



# Impacting Human Health

2022 ESG Report

moderna<sup>®</sup>  

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## Moderna's Mission:

Delivering the greatest possible impact to people through mRNA medicines.

# Message from our CEO



June 2023

## Dear Stakeholders,

I am very proud to share with all of you Moderna's Environmental, Social and Governance Report. 2022 was a pivotal year for our company: Now that we know our mRNA medicines can have a profound impact on human health, we have evolved our Mission: Deliver the greatest possible impact to people through mRNA medicines. In this report we reflect on our commitments to tackle some of the biggest threats to human health, such as the urgent need to increase access to quality healthcare and medicines, inequalities affecting vulnerable communities around the world, and the increasing negative effects of climate change. We recognize that Moderna's commitment to Corporate Social Responsibility is critical to our Mission.

We are guided by our unwavering belief that Moderna's mRNA platform can solve the world's greatest health challenges—from diseases impacting millions to medicines individualized down to a single patient. As part of our Global Public Health Strategy, we launched our new mRNA Access program to create a community of global scientists who can access our mRNA vaccine technology from anywhere in the world. Think like the Apple App Store for vaccines. The world needs novel, innovative approaches to address both known and emerging infectious diseases and we know that we can't do it alone.

In another year of significant growth, we continued to use our Values and Mindsets as tools to scale our culture and build the best version of Moderna. We are also committed to maintaining a great work environment for our employees, as exemplified by our eighth consecutive year ranked as a top company to work for by Science in 2022. Moderna was recently officially recognized as a Great Place to Work in the U.S. by Great Place To Work®. Being our best also means building a company that is responsible and minimizes our impact on the planet, and I am proud of our progress toward setting a baseline for our greenhouse gas emissions and our commitment to defining science-based targets.

Additionally, we are passionate about addressing the inequalities made even clearer by the pandemic, while contributing to the communities where we live and work. With the launch of the Moderna Charitable Foundation in April 2022 and the generous engagement of our employees, we are extending our societal impact. We believe that our continuous focus on quality, transparency, and ethics is critical to building and maintaining trust with all our stakeholders.

Looking ahead, we will continue to lead with our Values, our Mindsets and a deep sense of purpose embedded in everything we do. I invite you to read this report and learn about our progress across our Environmental, Social and Governance commitments. There is much work to do, and we are grateful for your engagement in this journey to help us deliver the greatest impact possible over the next several decades.

Warmest regards,

A handwritten signature in blue ink that reads "S. Bancel". The signature is fluid and cursive, with a long horizontal stroke at the end.

**Stéphane Bancel,**

*Chief Executive Officer, Moderna*

# Moderna in 2022

# Key ESG Highlights

## Medicines for Patients

48/35

Development programs/  
Candidates in active  
clinical trials

\$3.3bn

in R&D investment,  
65% increase vs. 2021

## Global Public Health

12

priority pathogens in  
research and development

9

institutions participating  
in mRNA Access

4

new regional manufacturing  
facilities announced

35

global fellows in Moderna  
Research Fellowships program

## Employees

50%

female employees

41%

female executives

8

Employee  
Resource Groups

9

Academies in  
Moderna University

## Equal pay for equal work study

## Environment

### Sustainability Strategy defined:

Incorporating  
**sustainability by  
design** in all new  
sites and buildings

Working to achieve  
**Net-Zero** carbon  
emissions in Scopes  
1 & 2 **by 2030**

### Decarbonizing our value chain

**2021** Scopes 1 & 2  
base year carbon  
emissions  
established

## Community

156% increase in  
tracked volunteer hours from 2021

63% employee  
participation rate in volunteering  
and/or giving

1,500 nonprofits  
supported globally

\$7.8 million  
in grants by the Moderna  
Charitable Foundation

\$4 million  
focused on improving health  
systems and healthcare in  
sub-Saharan Africa

\$800,000  
in donations from employee  
matching program

\$1 million  
corporate donation to support  
humanitarian relief efforts in  
Ukraine and Eastern Europe

## Governance & Ethics

Incorporated ESG  
metrics in our bonus  
program in 2021 and  
2022

Reimagined Code of  
Ethics and Business  
Conduct

Launched Sustainable  
and Responsible  
Procurement program

## Awards

### BioSpace's Best Places to Work

Ranked number 1 in large  
employer category on  
2022 list

### Science Careers' Top Employers

Ranked for eight consecutive  
years; number 7 on 2022 list



## Our areas of focus

At Moderna, our ESG strategy and corporate social responsibility program are built upon a foundation of integrity, quality, and respect. These values provide a foundation for us to build and support long-term programs that demonstrate our commitment to patients, employees, the environment, and local communities.



Our efforts are driven by our belief that:

**With the potential of our science comes a responsibility to the multitude of patients our technology could help,**

regardless of whether they have a disease shared by millions, or one that is unique to them alone

**We have a responsibility to do our part to ensure the sustainability of our planet,** and we will consider our impact on the environment in the decisions that we make

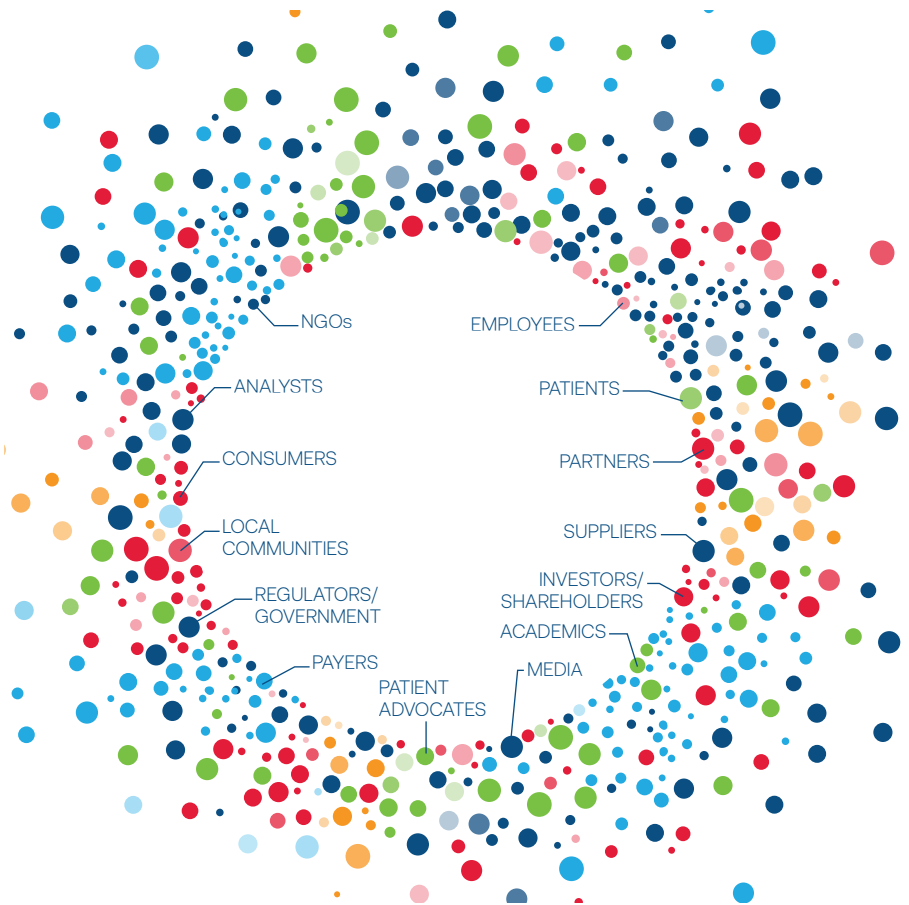
**We can and should use our expertise and resources** to give back to the communities in which we operate

**We have a responsibility to our employees to provide fulfilling, purposeful careers,** and to reward our employees for their dedication

**We must hold ourselves to high ethical standards across all areas of our business and with our stakeholders**—both internal and external—while ensuring we have the governance and practices in place to meet these standards

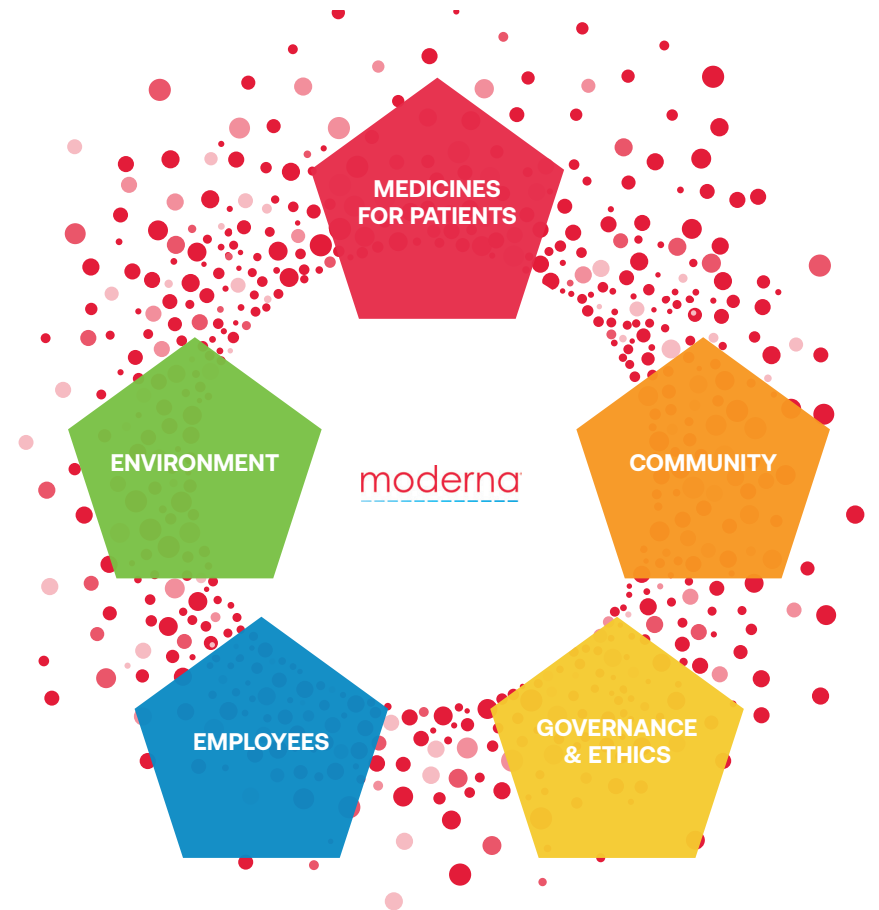
## Who are our Stakeholders?

By identifying and engaging with the groups that impact—or are impacted by—our business, we can better align our company’s corporate responsibility activities to their long-term objectives. We have identified and defined our key stakeholders and will continue working to understand their interests as we grow and advance our potential medicines through our pipeline. Moderna’s stakeholders include:



## Our Corporate Citizenship Framework

Moderna’s **corporate responsibility strategy** considers the needs and priorities of our key stakeholders and the areas where we believe we can have a direct impact today and in the future. Our work now and beyond is centered on five focus areas:



In 2023, we are taking a fresh look at our materiality analysis and how we prioritize issues within our Corporate Citizenship Framework, combining peer disclosure benchmarking, government regulations, and analysis of online news and social trends, with direct input from our internal and external stakeholders. We have started to analyze this information with a digital tool that uses real-time data and artificial intelligence (AI) to track issue relevance over time and integrate results into strategic discussions. We will supplement this information with input from our stakeholders. We are excited to continue to engage and to learn how can we create long-term value together.

# Medicines for patients

Moderna’s mission is to deliver the greatest possible impact to people through mRNA medicines. We are harnessing the power of mRNA to create a new category of medicines and a company that maximizes its impact on human health.



**Our commitment to patients means protecting their health by developing safe, affordable, and accessible mRNA medicines.**

## Delivering the greatest possible impact through mRNA medicines

Since the beginning, it has been our mission to deliver on the promise of mRNA technology for people. And we delivered at speed with our mRNA vaccine against COVID-19. As our first approved product, it has positively impacted hundreds of millions of lives around the world. In 2022, we delivered again in the fight against COVID-19 with two authorized Omicron-targeting bivalent vaccines, mRNA-1273.214 and mRNA-1273.222, bringing the latter to market in less than two months. Today, our COVID-19 vaccines have been approved in more than 70 countries.

Now that we know our mRNA medicines can have a profound impact on human health, we will continue to focus on relentless execution of our goals. In 2022, we matured to a company with multiple COVID-19 products on the market, and an extensive product pipeline across seven modalities. By the end of the year, we had 48 programs in our pipeline and 35 development candidates in active clinical trials, focusing on five therapeutic areas – infectious diseases, immuno-oncology, rare diseases, cardiovascular diseases and autoimmune diseases. Our platform technology also delivered the world’s first-ever mRNA cancer treatment to show efficacy in a randomized Phase 2 study. And in another important advancement, we are seeing early promise in our rare disease programs for propionic acidemia and methylmalonic acidemia.

The success of COVID-19 mRNA vaccines has accelerated investments to advance our science and provided the momentum needed to realize the

potential of mRNA for improving health. We have reached a turning point for mRNA science, and we are confident that through our collective efforts the field is poised to transform medicine.

## 2022 Highlights

**48** programs in pipeline, 35 candidates in active clinical trials

**70+** countries where our COVID-19 vaccines are approved

**\$3.3 billion** in R&D investment, more than 65% increase versus the prior year

**12** priority pathogens in research and development

**9** institutions participating in mRNA Access

**4** new manufacturing facilities announced

**35** global fellows in Moderna Research Fellowships program

## Removing barriers to health equity

Impacting human health depends on the ability to bring our mRNA medicines to the people who need them. But as the COVID-19 pandemic highlighted, unequal access to healthcare continues to be a reality for too many people in the world. To deliver on our mission, we recognize the need to be relentless in our efforts to remove barriers to equitable access to healthcare and to build sustainable health systems. This means remaining an active partner and engaging with stakeholders who share our goals and commitment to remove barriers to health equity.

### Promoting vaccine equity to fight the pandemic

From the beginning, our goal has been to protect as many people as possible around the globe and expanding access to our vaccines has remained a top priority. In December 2020, at the same time as we were scaling up manufacturing of our first commercial product, we published our access and pricing principles, putting health equity at the heart of our efforts. Our actions to fight the COVID-19 pandemic have demonstrated Moderna's commitment to these principles:

#### Increasing representation in COVID-19 trials:

In 2020, we slowed enrollment in our Phase 3 COVE study to ensure broad representation of racial and ethnic minority communities in our COVID-19 vaccine trial. In the end, our trial included more than 11,000 participants of color, representing 37 percent of the study population. We are proud of this outcome considering that people of color have been historically severely underrepresented in clinical trials in the U.S.

**Expanding our manufacturing capacity:** Early in the pandemic, we invested significantly in the expansion of our global production capacity, entering into agreements with well-established and trusted partners to ensure that sufficient vaccine would be available to meet demand from all countries that wanted it. We deployed our teams who knew how to make this new class of medicines to train those partners.

As a result, together with our partners, we manufactured and distributed more than 800 million doses of Moderna's COVID-19 vaccine in its first full year of production.

#### Supplying COVAX and the African Union:

From the beginning, we were committed to ensuring vaccine access to low- and middle-income countries (LMICs). Our agreement with Gavi led in 2021 to the supply of nearly 70 million doses of COVID-19 vaccines to the 92 Gavi COVAX Advance Market Commitment (AMC) LMICs, in addition to our Company facilitating the donation of more than 100 million doses to these countries (25% of all doses shipped in 2021). In total, Moderna committed to providing more than 750 million doses of our COVID-19 vaccine to COVAX and the African Union, beginning in 2021. While we were prepared to deliver on these commitments, in 2022, Gavi, on behalf of COVAX, asked to be released from its purchase commitment, and the African Union declined to exercise its options. We agreed to release Gavi from its contract and have entered into a new framework agreement to provide up to 100 million bivalent booster vaccines in 2023, if they are needed.

**Moderna Patent Pledge:** In October 2020, we became the first company to commit to not enforcing our COVID-19-related IP rights during the pandemic. In 2022, to further underscore our commitment to LMICs, and as part of our continued support for achieving global health equity, we updated our patent pledge to never enforce our patents for COVID-19 vaccines against manufacturers in or for the 92 LMICs in the Gavi COVAX AMC, provided that the manufactured vaccines are solely for use in AMC 92 countries. In non-AMC 92 countries, we expect those using Moderna-patented technologies will respect Moderna's intellectual property. We remain willing to license our technology for COVID-19 vaccines to manufacturers in these countries on commercially reasonable terms. Doing so enables us to continue to invest in research to develop new vaccines, prepare

for the next pandemic, and meet other pressing areas of unmet medical need.

### Access Principles

**We recognize that access to vaccines remains a challenge in many parts of the world.** That's why Moderna is committed to working on multiple levels to optimize the impact of mRNA vaccines and therapeutics. Our philosophy on pricing and access reflects a few basic principles:

- ⊗ Moderna is committed to developing a broad portfolio of vaccines and therapeutic solutions to address epidemiological challenges worldwide.
- ⊗ Moderna will invest in R&D in areas of unmet need.
- ⊗ Moderna will work to include communities that have historically been underrepresented in clinical research in our development programs, as well as those that are disproportionately impacted by the respective diseases.
- ⊗ Moderna aims to provide effective and affordable vaccines and therapeutics to all populations.
- ⊗ Moderna will price its products through differential pricing frameworks.
- ⊗ Moderna is committed to participating in key public-private partnerships such as Gavi, the Vaccine Alliance.
- ⊗ Gavi-eligible countries will get Moderna's lowest prices, and Moderna commits to an annual independent third-party audit on this commitment.

Published in December 2020

## Democratizing access

The “right to health” has been recognized as a fundamental human right in the World Health Organization (WHO) Constitution since 1946, “...the highest attainable standard of health as a fundamental right of every human being.” But according to the WHO, at least half of the world’s population still does not have access to essential health services.

As we scale up our company and realize the potential of our platform, we continue to act at multiple levels to promote health equity and address the complexity and challenges that may prevent people from accessing our mRNA medicines. We plan to be part of the solution to enable individuals to exercise their right to health. From increasing our investment in R&D in areas of unmet need, to ensuring representation in clinical research, to building manufacturing capacity, to pricing for value, to innovating in our platform to address cold chain supply issues, to seeking partnerships to improve health systems, we continue to accelerate our short-term and long-term access initiatives.

