moderna

annual report

2023

moderna® by the numbers

In 2023, we impacted more than 100 million people.

Delivering commercial impact

$6.7B
in net **product sales** in 2023

48%
U.S. COVID retail **market share** in fall 2023

$13.3B
in **cash, cash equivalents and investments** as of December 31, 2023

Advancing our pipeline

4
therapeutic areas

45
development programs

9
late-stage programs

Creating a unique and diverse organization

5,600
employees in 19 markets

49%
women in our workforce

39%
of **executives** are women

Celebrating our culture

2nd
consecutive year of **equal pay** for equal work study showing **no significant differences in pay**

9
years in a row as a *Science* top employer

No. 1
ranked large company in *BioSpace* **Best Places to Work**

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A letter from our CEO

January 2, 2024
Cambridge, Mass., U.S.A.

> **"As we reflect on the past year, our commitment to leveraging mRNA to deliver transformative medicines for patients has never been stronger."**

Stéphane Bancel,
Chief Executive Officer

Dear fellow shareholders,

Our mRNA platform is working.

Today, we are seeing the high-case scenario from our 2018 five-year, long-range plan unfold. We have demonstrated the potential for clinical benefit in multiple infectious disease vaccines, in skin cancer and in three different rare genetic diseases. Based on these clinical successes, we have advanced a broad and diverse pipeline.

We advanced nine programs into late-stage development, including one approved, one filed for approval, and three more that have completed Phase 3 enrollment. We are many steps closer to reaching millions more people with unmet medical needs.

Through more than a decade of progress and investment in science, Moderna has led in establishing the field of mRNA medicine. The team has built a remarkable platform to scale Moderna at a pace not seen before in our industry.

Now, it is up to us to bring these mRNA medicines to market for patients, and consequently to drive value for our shareholders.

As we reflect on the past year, our commitment to leveraging mRNA to deliver transformative medicines for patients has never been stronger. We have the platform, technology, resources and the team to establish a new era of medicine.

A Year of Transition

In 2023, SARS-CoV-2 continued to evolve. The virus that causes COVID-19 is clearly here to stay—just like influenza. Our business has also adapted to a more predictable, seasonal endemic market.

Managing the transition took significant effort in 2023. As you know, we rapidly scaled our manufacturing capabilities during the pandemic to play a critical role in combatting COVID-19 with our vaccine. We knew that this surge capacity may not be required in the endemic market, but we felt obligated to ensure we protected as many lives as we could during the pandemic.

During 2023, it became clear that demand for vaccines had entered a new stage of the endemic setting and we pivoted to significantly resize our manufacturing infrastructure to help ensure our COVID-19 franchise would be profitable in 2024 and beyond. Although undervaccination has been observed in the first endemic season, we believe this will settle out over the coming years as the impact of the virus and vaccine during endemic periods becomes evident and may affect future levels of vaccination.

At the same time, we invested in our people, processes, and digital systems to help us build Moderna for the long term. We opened a technology hub in Seattle and welcomed Brad Miller as Chief Information Officer, emphasizing our continued focus on building digital-first and investing in AI because of the profound impact it will have on our Mission. To further advance our mRNA science, we also entered into a partnership with IBM to explore quantum computing and generative AI. We believe that AI will be as transformational to any business as the desktop computer was when it entered the corporate world.

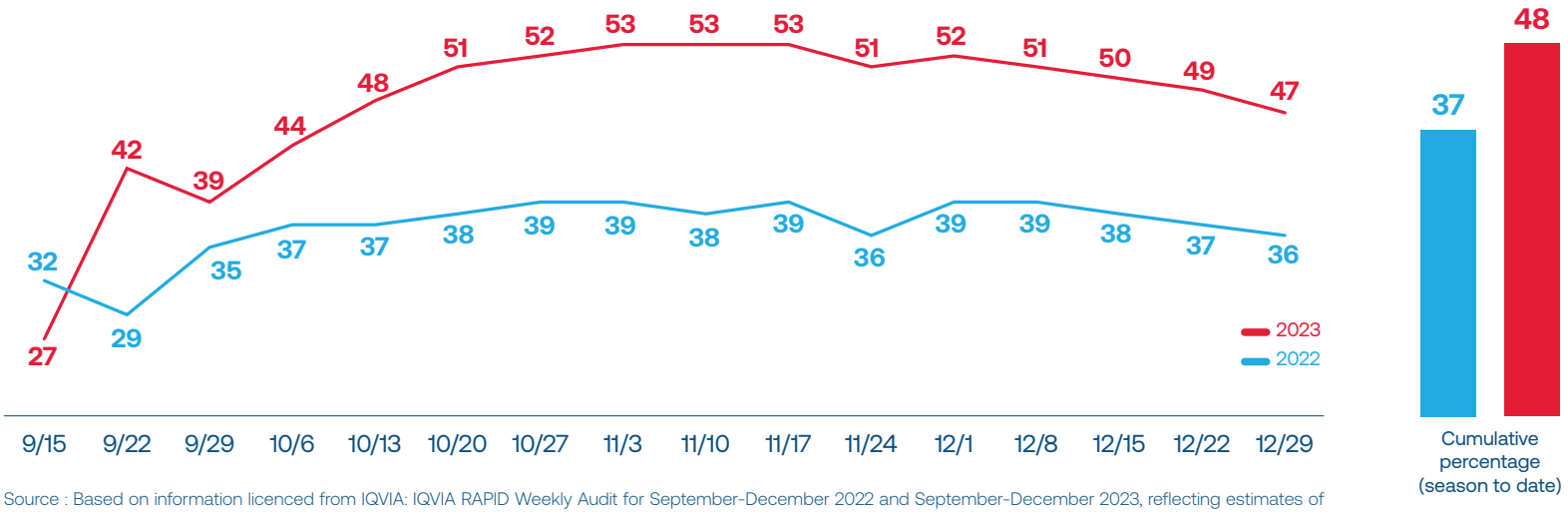
Additionally, we announced a strategic partnership with the Coalition for Epidemic Preparedness Innovations (CEPI), harnessing the power and speed of Moderna's mRNA platform to accelerate the development of mRNA vaccines against viral disease outbreaks that pose global public health threats. The expansion of our mRNA Access program reinforces our dedication to public health by providing researchers with our mRNA technology in the development of vaccines for emerging and neglected infectious diseases. We believe this program can play a key role in helping the next generation of researchers and engineers to advance mRNA science.

