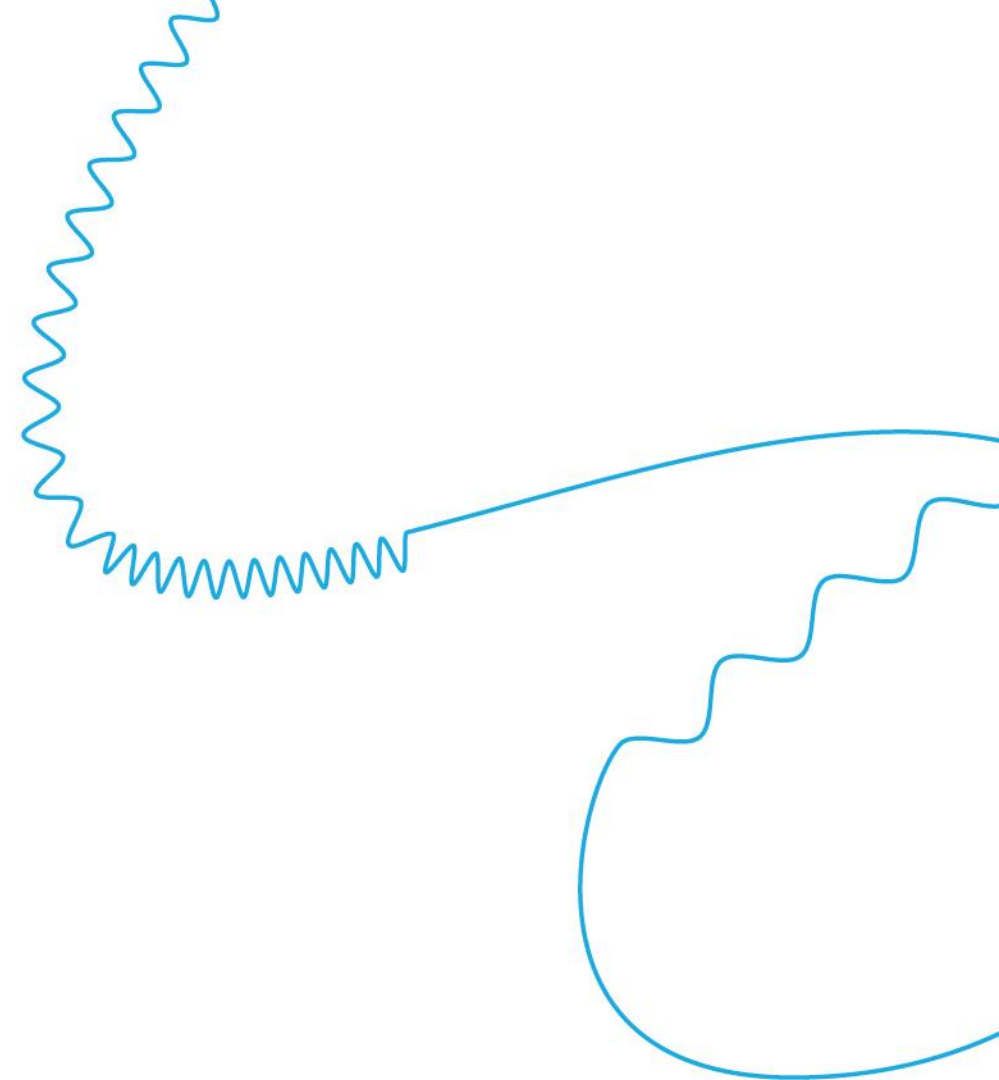




Second Quarter 2023 Financial Results

August 3, 2023



Forward-looking statements and disclaimer

This presentation contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, as amended, including statements regarding: Moderna's submissions to regulators globally for the approval or authorization of mRNA-1273.815; Moderna's ability to supply mRNA-1273.815 in time for the fall 2023 season; anticipated 2023 COVID-19 sales, including the timing of sales, from existing advance purchase agreements and additional sales for delivery in the second half of 2023, which may not be realized; Moderna's expectations regarding the commercial COVID-19 market, including the U.S. fall 2023 market size, and its ability to effectively compete in such a market; the potential best-in-class profile of Moderna's RSV vaccine, including its efficacy, safety and tolerability profile; the Phase 3 study of Moderna's individualized neoantigen therapy (INT) in adjuvant melanoma; plans to expand INT to additional tumor types; timing for an update from the P303 Phase 3 study; the potential for the P303 study to enable licensure of mRNA-1010 through accelerated approval; timing for completed enrollment of the Phase 3 clinical trial of Moderna's CMV vaccine; Moderna's capital allocation priorities, including anticipated spending on R&D for 2023; Moderna's plans to launch a number of new products in 2024 through 2026, including its RSV vaccine in 2024; and Moderna's 2023 financial framework, including with respect to cost of sales. 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 presentation 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. Except as required by law, Moderna disclaims any intention or responsibility for updating or revising any forward-looking statements contained in this presentation 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 presentation.

Financial figures in this presentation as of, and for the quarterly periods ended, June 30, 2023, and June 30, 2022, are unaudited.

I 2Q23 earnings call agenda



Business Review

Stéphane Bancel, CEO



R&D/Clinical Programs

Stephen Hoge, M.D., President



Commercial Market

Arpa Garay, CCO



Financials

Jamey Mock, CFO



Looking Forward

Stéphane Bancel, CEO

2Q23 financial highlights

2Q23 GAAP financial results



Revenue:
\$0.3 billion



Net income (loss):
\$(1.4) billion



Earnings per share (loss):
\$(3.62)



Cash and investments:
\$14.6 billion

Capital allocation highlights

Reinvest in the business

- \$1.1 billion R&D
- \$0.3 billion SG&A
- \$0.2 billion capital expenditures

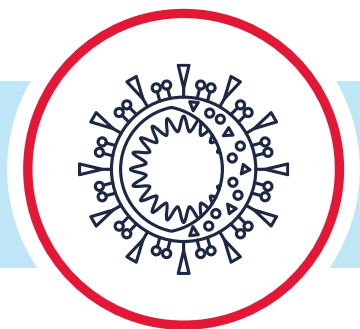
External investment opportunities (licenses and/or M&A)

2023: OriCiro (renamed Moderna Enzymatics), CytomX, Life Edit, Generation Bio

Return capital to shareholders

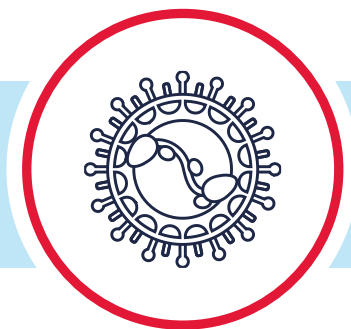
Repurchased 4.4 million shares for \$0.6 billion in 2Q23

2Q23 commercial and late-stage clinical updates



2023 COVID-19 market

- Submitted updated COVID-19 vaccine to regulators globally for approval/authorization
- Expecting full year 2023 COVID-19 sales of \$6-8 billion



RSV regulatory pre-launch activity

- Rolling submission started in the United States
- Additional regulatory applications submitted in Europe, Switzerland, Australia and United Kingdom
- Started to manufacture mRNA-1345 (presentation in pre-filled syringes)



Individualized Neoantigen Therapy (INT)

- Initiated Phase 3 study in adjuvant melanoma; enrolling patients
- Scaling manufacturing to support clinical development and commercial markets

Moderna as of August 2023

Pipeline	Commercial Moderna COVID-19 Vaccine/Spikevax®	6 in Phase 3 COVID-19 boosters, Flu, RSV, CMV, Next-generation COVID-19, INT	7 in Phase 2 Zika, PA, VEGF-A, Next-gen Flu	47 development programs
Programs in development	Respiratory vaccines • COVID-19; next-gen COVID-19 • Older adults RSV; pediatric RSV • Flu; next-gen flu; pandemic flu • Flu + COVID-19, flu + COVID-19 + RSV and flu + RSV • Next-gen combinations • hMPV + PIV3 • RSV + hMPV, endemic HCoV		Latent vaccines • CMV • EBV • HIV • VZV • HSV	mRNA therapeutics 15 medicines in 4 therapeutic areas • 5 Immuno-Oncology • 7 Rare Diseases • 2 Cardiovascular Diseases • 1 Autoimmune Disease
			Emerging vaccines • Zika • Nipah • Norovirus • Lyme	
Foundations	~5,150 employees ¹	 Officially recognized as a Great Place to Work in the U.S. by Great Place To Work®	17 commercial subsidiaries across North America, Europe and Asia Pacific	~\$14.6B of cash and investments ¹