## Launching patient access programs

The world is transitioning from the COVID-19 pandemic into an endemic paradigm. We are pivoting to adapt the commercialization, distribution, and access strategies for our COVID-19 vaccines to this new reality.

As we prepare for new challenges and opportunities in the distribution of our vaccines, we will strive to ensure anyone who wants our vaccine can obtain one, and that price will not pose a barrier. Our COVID-19 vaccines will continue to be available at no out-of-pocket cost to insured people in the U.S.

On April 18, 2023, the US Department of Health and Human Services (HHS) announced the HHS Bridge Access Program For COVID-19 Vaccines and Treatments Program to maintain broad access

to COVID-19 vaccines for millions of uninsured Americans. The program will create a unique public-private partnership to help maintain uninsured individuals’ access to COVID-19 care at their local pharmacies, through existing public health infrastructure, and at their local health centers.

## Pricing for value

We understand that impacting human health means enabling populations to access our medicines at fair prices and striking a balance between fueling future innovation and operating a sustainable business that delivers on our mission. For our first commercialized product, we have been committed to pricing that reflects the impact our vaccine has on patients and healthcare systems. Our tiered-pricing framework means that Gavi-eligible countries will continue to receive Moderna’s lowest prices.

## Investing in R&D to address unmet need

The success of our COVID-19 vaccines is funding more research to continue to transform the future of medicine. In 2022, we increased our investment in R&D by 65 percent compared to the prior year. In 2023, we expect to invest \$4.5 billion in research and development.

## Increasing representation in clinical research

For us, health equity means also making sure people of all backgrounds have access to the promising medicines of tomorrow. In 2022, we continued to include broad demographic objectives across our Phase 1, 2 and 3 trials and delivered on our commitment to diversity in clinical research.

## Accelerating our impact to global health

In 2022, we articulated our global health strategy, aimed at addressing priority pathogens identified as

the greatest threats, sharing our mRNA technology with experts around the world, and leveraging our skills and knowledge to accelerate our impact to global health. By the end of the year, we had 12 vaccines against priority pathogens in development and had started collaborations with nine institutions in our mRNA Access program.

## Seeking solutions to the lack of infrastructure

We continue to seek innovation in our platform to address cold chain supply issues faced by countries during the pandemic. mRNA-1283 is being developed as a potential refrigerator-stable mRNA vaccine that, if successful, should significantly reduce the burdens associated with shipping and storing mRNA vaccines in developing countries. mRNA-1283 dosed the first participant in its Phase 3 trial in 2023.

## Building local manufacturing

Further demonstrating our dedication to vaccine access, we have committed to building a state-of-the-art mRNA manufacturing facility in Kenya to provide a local source of mRNA medicines for the African continent, in part to prepare for future pandemics. Our goal is to provide Africa with its own dedicated plant for mRNA medicines that will be capable of launching vaccines simultaneous with launches in the rest of the world.

## Building local R&D capacity

With our commitment to building distributed manufacturing sites, not only will we increase access to our vaccines, but also, we will invest in the development of skilled R&D ecosystems. We believe we can maximize our impact by building local R&D capacity and partnering with local researchers to address relevant health needs and priorities.



### Approaching IP responsibly

We have not only updated our patent pledge, but as our Company enforces its intellectual property rights, we are conscious of doing so in a manner that will not impede access in LMICs.

### Ensuring supply

We continue to work closely with regulators and seek approval of our vaccine to facilitate market access. All doses to Gavi-eligible countries are offered at Moderna’s lowest-tiered price.

### Building resilient and sustainable health systems

We seek to drive transformation at the ecosystem level by supporting organizations that are dedicated to creating sustainable health systems, building resilience, and improving access to quality healthcare for vulnerable communities. The pandemic revealed the fragility of health systems and exacerbated many existing challenges, including health worker shortages. To truly ensure equitable access to healthcare, we will continue to leverage both public and private partnerships to address the key barriers present today: availability, accessibility, affordability, and acceptability.

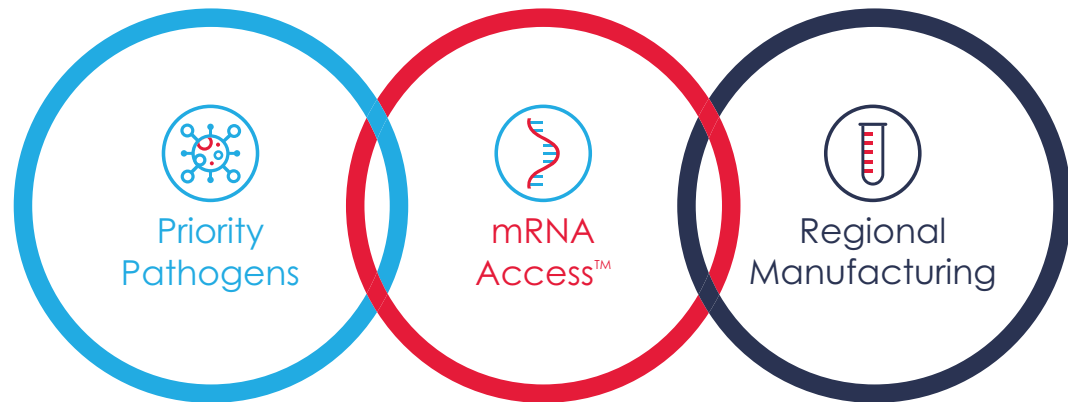
## Our Global Health Strategy: accelerating pandemic preparedness globally

At Moderna, we are dedicated to pursuing innovative vaccine solutions to address infectious diseases that pose the greatest risk to public health, and to do so through collaborative research and development. We believe the world needs novel, innovative approaches to address both known and emerging infectious diseases. We are bringing the full force of our mRNA vaccine platform to combat infectious diseases of public health concern and work with global partners to be part of the solution to prevent future pandemics and help millions of people around the world.

We have spent a decade refining our mRNA platform to accelerate the pace and success of mRNA medicines. The speed, scale and flexibility of our mRNA platform is uniquely suited for rapid response to “Disease X.” Named by the WHO, “Disease X” represents the knowledge that a serious international epidemic could be caused by a pathogen currently unknown to cause human disease.

In 2022, we articulated our global health strategy aimed at advancing mRNA vaccines for the prevention of infectious diseases.

### Moderna’s Global Health Strategy



Key Progress in 2022:

**12** priority pathogens in research and development

**9** institutions participating in mRNA Access

**4** new planned facilities announced in Australia, Canada, Kenya, and the United Kingdom

## Addressing 15 priority pathogens by 2025

Our commitment is to advance into clinical studies a portfolio of at least 15 vaccine programs targeting emerging or neglected infectious diseases by 2025. This portfolio will include advancing vaccines that address current diseases of significant impact to LMICs as well as those that prepare for Disease X. Our development efforts prioritize work against pathogens identified as persistent global health threats, neglected tropical diseases and the priority pathogens of the WHO and the Coalition for Epidemic Preparedness Innovations (CEPI).

**By the end of 2022, we made meaningful progress against prioritized pathogens, with 12 vaccines against pathogens in research and development.**

## Global Public Health Portfolio.

Priority Pathogen	ID #	Preclinical Development	Phase 1	Phase 2	Phase 3	Commercial	Collaborators
COVID-19	mRNA-1273						BARDA/NIAID
Zika	mRNA-1893						BARDA
Chikungunya	mRNA-1388						--
HIV	mRNA-1644						IAVI/Others
HIV	mRNA-1574						IAVI/BFMG/NIAID & Others
Nipah	mRNA-1215						NIH
Monkeypox	mRNA-1769						--
Ebola	--						UTMB
Dengue	--						--
Lassa	--						UTMB
MERS-CoV	--						--
Marburg	--						UTMB
Malaria	--						--
CCHF	--						--
Rift Valley Fever	--						--
SFTS	--						KNIH
Tuberculosis	--						--

As of May 31, 2023

Source: Compiled from Global Health groups.

### Abbreviations:

**CCHF**, Crimean Congo Hemorrhage Fever; **HIV**, human immunodeficiency viruses; **MERS-CoV**, Middle East respiratory syndrome coronavirus; **SFTS**, Severe fever with thrombocytopenia syndrome; **BARDA**, Biomedical Advanced Research and Development Authority; **NIAID**, National Institute of Allergy and Infectious Diseases; **IAVI**, International AIDS Vaccine Initiative HYPERLINK; **BMGF**, Bill & Melinda Gates Foundation; **NIH**, National Institute of Health; **UTMB**, University of Texas Medical Branch; **KNIH**, Korea National Institute of Health.

## Innovating in vaccine strategies to deliver impact in Global Health

### Human Immunodeficiency Virus (HIV)

HIV is the underlying cause of approximately 650,000 deaths per year, and it continues to cause nearly 1.5 million new infections worldwide each year<sup>(1)</sup>. A highly effective HIV vaccine has been the goal of vaccinologists for nearly 35 years.

We currently have two investigational HIV vaccines in clinical testing. Both programs are capitalizing on the deep expertise that exists in the field of HIV at institutions like Scripps, the International AIDS Vaccine Initiative (IAVI), and the National Institute of Allergy and Infectious Diseases (NIAID), and bringing their expertise to our platform to tackle what is largely recognized as the greatest infectious disease challenge of our lifetime. Our first program, mRNA-1644, aims to induce the generation of broadly neutralizing antibodies through sequential administrations of HIV antigens that prime and boost the immune system. This program relies on an iterative vaccine design/test cycle, one that learns from in-progress clinical studies to adapt and deploy new boosting vaccines, taking advantage of the speed and flexibility of our platform. This program is in a Phase I trial sponsored by IAVI and supported by the Bill & Melinda Gates Foundation. Our second vaccine candidate, mRNA-1574, tests three distinct antigen designs to understand the interplay of immunogen design and the induction of neutralizing antibodies. This program is in a Phase I trial and sponsored and funded by the Division of AIDS (DAIDS) of the NIAID.

(1) HIV Global Statistics. <https://www.hiv.gov/hiv-basics/overview/data-and-trends/global-statistics>

### Tuberculosis (TB)

About one quarter of the world's population has been infected with tuberculosis bacteria. A total of 1.6 million people died from TB in 2021 (including 187,000 people with HIV). Worldwide, TB is the 13<sup>th</sup> leading cause of death and the second leading infectious killer after COVID-19 (above HIV/AIDS). In 2021, an estimated 10.6 million people fell ill with TB worldwide—six million men, 3.4 million women and 1.2 million children. TB is present in all countries and age groups. Treatments exist today for drug-susceptible TB disease, which requires trained treatment support to the patient for a standard 4-month or 6-month course. Without such support, treatment adherence is more difficult. Multidrug-resistant TB (MDR-TB) remains a public health crisis and a health security threat. Only about one in three people with drug resistant TB accessed treatment in 2020. TB is the leading killer of people with HIV<sup>(2)</sup>. By 2022, \$13 billion is needed annually for TB prevention, diagnosis, treatment, and care to achieve the global target agreed at the UN high level-meeting on TB in 2018.

(2) <https://www.who.int/news-room/fact-sheets/detail/tuberculosis>

### Malaria

Malaria occurs mostly in poor tropical and subtropical areas of the world. In many of the countries affected by malaria, it is a leading cause of illness and death. In areas with high transmission, the most vulnerable groups are young children, who have not developed immunity to malaria yet, and pregnant women, whose immunity has been decreased by pregnancy. Globally, there were an estimated 247 million malaria cases in 2021 in 84 malaria endemic countries, and 619,000 estimated deaths. Sub-Saharan Africa bears nearly the entire global burden of malaria, accounting for an estimated 96 percent of malaria cases and deaths in 2020; approximately 4 in 5 of these deaths were among children under the age of five<sup>(3)</sup>. Despite the considerable efforts to tackle malaria in Africa over the last two decades, progress has plateaued in recent years and, in many countries with a high burden of the disease, cases are on the rise. Emerging threats, such as antimalarial drug resistance, could derail progress even further.

(3) <https://www.who.int/news/item/08-12-2022-despite-continued-impact-of-covid-19--malaria-cases-and-deaths-remained-stable-in-2021>



## mRNA Access

In 2022, we launched mRNA Access, a new program that offers researchers use of Moderna’s mRNA technology to explore new vaccines against emerging or neglected infectious disease.

The mRNA Access program opens our preclinical manufacturing capabilities and research and development expertise to global partners, to promote a collaborative approach to exploring the possibility of mRNA to tackle the world’s greatest global public health threats. Through the program, researchers at partnering institutions are invited to take advantage of our mRNA platform to develop mRNA medicines for existing neglected diseases. These programs will leverage our early development capabilities to accelerate vaccine development to the clinic. mRNA Access will also allow scientists around the world to explore novel vaccine designs against prototype viral families in preparation for “Disease X.” We believe that this program can transform the field of vaccinology using mRNA by continuing to advance our science and engage the next generation of researchers and engineers in the process.



**“It takes a community of scientists and disease experts to develop novel vaccines to tackle our greatest public health threats. mRNA Access was born of the idea that we are stewards of our platform, and by allowing researchers to access that platform and leverage the preclinical, clinical, regulatory and manufacturing capabilities that we’ve created, we could accelerate the development of novel vaccines.”**

**Hamilton Bennett**  
Senior Director, Vaccine Access and Partnerships at Moderna

**By the end of 2022, we had nine geographically dispersed institutions taking part in mRNA Access.**

## Building regional manufacturing capability

The final pillar of our global health strategy is building regional manufacturing capability.

We have already announced plans to build facilities in Australia, Canada, Kenya, and the United Kingdom, which can be deployed in response to a pandemic outbreak. One of the key aspects of our mRNA platform is that a single manufacturing facility can be used to manufacture any of our mRNA medicines.

We expect the new facility in Kenya to be able to produce up to 500 million doses of vaccines each year and enable drug substance and drug product manufacturing for Kenya and the African continent. In addition, this facility will have surge capacity to rapidly scale and respond to public health emergencies on the continent and around the world, building on our commitment to increase access in LMICs.



## Ensuring diversity in clinical trials

Moderna is developing medicines and vaccines for all and we realize we cannot maximize the potential of mRNA without ensuring that access to these vaccines and medicines is inclusive of all communities.

We remain unwavering in our commitment to researching mRNA-based vaccines and therapies with a goal of bringing better health for all populations.

## Reaching underrepresented groups

We recognize that there is not a “one size fits all” approach to cultivating inclusivity. To that end, we have centered our efforts on driving strategy and managing initiatives to build trust and ensure medically underrepresented groups can be better engaged in our clinical trials:

- Embed the importance of diversity in clinical trials into our company’s culture
- Establish demographic objectives and diversity plans for each trial (Phase 1-3)
- Select multi-regional clinical trial sites with inclusion in mind
- Increase ways to access trials
- Collaborate with trusted voices
- Develop outreach and education tailored to specific populations
- Leverage dashboard and metrics to understand historical performance within specific indications, inform site selection and enrollment strategy, and measure future performance

As we rapidly scale to bring additional vaccines and medicine to patients, we will continue to apply best practices as well as embrace the digital tools that are paramount to our success. Our ability to tap into automation and digital capabilities enables Moderna to coordinate the sharing of critical information across internal and external stakeholders, as well as pivot fearlessly in the face of new data.

### Moderna won

“The Delivering Inclusive Trials Award”  
at Reuters Pharma Europe 2022

Moderna is committed to **increasing diversity** in our clinical trials by identifying the **barriers that currently impede inclusion**, and implementing approaches to more efficiently **identify, engage, recruit, and retain** study participants from racial/ethnic **minority communities and vulnerable populations**.

### Diseases don’t discriminate—neither should clinical research

2020 was an unexpected year for all of us. The world looked to industry to run clinical trials for vaccines against COVID-19 as quickly and safely as possible. With our partners, Moderna enrolled more than 31,000 participants in our COVID-19 vaccine trials, and our Phase 3 COVE study was conducted in more than 100 locations across the U.S. However, speed and quality were not the only considerations for our vaccine program.

COVID-19 has had a disproportionate impact on racial and ethnic minority communities. It was our goal to design a trial for everyone. We slowed enrollment in our COVE study to ensure broad representation and inclusion across participants. In the end, our trial included more than 11,000 Participants of Color, representing 37 percent of the study population.

### Why is clinical trial Diversity & Inclusion important?

Medical diseases and conditions may affect all people differently, but they still can affect anyone. We can only advance science and clinical outcomes for all patients if they are represented in clinical trials. In the U.S. and abroad, regulatory approvals for investigational products are based on clinical trials where the participant population enrolled in the associated trial reflects the composition of the general population or of those affected by the disease. Trials must reflect our diverse society, especially as populations shift.

The demographics of the U.S. population are significantly shifting. By 2045, it is expected that those currently identified as racial or ethnic minorities will become the majority. As these demographics change, it is paramount that the composition of trial participants also shifts. Clinical trial diversity is not solely our ethical responsibility – it is also a scientific imperative.



**About CMV**

Cytomegalovirus (CMV) is a leading cause of birth defects around the world. CMV is a common viral infection that usually goes unnoticed or only causes mild symptoms in most people. But if a woman becomes infected with CMV while she is pregnant, she can pass the infection to her unborn baby. This can cause her child to suffer long-term disability due to birth defects, including hearing loss, or even death in very severe cases. Currently, there is no approved vaccine against CMV.

**Delivering on our commitment in 2022**

We continued to hold ourselves accountable to enroll the entire spectrum of intended populations in our clinical trials by establishing demographic objectives for the Phase 3 trials of our cytomegalovirus (CMV) vaccine and respiratory syncytial virus (RSV) candidates.

At the end of 2022, our Phase 3 trials in RSV and CMV were both on track to meet demographic objectives, while simultaneously working toward building trusted relationships within our communities and empowering people with the knowledge to make informed decisions about their health.

As of December 2022:



**US Enrollment Targets Based on Demographic Composition**

	Objective	Current %
White	58%	54%
Persons of color	42%	46%



**US Enrollment Targets Based on Demographic Composition**

	Objective	Current %
White	69%	63%
Persons of color	31%	37%



**About RSV**

Respiratory syncytial virus (RSV) causes a substantial disease burden in older adults aged 65 years and older. There are up to 160,000 RSV-related hospitalizations in adults 65 and older in the U.S. each year and up to 10,000 RSV-related deaths. Globally, there are more than 1.5 million episodes of acute respiratory tract infection related to RSV each year.