We also announced the acquisition of Japan-based OriCiro Genomics, which we now have integrated into Moderna as Moderna Enzymatics. That technology will enable us to reduce manufacturing cycle times and improve quality. We also established strategic collaborations with CytomX, Generation Bio, Immatics and Life Edit, to enhance our internal research and development.

Delivering the Greatest Possible Impact

Last year, we provided external guidance for Spikevax sales of at least $6 billion. We continued to focus on public health efforts to increase vaccination rates globally, and in the U.S. we achieved 48 percent market share for the 2023 fall season, compared to 37 percent in fall 2022—demonstrating our ability to compete in the commercial market. Recognizing that COVID is not going away, we are making it an important piece of our business with our vaccines against COVID-19 and our investigational combination vaccine against flu and COVID.

Spikevax U.S. Retail Administrations Market Share (%)



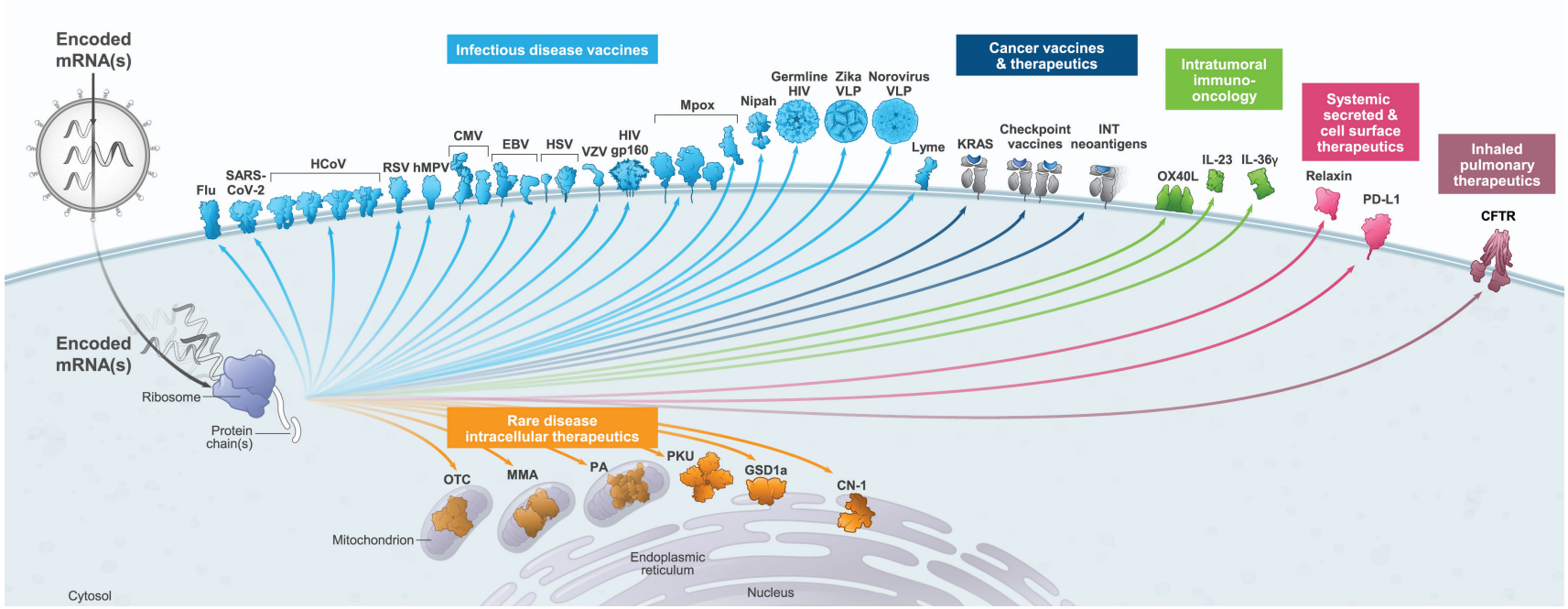
Source : Based on information licenced from IQVIA: IQVIA RAPID Weekly Audit for September-December 2022 and September-December 2023, reflecting estimates of real-word activity. 2022 figures have been aligned to closest corresponding 2023 figures, based on weeks following approval/launch. All rights reserved.

In parallel, we prepared for the potential 2024 launch of our investigational RSV vaccine for adults, which is expected to further strengthen our financial position and further demonstrate the commercial potential of our mRNA platform. We believe our RSV vaccine candidate has a potentially best-in-class profile based on clinical trial data and ready-to-use pre-filled syringes when compared to two recently launched products. In addition, the mRNA vaccine technology that our RSV vaccine uses has a well-established safety and tolerability profile, having been used in more than a billion COVID-19 vaccine doses.

“We have an exciting late-stage pipeline, and we expect to double the number of programs in Phase 3 by 2025 and launch up to 15 products in five years.”

Turning to the rest of our pipeline, positive clinical trial results across cancer, rare disease and infectious disease were shared during our annual R&D Day in September, when we announced our intent to launch up to 15 products in five years.

I will highlight a few notable 2023 milestones from across our 45 development programs.



The image above depicts Moderna's pipeline as a cell map, reflecting the new development candidates, Lyme, Mpox and Norovirus, added in 2023 to Moderna's infectious disease vaccines modality.

Respiratory Franchise

In 2023, we advanced our COVID, RSV and flu respiratory disease programs to positive Phase 3 data. We received U.S. FDA approval of our updated COVID-19 vaccine and filed a Biologics License Application (BLA) for our RSV vaccine. Additionally, our seasonal flu vaccine candidate met its primary endpoint in a Phase 3 trial, and consultations with regulators on a potential licensing package are ongoing.

Our combination vaccine candidates, which can also provide substantial public health benefits, address respiratory viruses associated with the largest disease burden in the category and are designed for higher compliance, increased uptake, consumer convenience and benefits to healthcare systems. Enrollment was completed in our combination trials for flu/COVID-19 (Phase 1/2), flu/RSV (Phase 1), and flu/COVID-19/ RSV (Phase 1). We also recently initiated a Phase 3 trial of our combination vaccine against seasonal flu and COVID-19 with the intention to have a combination vaccine available as early as 2025.

