation, and/or regulatory actions.

The company undertakes no obligation to publicly update any forward-looking statement, whether as a result of new information, future events or otherwise. Additional factors that could cause results to differ materially from those described in the forward-looking statements can be found in the company's 2019 Annual Report on Form 10-K and the company's other filings with the Securities and Exchange Commission (SEC) available at the SEC's Internet site (www.sec.gov).

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