## Bringing new hope in rare diseases

Rare diseases seldom have the spotlight, but they affect the lives of millions of people and their families. There are approximately 7,000 rare diseases that impact more than 300 million people worldwide. Collectively, people living with rare diseases represent one of the largest underserved patient communities in the world, with drugs approved for only five percent of known rare diseases. We recognize the impact of rare diseases on patients and their families, particularly when the disease lacks any effective treatment options. We are advancing mRNA-based therapeutics with the goal of one day bringing treatment options to patients and their families.

### Our programs

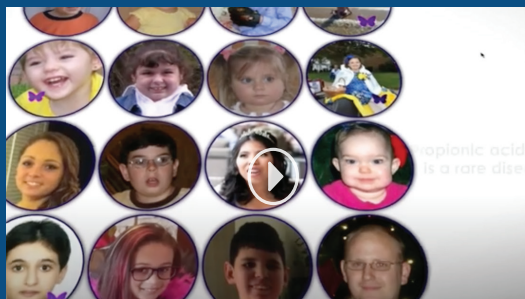
Our programs aim to deliver mRNA into target organ cells as a therapeutic approach for diseases caused by a missing or defective protein. We are excited about several clinical trials in this therapeutic area that have the potential to help improve quality of life for young patients and their families. The Phase 1/2 Paramount study of our propionic acidemia program is ongoing and the first two groups of patients are fully enrolled. Encouraging early data have shown a decrease in the number of metabolic decompensation events (MDEs) among participants and initial discussions with regulators are supportive of MDE as a primary endpoint for a pivotal study. The Phase 1/2 study of our methylmalonic acidemia candidate is ongoing and we are recruiting participants in the United Kingdom.

We are also evaluating the safety, tolerability and pharmacology of a single IV dose of our therapeutic candidate for glycogen storage disease 1a (GSD1a) in adult participants in a Phase 1 study. Enrollment is based on proof-of-concept data and leveraging our learnings from our rare disease programs, we recently

announced a new development candidate for ornithine transcarbamylase (OTC) deficiency, which uses the same lipid nano-particle (LNP) as our GSD1a program. This is our sixth rare disease candidate.

### Propionic Acidemia (PA)

Propionic Acidemia (PA) is an incredibly rare and severe pediatric disease in which the body can't break down certain parts of proteins and amino acids, which leads to the build-up of toxic chemicals. Learn more about PA and how Moderna is working to one day bring treatment options to patients and their families.



Moderna and the Propionic Acidemia Foundation

### Methylmalonic Acidemia (MMA)

Methylmalonic Acidemia (MMA) is a rare genetic metabolic disease with significant morbidity and mortality. Mortality rates are estimated to

be as high as 40 to 50 percent, and there is no approved therapy that addresses the underlying disease. Kidney and liver transplant can provide a benefit, but access to donors is limited and transplants also carry significant risk of morbidity and mortality.

### Glycogen Storage Disease Type 1a (GSD1a)

In Glycogen Storage Disease Type 1a (GSD1a), stored glycogen cannot be metabolized into glucose to supply energy and to maintain steady blood glucose levels for the body. There are no approved therapies except cornstarch, which children must receive through feeding tubes when they're very young to avoid life threatening loss of sugar. For these children, their lives may depend on a functioning alarm clock to wake them and their caregivers when it is time for their next dose of cornstarch. If a dose is missed, the disease can lead to seizures and, in rare instances, even death. Long term complications of GSD1a include kidney and liver damage, and risk of liver cancer.

We believe this is just the beginning and that mRNA could potentially help patients with a large variety of protein and enzyme deficiencies. We are committed to advancing mRNA therapeutic candidates to address diseases – whether they affect one person or a million.

**Our commitment to addressing ultra-rare diseases**

We are proud of our collaboration with the Institute for Life Changing Medicines to develop a new mRNA therapeutic (mRNA-3351) for Crigler-Najjar type 1 (CN1), an ultra-rare disease. The goal of this partnership is to make an mRNA therapy for the treatment of CN-1 available at no cost to patients and their families. The Institute will not pay Moderna an upfront fee or any downstream payments and Moderna will also provide the mRNA-3351 material free of charge. We are proud to be able to deploy our mRNA platform to help combat this ultra-rare disease.

**Crigler-Najjar Syndrome Type 1 (CN-1)**

Crigler-Najjar Syndrome Type 1 (CN-1) is a severe condition characterized by high levels of a toxic substance called bilirubin in the blood (hyperbilirubinemia). Symptoms become apparent shortly after birth and can be life-threatening. It is estimated that there are only approximately 70 to 100 known cases of CN-1 in the world. Current standard of care treatments relies on phototherapy treatments of up to 12 hours a day throughout life. The only definitive treatment is a liver transplant, which is associated with its own set of side effects and risk of death.

**#VoiceOfThePatient**



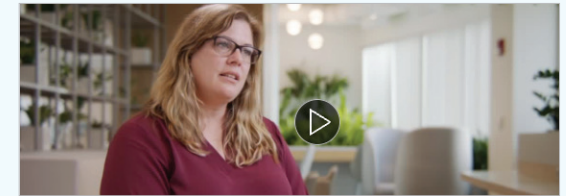
Jordan has Glycogen Storage Disease Type 1a (GSD-1a) - which is a rare inherited metabolic disease that affects just 1 in 1.25 million people.



Kathy Stagni, Executive Director of Organic Acidemia Association and mom to Melissa, who lives with Propionic Acidemia, shares her passion to connecting families with rare metabolic disorders.



Honey Stecken, mom to Maren, shares her experience of raising a child with Propionic Acidemia (PA) during COVID-19.



For parents of kids with PA, the condition consumes their lives, hear from Honey Stecken.

## Moderna Research Fellowships

In 2021, we were proud to announce the launch of the [Moderna Research Fellowship](#). The goal of our Fellowship program is to support the next generation of scientists and healthcare professionals as they innovate in the field of mRNA research toward improving patient care and population health. Prospective fellows may be clinicians and scientists who are interested in advancing mRNA research and innovation and the program underpins Moderna’s commitment to supporting independent research. The fellowship program selected 35 global fellows in 2022 with a focus on infectious diseases. It is overseen by an independent steering committee of international experts in science, medicine, and healthcare. 2023 applications are already under review.

In line with our commitment to building local R&D capacity, in 2023, we launched our inaugural [Australian Fellowship program](#) to support scientists with an interest in advancing mRNA innovation. This annual program, offering two Fellowships each year for five years, will prioritize research fellowships that advance mRNA science and medicines, in disciplines spanning early discovery to clinical development as well as projects emphasizing R&D in Infectious Diseases and Immunology. It will also offer a unique learning program to be delivered via experiential “on the job” learning, online courses from Moderna University and face-to-face periodic meetings with an assigned Moderna R&D expert mentor.



**“We hope this program helps to accelerate Australia’s contribution to the transformational power of mRNA science.”**

**Michael Azrak,**  
General Manager of Moderna Australia & New Zealand

We can’t wait to see what our fellows can do to impact human health.

## Ensuring high product quality and patient safety

**There is nothing more important to us than the safety of the people receiving our products.**

### Clinical trials

We design and conduct clinical trials in accordance with the highest scientific and ethical standards and in compliance with all applicable regulatory requirements. We have defined a framework of policies and standards to design all Moderna-sponsored clinical trials in accordance with local laws and regulations, international standards including those defined under the International Conference for Harmonization-Good Clinical Practice and Moderna’s policies and procedures. Our standards are applicable to all Moderna employees and agents and to all parties

with whom Moderna contracts (e.g., contract research organizations (CROs), vendors, or consultants) involved in Moderna-sponsored clinical trials. A qualified and independent Institutional Review Board (IRB) or Ethics Committee must review and approve all Moderna-sponsored trials prior to initiation of a given study. Study participants may only be enrolled in a clinical trial only after providing their voluntary informed consent or informed assent, as applicable, in compliance with local laws and regulations. Moderna respects the privacy rights of its study participants and safeguards the confidentiality of their medical information in accordance with all applicable laws and regulations.

### Quality

We believe that quality is essential to our mission to deliver the greatest possible impact to people through mRNA medicines. Our Quality Unit, led by Moderna’s Chief Technical Operations and Quality Officer—a member of our Executive Committee—grew into an international organization with the introduction of our COVID-19 vaccine and scaling of our manufacturing capabilities. We have established a culture that encourages transparency, accountability, and ownership of quality at all levels in the organization. As we scale, we have focused on hiring the best talent with the required experience, training, and education.

Our leaders at Moderna drive our quality culture and Quality Assurance ensures it is applied consistently and thoughtfully across the globe. We seek to ensure quality and compliance at Moderna through a combination of a robust Quality Management System (QMS), our quality culture, and our people. Senior management is engaged in the review of the quality system’s performance and the organizational health, while driving a culture of sustainable compliance and continuous improvements.

We have established, documented, and implemented a global QMS to assure continued compliance with applicable national and international regulations and laws related to product quality. We work with partners and vendors to ensure Moderna standards are understood and followed. We train and develop our teams, providing a learning environment where team members and leaders build and expand their technical capabilities and regulatory skillsets. As part of our governance and oversight obligations, the QMS elements within Moderna and at our partners and vendors are periodically audited and effectiveness is verified.

Our quality system applies across our product life-cycle starting with development, through commercial manufacturing and post-marketing surveillance. In the last two years, our Norwood manufacturing site, our affiliate offices, and our clinical safety and pharmacovigilance operations have been inspected by health authorities, including but not limited to U.S. Food and Drug Administration (FDA), European Medicines Agency (EMA), Medicines and Healthcare products Regulatory Agency (MHRA UK), Health Canada, Swissmedic, and Therapeutic Goods Administration (TGA Australia). Acceptable compliance statuses were received and related GMP clearances were obtained.

### Clinical Safety and Pharmacovigilance

The safety and quality of our products is paramount to us, and we are deeply dedicated to the safety of all our patients in our clinical trials and of those receiving our products after authorization. The Clinical Safety and Pharmacovigilance team supports our mission with proactive safety assessment, effective risk management, and transparent risk communication throughout the life cycle of our products. All products in clinical development have dedicated

cross-functional Safety and Risk Management Teams (SRMTs) which continuously review and assess all emerging safety data for the program. The SRMTs are overseen by Moderna's Safety Review Board (SRB), a senior level, cross-functional, safety governance body led by the Chief Safety Officer.

We have a pharmacovigilance (PV) system that assures comprehensive safety monitoring and signal detection across Moderna's portfolio of products and clinical programs. Moderna's standards and our QMS assure compliance with national and international reporting requirements as well as special reporting obligations in accordance with regulatory commitments. As part of Moderna's governance and oversight obligations, the effectiveness of the PV system is monitored and periodically audited, with outcomes reported to our senior leadership. All Moderna employees and contractors are required to complete training on the company's adverse event reporting policy.

### Protecting against product counterfeiting

The WHO estimates that falsified medicines are worth \$200 billion worldwide. The International Criminal Police Organization (INTERPOL) and other law enforcement bodies have issued warnings of the growing threat of opportunistic criminals taking advantage of the high demand for vaccines by flooding the market with fake vaccines and by promoting scams. Criminals do not adhere to any sort of standards in production, so the trade in counterfeit medicines can have a serious impact on public health and safety, lead to social and environmental concerns (substandard labor and production practices), and result in other criminal acts, such as fraud.

With all these concerns in mind, we aim to ensure that all patients are securely delivered genuine and uncompromised Moderna medicines. Our Brand Protection and Supply Chain Security (BPSCS) team has established a proactive, concerted approach to combat illicit trade, mitigate risk of theft, tampering, diversion, and prevent the production and sale of counterfeit products. This multi-tiered approach includes the development of intelligence-based threat matrices to identify target countries and regions, outreach and training to domestic and international officials, continuous monitoring of the internet and dark web, and market surveillance.

We work diligently to find the best partners and most advanced technology to collect timely and relevant brand threat intelligence. Close partnerships with law enforcement and regulatory bodies enable us to share intelligence, provide tools needed to investigate illicit trade of Moderna's medicines, identify perpetrators and criminal networks, and disrupt criminal activity. As potential threats are identified, BPSCS works closely with internal stakeholders to create business solutions and incorporate best practices to mitigate risks to the product, supply chain, and the patient.

## Product quality and patient safety performance indicators

	2022	2021	2020
<b>GxP audits</b>			
Total audits executed	312	281	140
Internal <sup>(1)</sup>	26	9	7
External <sup>(2)</sup>	286	272	133
<b>Regulatory authorities</b>			
Total inspections	30	30	20 <sup>(5)</sup>
Inspections found to be acceptable (%) <sup>(4)</sup>	92.3%	91.6%	90.0%
<b>US FDA</b>			
FDA clinical site inspections	6	5	9
FDA warning letters <sup>(6)</sup>	0	0	0
FDA Form 483	1	1	2
Number of FDA, ANMAT VAI (voluntary action indicated) classifications	4	1	2
Number of TGA, Swiss Medic, MHRA OAI (official action indicated) classifications	1	1	1
US FDA sponsor inspections	0	0	0
ANMAT clinical site inspections	2	0	0
TGA pharmacovigilance inspection	1	0	0
Health Canada pharmacovigilance inspection	1	0	0
Bulgarian Drug Agency (BDA) pharmacovigilance inspection	1	0	0
Swiss Medic pharmacovigilance inspections	0	1	1
MHRA pharmacovigilance inspections	0	1	0
EMA, Health Canada pharmacovigilance inspection	0	1	0
PMDA GCP Sponsor Inspection	2	3	0
Health Canada GCP Sponsor Inspection	0	1	0
<b>Recalls</b>			
Total recalls	1	0	0
Class I recalls	1	0	0
Class II recalls	0	0 <sup>(3)</sup>	0
<b>US FDA</b>			
FDA recalls	0	0	0

(1) Total number of audits performed on facilities owned by Moderna

(2) Total number of audits performed on GxP suppliers/vendors to Moderna

(3) 1 Recall was performed by the MAH Takeda

(4) Acceptable defined as general 483 findings not resulting in a warning letter/injunction or critical findings

(5) An FDA Site Visit was performed in Norwood in 2020 (the visit is not counted in the final inspection quantity for 2020).

(6) No FDA warning letters on Moderna owned facilities or Moderna product



# Employees

Changing the future of medicine starts with our people. Across Moderna, our colleagues are working to make the impossible possible, and our commitment is to support them every step along the way. We are creating the organization of the future.

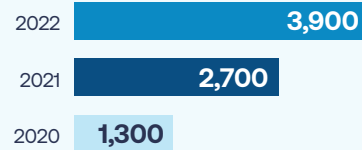


**“Our team has continued to push beyond what we ever thought possible to completely reimagine how medicines are created and delivered. They are the changemakers and the driving force behind our science and our culture, and we are making significant investments in both people and infrastructure to build the most impactful version of Moderna.”**

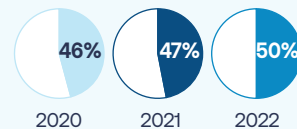
**Tracey Franklin,**  
Chief Human Resources Officer

## 2022 Highlights<sup>(1)</sup>

### Full-time employees



### Female employees



### Turnover<sup>(2)</sup>



(1) As of December 31, 2022

(2) Voluntary and involuntary, based on total FTEs by the end of 2022

	2020	2021	2022
<b>By gender</b>			
Female executives <sup>(3)</sup>	37%	39%	<b>41%</b>
Female employees in R&D and Manufacturing roles	-	-	<b>50%</b>
<b>By race and ethnicity – U.S. only</b>			
Asian	21%	24%	<b>26%</b>
Black and African American	3.5%	6%	<b>6%</b>
Hispanic / Latinx	5%	8%	<b>8%</b>

(3) Defined as employees at Vice President level and above

## Building a global and diverse workforce

Our workforce has expanded significantly by more than three times over the last several years as we have rapidly scaled to become a global commercial company. We brought on new leaders in 2022 who will help us scale during our next phase of growth as we prepare for several upcoming new product launches. At year-end, we had employees in 17 locations across North America, Europe and Asia Pacific.

While we continue to scale our organization, we are focused on creating an environment that is rooted in a strong sense of belonging. Our diverse team represents 34 different nationalities. Our workforce is 50 percent female, and women make up 41 percent of our executives. We also continued to work to increase racial and ethnic representation in our U.S. workforce in 2022.

## Providing equal pay for equal work

We are providing equal pay for equal work. Our most recent pay equity analysis in 2022 confirmed that among Moderna employees there is no statistically significant pay gap on the basis of gender globally and there is also no statistically significant pay gap on the basis of race or ethnicity in the United States. We are committed to measuring pay equity annually and sharing our results publicly, as well as committing to address unexplainable differences that we might identify.

We believe in the value of transparency and publicly disclosed our consolidated 2021 EEO-1 report for our U.S. workforce. We will continue to upload our most recent filings to our Corporate website.

## Scaling a unique culture

As an organization, we are bold, collaborative, curious and relentless.



These values are underpinned by a core set of what we call “basecamp” values – they are non-negotiable for every Moderna employee: **integrity, quality, respect.**



### Bold

Deliver on the promise of mRNA technology to transform the lives of patients. Be a visionary.



### Collaborative

Accomplish goals by working together and respecting others’ viewpoints. Be a part of one team.



### Curious

Seek to challenge and improve upon the status quo. Be innovative.



### Relentless

Stay undaunted by challenges and build quickly on successes. Be tenacious in pursuit of our mission for patients.

## We are working to build the most impactful version of Moderna 20 years from now.

To support our growth, in 2021 we articulated the Moderna Mindsets. These Mindsets are tools we are using to build Moderna, together. They define how we each collaborate, how we lead, and how we make decisions. We believe they will be integral to

our future success, and we are working to integrate them into every facet of how we identify, onboard, grow, and develop our people. In 2022, we started to immerse our senior leaders across the globe through a new coaching and development program that is based on our Moderna Mindsets. This program represents a significant investment in our growing senior leader cohort, providing every senior leader

with individualized coaching to help them become stronger leaders for Moderna’s future. Mindsets training is also provided to all new team members as part of their onboarding program.