> **"We were excited to see such a robust clinical benefit with our mRNA therapy, and to launch a new Phase 3 trial with non-small cell lung cancer patients in December."**

Latent Franchise

We continued to develop vaccines against six latent and other viruses with unmet or underserved needs, including cytomegalovirus (CMV), Epstein-Barr virus, herpes simplex virus, varicella zoster virus, norovirus and HIV. The pivotal Phase 3 study, CMVictory, of our CMV vaccine candidate fully enrolled with adults to evaluate the efficacy, safety and immunogenicity of the vaccine in the prevention of primary infection in women of childbearing age. The Phase 3 study is event-based but given the number of cases we have already seen, we could have CMV Phase 3 data in 2024. CMV is the most common infectious cause of birth defects in the U.S. and CMV has been designated a top priority in new vaccine development by the U.S. National Academy of Medicine for more than two decades.

Oncology Franchise

In 2023, we reported additional data from our Phase 2b trial evaluating our individualized neoantigen therapy (INT) in combination with Merck's KEYTRUDA® in melanoma patients compared to KEYTRUDA alone. The treatment continued to show significant and clinically meaningful improvement in recurrence-free survival and reduced the risk of recurrence or death by 49 percent. These data, with a median follow-up of approximately three years, demonstrate the durability of the therapy.

We were excited to see such a robust clinical benefit with our mRNA therapy, and to launch a new Phase 3 trial with non-small cell lung cancer patients in December. To support this continued progress, we have been investing in building a factory in Marlborough, Massachusetts, and in building out our people capability, which will enable the commercial launch for INT.

Rare Disease Franchise

Our rare disease portfolio, which includes therapies targeting methylmalonic acidemia (MMA), propionic acidemia (PA), glycogen storage disease and Phenylketonuria, continued to show promise. The Phase 1/2 trial for our MMA therapy candidate has dosed 11 participants with a total of 221 doses administered and all participants have opted into the Open-Label Extension study. A global Phase 1/2 trial for our PA candidate, which is our most advanced rare disease program, is enrolling patients in the dose confirmation arm, and most patients who have completed the treatment period of the main study have opted to enter a long-term extension study.

“Staying true to our Mission, we will also continue to invest in science to expand the field of mRNA medicine into new frontiers.”

Focusing on Execution

As you can see, we have built significant momentum across our business and our pipeline. Across our respiratory, latent, oncology and rare franchises, we are aiming to launch up to 15 new products over the next five years. We are excited by the near future and focused on execution to deliver for patients.

Staying true to our Mission, we will also continue to invest in science to expand the field of mRNA medicine into new frontiers. For example, in partnership with Vertex, we are advancing an investigational inhaled mRNA therapy in the lung to treat the underlying cause of cystic fibrosis, which we expect to read out in 2024.

Over the same five-year period, we expect to advance many new candidate medicines into clinical trials across established and new modalities. To do this, we will continue to lead with our Values, our Mindsets and a deep sense of purpose in everything we do.

Acting Responsibly

Our commitment to corporate social responsibility remains strong, as evidenced by the publication of our second annual ESG Report in June. As a company, we care deeply about our patients, our employees, the environment and our communities, and we recognize that we have an opportunity to change medicine for all. We will continue to engage, listen and understand what our stakeholders expect from us as a sustainable, responsible business and leader in mRNA medicines.

This leadership is made possible by our people, who are the driving force behind our progress and our culture. I am proud of our team and award-winning culture, which earned Moderna recognition from *Science* as a top employer for the ninth consecutive year, from *BioSpace* as the #1 large employer in its Best Places to Work report for the third year in a row, and from the Human Rights Campaign Foundation as an Equality 100 company for the first time in 2023.

Download our 2022 ESG Report

> **"This leadership is made possible by our people, who are the driving force behind our progress and our culture."**

Looking Ahead

Our focus for 2024 and 2025 is to drive sales growth *and* profitability. To achieve that, we are focusing on three priorities.

Priority one is commercial execution. Our recent market share gain in the U.S. demonstrates that we can compete with large established players. We expect COVID sales to stabilize in a fully endemic market, and we will build on our current momentum to grow our market share for Spikevax in 2024.

To support this, we made the decision at the end of 2023 to flatten our commercial organization to help us accelerate decisions and increase customer understanding as we prepare for multiple product launches. With the expected launch of our RSV vaccine candidate in 2024, and potential launch of our flu/COVID combination vaccine as early as 2025, we believe Moderna will experience sales growth in 2025.

Priority two is disciplined investment. We will continue to review our manufacturing costs, product pipeline, and deliver efficiencies. Our upcoming respiratory product launches in 2024 and 2025 will also achieve efficiencies from a growing pipeline.

Priority three is executing on our late-stage pipeline to drive organic sales growth. We have an exciting late-stage pipeline, and we expect to double the number of programs in Phase 3 by 2025 and launch up to 15 products in five years. Up to four of those launches could come by 2025.

With these priorities, we are completing our strategy to accelerate the growth of our business, a journey we have been on since mid-2021. We expect to break even in 2026, as revenue grows and late-stage R&D costs recede, when the current large Phase 3 clinical trials wind down and result in many potential new product launches.

Along the way, we will continue to invest in our people—the changemakers who help us maximize our impact on human health. I am so grateful for their dedication to our Mission and their relentless work. I am also thankful to all the people and organizations that partner with us on this journey to advance our Mission to deliver the greatest possible impact to people through mRNA medicines.

Thank you all for your ongoing trust and support as we work to deliver value to all our stakeholders, and bring mRNA medicines to the world.

We are excited about 2024. This is just the beginning...

Warmest regards,

Stéphane Bancel
Chief Executive Officer

Advancing mRNA respiratory vaccines

We are well-prepared for the launch of our second respiratory vaccine, RSV (mRNA-1345), which will build upon the success of our commercial efforts in the fall COVID-19 market.

We are encouraged by early indications of widespread consumer awareness and established demand in the RSV market, which we will enter with a strong competitive profile with robust efficacy data, a well-established safety and tolerability profile, and as the only pre-filled syringe (PFS) product available at the time of launch.

With a substantial number of U.S. RSV vaccines given to date in the pharmacy setting, PFS presentation offers ease of use, time savings and the potential to reduce medical errors. Given the labor shortage in the retail pharmacy channel, we anticipate our PFS presentation will be welcomed by pharmacists during the busy respiratory vaccine season, where pharmacists need, in addition to their regular tasks, to administer flu, COVID and RSV vaccines.