1.As of June 30, 2023

Accelerating AI at Moderna

Moderna named one of the world's most innovative companies for "pioneering AI-driven innovation"



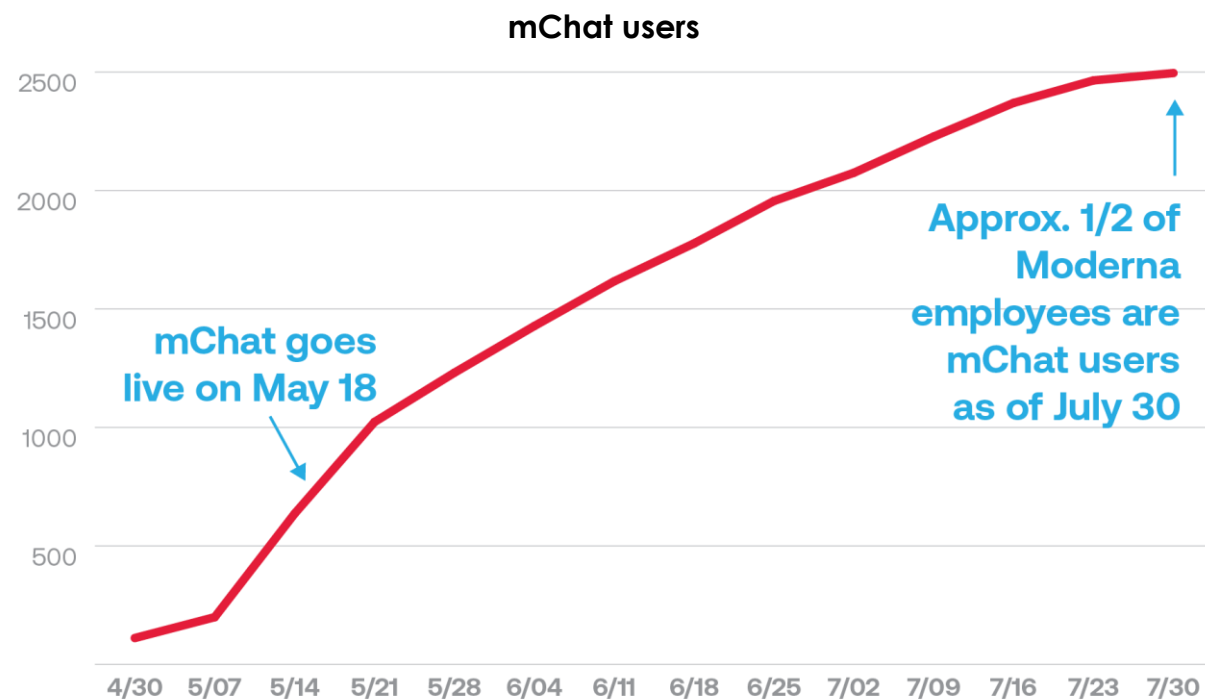
Source: Boston Consulting Group



MODERNA MINDSET

We digitize everywhere possible using the power of digital information to maximize our impact on patients.

Use of large language models growing at Moderna



I 2Q23 earnings call agenda



Business Review

Stéphane Bancel, CEO



R&D/Clinical Programs

Stephen Hoge, M.D., President



Commercial Market

Arpa Garay, CCO



Financials

Jamey Mock, CFO



Looking Forward

Stéphane Bancel, CEO

Respiratory vaccines pipeline overview

Commercial and Phase 3 programs



PC	Ph. 1	Ph. 2	Ph. 3	Comm.
----	-------	-------	-------	-------

COVID-19 (mRNA-1273.222/.815)



PC	Ph. 1	Ph. 2	Ph. 3	Comm.
----	-------	-------	-------	-------

Older adults RSV (mRNA-1345)



PC	Ph. 1	Ph. 2	Ph. 3	Comm.
----	-------	-------	-------	-------

Flu (mRNA-1010)

Next-gen programs

PC	Ph. 1	Ph. 2	Ph. 3	Comm.
----	-------	-------	-------	-------

COVID-19 next-gen booster
(mRNA-1283)

PC	Ph. 1	Ph. 2	Ph. 3	Comm.
----	-------	-------	-------	-------

Flu (mRNA-1011/-1012)

PC	Ph. 1	Ph. 2	Ph. 3	Comm.
----	-------	-------	-------	-------

Flu (mRNA-1020/-1030)

Combination programs

PC	Ph. 1	Ph. 2	Ph. 3	Comm.
----	-------	-------	-------	-------

COVID-19 + flu (mRNA-1073/-1083)

PC	Ph. 1	Ph. 2	Ph. 3	Comm.
----	-------	-------	-------	-------

COVID-19 + flu + RSV (mRNA-1230)

PC	Ph. 1	Ph. 2	Ph. 3	Comm.
----	-------	-------	-------	-------

RSV + flu (mRNA-1045)

PC	Ph. 1	Ph. 2	Ph. 3	Comm.
----	-------	-------	-------	-------

Pediatric hMPV + PIV3 (mRNA-1653)

PC	Ph. 1	Ph. 2	Ph. 3	Comm.
----	-------	-------	-------	-------

Pediatric RSV + hMPV (mRNA-1365)

Updated XBB.1.5 COVID-19 vaccine submitted globally for regulatory approval ahead of Fall 2023 season