 **For more information on our Mindsets,** visit <https://www.modernatx.com/newsroom/our-blog-coding-region/mindset-matters>.

## Our Mindsets



### We act with urgency.

Action today compounds the lives saved tomorrow.



### We pursue options in parallel

to make the best choice later.



### We accept risk

as the only path to impact.



### We obsess over learning.

We don’t have to be the smartest—we have to learn the fastest.



### We pivot fearlessly

in the face of new data.



### We question convention

because proven models don’t always fuel the future.



### We push past possible

because greatness lives outside of comfort zones.



### We behave like owners.

The solutions we’re building go beyond any job description.



### We act with dynamic range

driving strategy and execution at the same time and at every step.



### We remove viscosity

to encourage collective action.



### We prioritize the platform.

over any single product.



### We digitize everywhere possible


using the power of digital information to maximize our impact on patients.


<https://www.modernatx.com/moderna-mindsets>


## Leading with Belonging


We believe our strength comes from our diversity, and we are building a culture of inclusion and belonging for all.


Our commitment to diversity and inclusion starts with belonging, the most challenging but essential focus area. We have developed a holistic Belonging, Inclusion & Diversity roadmap, with focus on:

- 

**Prioritizing**  
diverse representation  
at every level of our organization
- 

**Creating**  
an exceptional culture of belonging,  
inclusion, and equity
- 

**Inspiring and developing**  
the next generation of diverse scientists,  
engineers, researchers, and dreamers
- 

**Setting the standard**  
for belonging, inclusion and diversity  
at each stage  
of clinical development
- 

**Using our voice and our brand**  
to expand access to healthcare to underserved  
communities and developing countries

### In 2022, we continued to act on our commitment to Belonging, Inclusion & Diversity.

Some highlights include:

- increasing our monitoring and reporting of company-wide gender and ethnicity data;
- including a belonging, inclusion and diversity focus in every employee engagement survey;
- continuing to invest in our Employee Resource Groups, which are voluntary, employee-led groups that harness the power of belonging in service to our people, our Company and the community at large;
- celebrations and learning opportunities for all employees throughout the year, including Pride Month, Women’s History Month, Black History Month, Hispanic Heritage Month and Asian & Pacific Islander Month.

### Empowering our employees

Our Employee Resource Groups (ERGs) provide support, help with personal or career development, and create a safe space where all employees can bring their whole selves to work. ERGs enhance our culture with a focus on shared identities, experiences, and allyship.

- **ADAPT** (Accessibility and Disability Allies Partnering Together) serves employees with disabilities and allies
- **ASPIRE** (ASian and Pacific Islander Resources and Engagement) serves Asian, Asian American, and Pacific Islander employees and allies
- **RaiNbow Alliance** serves lesbian, gay, bisexual, transgender, queer/questioning, asexual, intersex, nonbinary, and two-spirit employees and allies
- **mPOWER** serves Black, African American, and African employees and allies

- **mVETs** (Moderna Veteran Employees Together) serves veteran employees and allies
- **UNIDOS** serves Hispanic and Latinx employees and allies
- **WISDM** (Women in Science Driving Moderna) serves women and allies committed to gender equality at work
- **VOE** (Voice of the Employee) serves all Moderna employees who are interested in strengthening and supporting our culture

To ensure our ERGs are able to foster and grow thriving communities, every ERG is provided a centralized budget and has both an Executive Committee and Senior Leader sponsor. We believe this creates opportunity for underrepresented employees at more junior levels to enjoy regular and routine exposure to senior management and gain valuable experience governing a substantial budget. It also builds an environment in which the ERGs are accountable directly to the business—not only to Human Resources.

**CEO ACTION FOR DIVERSITY & INCLUSION**

Signatory company since 2020






**95/100**  
Score from 2022 Human Rights Campaign Corporate Equality Index, our first rating

## How ERGs support our culture of belonging

Our ERGs are helping us to build the most impactful version of Moderna, creating a strong sense of belonging and building trust with our communities. These are some of their stories in 2022.

### ADAPT

ADAPT is focused on creating an accessible, safe, and inclusive community where employees with disabilities have equal opportunity to thrive. The group aims to help Moderna become a worldwide innovative leader in disability inclusion by fostering community, investing in education, building a talent pipeline, and improving accessibility. The group will continue to raise awareness and celebrate events focusing on National Disability Employment Awareness Month in October, and the United Nations International Day of the Disabled Person on December 3<sup>rd</sup>.

### ASPIRE

Moderna's ASPIRE group recently had the opportunity to inspire young students and volunteer in celebration of AAPI Heritage Month 2022. With the leadership of our ASPIRE group, we hosted a group of students from Randolph Community Middle School at our Norwood facility. Through hands-on mRNA activity, the students were exposed to the various careers and roles available in the STEM field.

The ASPIRE group also celebrated AAPI Heritage Month 2022 by volunteering at Nantasket Beach Reservation in Massachusetts, U.S. This was an excellent opportunity to give back to our community while also honoring the contributions of the Asian American and Pacific Islander community.

### RaiNbow Alliance

Pride isn't just celebrated in June; at Moderna it's part of the culture we celebrate all year long.



Transgender Day of Visibility (TDOV) is meant to be a day of celebration that honors the resilience, accomplishments, and continued efforts of leaders who advocate and fight against anti-trans sentiment and violence. In March 2022, we hosted a company-wide panel with transgender activists to learn how each of us can better support the transgender community.

In 2022, Moderna supported Fenway Health, a leader in healthcare for LGBTQ+ people and other underserved communities. The organization serves more than 87,000 patients and other clients through social services and public health programs, medical care, and research and education activities.



During #WorldAIDSDay, we recognized our partner organizations that work to address inequalities and help #EndTheEpidemic. We were pleased to be a 'Hope Partner' of The National AIDS Memorial's World AIDS Day events, including a national observance in the National AIDS Memorial Grove, which brings leaders together for conversations on the ongoing efforts to end the epidemic.



## mPOWER

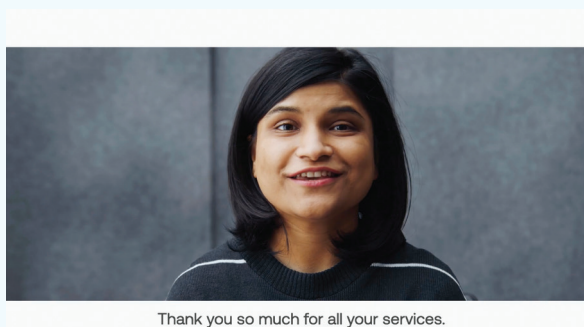
We celebrated Black History Month throughout February with multiple events sponsored by our mPOWER employee resource group. Last year, mPOWER focused on highlighting financial literacy through lunch and learns, a roundtable event on Black history hosted by an external speaker, and virtual fitness classes led by an organization whose mission is to amplify the voice and agency of people who have been most impacted by systemic racism and mass incarceration.



We are a proud sponsor of the Embrace Boston Foundation, whose mission is to dismantle structural racism through their work at the intersection of arts and culture, community, and research and policy. As part of our sponsorship, we were excited to support the 2022 construction and dedication of the Embrace Memorial in Boston.

## mVETs

In honor of Veterans Day, we shared a message from our teams at Moderna for all veterans, our nation's heroes, to recognize the immense bravery it takes to serve in the military, and thank veterans for their selflessness, sacrifice, and service. In 2022, we added Veteran's Day to the list of Moderna holidays celebrated across the US.



[Veterans Day Thank You Message](#)

## UNIDOS

In honor of National Hispanic Heritage Month (September 15 through October 15), we celebrated the invaluable contributions of our Hispanic and Latinx team members. Additionally, the group participated in outreach at local middle schools, social events at Moderna to engage our members, and lunch and learns to educate Moderna employees about Boston-area charitable organizations.



**“I love my job. I love coming into work every day. I love the diversity of my group. We all come from different places. And that just complements each other. More diversity means a greater diversity of ideas. And all these different ways of thinking got Moderna to where we are in the science.”**

**Clarissa Alvarez Garcia,**  
Moderna employee and co-chair of UNIDOS

[Building UNIDOS](#)

## WISDM

Each March, we celebrate International Women’s Day around the world and Women’s History Month in the U.S.

On [#InternationalWomensDay](#), we celebrated the incredible women at the heart of Moderna who are breaking barriers and helping to build a healthier world. We asked members of our WISDM employee resource group what [#IWD2022](#) means to them. [#BreakTheBias](#)



[International Women’s Day Quotes](#)

As a part of our focus on giving back to communities, WISDM sponsored Symphony for Science, an annual benefit concert, and funds supported the Science Club for Girls, located in Cambridge, Massachusetts, U.S., and partnered with several external women’s organization including Boston Area Women in Bioinformatics and Women in Science and Technology (WEST) that brought external talent to Moderna.

WISDM also launched Moderna’s first ERG-driven mentoring program, providing employees with an opportunity for peer-to-peer and senior mentorship across the organization. The impact of a platform to help employees navigate and discuss technical, leadership, industry insights and career paths has been incredibly well received; WISDM saw an increase of 67% in memberships in 2022.

**“My goal as part of relaunching this ERG was to truly enable employees to make the greatest possible impact through developing leadership and mentorship programs and providing career resources for women employees across the career continuum to enable colleagues to have a holistic career experience and to make a human impact on their surrounding communities.”**

**Makeda Mesquitta,**  
Co-chair of Moderna’s Employee Resource Group for Women

**“ERGs provide a platform to bring people together and build a strong support network of diverse people and thoughts.**

**I am passionate about bringing women together and fostering a network where we can learn and uplift each other. I am truly grateful to have the opportunity to lead WISDM and be part of the Moderna Culture and Belonging team to ensure we feel inclusive and connected.”**

**Reema Raghavendra,**  
Co-chair of Moderna’s Employee Resource Group for Women

## Attracting and retaining talent

We operate in a highly competitive environment for talent, particularly as we seek to attract and retain individuals with the ability and mindsets to help us to achieve our mission. We are focused on ensuring that our employees find that their careers at Moderna are filled with purpose and growth. We believe that a career at Moderna provides opportunity for:

- **Impact:** Our people have the opportunity to do work that is unparalleled in terms of its innovation and scope of impact on people’s lives.
- **Growth:** We provide incredible opportunities for growth and we obsess over learning. We invest substantially through Moderna University in the development of our people.
- **Well-being:** We are deeply invested in the health and well-being of our employees and provide benefits and resources that support each person at work, at home and in their communities.
- **Inclusion:** We believe that innovation happens through bringing together a diverse set of perspectives and backgrounds, and creating an environment where differences are celebrated.
- **Compelling rewards:** To attract and retain the best talent, we provide compensation and benefits that reward and recognize our talent for delivery of groundbreaking work and allow employees to share in the value we will create together, including through our equity programs.

We are committed to equal employment opportunity and non-discrimination for all employees and qualified applicants without regard to a person’s race, color, gender, age, religion, national origin, ancestry, disability, veteran status, genetic information, sexual orientation or any characteristic protected under applicable law. We make reasonable accommodations for qualified individuals with known disabilities, in accordance with applicable law.

Though we have grown considerably in the past few years, we’re determined to further develop and retain our people. We conduct periodic talent reviews that identify key talent within the organization. We use that data to inform specific development opportunities for key current and potential future leaders, and to support our succession planning activities for key roles. Not only does this help ensure Moderna has a robust understanding of our workforce and a talent pipeline to grow future leaders, but it also gives our employees the opportunity to continuously grow and advance in a way that meets their aspirations and skills.

### Building paths to well-being

We are grateful to our employees for their dedication and relentless pursuit of our mission and have developed programs supporting their well-being. We continue to invest in our people by providing a fully holistic well-being experience which continuously evolves to meet the changing needs of our global workforce.

Our robust listening program ensures a cross-functional understanding of the evolving needs of the team. A combination of surveys, focus groups, and small-group listening sessions inform major company initiatives, programs and processes. Our **2022 Total Rewards Optimization Survey** aimed to understand the barriers our employees face in each well-being element: physical, social, emotional, and financial. The survey yielded 65 percent employee participation and provided key insights into what supports our people to be their best, and what challenges they face to stay at their best.

The data helped us to continue to scale up our Benefits program in 2022:

**Health and well-being:** We provide quality and affordable programs to support employees in all their health needs. We support our employees’ financial well-being by recognizing when they are unable to

work, and protecting their income through highly competitive leave plans. In 2022, we increased our 401k match in the US to help our workforce better plan for their future financial freedom. Subsidized green transportation and lunches are also provided across all our campuses in the U.S. Every employee globally is provided with a Lifestyle Spending Account, a monthly investment which can be used to invest in well-being activities that are the most meaningful to themselves and their families. More than 90 percent of the company utilizes the benefit for gym memberships and fitness classes, healthy meal delivery, nutritional coaching and in support of time away from work. Additionally, our employees and their families have access to 24/7 support on a spectrum of needs, from coaching to licensed mental health therapists and psychologists, legal and financial services, guidance and resources for child and elder care, and more, all at no cost. We recognize that all employees don’t have equitable access to quality care, and we’ve partnered with an organization which provides curated support and specialized navigational programs to support our LGBTQ+ colleagues.



**“Making sure our employees understand that well-being is a priority is paramount to engagement and successful outcomes in our investments.”**

**Erin Sarin,**  
Senior Director, Global Benefits





**Time off and sabbaticals:** It is important that our employees take time to rest and recharge to bring the best possible version of themselves to work each day. Our paid time off programs continue to evolve to ensure they are truly representative of our people and their lives. In 2023, we introduced three annual Global “Recharge” days, providing our employees with the opportunity to disconnect collectively. Moderna’s sabbatical program provides employees with a paid month off after five years of service, then every three years thereafter.

**Life & Family benefits:** We understand that building a family can take many shapes and sizes, which is why we provide unlimited access to world class fertility coverage, adoption and surrogacy benefits, 18 weeks of paid parental leave for all new parents, and personal care navigation programs to help prepare for parenthood. Employees have access to up to a month’s worth of back-up childcare to provide them with the peace of mind to cover life’s unexpected surprises.

**“Moderna’s startup spirit provides us with the environment to adapt new programs and benefits quickly, and get creative in how we deliver them. We have the opportunity to do things that haven’t been done before - things that are relevant to our population and easy to scale to support growth.”**

**Erin Sarin**

**Compelling rewards:** All employees participate in our corporate long-term incentive programs through the receipt of equity grants. We believe that in addition to incentivizing growth that leads to shareholder value, broad eligibility for our equity programs helps promote employee retention as these awards generally vest over a four-year period and embed our “We behave like owners” mindset. We operate in multiple locations and jurisdictions that have varying minimum-wage requirements, but employees’ starting salaries are typically well above applicable minimum-wage requirements.

With a keen interest in retaining and recruiting top talent to help advance our mission, we continue to offer best-in-class employee benefits and to adapt our offerings to address the needs of our people.





**“Our vision for learning at Moderna is to become a ‘beacon of education’ and to be recognized globally as the pre-eminent talent development destination in biopharma and beyond. We have great intellectual horsepower in our teams. We owe it to the world to contribute knowledge as well as medicines.”**

**Noah Rabinowitz,**  
Vice President, Learning & Development

## We obsess over learning

We believe designing an ecosystem that provides innovative and transformational learning, upskilling, and career development opportunities to our employees will build culture, promote well-being, and drive high-performance.

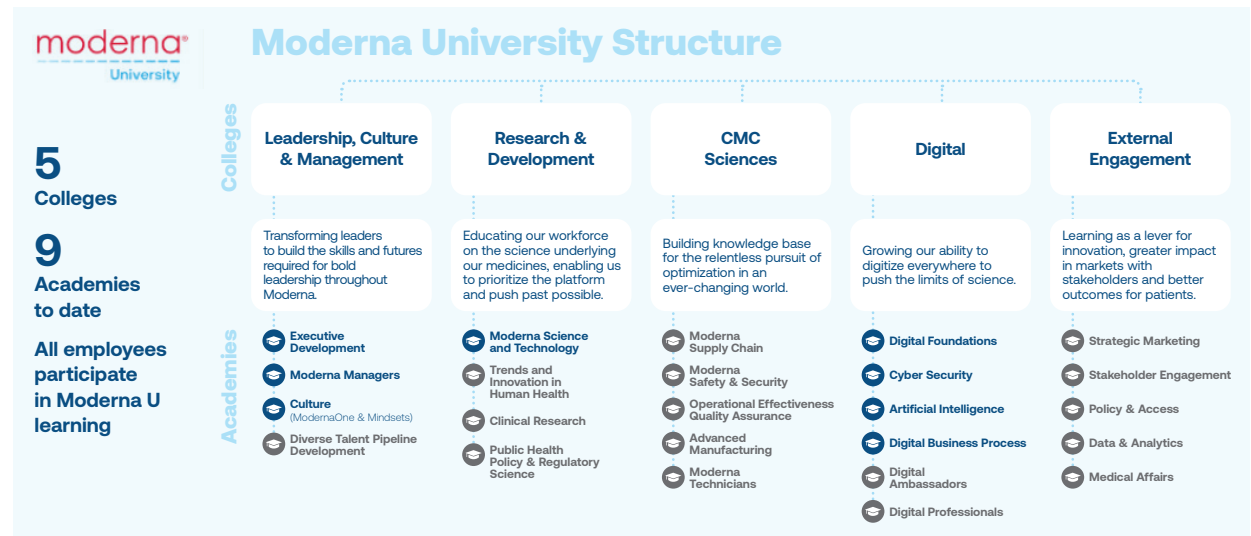
## Creating a learning organization of the future

### Moderna University

Moderna University is the place where our people’s curiosity and obsession for learning meet to unleash their potential. In 2022, we took our university to the next level, setting up a college and academy structure for scale.

Colleges are led by deans, who act as ambassadors of our institution, architects of our curriculum, and role models of the learning and growth culture we are building. Curricula comprise different learning modalities, from instructor-led, virtual sessions, micro learning, simulations, peer-to-peer learning, etc.

We are also building a state-of-the-art campus with a central location in Norwood, Massachusetts, U.S., as the “hub” of Moderna University, supported by satellite “spoke” sites across the globe. These will be digitally connected through innovative technology, bridging local and global inspiration, knowledge, and people.