We have filed for regulatory approvals of our vaccine for the prevention of RSV-associated lower respiratory tract disease (RSV-LRTD) and acute respiratory disease (ARD) in adults ages 60 years or older. The regulatory applications are based on positive data from the pivotal ConquerRSV study, a randomized, double-blind, placebo-controlled study of approximately 37,000 adults, 60 years or older. The trial met both its primary efficacy endpoints, with a vaccine efficacy (VE) of 83.7% (95.88% CI: 66.1%, 92.2%; p<0.0001) against RSV-LRTD as defined by two or more symptoms, and a VE of 82.4% (96.36% CI: 34.8%, 95.3%; p=0.0078) against RSV-LRTD defined by three or more symptoms. Most solicited adverse reactions were mild to moderate, and no cases of Guillain-Barre Syndrome (GBS) have been reported with mRNA-1345 in the Phase 3 RSV trial. These data were published in the *New England Journal of Medicine* in December 2023.

Follow-up data from a Phase 3 RSV study with a median follow-up duration of 8.6 months, with a range of 15 days to 530 days, and including subjects from the Northern and Southern Hemispheres was recently presented at the RSVVW'24 conference. In this supplemental analysis, mRNA-1345 maintained durable efficacy, with sustained VE of 63.3% (95.88% CI: 48.7%, 73.7%) against RSV-LRTD including two or more symptoms. VE was 74.6% (95% CI, 50.7-86.9) against RSV-LRTD with ≥2 symptoms, including shortness of breath and 63.0% (95% CI, 37.3-78.2) against RSV-LRTD including three of more symptoms. The stringent statistical criterion of the study, a lower bound on the 95% CI of >20%, continued to be met for both endpoints.

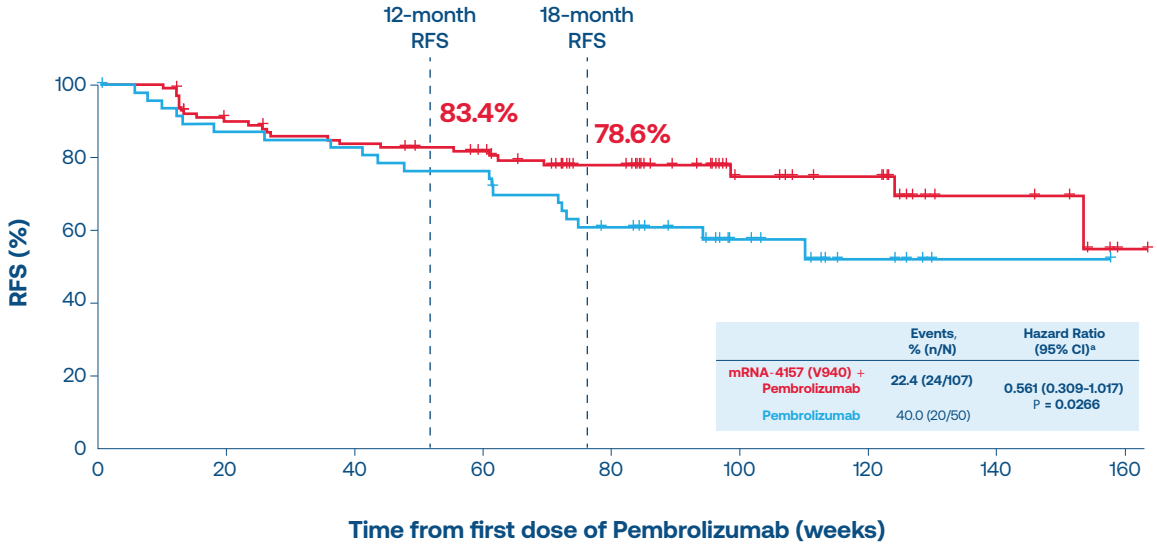
RSV is a common respiratory virus that usually causes mild, cold-like symptoms. Most people recover within a week or two, but infants and older adults, who are more vulnerable, can develop severe complications leading to hospitalization. The rising global incidence of severe RSV in older adults has highlighted the urgent need for better prevention strategies.

A new frontier in cancer care

We, along with our partner Merck, are pioneering a new frontier in the fight against cancer by researching an mRNA-based investigational individualized neoantigen therapy (INT) with the goal of targeting each patient's unique cancer cells.

Our INT, mRNA-4157, marks an advancement at the intersection of immunology and cancer biology, leveraging a combination of technological, digital, and biological innovations. At its heart, this approach is patient-focused, utilizing next-generation sequencing to identify tumor-specific mutations from a patient's blood sample. These mutations are analyzed by a proprietary algorithm to select up to 34 neoantigens, which are then used to create an individualized mRNA treatment aimed at training the patient's immune system to recognize and fight cancer cells. This entire process can be achieved within about six weeks.

mRNA-4157 (V940) in combination with Pembrolizumab reduced the risk of recurrence or death by 44% compared to Pembrolizumab alone



Number at risk									
mRNA-4157 (V940) + Pembrolizumab	107	92	85	73	49	24	20	8	1
Pembrolizumab	50	42	40	37	28	13	6	1	0

1. Khattak A, et al. Presented at the American Association for Cancer Research® (AACR) Annual Meeting; April 14-19, 2023; Orlando, FL, USA. Oral presentation CT001.
2. Khattak A, et al. Presented at the American Society of Clinical Oncology (ASCO) Annual Meeting; June 2-6, 2023; Chicago, IL, USA. Oral presentation CI, confidence interval; mRNA, messenger RNA; RFS, recurrence-free survival.aThe hazard ratio and 95% CI for mRNA-4157 (V940) plus pembrolizumab versus pembrolizumab is estimated using a Cox proportional hazards model with treatment group as a covariate, stratified by disease stage (stages IIIB or IIIC or IIID vs stage IV) used for randomization. The P value is based on a 1-sided log-rank test stratified by disease stage (stages IIIB or IIIC or IIID vs stage IV) used for randomization.

Manufacturing site in Marlborough, MA.

We made great strides in our INT program in 2023. We announced that in our Phase 2 study, mRNA-4157, in combination with pembrolizumab, demonstrated a clinically meaningful improvement in recurrence-free survival and distant metastasis-free survival compared to standard of care in high-risk resected melanoma. We saw a 49% reduction in the risk of recurrence or death and a 62% reduction in the risk of distant metastasis or death compared to pembrolizumab alone with a median of three years of follow-up, and a Phase 3 pivotal study has begun enrolling.

We have also initiated a Phase 3 trial in non-small cell lung cancer that is actively enrolling and plan to expand the development program to additional tumor types. To supply product to these trials and in preparation for the future, we announced that we are building a manufacturing site in Marlborough, MA as a commercial INT manufacturing facility.