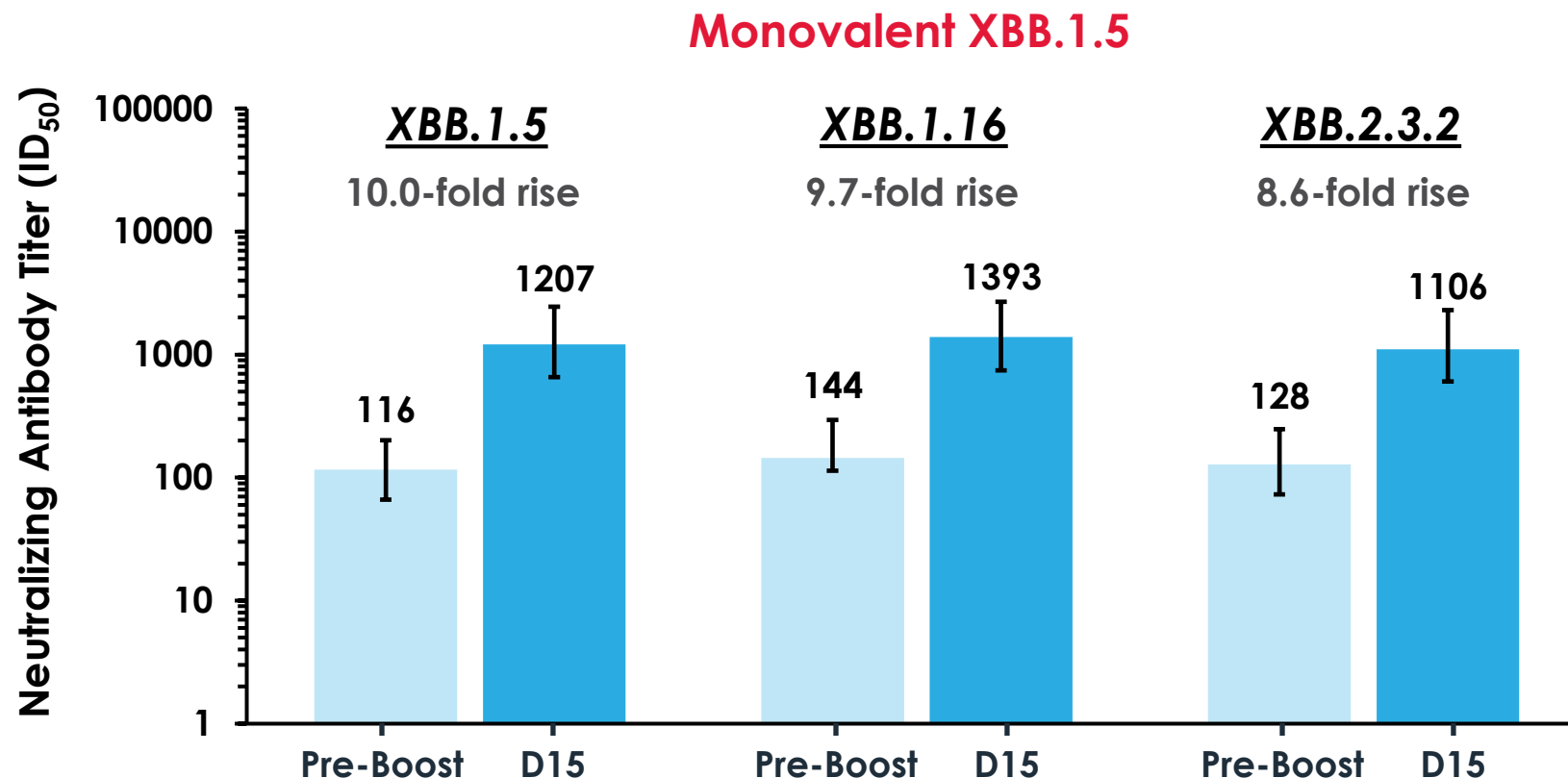


COVID-19 updated regulatory recommendations

- On its June 15th meeting, VRBPAC unanimously recommended a monovalent XBB lineage vaccine, with a preference for selection of XBB.1.5 expressed during discussions; similar recommendations were made by the WHO and EMA
- Following VRBPAC recommendation, FDA advised manufacturers to develop monovalent XBB.1.5 composition
- ACIP is expected to publish updated recommendations following vaccine approval/authorization

VRBPAC: Vaccines and Related Biological Products Advisory Committee
ACIP: Advisory Committee on Immunization Practices

Clinical data from our Phase 2/3 study with a monovalent XBB.1.5 vaccine (mRNA-1273.815) demonstrated potent neutralization and cross-reactivity



Moderna PSVN research assay
Subset analysis presented during June 15 VRBPAC

RSV: mRNA-1345 older adult on track for expected global regulatory approvals in 2024 with potential best-in-class profile



U.S. regulatory submission

Initiated a rolling submission process for a Biologics License Application (BLA) to the FDA, with the option to use a Priority Review Voucher (PRV)



Global regulatory submissions

Regulatory applications submitted in Europe (EMA), Switzerland (Swissmedic), Australia (TGA) and United Kingdom (MHRA)

FDA: U.S. Food and Drug Administration

EMA: European Medicines Agency

TGA: Therapeutic Goods Administration

MHRA: Medicines and Healthcare products Regulatory Agency

© 2023 Moderna, Inc. All rights reserved.

Flu: mRNA-1010 P303 Phase 3 study is fully enrolled; update expected in 3Q23



Design

Randomized, observer-blind, active-controlled study



Number of participants

2,400 medically stable adults ≥ 18 years old



Vaccination schedule

Randomization 1:1 to mRNA-1010 or active comparator



Duration: 6 months

Enrollment period: April – June 2023

Study participants will be followed up for 6 months after study injection



Site location

Northern Hemisphere (United States)

- **P303 will test the immunogenicity of an updated formulation of mRNA-1010**
- **Expect to share an update on P303 in 3Q23**
- **Intended to enable the licensure of mRNA-1010 through an accelerated approval**

Latent vaccines

Phase 3 CMVictory study is >80% enrolled

Phase 3 programs



PC	Ph. 1	Ph. 2	Ph. 3	Comm.
----	-------	-------	-------	-------

CMV (mRNA-1647)

Early clinical programs

PC	Ph. 1	Ph. 2	Ph. 3	Comm.
----	-------	-------	-------	-------

EBV (mRNA-1189; mRNA-1195)

PC	Ph. 1	Ph. 2	Ph. 3	Comm.
----	-------	-------	-------	-------

HIV (mRNA-1644; mRNA-1574)

PC	Ph. 1	Ph. 2	Ph. 3	Comm.
----	-------	-------	-------	-------

VZV (mRNA-1468)

Pre-clinical programs

PC	Ph. 1	Ph. 2	Ph. 3	Comm.
----	-------	-------	-------	-------

HSV (mRNA-1608)

mRNA therapeutics

INT enrolling patients in Phase 3 adjuvant melanoma study; PA dose confirmation cohort ongoing

Immuno-oncology

PC	Ph. 1	Ph. 2	Ph. 3	Comm.
----	-------	-------	-------	-------

Individualized Neoantigen Therapy (INT)
(mRNA-4157)

PC	Ph. 1	Ph. 2	Ph. 3	Comm.
----	-------	-------	-------	-------

Checkpoint vaccine (mRNA-4359)

PC	Ph. 1	Ph. 2	Ph. 3	Comm.
----	-------	-------	-------	-------

Triplet (mRNA-2752)

PC	Ph. 1	Ph. 2	Ph. 3	Comm.
----	-------	-------	-------	-------

IL-12 (MEDI1191)

PC	Ph. 1	Ph. 2	Ph. 3	Comm.
----	-------	-------	-------	-------

KRAS (mRNA-5671)

Cardiovascular

PC	Ph. 1	Ph. 2	Ph. 3	Comm.
----	-------	-------	-------	-------

Relaxin (mRNA-0184)

PC	Ph. 1	Ph. 2	Ph. 3	Comm.
----	-------	-------	-------	-------

VEGF-A (AZD8601)

Autoimmune

PC	Ph. 1	Ph. 2	Ph. 3	Comm.
----	-------	-------	-------	-------

PD-L1 (mRNA-6981)

Rare Disease

PC	Ph. 1	Ph. 2	Ph. 3	Comm.
----	-------	-------	-------	-------

PA (mRNA-3927)

PC	Ph. 1	Ph. 2	Ph. 3	Comm.
----	-------	-------	-------	-------

MMA (mRNA-3705)

PC	Ph. 1	Ph. 2	Ph. 3	Comm.
----	-------	-------	-------	-------

GSD1a (mRNA-3745)

PC	Ph. 1	Ph. 2	Ph. 3	Comm.
----	-------	-------	-------	-------

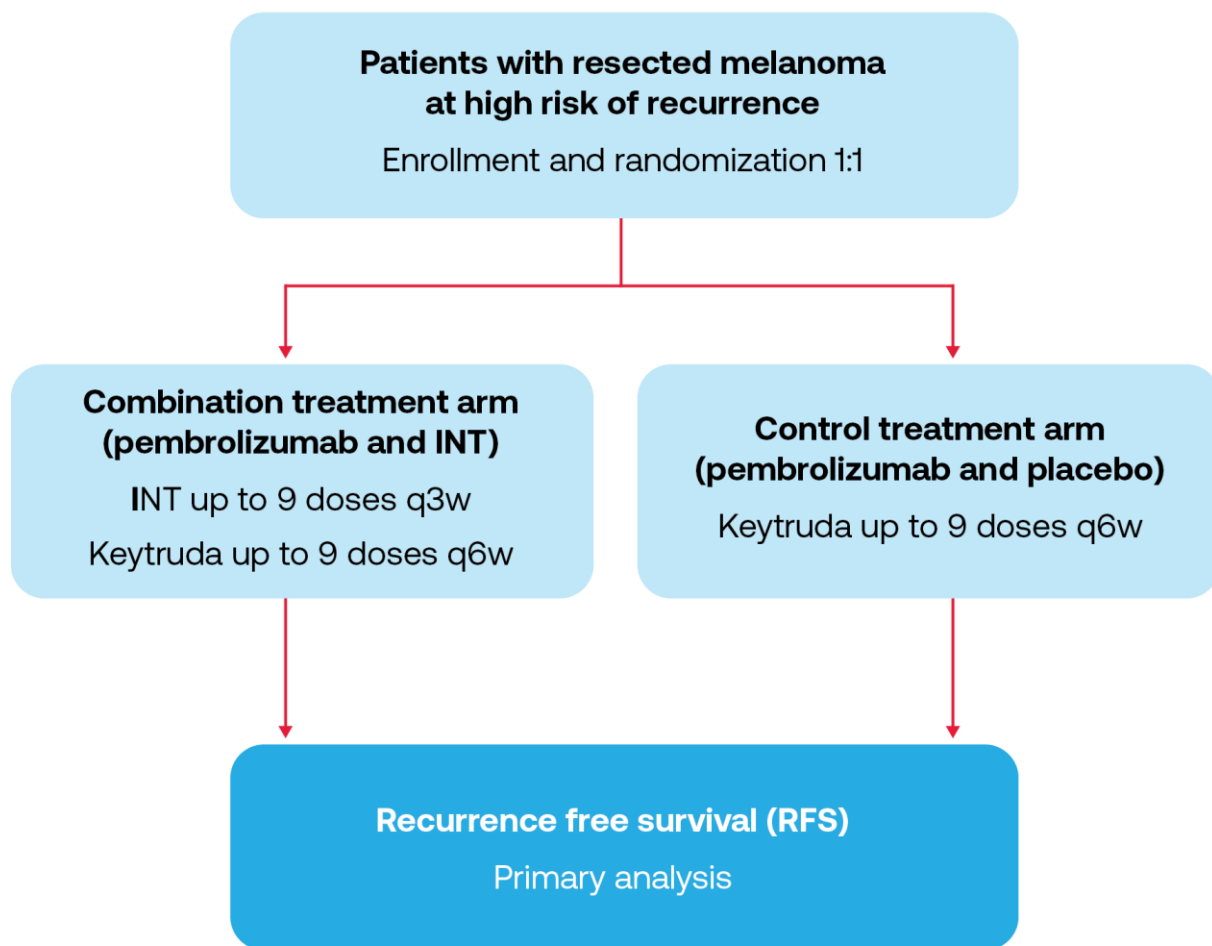
CF (VX-522)