Rendering image of future Moderna University Campus

## Key programs in 2022

### Scaling up our culture

#### Mindsets ‘LEARN’ Immersion

Our interactive, full-immersion Mindsets Workshops pair people from across the organization in small-group sessions to discuss how they see these values represented in their work. As of November 2022, 88 percent of our global employee population had completed this training.

#### Moderna ONE

Our culture thrives when we are together, and we know how critical the first few months are at Moderna. Starting in November 2022, our Moderna ONE onboarding program is now hosted in-person in Cambridge, MA. We have refreshed Moderna ONE, our onboarding program designed to help ensure that each new team member has a powerful experience integrating into the company and our Mindsets from day one. Since November 2022, more than 600 people have gone through this new experience, with 84 percent participating within their first month at Moderna.

#### Manager Academy

Our Manager Academy program aims to enable our 1,200+ people leaders to successfully guide and inspire our teams through future bold challenges and our Mindsets. The academy includes learning experiences on coaching, performance feedback, hiring, well-being, and leading for innovation.

### Democratizing AI

#### AI Academy

Launched in 2021, the artificial intelligence (AI) Academy offers a cross-organization hybrid training focused on topics like data visualization, machine learning

algorithms and AI ethics, and dives deep into how our teams can leverage AI in their specific job functions. The program’s interactive platform supports both in-person and online learning, and the program continues to evolve the experience based on employee feedback and newly available technology. AI Academy is not only a teaching tool, but also an incubator that generates innovative ideas that are executed within the company on an ongoing basis. By the end of 2022, more than 600 employees have been through the program and the team has held Ideathons in the U.S. and Europe. The result is more than 340 actual AI use cases. The company has also run successful pilot programs for “AI Applied,” a more specialized learning initiative for team members who work in data visualization and is now piloting a “Pro” level engagement for a smaller group at the organization who use AI in their day-to-day roles.



**“Moderna is well positioned to become a real-time AI company, but to win we must continue to build for scale, speed and quality.”**

**Brad Miller**  
Chief Information Officer

#### Cybersecurity Academy

Launched in 2022, the Cybersecurity Academy helps employees to learn about their critical role in protecting each other and our organization from security risks and threats. We also refreshed our Security at Moderna training and partnered with industry experts to curate

new and engaging training experiences, including a Cyber Escape Room. We celebrated a 10-day learning challenge for all employees to build foundational cyber skills and drive engagement.

### The “front-door” to learning at Moderna

We are updating our digital learning platform to scale learning across Moderna in support of building a culture of perpetual learning. The platform provides a personalized, AI-enabled, engaging, and collaborative experience by pulling content from experts around the world and recommending bite-sized learning based on individual upskilling goals. It allows our people to not just be consumers of learning, but also creators and curators.

Another critical pillar of our learning offering is our digital regulatory compliance system. The platform allows us to track and administer training programs for each of our employees, build awareness of internal policies and responsibilities, and meet regulatory requirements.

### How mRNA Medicine Will Change the World - Melissa J. Moore | TED



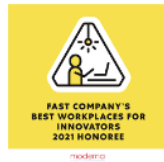
## Engaging our employees

We believe that our employees are highly engaged, and our company and team have been publicly recognized for our leadership, innovation and good corporate citizenship. We measure employee engagement through a vendor-supplied engagement software, using validated external benchmarks to track employee engagement factors. We consistently achieve above benchmark scores on engagement, culture, and belonging.



In 2022, we ranked as the number one large employer in BioSpace’s 2023 Best Places to Work in Biopharma report for second consecutive year.

We were ranked one of the top employers in the global biopharmaceutical industry by Science and Science Careers’ 2022 Top Employers Survey for the eighth consecutive year. We were ranked no. 7 on the list and recognized for our commitment to innovative leadership, respect for employees and corporate social responsibility.



## Owning our health, safety and environment

### Our mission depends on the health, well-being and safety of our employees

Achieving our mission relies on our employees being at their best, feeling well, staying safe and taking care of the environment. It requires us all to take personal ownership for reducing health and safety risks, looking after our well-being, and minimizing the environmental impacts of our work.

We have developed Moderna’s Global Environment, Health and Safety (EHS) Policy to formalize our commitments to protect the environment in all the locations where we operate, and the health and safety of all our employees, third-party contractors and communities. Our Global EHS Policy embodies our principles as we build our EHS management system to ensure strategic planning and continual improvement, in alignment with recognized global standards such as ISO 14001 and ISO 45001. The Policy is expected to be fully rolled out in 2023.



Our Corporate EHS functional area is key to developing, supporting, and fostering an EHS culture across Moderna through identifying and managing EHS risks, engaging our employees and contractors, complying with local laws and regulations and adhering to the highest internal requirements.

We conduct periodic internal EHS audits based on operational risk to identify areas of improvement, inform our EHS management system and reduce risk. New employees and contractors are provided safety training for their specific roles and refresher training is conducted as appropriate. At our Moderna Technology Center in Norwood, Massachusetts, and the Moderna Science Center, in Cambridge, Massachusetts, Safety Committees of representatives from various departments meet regularly to discuss safety programs and performance.

In 2022, there were no employee or contractor fatalities associated with Moderna operations.

## Committing to respect human rights

We believe that we will only succeed in our goals if we are able to attract and retain individuals of diverse backgrounds, regardless of age, gender, ethnicity, religion, country of origin, or sexual orientation. Our commitment to respect human rights is described in our [Human Rights Policy](#).

# Environment

We're building a company that seeks to drive change through what we make and how we make it. We believe that ensuring the health of our planet is critical to impacting human health.






## Growing responsibly to protect our planet

As a company whose mission it is to deliver the greatest possible impact to people through mRNA medicines, we realize we have an obligation to protect the planet and to mitigate the risk of climate change on human and planetary health.

To accelerate our efforts, we have established our environmental sustainability strategy based on three pillars, which capture our commitments to grow the company in a way that protects and minimizes our impact on the environment. Our Executive Committee at Moderna oversees our environmental sustainability strategy and gives updates to the Board of Directors on a regular basis.

**Environmental Sustainability Strategy**

 <b>Sustainability by Design</b>	 <b>Natural Resource Conservation</b>	 <b>Decarbonize Value Chain</b>
<i>Current focus area as:</i>		
<ul style="list-style-type: none"> <li>▶ <b>LEED<sup>(1)</sup></b> certification, or equivalent, for new sites and buildings</li> </ul>	<ul style="list-style-type: none"> <li>▶ Energy and water conservation</li> <li>▶ <b>Net-zero</b> target for Scopes 1 and 2 carbon emissions</li> </ul>	<ul style="list-style-type: none"> <li>▶ <b>Partner</b> with suppliers to reduce Scope 3 carbon emissions</li> </ul>
<small>(1) U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED)</small>		



## Sustainability by design

A fundamental pillar of our strategy is to incorporate sustainability by design principles in new sites and buildings. To demonstrate our commitment, we will seek LEED, or similar, certification for new projects. As a relatively new commercial company, we have a unique opportunity to grow in a way that positions the protection of the environment as a key consideration in the design of new facilities, new processes and new products. We continue to scale and have announced investments in a new headquarters building in

### Building a new HQ and R&D operations low-carbon building in Cambridge

The new science center is being built to support our growth as the company continues to enhance its pipeline of mRNA medicines, and this new site will include custom spaces for leading-edge research and development. The building will integrate scientific and non-scientific spaces to maximize collaboration and provoke innovative disruption.

This building is designed to be the most sustainable commercial lab building in Cambridge, expected to eliminate most of the fossil fuel consumption for building heating and includes features that promote occupant health and wellness, enabling Moderna to advance its strategic sustainability initiatives.

#### TARGETING

**92%**

reduction in fossil fuel use

**10%**

reduction in embodied carbon

**100%**

of building energy consumption offset by on- and off-site renewable energy

**LEED Platinum Core & Shell and LEED Zero Energy** certifications

Cambridge, Massachusetts, a quality control lab center in Madrid, Spain, as well as commitments to build new manufacturing sites in Canada, Australia, Kenya, and the United Kingdom. This expansion will also minimize the need to ship products from U.S. or EU sites and increase our social and economic impact in countries where we establish a local presence. We include in this report current examples of how we are incorporating sustainability design in our new projects.

### Opening a new lab prioritizing sustainability

Our new Moderna Madrid lab, located at the [OM building](#) in the heart of Madrid's digital district, is poised to become Moderna's new EU Testing Lab Center of Excellence. The OM building has LEED® Platinum and WELL Platinum pre-certifications. The building offers high-efficiency spaces and was recently recognized by the Association of Enterprise Opportunity's Innovation award. An energy resource optimization philosophy is embodied in the day-to-day operation of the building, utilizing photovoltaic and thermosolar panels, geothermal energy, biomass boilers, wind energy, rainwater accumulation systems and treatment of water and waste. The building is powered by five different sources of renewable energy.

## Incorporating sustainability by design across regional manufacturing sites



In 2022, we celebrated the groundbreaking of our manufacturing facilities in Canada and Australia. As an example of how we are incorporating sustainability design elements in our new manufacturing facilities, our manufacturing facility in Canada is designed to eliminate most fossil fuel usage.

We have electrified heating equipment, eliminating the needs for fossil fuel-fired boilers.

In addition, the site is located in Laval, Quebec, an area where a majority of electricity generation is from renewable sources.

**TABLE 1: ENERGY and EMISSIONS DATA 2021 (base year) and 2022**

**Energy Consumption**

**Notes:**

- (1) Enhancements to Moderna's Basis of Accounting for greenhouse gas (GHG) emissions associated with our operations resulted in adjustments to 2021 (base year) Energy & Emissions Data reported prior to April 1, 2023.
- (2) ERM Certification and Verification Services, Inc. (ERM CVS) was engaged to provide limited assurance in relation to the 2022 data, which is summarized in the ENERGY & EMISSIONS DATA Reporting table included in this report. See the 2022 ERM CVS Assurance Statement for details.

ENERGY <sup>(a)</sup> megawatt hours (MWh)		2021 <sup>(1)</sup>	2022 <sup>(2)</sup>
<b>Direct Energy [Energy from Onsite Combustion]<sup>(b)</sup></b>			
Natural Gas	MWh	44,851	55,952
Diesel	MWh	759	565
TOTAL ENERGY FROM ONSITE COMBUSTION (MWh)		45,610	56,516
<b>Indirect Energy [Purchased electricity]<sup>(c)</sup></b>			
TOTAL PURCHASED ELECTRICITY (MWh)		28,819	39,688
<b>Indirect Energy - Fuel Mix: market-based<sup>(d)</sup></b>			
Fossil Fuel	MWh	3	290
Nuclear	MWh	30	81
Renewable	MWh	28,786	39,317
<b>Indirect Energy - Fuel Mix: location-based<sup>(e)</sup></b>			
Fossil Fuel	MWh	15,453	22,479
Nuclear	MWh	7,612	10,366
Renewable	MWh	5,753	6,843

- a) Energy information was determined using utility invoices for natural gas and electricity at our main facilities in Norwood, Massachusetts and Cambridge, Massachusetts. For smaller facilities and office buildings, energy information was estimated based on energy intensity factors from the U.S. Energy Information Administration's Commercial Buildings Energy Consumption Survey (2018). For energy from diesel combustion, energy was determined from emergency generator fuel meters or emergency generator runs hours.
- b) Direct Energy is energy produced from combustion of fuels in onsite equipment that is owned or operated by Moderna, such as energy from the consumption of natural gas in boilers and energy from the consumption of diesel fuel in emergency generators.
- c) Indirect Energy is energy generated offsite and purchased by Moderna, such as electricity.
- d) Indirect Energy Fuel Mix (market-based) reflects action taken by Moderna to source energy and energy attribute certificates. In 2021, Moderna purchased unbundled renewable energy certificates for our U.S. operations, resulting in 99% of our indirect energy being attributed to renewable energy. For facilities outside of the U.S., the market-based indirect energy fuel mix was determined using the 2021 U.S. Energy Information Administration's country specific information for the generation of electricity.
- e) Indirect Energy Fuel Mix (location-based) represents indirect energy obtained from electric grids in regions where our facilities are located. For facilities in the U.S., the location-based indirect energy fuel mix was determined using the U.S. EPA eGRID Summary Table 2020. For facilities outside the U.S., the location-based indirect energy fuel mix was determined using the 2021 U.S. Energy Information Administration's country specific information for the generation of electricity.

**Greenhouse Gas (GHG) Emissions Scopes 1 & 2**

GREENHOUSE GAS (GHG) EMISSIONS metric tons (mt) of carbon dioxide equivalents (CO2e)		2021 <sup>(1)</sup>	2022 <sup>(2)</sup>
<b>Scope 1: Direct Emissions<sup>(f)</sup></b>			
On-site Combustion	mt CO2e	8,321	10,284
Executive Air Travel	mt CO2e	-	128
Vehicles: Fleet/Logistics	mt CO2e	140	72
Fugitive - Refrigerant and Purchased CO2	mt CO2e	899	1,407
TOTAL SCOPE 1: (mt CO2e)		9,360	11,891
<b>Scope 2: Indirect Emissions [Market-based]<sup>(g)</sup></b>			
TOTAL SCOPE 2: Market-based Emissions Methodology	mt CO2e	4	225
<b>Scope 2: Indirect Emissions [Location-based]<sup>(h)</sup></b>			
TOTAL SCOPE 2: Location-based Emissions Methodology	mt CO2e	6,949	9,880

- f) Emissions are reported as carbon dioxide equivalents (CO2e), which standardizes the impact of other greenhouse gases, such as methane and nitrous oxide, to carbon dioxide based on their respective global warming potentials. Scope 1: Direct Emissions result from the combustion of fuel in owned or operated equipment such as boilers, emergency generators, aircraft used for executive travel, and fleet and onsite logistic vehicles. Scope 1 emissions also include fugitive emissions from unintentional refrigerant losses and from purchased carbon dioxide. NOTE: refrigerant losses from equipment maintained and operated by lessors of property we occupy are outside of our operational control and not included in our scope 1 emissions. Emissions from natural gas and diesel fuel combustion were calculated using the U.S. EPA's Center for Corporate Climate Leadership Emission Factors for Greenhouse Gas Inventories (1 April 2022). Emissions from fuel combustion in aircraft used for executive travel and U.S. based vehicles were calculated using the U.S. EPA's Center for Corporate Climate Leadership Emission Factors for Greenhouse Gas Inventories (1 April 2022). Emissions from fuel combusted in internationally based vehicles were calculated using the U.K. DEFRA's Greenhouse gas reporting: conversion factors 2021. Emissions from refrigerant losses are calculated using associated global warming potentials for individual refrigerants.
- g) Scope 2: Indirect Emissions [market-based] for U.S. locations were calculated using unbundled Green-e® Certified renewable energy certificates (with zero greenhouse gas emissions). Indirect Emissions [market-based] for our facilities in Switzerland and Poland were calculated using the International Energy Agency's CO2 emission factors for electricity (2022). Indirect Emissions [market-based] for our facility in Canada were calculated using Canada's 2022 National Inventory Report emission factors for Ontario (Table A13-7). Indirect Emissions [market-based] for our facility in the United Kingdom were calculated using the U.K. DEFRA's Greenhouse gas reporting: conversion factors 2022.
- h) Scope 2: Indirect Emissions [location-based] for U.S. locations were calculated using the U.S. EPA eGRID Summary Table 2021. Indirect Emissions [location-based] for our facilities in Switzerland and Poland were calculated using the International Energy Agency's CO2 emission factors for electricity (2022). Indirect Emissions [location-based] for our facility in Canada were calculated using Canada's 2022 National Inventory Report emission factors for Ontario (Table A13-7). Indirect Emissions [location-based] for our facility in the United Kingdom were calculated using the U.K. DEFRA's Greenhouse gas reporting: conversion factors 2022.

## Natural resource conservation

Human and planetary health are interconnected, and both are impacted by climate change, loss of biodiversity, water scarcity and plastic pollution. In 2022, we continued to focus on understanding the use of natural resources in our manufacturing and value chain.

With this information, we are working on defining strategies that support nature and biodiversity, which we believe are necessary to protecting human health and the planet. We are currently expanding our baseline metrics to include waste and water and will assess biodiversity around our new manufacturing sites to identify conservation priorities.

Building on our 2021 announcement to achieve net-zero carbon emissions in Scopes 1 and 2 by 2030, we continued to make progress on our emissions accounting and reporting by establishing and sharing our 2021 base year emissions on [www.modernatx.com/responsibility](http://www.modernatx.com/responsibility). In addition, in 2022 we committed to set emissions targets in alignment with the Science Based Targets initiative's (SBTi) target-setting criteria.

Energy and greenhouse gas emissions data for 2021 and 2022 are presented in Table 1. In 2022, our energy consumption and carbon emissions increased as we continued to expand operations at our Moderna Technical Center (MTC) in Norwood, Massachusetts.

As we scale, we are increasing understanding of our operations and have initiated internal energy audits to find efficiency opportunities and identify fossil fuel-fired equipment for replacement in pursuit of our net-zero carbon emissions commitment.

## Decarbonize Value Chain

At Moderna, we understand that our responsibility to reduce carbon emissions extends to the operations of our value chain. We have committed to define a near-term science-based target and evaluate a long-term Scope 3 target to minimize the impact to the environment from our value chain.

We have established our 2021 GHG Scope 3 baseline and will share our results once third-party verification has been completed in 2023. Like others in our industry, Scope 3 emissions in 2021 accounted for more than 90% of our carbon emissions and we have identified the list of partners that contribute most to these emissions. We have already started to engage with strategic partners to discuss our shared journey to reduce carbon emissions, intending to use our brand and purchasing power to influence our partners to support setting or accelerating their carbon reduction goals in line with the SBTi.

Our employees are empowered to be part of this journey, and we continue to support initiatives that help us reduce Scope 3 emissions. For example, in the United States, we offer benefits to encourage green transportation across all our campuses, including annual bike-share memberships, monthly allowance for commuting expenses and charging electric vehicles while at work.