We believe an individualized neoantigen therapy can be a catalyst for innovation and drive us toward the next frontier of cancer care. By harnessing the power of mRNA, we hope to bring this potential therapy to the patients who need it as quickly as possible.

Pipeline

Below is Moderna's pipeline as of February 22, 2024.

RESPIRATORY VACCINES

	Program Indication	ID #	Preclinical Development	Phase 1	Phase 2	Phase 3	Commercial	Moderna rights
RESPIRATORY VACCINES								
ADULTS	***COVID-19 vaccine***	*Spikevax® (mRNA-1273)*						Worldwide
		mRNA-1283						Worldwide
	Flu vaccine	*mRNA-1010*						Worldwide
		mRNA-1020						Worldwide
		mRNA-1030						Worldwide
		mRNA-1011						Worldwide
		mRNA-1012						Worldwide
	Older adults RSV vaccine	*mRNA-1345*						Worldwide
	Flu + COVID vaccine	*mRNA-1083*						Worldwide
	Flu + COVID + RSV vaccine	*mRNA-1230*						Worldwide
	Flu + RSV vaccine	*mRNA-1045*						Worldwide
	Endemic HCoV vaccine	*mRNA-1287*						Worldwide
	Pandemic Flu	*mRNA-1018*						Worldwide
	RSV + hMPV vaccine	*mRNA-1365*						Worldwide
ADOLESCENTS AND PEDIATRICS	***COVID-19 vaccine (adolescents)***	*mRNA-1273.815*	TeenCOVE					Worldwide
	COVID-19 vaccine (pediatrics)	*mRNA-1273.815*	KidCOVE					Worldwide
	Pediatric RSV vaccine	*mRNA-1345*						Worldwide

Abbreviations:

BARDA: Biomedical Advanced Research and Development Authority
CMV: cytomegalovirus
CN-1: Crigler-Najjar syndrome type 1
EBV: Epstein-Barr Virus
GSD1a: glycogen storage disease type 1a
HCoV: human coronavirus
HIV: human immunodeficiency virus
hMPV: human metapneumovirus
HSV: herpes simplex virus
IAVI: International AIDS Vaccine Initiative
IL-23: interleukin 23
IL-36 γ: interleukin 36 gamma
ILCM: Institute for Life Changing Medicine
MMA: methylmalonic acidemia
NIH: National Institutes of Health
NSCLC: non-small cell lung cancer
OTC: ornithine transcarbamylase deficiency
PA: propionic acidemia
PKU: phenylketonuria
RSV: respiratory syncytial virus
VZV: varicella-zoster virus

LATENT & OTHER VACCINES

	Program Indication	ID #	Preclinical Development	Phase 1	Phase 2	Phase 3	Commercial	Moderna rights
LATENT VACCINES & OTHER VACCINES								
LATENT VACCINES	***CMV vaccine***	*mRNA-1647*						Worldwide
	EBV vaccine *(to prevent infectious mononucleosis)*	*mRNA-1189*						Worldwide
	EBV vaccine *(to address EBV sequelae)*	*mRNA-1195*						Worldwide
	HSV vaccine	*mRNA-1608*						Worldwide
	VZV vaccine	*mRNA-1468*						Worldwide
	HIV vaccines	*mRNA-1644*						Worldwide (IAVI funded)
		mRNA-1574						Worldwide (IAVI/others funded)
ENTERIC	***Norovirus vaccines***	*mRNA-1403*						Worldwide
		mRNA-1405						Worldwide
BACTERIAL	***Lyme vaccines***	*mRNA-1975*						Worldwide
		mRNA-1982						Worldwide
PUBLIC HEALTH VACCINES	***Zika vaccine***	*mRNA-1893*						Worldwide (BARDA funded)
	Nipah vaccine	*mRNA-1215*						Worldwide (NIH funded)
	Mpox vaccine	*mRNA-1769*						Worldwide

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THERAPEUTICS

	Program Indication	ID #	Preclinical Development	Phase 1	Phase 2	Phase 3	Commercial	Moderna rights
THERAPEUTICS								
SYSTEMIC SECRETED & CELL SURFACE THERAPEUTICS	***Relaxin*** *Heart failure*	*mRNA-0184*						Worldwide
	PD-L1 *Autoimmune hepatitis*	*mRNA-6981*						Worldwide
CANCER VACCINES & THERAPEUTICS	***Individualized neoantigen therapy (INT)*** *–adjuvant melanoma*	*mRNA-4157*						50-50 global profit sharing with Merck
	Individualized neoantigen therapy (INT) *–adjuvant NSCLC*	*mRNA-4157*						50-50 global profit sharing with Merck
	KRAS vaccine	*mRNA-5671*						Worldwide
	Checkpoint vaccine	*mRNA-4359*						Worldwide
INTRATUMORAL IMMUNO-ONCOLOGY	***OX40L/IL-23/IL-36γ (Triplet)*** *Solid tumors/lymphoma*	*mRNA-2752*						Worldwide
RARE DISEASE INTRACELLULAR THERAPEUTICS	***PA***	*mRNA-3927*						Worldwide
	MMA	*mRNA-3705*						Worldwide
	GSD1a	*mRNA-3745*						Worldwide
	OTC	*mRNA-3139*						Worldwide
	PKU	*mRNA-3210*						Worldwide
	CN-1	*mRNA-3351*						Provided to ILCM free of charge
INHALED PULMONARY THERAPEUTICS	***Cystic fibrosis***	*mRNA-3692 / VX-522*						Vertex to pay milestones and royalties

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Building our team

Creating a Unique Organization

We continue to focus on the elements of our culture to create an environment where everyone can have an impact. Our Mission, Values and Mindsets support our ways of working and unite our people in our shared goal to change how medicines are made and delivered.

As part of our efforts to scale our culture, we introduced the concept of our 'People Platform' in 2023. This concept involves regularly reviewing the programs we provide for our employees, the systems that underpin them, and the data and insights they generate. We aim to ensure that every employee, regardless of their location or level, experiences the same employee journey and that our culture is embedded throughout this journey.

We emphasize learning and development. In 2023, we focused on upskilling our teams on topics such as artificial intelligence (AI) and how AI and machine learning can help ensure we are digitizing everywhere.