PC	Ph. 1	Ph. 2	Ph. 3	Comm.
----	-------	-------	-------	-------

OTC, PKU, CN-1
(mRNA-3139/-3238/-3351)

INT: adjuvant melanoma Phase 3 trial is now enrolling

Primary endpoint is recurrence free survival compared to pembrolizumab



Randomized, double-blind placebo controlled, INT + pembrolizumab (KEYTRUDA®) vs. placebo + pembrolizumab (1:1)

Resected melanoma patients: stage IIB or IIC, III, IV

Primary endpoint: recurrence free survival (RFS)

Secondary endpoints: Distant Metastasis-Free Survival (DMFS), Overall-Survival (OS)

Number of participants: ~1,089

[NCT05933577](https://clinicaltrials.gov/ct2/show/study/NCT05933577)

I 2Q23 earnings call agenda



Business Review

Stéphane Bancel, CEO



R&D/Clinical Programs

Stephen Hoge, M.D., President



Commercial Market

Arpa Garay, CCO



Financials

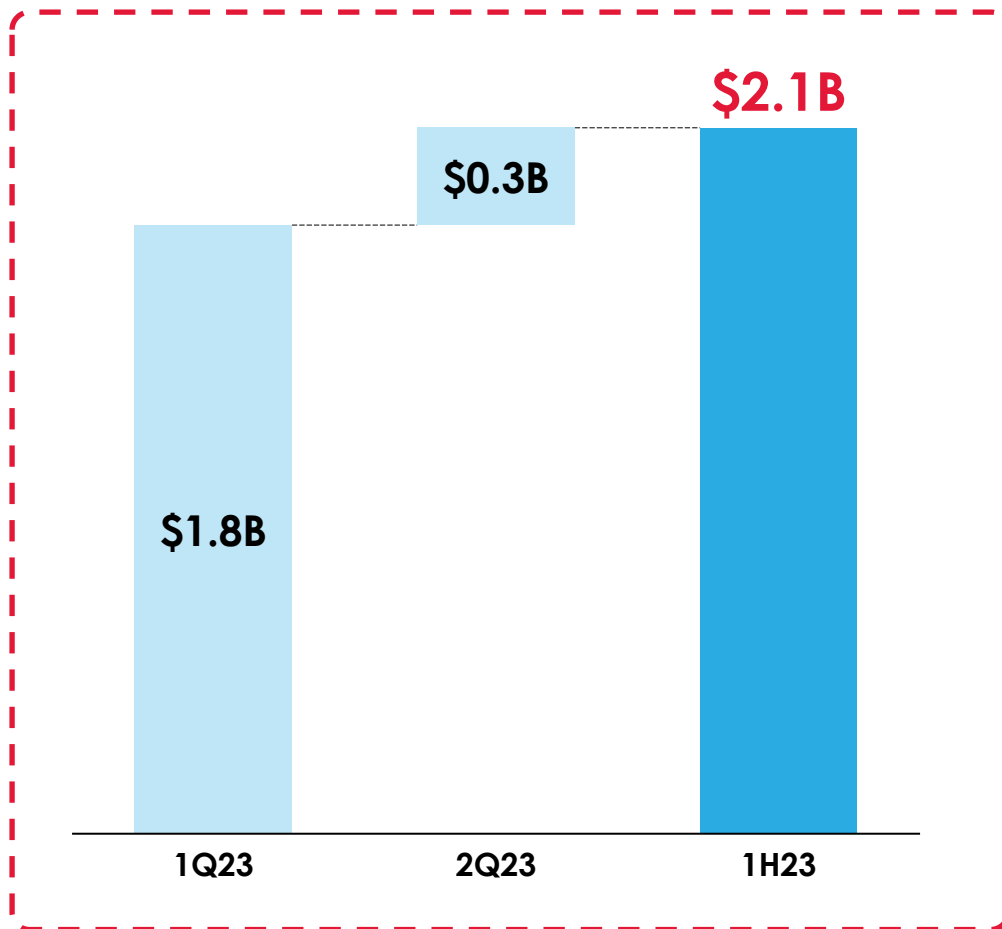
Jamey Mock, CFO



Looking Forward

Stéphane Bancel, CEO

2Q23 COVID-19 vaccine sales of \$0.3B

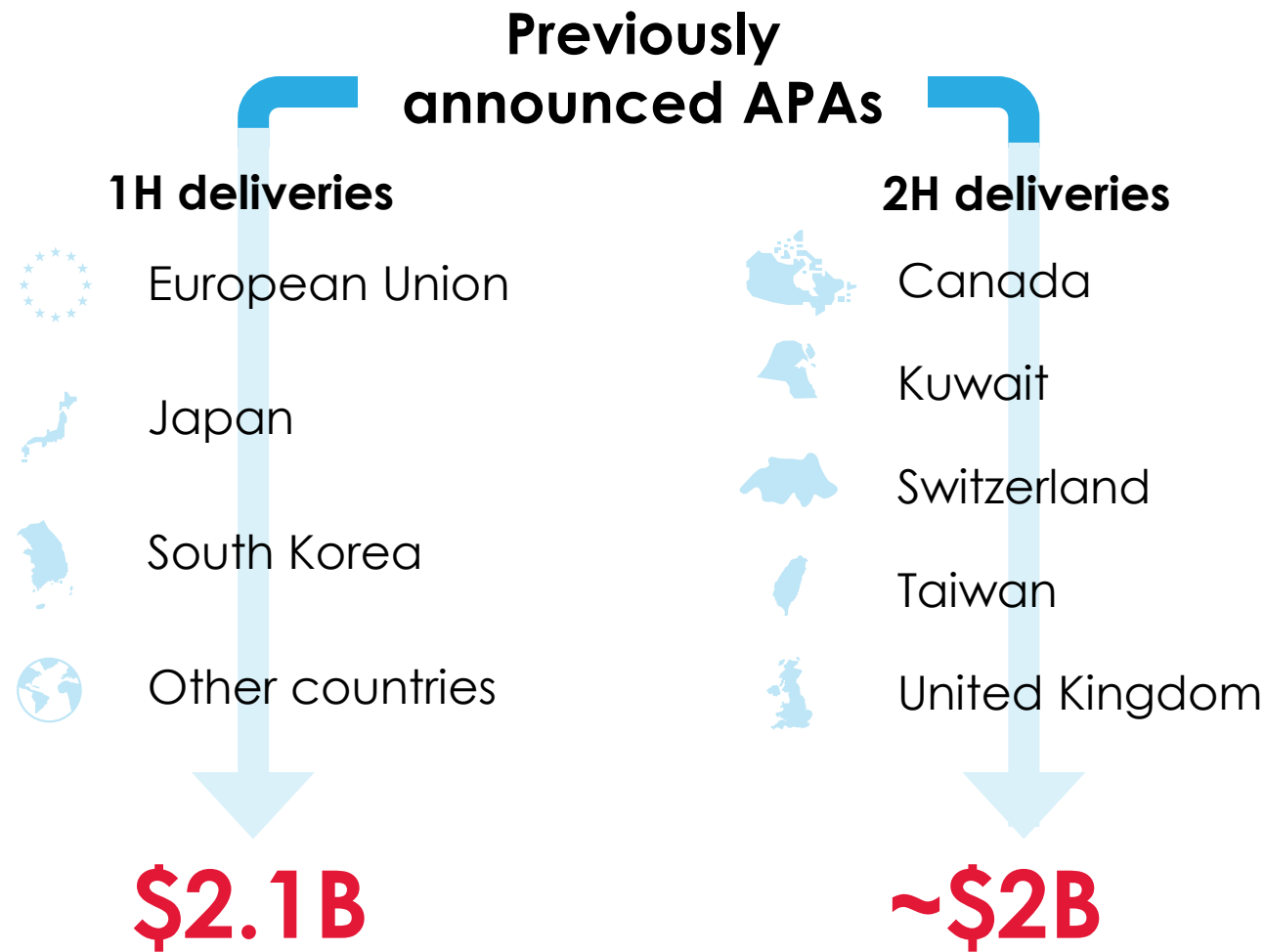


Achieved expectations of ~\$2B 1H23 APA deliveries

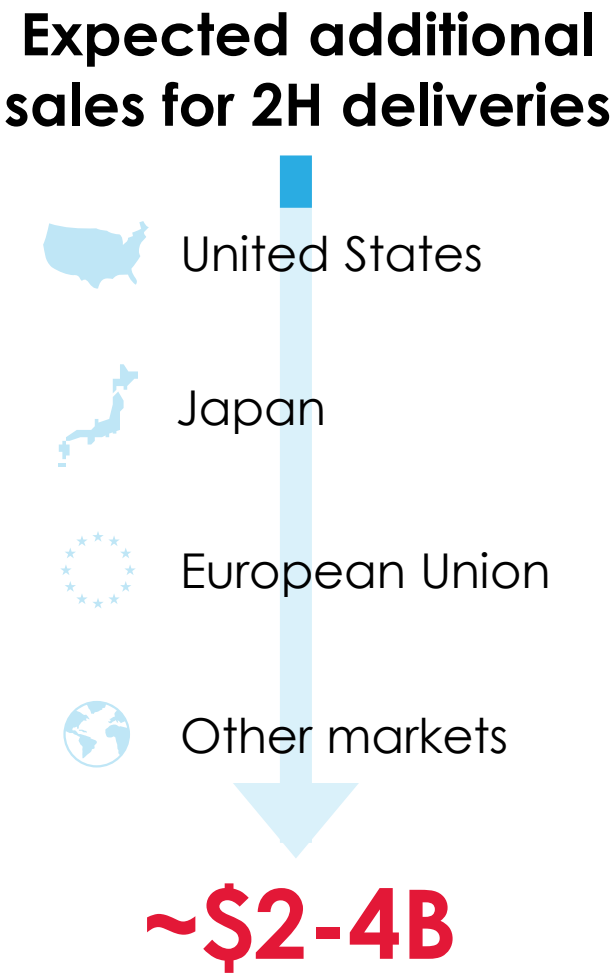
- \$0.3 billion of vaccine sales from previously announced APAs were delivered in 2Q23
- \$2.1 billion in vaccine sales reported in 1H23

Additional sales expected beginning in 2H23
from mRNA-1273.815 (XBB.1.5 variant) COVID-19 vaccine

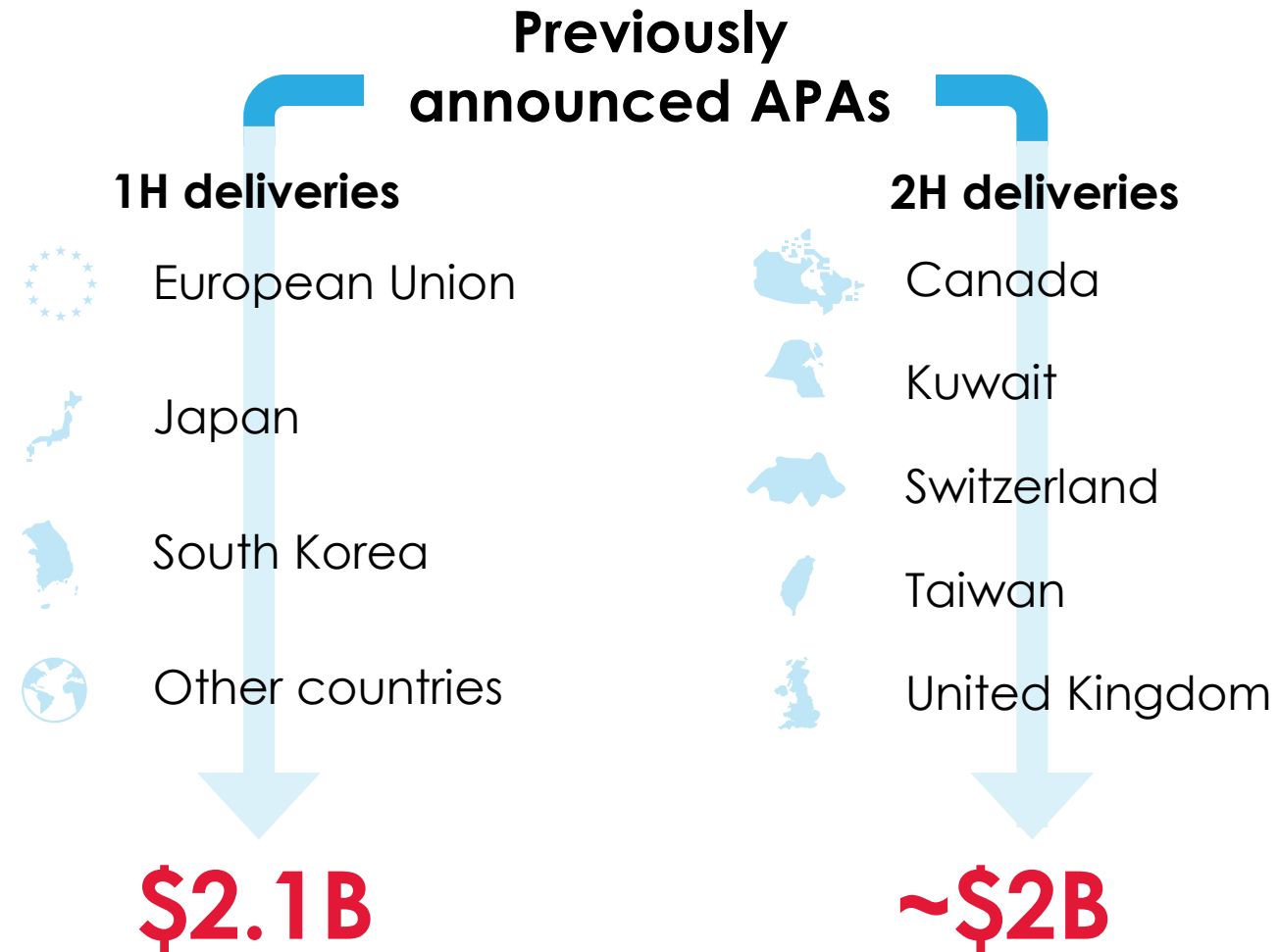
Expecting 2023 COVID-19 sales of \$6-8B, dependent on U.S. vaccination rates



(~\$1B of original \$3B of APAs expected to be deferred to 2024)