In parallel with establishing our base line Scope 3, we engaged with a strategic logistics partner, Kuehne+Nagel, to implement the use of biodiesel in a European shipping route. Through this partnership, we conducted a pilot to operate a logistic route between Belgium and Spain using Hydro-treated Vegetable Oil (HVO). HVO is a biofuel that can reduce CO2 emissions up to 90%, over the fuel's life cycle compared to fossil derived diesel fuel. Through these engagements and future pilots, we aim to support the expansion of alternative fuels in the marketplace. Late in 2022, we initiated a pilot to use sustainable aviation fuel (SAF) on selected EU air logistics routes from our Moderna's EU distribution hub in Belgium.



## Accelerating our commitment to the environment

Climate change is increasingly impacting human health, affecting the spread of infectious disease, and putting populations at higher risk of emerging disease and co-epidemics. The Intergovernmental Panel on Climate Change (IPCC)'s 2023 Synthesis Report on climate change concluded that “there is a rapidly closing window of opportunity to secure a liveable and sustainable future for all.”

We have a lot of work to do and are focused on understanding our impact on the environment and taking action to protect the health of the planet. It is critical for a high-growth company like ours to set ambitious environmental goals and we aspire to also put Moderna among the global leaders in managing the impact of waste from our business and decreasing the natural resources we use, to promote long-term, sustainable growth for the planet and our organization.

The next key steps in our journey include:

- conduct climate scenario analysis to enhance our understanding of climate-related risks and opportunities and to align with the recommendations of the Task Force on Climate-related Financial Disclosures
- submit our carbon emissions targets for SBTi validation
- obtain third party assurance of our water use and waste generation metrics and disclose on our website
- report on our progress through the CDP Climate Change Questionnaire

We will remain transparent with our stakeholders and will share progress as we advance our environmental sustainability strategy.



**“In 2022 we put our aspirations into action, laying the foundation for the future. We are building the best version of Moderna for a sustainable future.”**

**Deborah Donovan,**  
Senior Vice President, Environment, Health and Safety



# Community

We aspire to be an active contributor to the communities where we live and work.

As we work to maximize our positive impact on human health, we recognize that some of the most vulnerable communities have seen disproportionately negative impacts from the pandemic. At Moderna, our work to address inequalities exacerbated by COVID-19 has become more important than ever. Our commitment to serve the communities where we live and work has always been part of our identity, and in 2022 we continued to diversify and add more programs to our **giving strategy**.



Engaging with our communities is also a critical part of understanding the evolving needs of our stakeholders and creating long-term value. We will be more capable of delivering on our mission if we understand the inequalities that exist in the social determinants of health of all populations. Through our giving strategy, we are seeking partners that share our commitments to improving human health and closing opportunity gaps.

## 2022 Highlights

**156%** increase in tracked volunteer hours from 2021

**4<sup>th</sup>** Annual Volunteer week with participation across 6 countries

**63%** overall employee participation rate in volunteering and/or giving

**1,500** nonprofits supported globally

**\$7.8 million** in grants by the Moderna Charitable Foundation

**\$800,000** in donations from employee matching program

**\$1 million** corporate donation to support humanitarian relief efforts in Ukraine and Eastern Europe

**\$4 million** in grants by the Moderna Charitable Foundation focused on improving health systems and healthcare in sub-Saharan Africa

**“There’s nothing more normal than neighbors working together. Moderna makes it possible for us to meet and work alongside our neighbors— building community to help communities return to normal.”**

Moderna employee, 2022

## Giving back

At Moderna, we know that we hire talented and passionate people who are committed to making a difference in the world beyond our four walls. As a company, we are proud to support these efforts and offer different programs that enable our employees to engage with causes that matter most to them. All our team members receive eight hours of paid time each year to dedicate toward volunteering, and our Dollars for Doers program matches additional volunteer time with cash donations at a specific hourly rate.

2022 marked our most impactful year of giving back to our communities, both locally and globally. We increased by 156 percent the number of tracked volunteering hours compared to 2021, and 63 percent of our workforce participated in volunteering and/or giving activities. Across the world, we supported more than 1,500 nonprofits. The first inaugural year of our employee matching program resulted in \$800,000 in donations to causes that matter to our employees.

This engagement represents our purpose-driven culture, and our commitment to maximize our positive impact to communities and society, at the same speed and with the same determination as we scale up our company. We are grateful to our employees for working relentlessly to build the most impactful version of Moderna.

Each year between Giving Tuesday and International Volunteer Day, we organize a company-wide Volunteer Week. During our annual Volunteer Week in 2022, hundreds of Moderna team members participated to make a substantial impact with community partners

around the world. This year, we had participants in six countries, including Australia, Poland, South Korea, Switzerland, the United Kingdom, and the United States.



*Distributing food to those in need at Thanksgiving Schweiz, Basel, Switzerland*

Volunteers in the Massachusetts area prepared meals for Pine Street Inn and the American Cancer Society, and inspired comfort and joy by decorating shelters for Heading Home. In partnership with Year Up, our volunteers mentored underserved students by guiding them through mock interviews to help prepare for their future careers.

Internationally, teams across Europe, Asia and Australia supported their communities by cleaning up along the Rhine River, distributing food at local food banks, renovating women’s shelters, and delivering goods to families in need. Both in-person and remote volunteer options were available to support those looking to do in-office team building and for employees unable to travel. These opportunities included spreading cheer by baking holiday cookies and by penning letters of support for cancer patients and their caregivers.



*Decorating a shelter with Heading Home in Cambridge, MA, U.S.*

**“The reason I came to work for Moderna is the same reason I volunteer. It sparks joy to know I am a small part of a team that brings happiness in difficult situations.”**

Moderna employee, 2022



*Building bookshelves for South Korea for children’s welfare centres in Seoul, South Korea*

## Engaging with our communities is critical to deliver on the promise of mRNA

In 2022, we were proud to engage the next generation of scientists by supporting STEM Education Day at Fenway Park, home of the Boston Red Sox. The event brought approximately 3,000 students aged 8-15 and their educators to the ballpark for an educational morning of interactive exhibits. We hosted four stations to help attendees learn about mRNA science by experiencing it first-hand.



Participants learned about mRNA and its relationship to protein, basic concepts around protein translation and folding by rearranging LEGO protein structures, and finally, a looping series of videos highlighted Moderna team members from across our company to help kids understand the wide range of career options available in biotech.

**“A key highlight was seeing my impassioned colleagues speak to the science of mRNA in a relatable way to eager students and then immediately see the curiosity and excitement on the students’ faces. It was a great event to continue our community partnership and showcase our science!”**

Moderna employee, 2022

## Moderna Charitable Foundation

We launched the [Moderna Charitable Foundation](#) in 2022 with an initial endowment of \$50 million. The Foundation supports organizations that promote public health and access to quality healthcare, advancing scientific education and innovation, and advocating for diversity and inclusion, particularly in underserved populations. The Foundation is an extension of the societal impact we have made with our COVID-19 vaccine and seeks to be a full partner in the pursuit of health and education equity.

We aspire toward a long-lasting impact by:

- Grant-making to support organizations that align with our mission
- Philanthropic giving to provide support during humanitarian crises
- Employee matching to enable our people to support causes that matter most to them

At launch, we announced approximately \$5 million in initial grants to five local and global nonprofit organizations, including:

- Boston Medical Center’s [Good Grief Program](#), to help meet growing demand for trauma-informed, culturally responsive therapeutic services for children who have experienced loss, such as the death of a loved one due to COVID-19
- [Heading Home](#), to provide permanent, supportive housing for extremely low-income individuals in Cambridge, Massachusetts
- [International Rescue Committee](#), to support infection prevention and control programs for improved and resilient health systems in West and Central Africa, particularly in countries that have been impacted by conflict
- [Life Science Cares](#), to support nonprofit partnerships and programs fighting poverty and its effects in the Greater Boston Area

- [Year Up](#), to support a workforce development program that closes the opportunity divide between young adults and companies across the U.S.

### Addressing disparities right at our front door

**“The Massachusetts housing crisis, fueled by low affordable housing stock, an exceptionally high cost of living, and childcare costs that are among the highest in the country, is a financial stability disruptor for those barely making ends meet. With the Moderna Charitable Foundation, we share concerns about homelessness as a public health issue and the ongoing disparities that this population has experienced as a result of COVID. With housing as a social determinant of health, we know that outcomes for underlying clinical/medical co-occurring conditions improve for clients, once housing is in place.”**

**Suzanne Picher,**  
Heading Home Inc., Boston, U.S.

Heading Home has helped clients leave their homelessness behind for 49 years, supporting 1,600+ people annually on their pathways out of homelessness. All extremely low-income, and often with co-occurring health and safety-related issues, 100 percent of clients enter their programs with a history of trauma. Ranging from infants to the elderly, over 83 percent of their clients identify as non-white and/or Hispanic/Latinx.

**“Volunteering at Heading Home was a humbling experience. We are so focused on our day-to-day work and family lives that we sometimes lose sight of our greater purpose. Small acts of kindness can make a huge difference in other people’s lives.”**

Moderna employee, 2022.

The Foundation has been partnering with Heading Home to support their permanent supportive housing development in Cambridge, and nearly 75 Moderna volunteers have participated in various engagements, including the beautification of a shelter, decorating a shelter for the winter holidays, and an “Up and Out” move to transform the life of one Heading Home family, as they left their homelessness behind.





## Partnering to build resilient and sustainable health systems

The COVID-19 pandemic placed excessive demands on health workers who were called to serve on the frontline of surveillance, diagnosis and care of COVID-19 patients. In Africa, this added to the burden on the continent’s fragile healthcare system, which continues to face a shortage of staff and resources. Africa currently has 2.3 healthcare workers per 1,000 people. This is significantly low compared to the Americas, which has 24.8 healthcare workers per 1,000 population<sup>(1)</sup>.



IRC staff take off their Personal Protective Equipment at an IRC triage space in the hospital in Goma, Democratic Republic of Congo

The International Rescue Committee (IRC) helps people affected by humanitarian crises to survive, recover and rebuild their lives. A core part of the IRC’s mission is to provide essential health services to those affected by crisis. According to IRC, the World Health Organization (WHO) has estimated that at any given time more than 1.4 million patients are affected by health care associated infections (HAIs), one of the leading causes of death and

disease globally among hospitalized patients. Achieving high quality infection prevention and control (IPC) standards can be challenging in any setting and even more so in the fragile and conflict-affected areas where the IRC works. The COVID-19 pandemic put a spotlight on the fragility of health systems globally and forced pain-points, that predated the pandemic, to become glaringly evident. The Foundation’s grant supports building IPC resilience frameworks in the Democratic Republic of Congo and Sierra Leone.

**“Commitments from partners like the Moderna Foundation are needed more than ever to improve quality of care in health facilities, where 70% of acquired infections are preventable. With this support, the IRC is working with ministries of health and leveraging innovative digital technologies to strengthen infection prevention and control (IPC) across 40 health facilities in Sierra Leone and the Democratic Republic of Congo. Together we are increasing service quality and safety, promoting antimicrobial stewardship, and protecting against infectious outbreaks in humanitarian contexts. As we continue to prioritize and scale IPC throughout our geographic reach, we are grateful for the Moderna Foundation’s commitment to this vital—yet often overlooked—element of health systems strengthening.”**

**Mesfin Teklu Tessema,**  
IRC Senior Director of Health

We are hopeful that with these investments, our partners can reverse some of these setbacks and build innovative models to grow the health workforce, provide essential training to healthcare workers, and help ensure access to COVID-19 vaccines in Africa.

## In 2022, the Moderna Charitable Foundation awarded a total of \$4 million to three global nonprofit organizations focused on improving health systems and healthcare in sub-Saharan Africa.

Amref Health Africa strengthens health systems and trains health workers to respond to the continent’s most critical health challenges. The Foundation is supporting Amref to improve COVID-19 vaccination coverage in Kenya, with a focus on vulnerable and hard-to-reach communities in counties most impacted by the pandemic. Programming focuses on community engagement and integration with non-communicable disease health services to build out overall health system capacity, ensure sustained access to COVID-19 vaccines, and fill gaps in routine care.



(1) Nchasi G, Okonji OC, Jena R, Ahmad S, Soomro U, Kolawole BO, Nawaz FA, Essar MY, Aborode AT. Challenges faced by African healthcare workers during the third wave of the pandemic. Health Sci Rep. 2022 Oct 17;5(6):e893. doi: 10.1002/hsr2.893. PMID: 36262807; PMCID: PMC9576111.

The Foundation is partnering with Seed Global Health (Seed) to support the development of the health workforce in Malawi, Sierra Leone, Uganda and Zambia by providing advanced clinical education and training. These programs focus on national quality improvement and create a model to scale and retain healthcare workers.

Seed also responds to the needs of partner countries to help address health emergencies when they happen. This last year, Seed was one of the first partners that ministries of health called on to support several disease outbreak response efforts. For example, in September 2022, and for the first time in more than a decade, Uganda declared an outbreak of the Sudan strain of Ebola virus after confirmation of a case in the central part of the country. The Ministry of Health swiftly called partners to action to help contain the highly contagious virus. Seed mobilized to support the Government and district hospitals in the following months by training more than 4,000 healthcare workers in Ebola response and care and assisting with contact tracing, ambulance transfers, and distribution of personal protective equipment. On January 11, 2023, Uganda was declared Ebola-free.



Uganda is one of many countries in the region experiencing a rapid increase in the number of zoonotic disease outbreaks; there has been a 63 percent surge in the last decade alone in Africa<sup>(1)</sup>. As the effects of climate change continue to cause widespread health threats like increased outbreaks, the Foundation’s grant has enabled Seed and local partners to meet the emergent challenges of today, while building a fit-for-purpose healthcare workforce and resilient system able to address tomorrow’s health burdens.

(1) <https://www.un.org/africarenewal/magazine/july-2022/africa-63-jump-diseases-spread-animals-people-seen-last-decade>



## Thriving through grief and loss

The COVID-19 pandemic triggered a mental health crisis impacting families everywhere. Data suggest that from April 1, 2020, through June 30, 2021, more than 140,000 children in the United States experienced the death of a parent or grandparent caregiver. The risk of such loss was 1.1 to 4.5 times higher among children of racial and ethnic minority groups compared with non-Hispanic White children<sup>(1)</sup>. The Good Grief Program at Boston Medical Center provides trauma-informed, culturally responsive therapeutic services to children (age 0-18) impacted by death and acute loss. As one of the only children’s grief and loss programs within the city of Boston, Good Grief works tirelessly to best serve urban children and youth who have suffered multiple, traumatic losses. With the Foundation’s grant, Good Grief has been able to respond to the urgent need for services, while also adding language capabilities to their team to serve more children and families.

**“Nayla is a 12-year-old girl who connected with the Good Grief Program after her father died from complications secondary to COVID-19 and is now living with her maternal grandmother. Nayla has been estranged from her biological mother since she was young because her mother carries a substance use disorder. When Nayla walked through the doors of the program, she quite literally embodied rainbows and butterflies. Her early artwork depicted sunshine and rainbows and inspirational messages such as, “Everything will be okay” and “Kindness is cool.” Despite Nayla’s bright smile, her Good Grief therapist detected that there was pain and sadness being pushing out of sight. In a recent session, Nayla’s therapist asked: “What does grief look like?” Nayla selected an image of a single, rotten apple surrounded by fresh apples and shared that grief feels “like a rotten apple. Everyone is happy around me, but I stay in silence, suffering.” This one question opened up a new pathway for Nayla and her therapist to begin to process her many losses. Nayla’s therapist was able to acknowledge and validate Nayla’s experiences in their depth – she was no longer suffering in silence. Their work is now focusing on the ways that Nayla wants to integrate her losses and grow beyond them. By focusing on the ways that Nayla’s experiences are growth-promoting, she can take her apple seeds and cultivate something meaningful. A simple exchange in the context of a trusting relationship highlights the powerful potential embedded within grief therapy.”**

Story shared by Boston Medical Center’s Good Grief Program, U.S.



(1) <https://publications.aap.org/pediatrics/article/148/6/e2021053760/183446/COVID-19-Associated-Orphanhood-and-Caregiver-Death?autologincheck=redirected>

# Governance and ethics

At Moderna, our basecamp values of quality, integrity, and respect guide our work and actions every day. These values are critical to bringing new medicines to patients around the world.

Central to our mission is our commitment to transparency and upholding the highest ethical standards. These values are embedded in every aspect of our business, from our preclinical research and clinical trials to our regulatory and manufacturing processes and our commercial functions to how we conduct ourselves in our relationships with employees, patients, investors and other stakeholders.



## Building good corporate governance


Our Board of Directors believes that sound governance practices and policies provide the foundation for establishing Moderna as a responsible corporate citizen and maintaining the trust of our stakeholders, as well as ensuring the success of our company. Our Board of Directors has set high standards for themselves, our employees, officers and directors.

We have adopted a Code of Business Conduct and Ethics that applies to our Board directors and all our officers and employees. In addition, we have adopted Corporate Governance Guidelines that formalize certain fundamental board policies and practices.

Among other things, we expect that all our directors will have the following experience and traits:

- substantial experience at a strategic or policymaking level in a business, government, non-profit, or academic organization of high standing, able to contribute to Moderna’s strategic growth and able to offer advice and guidance to Moderna’s senior management based on that experience;
- highly accomplished in his or her respective field;
- the ability to contribute positively to the Board’s collaborative culture;
- knowledge of our business;
- understanding of the competitive landscape facing our business; and
- expertise relevant to our growth and business strategy.

Our Board of Directors has established five committees: Audit, Compensation and Talent, Nominating and Corporate Governance, Product Development and Science and Technology. All members of all five standing committees are independent directors.

 **For more information, please see our [Proxy Statement](#) (page 11).**

## Board diversity

We believe that the best decisions arise when people of varied backgrounds, perspectives and experiences come together. Our Board of nine directors includes three that identify as female and two that identify as members of two or more races or ethnicities. As we pursue future Board recruitment efforts, our Nominating and Governance Committee will continue to seek out candidates who can contribute to the diversity of views and perspectives of the Board in accordance with the committee’s Policies and Procedures for Director Candidates. This includes seeking out individuals of diverse ethnicities, a balance in terms of gender, and individuals with diverse perspectives informed by other personal and professional experiences.