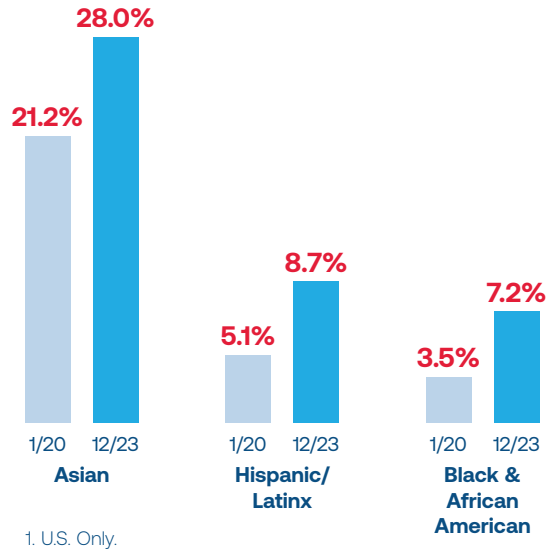
Leading with Belonging

In addition to system-level improvements, we focus heavily on the individual. Our strategy for diversity and inclusion starts with belonging. We believe that employees can only thrive and innovate when they feel they belong and can be their authentic selves.

Our workforce demographics show that 49 percent of our employees are women, with 39 percent female representation in executive roles as of December 2023. Although this represents a slight decline from the prior year, we are proud of these figures, and have made significant strides in our race and ethnicity demographics by focusing on our early talent pipeline. Of our inaugural group of MBA interns, 43 percent identified with races or ethnicities that are underrepresented.

One achievement we take immense pride in is our commitment to pay equity. We ensure equal pay for equal work, a commitment we have upheld for the second year running.

Race & Ethnicity[1]



1. U.S. Only.

We also care deeply about our employees' well-being and understand that each employee has unique needs that change over time. Therefore, we provide programs that focus on meeting employees where they are and that are tailored to their needs. Recently introduced programs include enhanced mental health and life insurance benefits.

Our focus remains on creating an inclusive environment where every individual can thrive and contribute to our mission. We are committed to continuous learning and improvement in this area, always striving to do better for our people.

Celebrating Our Culture

Moderna ranked 9th among biopharmaceutical companies in this year's *Science* survey. Marking our ninth consecutive year on this list, we were recognized for our commitment to innovative leadership, respect for employees and corporate social responsibility.

Additionally, *BioSpace* named Moderna the number one large employer in its Best Places to Work report for the third year in a row. We were also recognized by the Human Rights Campaign Foundation as an Equality 100 company for the first time in 2023—a proud moment for Moderna as we continue to build a culture of belonging.

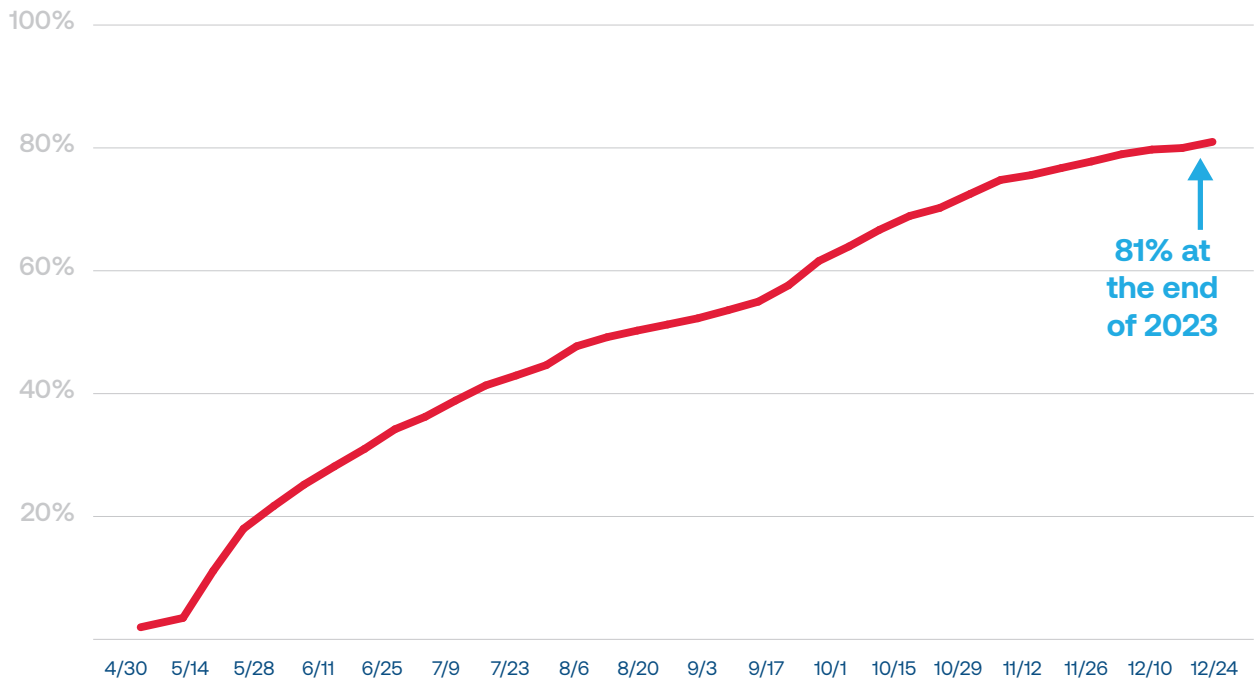
"We believe that employees can only thrive and innovate when they feel they belong and can be their authentic selves."

Digitizing everywhere

In 2021, when we developed the Moderna Mindsets to help encode our culture, we articulated our commitment to digitizing everywhere possible. Digital technology has been part of our programs since our early days and we have built our own AI models for protein and mRNA engineering, assay data analyses, regulatory interaction and many other use cases. As a recent example, we used AI to develop an internal scheduling algorithm to optimize our manufacturing process for our investigational INT program to account for manufacturing capacity and target dosing dates for all active patients in our Phase 3 trials targeting melanoma and non-small cell lung cancer globally, taking a highly patient-centric approach.

We are well-positioned to scale our manufacturing and our business overall using AI because we are a platform company. AI training is required of all Moderna team members and we facilitate this training at a corporate level through our AI Academy. We have challenged everyone across all our business functions to incorporate AI into their everyday workflows. Our AI implementation is accelerating throughout Moderna, where our secure large language model usage has grown rapidly to approximately 81 percent of our employee base since its introduction in May 2023.

Percentage of Moderna employees who are active mChat users



Responsibility

We are guided by our unwavering belief that our mRNA platform can solve the world's greatest health challenges—from diseases impacting millions to medicines personalized to the individual level. We also operate with a deep sense of purpose and care for our patients, our employees, the environment, and our communities. We underscored our commitment to responsible corporate citizenship through the publication of our second annual ESG Report in June 2023.