Expecting 2023 COVID-19 sales of \$6-8B, dependent on U.S. vaccination rates



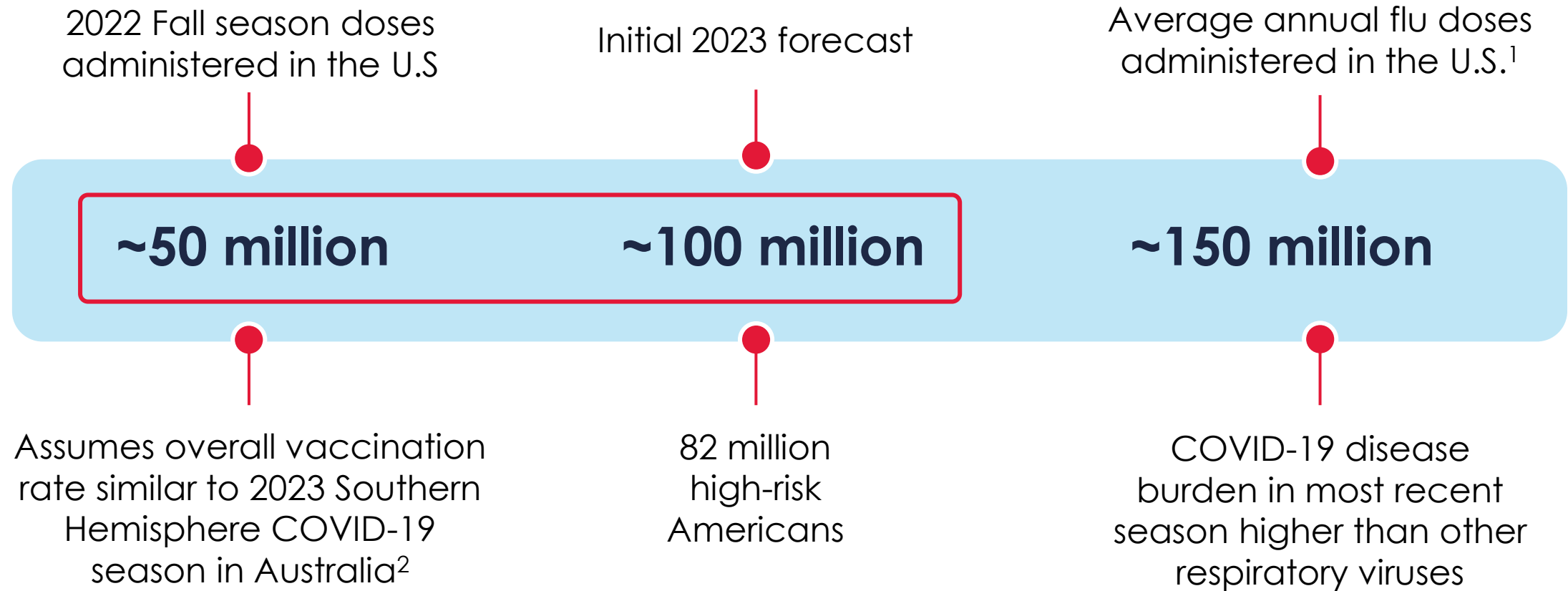
(~\$1B of original \$3B of APAs expected to be deferred to 2024)

Expected additional sales for 2H deliveries



U.S. Fall 2023 COVID-19 market size is dependent on vaccination rates

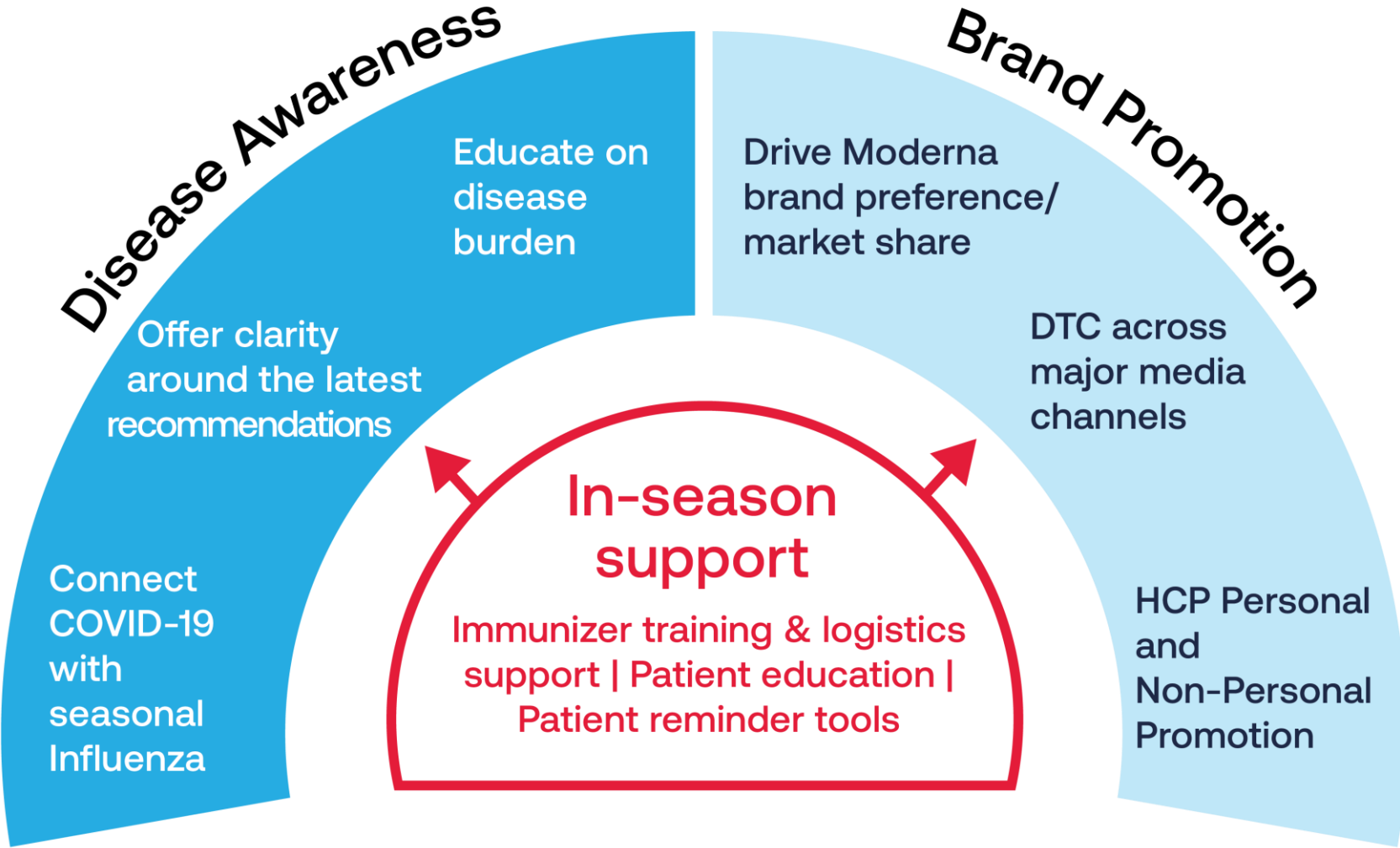
Parameters informing 2023 COVID-19 volume forecast



1. Average over past 9 years

2. <https://www.health.gov.au/resources/publications/covid-19-vaccine-rollout-update-21-july-2023?language=en>

2023 Fall vaccine campaign focused on increasing market doses administered and solidifying Moderna's market share



Strong product profile for expected RSV 2024 launch

Only mRNA RSV investigational vaccine with positive Phase 3 data

High efficacy across vulnerable and older populations¹

83.7% efficacy in overall study population

88.4% efficacy in participants with comorbidities

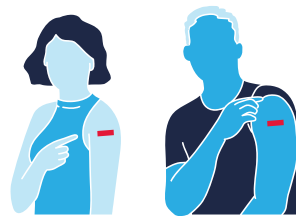
95.4% efficacy in participants aged 70-79 years

¹ Based on RSV LRTD with ≥ 2 symptoms; [RSVVW data](#)

² As of April 30, 2023

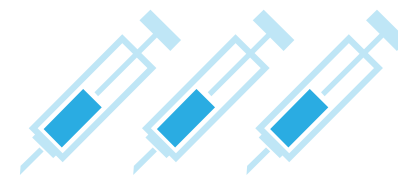
³ www.ncbi.nlm.nih.gov/pmc/articles/PMC7846520/

⁴ www.ncbi.nlm.nih.gov/pmc/articles/PMC7913196/



Well-established safety and tolerability profile for mRNA vaccine technology

- Over 1 billion COVID-19 doses using same mRNA technology
- Most solicited adverse reactions were mild to moderate^{1,2}
- No cases of Guillain-Barre Syndrome (GBS) have been reported with mRNA-1345 in Phase 3 RSV trial²