 **Please see [Board Diversity Matrix](#) in our [Proxy Statement](#) (pages 11 and 12).**

## ESG governance

A true commitment to ESG requires engagement and oversight at every level of the organization. Our Board recognizes that as Moderna grows,

we have the opportunity to lay the foundation for building the best possible version of Moderna. The Board’s Nominating and Corporate Governance Committee oversees ESG matters and practices so that ESG is incorporated into our governance practices at the highest level of the organization. The committee reports to the full Board on ESG matters and our progress on ESG initiatives. Our Chief Legal Officer, reporting to the CEO, leads Moderna’s ESG strategy, with Executive Committee members overseeing additional elements of particular ESG initiatives. For instance, our environmental sustainability strategy pulls on multiple functions, including our facilities team, which is overseen by our Chief Technical Operations and Quality Officer. And our Chief Human Resources Officer leads our efforts to scale up our culture and strategies to attract and retain talent.

In 2021, we took ESG accountability a step further by incorporating human capital metrics in our bonus program for that year. These goals were focused on maintaining or improving upon employee survey responses that seek to measure belonging and engagement, which we view as key elements of attracting and retaining a diverse workforce. In 2022, in addition to maintaining a human capital metric for our bonus program, we added a vaccine access metric focused on low- and middle-income countries to incentivize meeting demand from these countries.

## Transparency


### Clinical trials

At Moderna, we value trust, integrity, and transparency. We believe that making clinical trial data accessible ensures trust and transparency between researchers, participants/patients, the public and

the pharmaceutical industry. We recognize that it is important for regulators, researchers, trial participants and other concerned parties to have access to clinical trial information to advance medical understanding and progress. Knowledge enlightens and empowers stakeholders to help make sound medical decisions. It is also important that this access works in ways that protect patient privacy, comply with global laws, regulations, standards and enable new research.

We share clinical trial data in a variety of ways, including trial registration, basic results posting, public disclosure synopsis, publications, and data sharing with researchers. We provide results on ClinicalTrials.gov and the European Union Clinical Trials Register (EU CTR) within the timelines required by United States law and regulations issued by the U.S. Department of Health and Human Services (HHS) and the European Medicines Agency (EMA).

Moderna’s Transparency and Disclosure policy ensures compliance is met and clinical trials are conducted in accordance with applicable laws and regulations, including principles derived from relevant international standards. We are designing and conducting clinical trials with the highest ethical and scientific standards.

 [Read more about our commitment in our Moderna Clinical Trial Disclosure and Transparency Policy.](#)

### Political engagement

We believe that public policy and legislation related to our industry and the patients that we serve should be rooted in sound science and an understanding of how innovation benefits us all. To that end, we engage directly with government officials and policymakers, as well as through trade associations

and other advocacy organizations, particularly those engaged in healthcare- and technology-related matters, to help ensure that public policy decisions and legislation are well informed and that they continue to promote innovation and our mission of delivering for patients. The Nominating and Corporate Governance Committee of the Board of Directors, which is composed solely of independent directors, annually reviews our Political Engagement Policy and disclosures, and exercises oversight of Moderna’s political engagement, including our engagement with trade associations and other tax-exempt organizations that may engage in political activity.

Our approach to political engagement, as outlined in our Political Engagement Policy, is defined by the following principles: We do not contribute corporate funds to political candidates, parties, or committees for public office or to 527 groups (including political action committees, or PACs); we do not make independent political expenditures or contribute corporate funds in direct support of or in opposition to political campaigns, ballot measures or ballot initiatives; and we do not sponsor an employee PAC, and have no plans to do so.

### Trade associations

We believe that membership in trade associations and contributions to advocacy organizations can help advance the biotechnology industry, promote a policy environment that continues to encourage innovation, and promote our mission. To the extent that we contribute more than \$25,000 in any calendar year to a trade association, we will disclose the name of that organization and the dollar amount of any membership dues or contributions that are ineligible for deduction as an “ordinary and necessary” business expense.

## Healthcare partners and patient organizations

Collaboration between industry, healthcare professionals, healthcare organizations and patient advocacy organizations is critical to the development and effective use of new vaccines and medicines. We recognize that transparent relationships with healthcare professionals and organizations are critical to our mission to deliver the greatest possible impact to people through mRNA medicines.

We are complying with all applicable laws, regulations, and codes of conduct governing the transparency of our interactions with healthcare professionals and organizations to ensure public trust and confidence. We publicly disclose the transfers of value made to healthcare professionals, healthcare organizations, and patient associations through applicable government portals and the [Moderna website](#).

## Corporate Policies

Working at Moderna is a privilege and responsibility, and we must operate ethically, with integrity and quality in everything we do. The Moderna Code of Ethics and Business Conduct is our guide to how we conduct ourselves and our activities globally. Our Code outlines the high standards to which we hold ourselves and provides the foundation for our continued success. The Code applies to all directors, officers, employees, contractors and anyone who conducts business for or on behalf of Moderna. This includes all staff and levels of management as well as external workers, consultants and temporary workers.

As we have grown and evolved as a company, we

have reimagined our Code to be principles-based. Moderna's reimagined Code, alongside our Mindsets and Values, allows us to build the most impactful Moderna, serving and protecting people across the globe and overcoming challenges together.

We Protect <b>Patients</b>	We Safeguard Our <b>Company</b>
We Value Our <b>Communities</b>	We Build <b>Trust</b>

The new Code was approved by our Executive Committee and Board of Directors in 2022, becoming effective in January 2023. We are committed to providing our Code in local language as needed and we will train all employees on our new Code in 2023.

We have established comprehensive policies to guide our employees in applying the highest ethical standards in their decisions. Some of our key compliance policies and guidance are summarized below:

- **Anti-Bribery:** our Global Anti-Bribery and Anti-Corruption Policy is principles-based and describes our position against corruption. Corrupt activities, including bribery, are not tolerated at Moderna. Among other guidance, our Policy states that facilitation payments are strictly prohibited and giving or receiving entertainment is not permitted.
- **HCP Engagements:** Moderna requires the specific business need for each healthcare professional (HCP) engagement to be documented and

approved before conducting any business, and will only compensate HCPs based on an independently established fair market value for their time.

- **Conflict of Interest:** our employees are responsible for avoiding activities and situations that present a potential or actual conflict between their personal interests and Moderna's interests.
- **Ethical Promotion:** we require and train our employees to follow regulatory requirements for promoting our products for their approved and intended use, and other company policies that govern the creation of promotional material to ensure it is consistent with our approved commercial label.
- **Trade Compliance:** we are meeting the regulatory requirements of all countries in which we operate, including international trade regulations. Our Code of Business Conduct and Ethics requires all Moderna personnel to understand how international trade regulations apply to their work.
- **Sexual Harassment and Other Discriminatory Harassment:** we promote a workplace that is free from all forms of discriminatory harassment based on protected personal characteristics, including, without limitation, sexual harassment. We do not tolerate prohibited discriminatory harassment towards our employees and third parties with whom Moderna works, including partners, vendors, and consultants.
- **Human Rights:** Moderna personnel have an obligation to report any human rights concerns they may identify in the course of their work responsibilities, including those that may occur in a Moderna service provider or supplier.

## Safeguarding information and assets

Information is one of our most valuable assets and the security of our data is fundamental to our commitment to patients, HCPs, business partners, the communities we serve and our employees.

We continue to enhance our security mechanisms to protect information, privacy and Moderna's resources, which include:

- Our cybersecurity program is overseen by the Board Audit Committee and led by our Chief Information Officer
- Audits / external assessments are conducted regularly
- We assess third parties for their security controls and include security requirements in contracts
- We also engage with government agencies, industry, and other companies
- We follow NiST Cybersecurity Framework and have controls around Identify, Detect, Protect, Respond and Recover

We provide regular IT security training to our employees as well as running regular phishing tests. In 2022, we launched our Cybersecurity Academy to raise awareness and educate our workforce on their responsibility to protect information and assets. And in 2023, we announced the appointment of Moderna's Chief Information Security Officer, who will focus on collaborating across Moderna to help ensure that cybersecurity is core to how we operate and build technologies.

We are protecting the Personal Data entrusted to us from employees, healthcare professionals, patients, suppliers, and partners and to processing it in an ethical, honest and fair manner, aligned with the applicable global requirements. Our Global Privacy Policy describes the principles for collecting and

processing personal data when conducting our business and aligns with the basics of the EU's General Data Protection Regulation (GDPR) as well as other relevant privacy laws, including HIPAA. We have nominated a Chief Privacy Officer (CPO) and a European Data Protection Officer to oversee the company's commitment. The CPO is part of Moderna's Legal function and reports to the Audit Committee on data protection topics. The Global Privacy team provides advice and support to relevant stakeholders within Moderna. Our employees receive regular training on data protection.

## Animal welfare

Sometimes using animals in testing is the only way to advance science, but we take our responsibility to these animals seriously and look for non-animal alternatives whenever possible. Moderna's Institutional Animal Care and Use Committee (IACUC) oversees the welfare and humane treatment of any animals used for testing at Moderna. Animals used for research at Moderna are treated humanely and we comply with the 3R-principle (Reduce, Refine, Replace). To qualify testing facilities to which we contract animal studies, we require IACUC and appropriate accreditation for utilizing animals in research that ensures the welfare of the animals.

## Suppliers

To achieve our goals, we collaborate with partners around the world. Our success depends on working with ethical, reliable business partners that help us build trust with the communities that we serve. We seek to work with partners who bring value to Moderna and align with our high ethical standards and Values. In 2022, we accelerated our activities to increase transparency across our supply chain.

Moderna's Third Party Code of Business Conduct (Third Party Code) was launched in 2022 to reinforce

our expectations of our contractual business partners, such as suppliers, distributors, wholesalers, consultants, service providers, joint ventures, co-promotion and research or licensing partners. We also launched our Sustainable and Responsible Procurement program and initiated a sustainability assessment of current key suppliers.

We are building the program foundations, so we can make sure that we are building a supply chain that reflects our values.

Our distributors and agents are evaluated for any concerns related to corruption, money laundering, human rights, and other ethical principles before agreements are signed.

## Speak Up

At Moderna, we trust and rely on all of our people to be catalysts for acting with integrity and doing the right thing. Asking a question to gain understanding or speaking up when something may be wrong or inappropriate is part of acting as an owner and in accordance with the [Moderna Mindsets](#).

Our [Speak Up Hotline](#) empowers our employees and third parties to submit a question or voice a concern that we may not be meeting the values that we strive to achieve every day. Both employees and third parties may choose to submit reports anonymously, where permitted by law.

We strictly prohibit retaliation under our Code of Business Conduct and Ethics.



# Going forward



## Dear Stakeholders,

2022 marked the beginning of a tremendously important journey at Moderna, where we seek to more deeply engage, listen and understand what our stakeholders expect from us as a responsible business and leader in mRNA medicines.

Since the publication of our first ESG report in 2022, we have remained committed to transparency about our efforts, as demonstrated during our first ever ESG-focused investor and analyst event in November. This is an example of how we are working to increase the visibility that stakeholders can have into our actions, including through the communication of goals and performance that can help others assess our progress in the months and years to come.

We know that we cannot create the most impactful version of Moderna in isolation. Your continuous input into our purpose is critical for us and helps us to anticipate your needs to create long-term value. In 2023, we will be engaging with key groups of stakeholders to validate our understanding and assessment of material ESG topics. We are excited for the opportunity to continue our dialogue and demonstrate accountability.

We also continue to monitor how the ESG reporting landscape evolves and to build a robust governance framework around our program. We are actively participating in various ESG forums to contribute where possible to the definition of reporting requirements and standards.

We continue to challenge ourselves and to expand the impact that our commitments can have on our stakeholders. We are excited about the journey ahead to build the best version of Moderna. This report represents our strong commitment to transparency about our efforts and progress as our journey continues. Thank you for continuous engagement and feedback, which helps to keep us on track and ensures that we stay true to our purpose.

With best regards,

A handwritten signature in black ink, appearing to read 'S K'.

**Shannon Thyme Klinger,**  
*Chief Legal Officer, Moderna*  
*President, Moderna Charitable Foundation*

# Appendix

## Our approach to reporting

As we continue to progress in our corporate social responsibility and ESG journey, we will refer to widely recognized standards to improve our disclosures of environmental, social and governance impacts, and to share how we create value over the long-term. We are presenting our disclosures within the Sustainability Accounting Standards Board (SASB) Framework and Global Reporting Initiative (GRI) Standards. Both indexes

are intended to help our stakeholders locate the relevant disclosures called for by each reporting standard. For a detailed explanation of the indicators included in this index, visit the GRI website and SASB website.

This report covers all our entities and activities for the January 1 – December 31 reporting period. ERM CVS provided limited assurance according to ISAE 3000 for metrics included in page 34.

We will continue to expand upon our ability to share metrics according to these standards and expand our use of other recognized frameworks that will allow us to report on our activities to relevant stakeholders.

## SASB Index

Topic	SASB Code	Accounting Metric Description	2022 Disclosure Location
<b>Safety of Clinical Trial Participants</b>	<b>HC-BP-210a.1</b>	Discussion, by world region, of management process for ensuring quality and patient safety during clinical trials	ESG Report, Medicines for patients, pages 18-20
	<b>HC-BP-210a.2</b>	Number of FDA Sponsor Inspections related to clinical trial management and pharmacovigilance that resulted in: (1) Voluntary Action Indicated (VAI) and (2) Official Action Indicated (OAI)	We report material regulatory issues in our annual 10-K filing.
	<b>HC-BP-210a.3</b>	Total amount of monetary losses as a result of legal proceedings associated with clinical trials in developing countries	None
<b>Access to Medicines</b>	<b>HC-BP-240a.1</b>	Description of actions and initiatives to promote access to health care products for priority diseases and in priority countries as defined by the Access to Medicine Index	ESG Report, Medicines for patients, pages 7-13
	<b>HC-BP-240a.2</b>	List of products on the WHO List of Prequalified Medicinal Products as part of its Prequalification of Medicines Programme (PQP)	None
<b>Affordability &amp; Pricing</b>	<b>HC-BP-240b.1</b>	Number of settlements of Abbreviated New Drug Application (ANDA) litigation that involved payments and/or provisions to delay bringing an authorized generic product to market for a defined time period	None
	<b>HC-BP-240b.2</b>	Percentage change in: (1) average list price and (2) average net price across U.S. product portfolio compared to previous year	Our only product sold during 2021 and 2022 in the U.S. was our COVID-19 vaccine and boosters, which were sold directly to the U.S. government. We are not reporting this metric, as it could potentially reveal competitive information.

Topic	SASB Code	Accounting Metric Description	2022 Disclosure Location
	<b>HC-BP-240b.3</b>	Percentage change in: (1) list price and (2) net price of product with largest increase compared to previous year	Our only product sold during 2021 and 2022 was our COVID-19 vaccine and boosters. We are not reporting this metric, as it could potentially reveal competitive information.
<b>Drug Safety</b>	<b>HC-BP-250a.1</b>	List of products listed in the Food and Drug Administration's (FDA) MedWatch Safety Alerts for Human Medical Products database	<a href="#">(FDA) MedWatch Safety Alerts for Human Medical Products database</a>
	<b>HC-BP-250a.2</b>	Number of fatalities associated with products as reported in the FDA Adverse Event Reporting System	<a href="#">FDA Adverse Event Reporting System</a>
	<b>HC-BP-250a.3</b>	Number of recalls issued, total units recalled	<p>Moderna and ROVI Pharma Industrial Services, S.A.U. announced a recall of one lot of the Moderna COVID-19 vaccine (Spikevax®). The lot was recalled due to a foreign body being found in one vial in the lot manufactured at the Company's contract manufacturing site, ROVI, in Spain. The impacted vial was punctured and was not administered.</p> <p>Moderna, through its marketing authorization holder, Moderna Biotech Spain, S.L.U., and ROVI, were alerted to this issue through a product complaint from a vaccination center in Malaga, Spain. The vial was returned for forensic assessment and investigation.</p> <p>Moderna conducted a cumulative search of its global safety database, and no safety concerns were reported in individuals who received the Moderna COVID-19 vaccine from this lot. To date, no safety or efficacy issues have been identified. Given the Company's priority to assure quality, and out of an abundance of caution, this lot was recalled.</p> <p><a href="https://investors.modernatx.com/news/news-details/2022/Moderna-Recall-Notification-of-Lot-000190A/default.aspx">https://investors.modernatx.com/news/news-details/2022/Moderna-Recall-Notification-of-Lot-000190A/default.aspx</a></p>
	<b>HC-BP-250a.4</b>	Total amount of product accepted for take-back, reuse, or disposal	None
	<b>HC-BP-250a.5</b>	Number of FDA enforcement actions taken in response to violations of current Good Manufacturing Practices (cGMP), by type	We report material regulatory issues in our annual 10-K filing.