Prioritizing Inclusive Research

In 2023, we remained steadfast in our commitment to inclusive research, developing mRNA-based investigational therapies and vaccines that are equitable for all. Recognizing the importance of diversity for scientific excellence, we design our clinical trials to reflect the global community, particularly those disproportionately affected by diseases. We continue to make significant strides in including medically underserved communities and diverse populations and have set a standard in our healthy volunteer clinical trials with at least 37 percent of trial participants from global ethnic majority groups, at least half being female, and representation across all age groups. We are proud to not just meet industry expectations but set and exceed them in every demographic category.

To sustain our drive toward inclusive research, we concentrate our efforts around three pillars: increasing awareness, bringing trials into communities, and providing flexible participation options. This approach has led to increased enrollment, retention, and participant satisfaction. At its core, our commitment to innovative and inclusive clinical trials helps to ensure that potential medicines of tomorrow are accessible to all.

Focusing on Global Public Health

In 2023, we continued to leverage our mRNA platform to address potential global public health threats and build pandemic preparedness, addressing priority pathogens that represent high disease burden, especially in low- and middle-income countries.

1. non-exhaustive

Moderna's global public health portfolio, launched in 2022, continues to evolve, with advanced clinical trials against diseases such as Zika, Mpox, HIV, and Nipah. Our focus has expanded to include other respiratory threats like pandemic influenza, with our mRNA-1018 program making strides in clinical testing. Through our mRNA Access program, we have increased collaborations and opened preclinical production capabilities to more academic institutions worldwide, decentralizing the research and development of mRNA vaccines. We are also developing new manufacturing sites in Australia, Canada and the U.K. to enhance our ability to swiftly respond to potential regional and global pandemic outbreaks.

In October 2023, we entered into a strategic partnership with the Coalition for Epidemic Preparedness Innovations (CEPI) with the goal of harnessing Moderna's mRNA platform to accelerate the development of vaccines against viral disease outbreaks that threaten global health. The work undertaken as part of this partnership could expand the infectious disease targets for mRNA vaccine technology and strengthen pandemic preparedness and public health efforts in alignment with the 100 Days Mission, a global goal to compress vaccine development timelines to 100 days.

Building the Moderna Charitable Foundation

The Moderna Charitable Foundation continues to make a positive impact in our communities locally and globally. Through philanthropic giving, employee gift matching, and humanitarian relief, the Moderna Foundation supported nonprofit organizations with $8.5 million in grants in 2023, with a significant focus on improving health systems in sub-Saharan Africa. Partnerships with organizations such as Science Club for Girls, CDC Foundation, Imperial College London, and Amref Health Africa further advance the Foundation's mission to promote public health, advance scientific education, and advocate for diversity and inclusion.

Giving Back to the Community

Our commitment to serve the communities where we live and work has always been part of our identity, and we constantly strive to extend our impact on society. Each year between Giving Tuesday and International Volunteer Day, we organize a company-wide Volunteer Week. 2023 marked our fifth annual Volunteer Week, and hundreds of Moderna team members participated in organized activities across 15 countries, up from six in 2022, to make a substantial impact with community partners around the world.

All our team members receive eight hours of paid time off each year to dedicate toward volunteering, and our Dollars for Doers program matches additional volunteer time at a specific hourly rate. Additionally, the Moderna Charitable Foundation matches monetary donations that employees have made to qualified charitable organizations. In 2023, our collective efforts supported more than 2,000 nonprofits around the world, with 70 percent of our workforce engaging in giving and/or volunteering.

Protecting the Environment

In 2023, we advanced our environmental sustainability efforts underlined by a strategy focused on Sustainability by Design, Natural Resource Conservation, and Value Chain Decarbonization. We have launched initiatives like a climate risk and scenario analysis, increased public greenhouse gases (GHG) emissions disclosures, and incorporated energy-saving technologies in new constructions. We are also working to reduce Scope 3 emissions with suppliers and promoting green employee transport. As Moderna prepares for 2024, we aim to further integrate climate risk management, validate our GHG emissions reduction roadmap by Science Based Targets initiative (SBTi), and enhance energy, emissions, and waste programs, reinforcing our commitment to environmental stewardship as part of our healthcare mission.

Leadership

Executive Committee

In order left to right

Stephen Hoge, MD | President

Stéphane Bancel | Chief Executive Officer

Tracey Franklin | Chief Human Resources Officer

Kate Cronin | Chief Brand Officer

Jerh Collins, PhD | Chief Technical Operations and Quality Officer

Shannon Thyme Klinger | Chief Legal Officer and Corporate Secretary

Brad Miller | Chief Information Officer

Jamey Mock | Chief Financial Officer

Board of Directors

Noubar Afeyan, PhD | Co-founder and Chairman, Moderna; Chief Executive Officer, Flagship Pioneering

Stéphane Bancel | Chief Executive Officer, Moderna

Stephen Berenson | Managing Partner, Flagship Pioneering

Sandra Horning, MD | Former Chief Medical Officer and Global Head of Product Development, Roche

Robert Langer, ScD | Academic Co-Founder, Moderna; David H. Koch Institute Professor, MIT

Elizabeth Nabel, MD | Former President, Brigham Health

François Nader, MD | Former President, CEO and Executive Director, NPS Pharmaceuticals

Paul Sagan | Catalyst Advisor, General Catalyst

Elizabeth Tallett | Former Principal, Hunter Partners

In Memoriam, **Henri Termeer** | Retired Chairman, President and CEO of Genzyme

Awards and recognition highlights

BioSpace Best Places to Work
Ranked no. 1 large company on 2024 list

Boston Consulting Group's 50 Most Innovative Report
Ranked no. 6 on 2023 list

Deloitte's Technology Fast 500 List
Ranked no. 4 on the 2023 list

Disability Equality Index's Best Places to Work
Scored 100/100 in 2023

Edison Gold Award
Awarded in 2023 for Advanced Drug Delivery: COVID-19 Vaccine

Financial Times Americas' Fastest Growing Companies
Ranked no. 5 in 2023

Fortune 500 List
Ranked no. 211 on the 2023 list

Fortune's World's Most Admired Companies
Ranked no. 37 on 2024 list

Great Place to Work
Certified in U.S. in 2023

Human Rights Campaign Foundation's Corporate Equality Index
Scored 100/100 in 2023