Ease of administration

- Single-dose prefilled syringe
- HCP customer convenience: only ready-to-use formulation, saving time and reducing administration errors^{3,4}

I 2Q23 earnings call agenda



Business Review

Stéphane Bancel, CEO



R&D/Clinical Programs

Stephen Hoge, M.D., President



Commercial Market

Arpa Garay, CCO



Financials

Jamey Mock, CFO



Looking Forward

Stéphane Bancel, CEO

Second quarter 2023 financial results

In \$ millions, except per share amounts

	2Q 2023	2Q 2022	Change (2Q23 vs. 2Q22)	
Product sales	\$ 293	\$ 4,531	\$ (4,238)	(94)%
Other revenue ¹	51	218	(167)	(77) %
Total revenue	344	4,749	(4,405)	(93)%
Cost of sales	731	1,381	(650)	(47) %
Research and development	1,148	710	438	62 %
Selling, general and administrative	332	211	121	57 %
Total operating expenses	2,211	2,302	(91)	(4)%
(Loss) income from operations	(1,867)	2,447	(4,314)	(176)%
Other income, net	118	27	91	337 %
(Benefit from) provision for income taxes	(369)	277	(646)	(233) %
Net (loss) income	\$ (1,380)	\$ 2,197	\$ (3,577)	(163)%
(Loss) earnings per share – Diluted	\$ (3.62)	\$ 5.24	\$ (8.86)	(169) %
Weighted average shares – Diluted ²	381	419	(38)	(9) %
Weighted average shares – Basic ²	381	396	(15)	(4) %
Effective tax rate	21 %	11 %		

¹Includes grant revenue and collaboration revenue

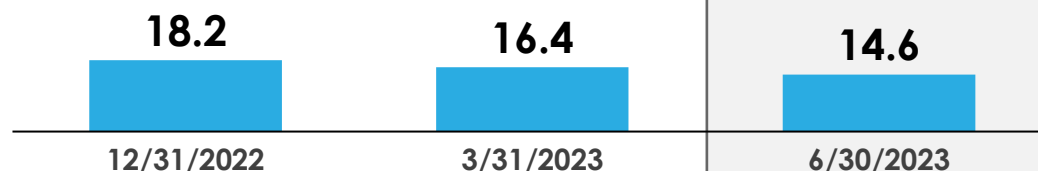
²We generated a net loss in 2Q 2023, therefore the basic and diluted weighted average shares calculation was the same

Cash / investments and cash deposits

Cash / investments

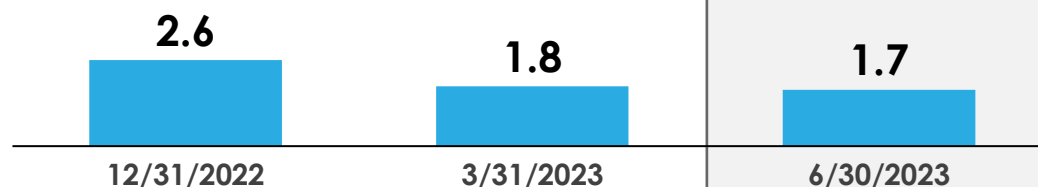
In USD Billions

Cash, cash equivalents and investments



Cash, cash equivalents and investments as of June 30, 2023, at \$14.6 billion, down from \$16.4 billion as of March 31, 2023

Balance of cash deposits for future product supply

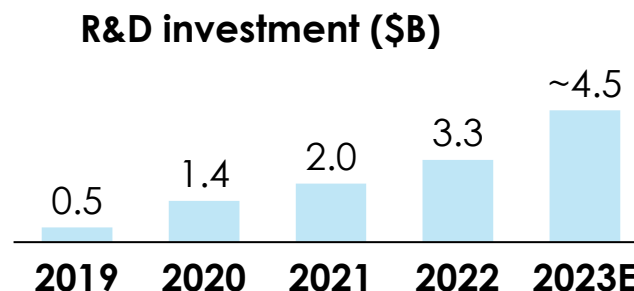


Balance of cash deposits for future product supply as of June 30, 2023, at \$1.7 billion, below prior quarter driven by product deliveries against customer deposits

Cash and investments decreased in 2Q, primarily driven by the operating loss and share buyback activity

Moderna's capital allocation priorities

Reinvest in the business and accelerate investment in R&D, manufacturing infrastructure and company buildout



- Phase 3 trials: COVID boosters, Flu, RSV, CMV, Next-gen COVID-19, INT
- Individualized Neoantigen Therapy
- 47 development programs

Seek attractive external investment opportunities (licenses and/or M&A) to further expand the reach of Moderna's technology



generation bio™



Return capital to shareholders

- Repurchased 4.4 million shares in 2Q 2023 for \$0.6 billion
- Repurchased 8.0 million shares year-to-date for \$1.2 billion
- \$1.7 billion remaining capacity under the \$3.0 billion August 2022 authorization as of June 30, 2023

2023 updated financial framework

Sales

- Expecting 2023 COVID-19 sales of \$6-8 billion, dependent on U.S. vaccination rates
- 2H23 sales timing subject to regulatory approvals; currently expecting sales split of ~30% in Q3; 70% in Q4

Cost of sales

- Now expect FY 2023 reported cost of sales to be ~\$3.5-4.0 billion for the year

R&D & SG&A Expenses

- Continue to expect full year R&D and SG&A expenses of ~\$6 billion, with ~\$4.5 billion in R&D

Tax

- We now anticipate a full year tax benefit of ~\$0.7-1.0 billion, driven by an assumed operating loss, R&D credits, international provisions and non-recurring items

Capital Expenditures

- Continue to expect capital expenditures of ~\$1.0 billion

I 2Q23 earnings call agenda



Business Review

Stéphane Bancel, CEO



R&D/Clinical Programs

Stephen Hoge, M.D., President



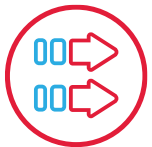
Commercial Market

Arpa Garay, CCO



Financials

Jamey Mock, CFO



Looking Forward

Stéphane Bancel, CEO

Commercial outlook

COVID-19 sales



Commercial contracts in place across U.S. customer segments



Expecting 2023 COVID-19 sales in the range of \$6-8 billion

RSV



Anticipate RSV commercial launch in 2024



Strong RSV product profile with pre-filled syringe at launch

Individualized Neoantigen Therapy



Comprehensive plan to expand manufacturing scale while reducing needle-to-needle time frames



Working with our partner Merck to assess prioritization beyond melanoma and non-small cell lung cancer (NSCLC)

Moderna is preparing to launch a number of new products in 2024 through 2026



Up to 5 respiratory vaccines

- RSV
- Seasonal Flu
- Combination vaccines
- Next-gen COVID-19
- Next-gen Flu



Our first latent virus vaccine

- CMV



Our first oncology product and multiple rare disease medicines

- INT in multiple indications
- MMA
- PA

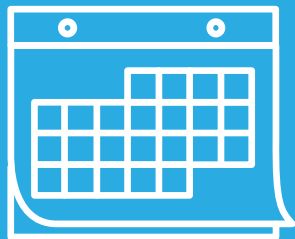


Our mRNA platform is poised to deliver multiple commercial products

*Subject to clinical and regulatory success

© 2023 Moderna, Inc. All rights reserved.