Topic	SASB Code	Accounting Metric Description	2022 Disclosure Location
<b>Counterfeit Drugs</b>	<b>HC-BP-260a.1</b>	Description of methods and technologies used to maintain traceability of products throughout the supply chain and prevent counterfeiting	ESG Report, Medicines for patients, page 19
	<b>HC-BP-260a.2</b>	Discussion of process for alerting customers and business partners of potential or known risks associated with counterfeit products	ESG Report, Medicines for patients, page 19
	<b>HC-BP-260a.3</b>	Number of actions that led to raids, seizure, arrests, and/or filing of criminal charges related to counterfeit products	In 2022, zero actions led to raids, seizure, arrests, and/or filing of criminal charges related to counterfeit products.
<b>Ethical Marketing</b>	<b>HC-BP-270a.1</b>	Total amount of monetary losses as a result of legal proceedings associated with false marketing claims	None
	<b>HC-BP-270a.2</b>	Description of code of ethics governing promotion of off-label use of products	ESG Report, Governance and ethics, page 45
<b>Employee Recruitment, Development &amp; Retention</b>	<b>HC-BP-330a.1</b>	Discussion of talent recruitment and retention efforts for scientists and research and development personnel	ESG Report, Employees, pages 21-31
	<b>HC-BP-330a.2</b>	(1) Voluntary and (2) involuntary turnover rate for: (a) executives/senior managers, (b) mid-level managers, (c) professionals, and (d) all others	ESG Report, Employees, page 21
<b>Supply Chain Management</b>	<b>HC-BP-430a.1</b>	Percentage of (1) entity's facilities and (2) Tier I suppliers' facilities participating in the Rx-360 International Pharmaceutical Supply Chain Consortium audit program or equivalent third-party audit programs for integrity of supply chain and ingredients	ESG Report, Medicines for patients, pages 18-20
<b>Business Ethics</b>	<b>HC-BP-510a.1</b>	Total amount of monetary losses as a result of legal proceedings associated with corruption and bribery	None
	<b>HC-BP-510a.2</b>	Description of code of ethics governing interactions with health care professionals	ESG Report, Governance and ethics, page 45
<b>Activity Metric</b>	<b>HC-BP-000.A</b>	Number of patients treated	ESG Report, Medicines for patients, page 7
	<b>HC-BP-000.B</b>	Number of drugs (1) in portfolio and (2) in research and development (Phases 1-3)	ESG Report, Medicines for patients, page 7

## GRI content index

<b>Statement of use</b>	Moderna has reported in accordance with the GRI Standards for the period January 1 – December 31, 2022
<b>GRI 1 used</b>	GRI 1: Foundation 2021
<b>Applicable GRI Sector Standard(s)</b>	No sector guidelines

<b>GRI Standard</b>	<b>Disclosure</b>	<b>Location</b>
<b>GRI 2: General Disclosures 2022</b>	<b>2-1 Organizational details</b>	Annual Report, page 59
	<b>2-2 Entities included in the organization’s sustainability reporting</b>	ESG Report – our approach to reporting
	<b>2-3 Reporting period, frequency and contact point</b>	ESG Report – our approach to reporting
	<b>2-4 Restatements of information</b>	ESG Report – our approach to reporting
	<b>2-5 External assurance</b>	ESG Report – our approach to reporting
	<b>2-6 Activities, value chain and other business relationships</b>	Annual Report, page 8
	<b>2-7 Employees</b>	ESG Report – Employees
	<b>2-8 Workers who are not employees</b>	ESG Report, Governance and ethics, Suppliers ESG Report, Employees, Owning our health, safety and environment
	<b>2-9 Governance structure and composition</b>	2023 Proxy Statement, page 11
	<b>2-10 Nomination and selection of the highest governance body</b>	2023 Proxy Statement, page 11
	<b>2-11 Chair of the highest governance body</b>	2023 Proxy Statement, page 11
	<b>2-12 Role of the highest governance body in overseeing the management of impacts</b>	2023 Proxy Statement, page 15 ESG Report, Governance and ethics, ESG Governance
	<b>2-13 Delegation of responsibility for managing impacts</b>	ESG Report, Governance and ethics, ESG Governance
	<b>2-14 Role of the highest governance body in sustainability reporting</b>	2023 Proxy Statement, page 15 ESG Report, Governance and ethics, ESG Governance
	<b>2-15 Conflicts of interest</b>	2023 Proxy Statement, page 16
	<b>2-16 Communication of critical concerns</b>	2023 Proxy Statement, Board’s Role in Risk Oversight, page 15 ESG Report, Governance & Ethics  We don’t report the total number and nature of critical concerns communicated to the Board.
	<b>2-17 Collective knowledge of the highest governance body</b>	2023 Proxy Statement, Governance, page 11
	<b>2-18 Evaluation of the performance of the highest governance body</b>	2023 Proxy Statement, Director Compensation, page 23
	<b>2-19 Remuneration policies</b>	2023 Proxy Statement, Director Compensation, page 23
	<b>2-20 Process to determine remuneration</b>	2023 Proxy Statement, Director Compensation, page 23



GRI Standard	Disclosure	Location
	<b>2-21 Annual total compensation ratio</b>	2023 Proxy Statement, CEO Pay Ratio, page 64
	<b>2-22 Statement on sustainable development strategy</b>	ESG Report, CEO letter
	<b>2-23 Policy commitments</b>	ESG Report, Governance and ethics
	<b>2-24 Embedding policy commitments</b>	ESG Report, Governance and ethics
	<b>2-25 Processes to remediate negative impacts</b>	ESG Report, Governance and ethics
	<b>2-26 Mechanisms for seeking advice and raising concerns</b>	ESG Report, Governance and ethics
	<b>2-27 Compliance with laws and regulations</b>	ESG Report, Governance and ethics
	<b>2-28 Membership associations</b>	ESG Report, Governance and ethics, Trade associations Corporate website, Responsibility, Political Policy and Disclosure
	<b>2-29 Approach to stakeholder engagement</b>	ESG Report, Our approach
	<b>2-30 Collective bargaining agreements</b>	None of our employees are represented by a labor union or works councils, and none of our employees have entered into a collective bargaining agreement with us. A small number of employees in Belgium, France, Italy and Spain are covered by statutory collective bargaining agreements governing certain benefits and working conditions. We consider our employee relations to be good.
<b>GRI 3: Material Topics 2021</b>	<b>3-1 Process to determine material topics</b>	ESG Report, Our approach
	<b>3-2 List of material topics</b>	ESG Report, Our approach
	<b>3-3 Management of material topics</b>	ESG Report, ESG Governance
<b>GRI 201: Economic Performance 2016</b>	<b>201-1 Direct economic value generated and distributed</b>	Annual Report, page 26
	<b>201-2 Financial implications and other risks and opportunities due to climate change</b>	We will conduct climate scenario analysis to enhance our understanding of climate-related risks and opportunities and to align with the recommendations of the Task Force on Climate-related Financial Disclosures.
	<b>201-3 Defined benefit plan obligations and other retirement plans</b>	2023 Proxy Statement, page 50 ESG Report, Employees, Building paths to well-being
	<b>201-4 Financial assistance received from government</b>	Corporate website, Responsibility, Government funding and vaccine access 10-K, page 128
<b>GRI 205: Anti-corruption 2016</b>	<b>3-3 Management of material topics</b>	ESG Report, Governance and ethics
	<b>205-1 Operations assessed for risks related to corruption</b>	ESG Report, Governance and ethics, Corporate Policies ESG Report, Governance and ethics, Suppliers
	<b>205-2 Communication and training about anti-corruption policies and procedures</b>	ESG Report, Governance and ethics, Corporate Policies ESG Report, Governance and ethics, Suppliers
	<b>205-3 Confirmed incidents of corruption and actions taken</b>	None

GRI Standard	Disclosure	Location
<b>GRI 206: Anti-competitive Behavior 2016</b>	<b>3-3 Management of material topics</b>	ESG Report, Governance and ethics, Corporate Policies
	<b>206-1 Legal actions for anti-competitive behavior, anti-trust, and monopoly practices</b>	None (See 10-K, page 94)
<b>GRI 302: Energy 2016</b>	<b>3-3 Management of material topics</b>	ESG Report, Environment
	<b>302-1 Energy consumption within the organization</b>	ESG Report, Environment, Natural resource conservation Corporate website, Responsibility, Energy and Emissions Data
	<b>302-2 Energy consumption outside of the organization</b>	ESG Report, Environment, Natural resource conservation Corporate website, Responsibility, Energy and Emissions Data
	<b>302-3 Energy intensity</b>	ESG Report, Environment, Natural resource conservation Corporate website, Responsibility, Energy and Emissions Data
	<b>302-4 Reduction of energy consumption</b>	ESG Report, Environment, Natural resource conservation Corporate website, Responsibility, Energy and Emissions Data
	<b>302-5 Reductions in energy requirements of products and services</b>	ESG Report, Environment, Natural resource conservation Corporate website, Responsibility, Energy and Emissions Data
<b>GRI 305: Emissions 2016</b>	<b>3-3 Management of material topics</b>	ESG Report, Environment, Natural resource conservation
	<b>305-1 Direct (Scope 1) GHG emissions</b>	ESG Report, Environment, Natural resource conservation Corporate website, Responsibility, Energy and Emissions Data
	<b>305-2 Energy indirect (Scope 2) GHG emissions</b>	ESG Report, Environment, Natural resource conservation Corporate website, Responsibility, Energy and Emissions Data
	<b>305-3 Other indirect (Scope 3) GHG emissions</b>	Will be reported on our Corporate website once third-party verification has been completed
	<b>305-4 GHG emissions intensity</b>	ESG Report, Environment, Natural resource conservation Corporate website, Responsibility, Energy and Emissions Data
	<b>305-5 Reduction of GHG emissions</b>	ESG Report, Environment, Natural resource conservation Corporate website, Responsibility, Energy and Emissions Data
	<b>305-6 Emissions of ozone-depleting substances (ODS)</b>	Will be reported on our Corporate website once third-party verification has been completed
<b>305-7 Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions</b>	Will be reported on our Corporate website once third-party verification has been completed	
<b>GRI 401: Employment 2016</b>	<b>3-3 Management of material topics</b>	ESG Report, Employees
	<b>401-1 New employee hires and employee turnover</b>	ESG Report, Employees
	<b>401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees</b>	ESG Report, Employees, Building paths to well-being
	<b>401-3 Parental leave</b>	ESG Report, Employees, Building paths to well-being

GRI Standard	Disclosure	Location
<b>GRI 403: Occupational Health and Safety 2018</b>	<b>3-3 Management of material topics</b>	ESG Report, Employees, Owning our health, safety and environment
	<b>403-1 Occupational health and safety management system</b>	ESG Report, Employees, Owning our health, safety and environment
	<b>403-2 Hazard identification, risk assessment, and incident investigation</b>	ESG Report, Employees, Owning our health, safety and environment
	<b>403-3 Occupational health services</b>	ESG Report, Employees, Building paths to well-being
	<b>403-4 Worker participation, consultation, and communication on occupational health and safety</b>	ESG Report, Employees, Owning our health, safety and environment
	<b>403-5 Worker training on occupational health and safety</b>	ESG Report, Employees, Owning our health, safety and environment
	<b>403-6 Promotion of worker health</b>	ESG Report, Employees, Building paths to well-being
	<b>403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships</b>	ESG Report, Employees, Owning our health, safety and environment
	<b>403-8 Workers covered by an occupational health and safety management system</b>	ESG Report, Employees, Owning our health, safety and environment
	<b>403-9 Work-related injuries</b>	ESG Report, Employees, Owning our health, safety and environment. We are not reporting this metric in 2022.
<b>403-10 Work-related ill health</b>	ESG Report, Employees, Owning our health, safety and environment. We are not reporting this metric in 2022.	
<b>GRI 404: Training and Education 2016</b>	<b>3-3 Management of material topics</b>	ESG Report, Employees, We obsess over learning
	<b>404-1 Average hours of training per year per employee</b>	ESG Report, Employees, We obsess over learning
	<b>404-2 Programs for upgrading employee skills and transition assistance programs</b>	ESG Report, Employees, We obsess over learning
	<b>404-3 Percentage of employees receiving regular performance and career development reviews</b>	ESG Report, Employees, Attracting and retaining talent
<b>GRI 405: Diversity and Equal Opportunity 2016</b>	<b>3-3 Management of material topics</b>	ESG Report, Employees, Providing equal pay for equal work
	<b>405-1 Diversity of governance bodies and employees</b>	2023 Proxy Statement, Board Diversity Matrix, page 12 ESG Report, Employees
	<b>405-2 Ratio of basic salary and remuneration of women to men</b>	ESG Report, Employees, Providing equal pay for equal work
<b>GRI 407: Freedom of Association and Collective Bargaining 2016</b>	<b>3-3 Management of material topics</b>	<a href="#">The Moderna Code of Ethics and Business Conduct</a> , We Respect Others, page 20 <a href="#">Third Party Code of Business Conduct</a> , page 6
	<b>407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk</b>	None of our employees are represented by a labor union or works councils, and none of our employees have entered into a collective bargaining agreement with us. A small number of employees in Belgium, France, Italy and Spain are covered by statutory collective bargaining agreements governing certain benefits and working conditions. We consider our employee relations to be good. ESG Report, Governance and ethics, Suppliers

GRI Standard	Disclosure	Location
<b>GRI 408: Child Labor 2016</b>	<b>3-3 Management of material topics</b>	ESG Report, Employees, Human Rights <a href="#">Human Rights Policy</a>
	<b>408-1 Operations and suppliers at significant risk for incidents of child labor</b>	ESG Report, Governance and ethics, Suppliers <a href="#">UK modern slavery act statement</a>
<b>GRI 409: Forced or Compulsory Labor 2016</b>	<b>3-3 Management of material topics</b>	ESG Report, Employees, Human Rights <a href="#">Human Rights Policy</a>
	<b>409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labor</b>	ESG Report, Governance and ethics, Suppliers <a href="#">UK modern slavery act statement</a>
<b>GRI 413: Local Communities 2016</b>	<b>3-3 Management of material topics</b>	ESG Report, Community
	<b>413-1 Operations with local community engagement, impact assessments, and development programs</b>	ESG Report, Community
	<b>413-2 Operations with significant actual and potential negative impacts on local communities</b>	ESG Report, Environment
<b>GRI 414: Supplier Social Assessment 2016</b>	<b>3-3 Management of material topics</b>	ESG Report, Governance and ethics, Suppliers
	<b>414-1 New suppliers that were screened using social criteria</b>	ESG Report, Governance and ethics, Suppliers
	<b>414-2 Negative social impacts in the supply chain and actions taken</b>	ESG Report, Governance and ethics, Suppliers
<b>GRI 415: Public Policy 2016</b>	<b>3-3 Management of material topics</b>	ESG Report, Governance and ethics, Trade associations Corporate website, Responsibility, Political Policy and Disclosure
	<b>415-1 Political contributions</b>	Moderna does not make direct contributions to political campaigns or candidates, and we are committed to transparency on our engagement with trade associations and other advocacy organizations.
<b>GRI 416: Customer Health and Safety 2016</b>	<b>3-3 Management of material topics</b>	ESG Report, Medicines for patients, Ensuring high product quality and patient safety
	<b>416-1 Assessment of the health and safety impacts of product and service categories</b>	ESG Report, Medicines for patients, Ensuring high product quality and patient safety
	<b>416-2 Incidents of non-compliance concerning the health and safety impacts of products and services</b>	ESG Report, Medicines for patients, Ensuring high product quality and patient safety
<b>GRI 417: Marketing and Labeling 2016</b>	<b>3-3 Management of material topics</b>	ESG Report, Medicines for patients, Ensuring high product quality and patient safety
	<b>417-1 Requirements for product and service information and labeling</b>	ESG Report, Medicines for patients, Ensuring high product quality and patient safety
	<b>417-2 Incidents of non-compliance concerning product and service information and labeling</b>	ESG Report, Medicines for patients, Ensuring high product quality and patient safety
	<b>417-3 Incidents of non-compliance concerning marketing communications</b>	ESG Report, Governance and ethics, Corporate Policies
<b>GRI 418: Customer Privacy 2016</b>	<b>3-3 Management of material topics</b>	ESG Report, Governance and ethics, Safeguarding information and assets
	<b>418-1 Substantiated complaints concerning breaches of customer privacy and losses of customer data</b>	In 2022, Moderna received no complaints concerning breaches of customer privacy and losses of customer data. ESG Report, Governance and ethics, Safeguarding information and assets

# About this report

This report describes our efforts and progress on Environmental, Social and Governance topics that we consider more important based on Moderna's Corporate Social Responsibility Program and that are relevant to reporting standards and frameworks. All our business operations are in scope and have included ESG performance data from January 1, 2022, to December 31, 2022, unless otherwise stated. Our 2022 Annual Report on Form 10-K contains our financial disclosures.

## Forward-Looking Statements

This report contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, as amended, including statements regarding: the potential for Moderna's mRNA platform to solve the world's greatest health challenges and prevent future pandemics; Moderna's access principles and its ability to remove barriers to equitable access to medicines; Moderna's ability to adapt to the endemic COVID-19 market, including its pricing and patient access programs; Moderna's expected investment in research and development in 2023; the potential for mRNA-1283 to reduce the burdens associated with shipping and storing mRNA vaccines in developing countries; the building of Moderna's manufacturing facility in Kenya as a local source of mRNA medicines for the African continent; Moderna's global health strategy, including developing vaccines against priority pathogens, mRNA Access and regional manufacturing; the potential to leverage the Company's platform to address "Disease X"; Moderna's environmental sustainability strategy, including its goal to achieve net-zero carbon emissions in Scopes 1 and 2 by 2030; Moderna's publication of its results of its 2021 GHG Scope 3 baseline assessment; Moderna's next key steps in its environmental sustainability strategy; Moderna's ability to expand its portfolio and address critical unmet medical needs with its mRNA platform; Moderna's commitment to advance into clinical studies a portfolio of at least 15 vaccine programs targeting emerging or neglected infectious diseases by 2025; the potential for Moderna's mRNA platform to address rare diseases and the early promise observed in Moderna's rare disease programs; Moderna's collaboration with the Institute for Life Changing Medicines on the development of mRNA-3351; Moderna's patent pledge; the buildout of the Company's commercial, manufacturing and regulatory capabilities and networks; Moderna's ability to enroll study participants from minority communities and vulnerable populations in its clinical trials; Moderna's investment in its new Moderna Science Center and Moderna Madrid lab and the features of those facilities, including their environmental footprints; Moderna's commitments to build new mRNA manufacturing facilities in Canada, Australia, Kenya and the United Kingdom; and the areas of focus of the Moderna Charitable Foundation. In some cases, forward-looking statements can be identified by terminology such as "will," "may," "should," "could," "expects," "intends," "plans," "aims," "anticipates," "believes," "estimates," "predicts," "potential," "continue," or the negative of these terms or other comparable terminology, although not all forward-looking statements contain these words. The forward-looking statements in this report are neither promises nor guarantees, and you should not place undue reliance on these forward-looking statements because they involve known and unknown risks, uncertainties, and other factors, many of which are beyond Moderna's control and which could cause actual results to differ materially from those expressed or implied by these forward-looking statements. These risks, uncertainties, and other factors include, among others, those risks and uncertainties described under the heading "Risk Factors" in Moderna's Annual Report on Form 10-K for the fiscal year ended December 31, 2022, filed with the U.S. Securities and Exchange Commission (SEC), and in subsequent filings made by Moderna with the SEC, which are available on the SEC's website at [www.sec.gov](http://www.sec.gov). Except as required by law, Moderna disclaims any intention or responsibility for updating or revising any forward-looking statements contained in this report in the event of new information, future developments or otherwise. These forward-looking statements are based on Moderna's current expectations and speak only as of the date of this report.



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