Science Careers' Top Employers
Ranked for nine consecutive years; no. 9 on 2023 list

Vaccine Industry Excellence Award
Awarded for Best COVID Vaccine in 2023

Moderna's locations around the world

Consolidated Balance Sheets

(in millions)	December 31, 2023	2022
Assets		
Current assets:		
Cash and cash equivalents	$ 2,907	$ 3,205
Investments	5,697	6,697
Accounts receivable, net	892	1,385
Inventory	202	949
Prepaid expenses and other current assets	627	1,195
Total current assets	**10,325**	**13,431**
Investments, non-current	4,677	8,318
Property, plant and equipment, net	1,945	2,018
Right-of-use assets, operating leases	713	121
Deferred tax assets	81	982
Other non-current assets	685	988
Total assets	**$ 18,426**	**$ 25,858**
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	$ 520	$ 487
Accrued liabilities	1,798	2,101
Deferred revenue	568	2,038
Income taxes payable	63	48
Other current liabilities	66	249
Total current liabilities	**3,015**	**4,923**
Deferred revenue, non-current	83	673
Operating lease liabilities, non-current	643	92
Financing lease liabilities, non-current	575	912
Other non-current liabilities	256	135
Total liabilities	**4,572**	**6,735**
Stockholders' equity:		
Additional paid-in capital	371	1,173
Accumulated other comprehensive loss	(123)	(370)
Retained earnings	13,606	18,320
Total stockholders' equity	**13,854**	**19,123**
Total liabilities and stockholders' equity	**$ 18,426**	**$ 25,858**

The Consolidated Balance Sheets have been derived from our audited consolidated financial statements included in Moderna's Annual Report on Form 10-K.

Consolidated Statements of Operations

(in millions, except per share data)	Years Ended December 31, 2023	2022
Revenue:		
Net product sales	$ 6,671	$ 18,435
Other revenue[1]	177	828
Total revenue	**6,848**	**19,263**
Operating expenses:		
Cost of sales	4,693	5,416
Research and development	4,845	3,295
Selling, general and administrative	1,549	1,132
Total operating expenses	**11,087**	**9,843**
(Loss) income from operations	(4,239)	9,420
Interest income	421	200
Other expense, net	(124)	(45)
(Loss) income before income taxes	(3,942)	9,575
(Benefit from) provision for income taxes	772	1,213
Net (loss) income	**$ (4,714)**	**$ 8,362**
(Loss) earnings per share:		
Basic	$ (12.33)	$ 21.26
Diluted	$ (12.33)	$ 20.12
Weighted average common shares used in calculation of (loss) earnings per share:		
Basic	382	394
Diluted	382	416

1. Includes grant revenue and collaboration revenue

The Consolidated Statements of Operations have been derived from our audited consolidated financial statements included in Moderna's Annual Report on Form 10-K.

Consolidated Statements of Cash Flows

(in millions)	Years Ended December 31, 2023	2022
Operating activities		
Net (loss) income	$ (4,714)	$ 8,362
Adjustments to reconcile net (loss) income to net cash (used in) provided by operating activities:		
Stock-based compensation	305	226
Depreciation and amortization	621	348
Amortization/accretion of investments	(61)	31
Loss on equity investments, net	35	—
Deferred income taxes	828	(559)
Other non-cash items	7	28
Changes in assets and liabilities, net of acquisition of business:		
Accounts receivable, net	493	1,790
Prepaid expenses and other assets	974	(1,699)
Inventory	747	492
Right-of-use assets, operating leases	(605)	21
Accounts payable	13	240
Accrued liabilities	(340)	612
Deferred revenue	(2,060)	(4,157)
Income taxes payable	15	(828)
Operating lease liabilities	551	(14)
Other liabilities	73	88
Net cash (used in) provided by operating activities	**(3,118)**	**4,981**
Investing activities		
Purchases of marketable securities	(3,760)	(11,435)
Proceeds from maturities of marketable securities	5,575	3,151
Proceeds from sales of marketable securities	3,206	3,548
Purchases of property, plant and equipment	(707)	(400)
Acquisition of business, net of cash acquired	(85)	—
Investment in convertible notes and equity securities	(23)	(40)
Net cash provided by (used in) investing activities	**4,206**	**(5,176)**
Financing activities		
Proceeds from issuance of common stock through equity plans	46	65
Repurchase of common stock, including excise tax	(1,153)	(3,329)
Changes in financing lease liabilities	(270)	(184)
Net cash used in financing activities	**(1,377)**	**(3,448)**
Net decrease in cash, cash equivalents and restricted cash	(289)	(3,643)
Cash, cash equivalents and restricted cash, beginning of year	3,217	6,860
Cash, cash equivalents and restricted cash, end of period	**$ 2,928**	**$ 3,217**

The Consolidated Statements of Cash Flows have been derived from our audited consolidated financial statements included in Moderna's Annual Report on Form 10-K.

Forward-Looking Statements Disclaimer

This annual report contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, as amended, including regarding: the potential of Moderna's mRNA platform; Moderna's ability to bring medicines to market; Moderna's expectation that its COVID-19 franchise will be profitable for 2024 and beyond; Moderna's ability to compete in the commercial market and future market share; the potential 2024 launch of Moderna's RSV vaccine for adults with a potentially best-in-class profile; our ability to compete in the RSV market, and the advantages of our PFS presentation; the safety and tolerability profile of Moderna's mRNA vaccine technology; Moderna's intent to launch up to 15 products in five years; the potential for approval of Moderna's seasonal flu vaccine candidate and the timing for that approval; the anticipated benefits of combination vaccines, and Moderna's intent to have a flu/COVID combination vaccine available as early as 2025; the clinical benefit observed with Moderna's mRNA cancer therapy; Moderna's plans to expand INT to additional tumor types; Moderna's construction of a factory to support INT; the promise of Moderna's rare disease franchise; the expected read out in 2024 for Moderna's mRNA therapy for cystic fibrosis and potential readout for CMV; Moderna's ability to scale its manufacturing and business overall using AI; Moderna's expectation to be in sales growth by 2025 and to break even in 2026; Moderna's expectation to double the number of programs in Phase 3 by 2025; and the timing and scale for Moderna's planned investments in research and development. The forward-looking statements in this annual 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 those other 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, 2023, 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. Except as required by law, Moderna disclaims any intention or responsibility for updating or revising any forward-looking statements contained in this annual 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 annual report.