moderna



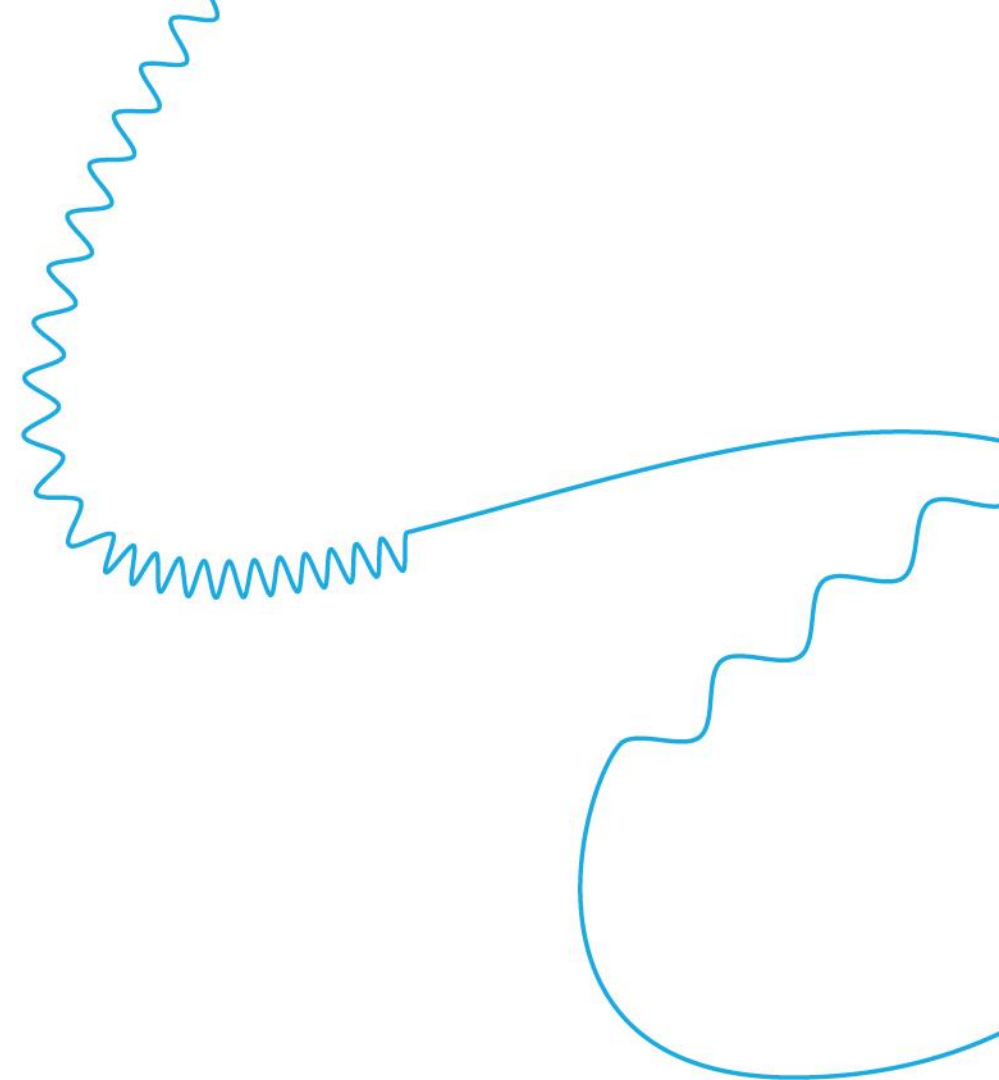
Save the Date

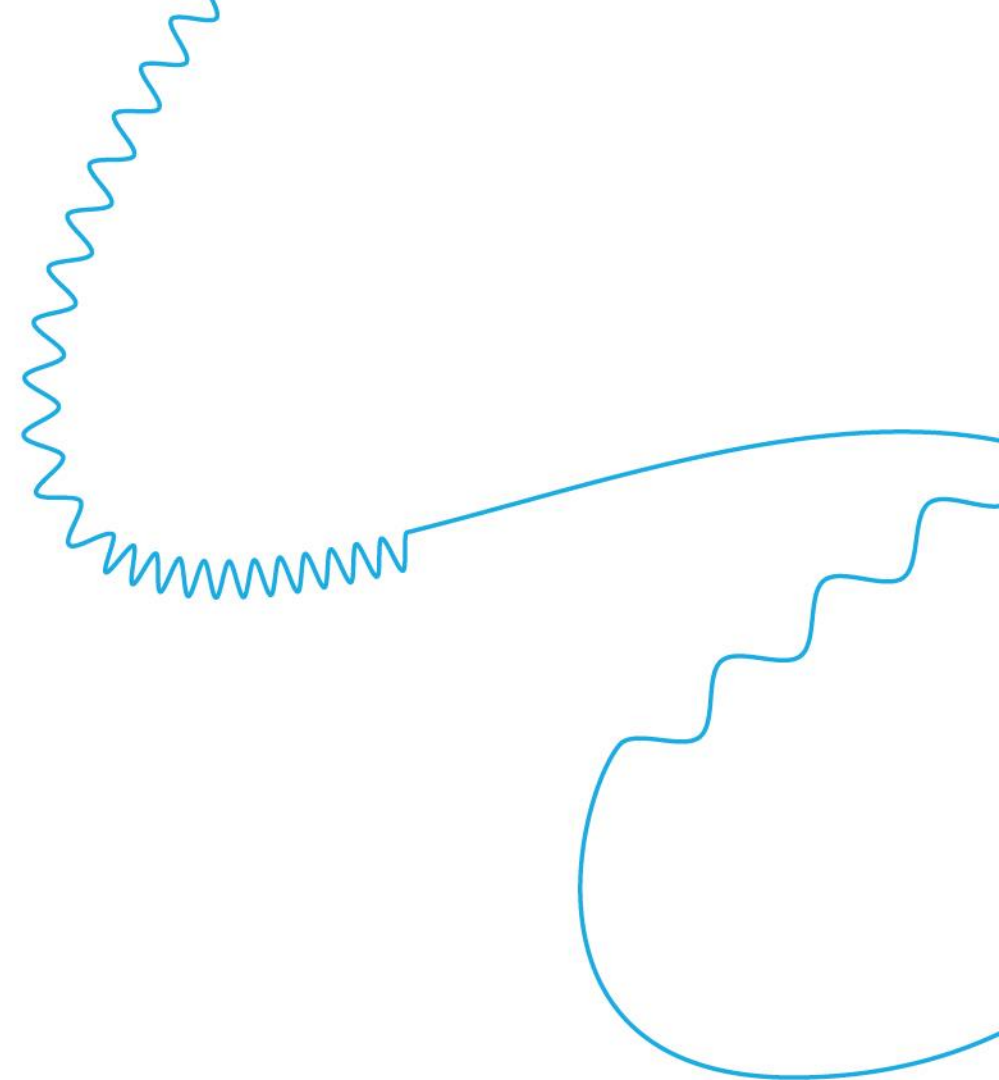
Events in 2023

- > **R&D Day**
September 13th
- > **ESG Day**
December 7th

Our Mission

Deliver the greatest possible impact to people through mRNA medicines.

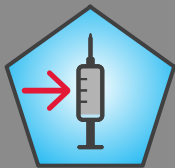




Thank you

Q&A

Moderna's Respiratory Vaccines (Pipeline 1/3)

Modality	Program	ID #	Preclinical development	Phase 1	Phase 2	Phase 3	Commercial	Moderna rights
Adults  Infectious disease vaccines	COVID-19 vaccine	Spikevax®						Worldwide
		mRNA-1283	Next generation (2-5 °C)					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
	COVID + Flu vaccine	mRNA-1073						Worldwide
	COVID + Flu vaccine	mRNA-1083						Worldwide
	COVID + Flu + RSV vaccine	mRNA-1230						Worldwide
	Flu + RSV vaccine	mRNA-1045						Worldwide
	Endemic HCoV vaccine	mRNA-1287						Worldwide
	Pandemic Flu	mRNA-1018						Worldwide
Adolescents & Pediatrics	COVID-19 vaccine (adolescents)	mRNA-1273.222/.214	TeenCOVE					Worldwide
	COVID-19 vaccine (pediatrics)	mRNA-1273.222/.214	KidCOVE					Worldwide
	Pediatric RSV vaccine	mRNA-1345						Worldwide
	Pediatric hMPV + PIV3 vaccine	mRNA-1653						Worldwide
	Pediatric RSV + hMPV vaccine	mRNA-1365						Worldwide

Moderna's Latent & Emerging Vaccines (Pipeline 2/3)

Modality	Program	ID #	Preclinical development	Phase 1	Phase 2	Phase 3	Commercial	Moderna rights
Latent  Infectious disease 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	Zika vaccine	mRNA-1893						Worldwide BARDA funded
	Nipah vaccine	mRNA-1215						Worldwide NIH funded

Moderna's Therapeutics (Pipeline 3/3)

Modality	Program	ID #	Preclinical development	Phase 1	Phase 2	Phase 3	Commercial	Moderna rights
 Systemic secreted & cell surface therapeutics	Relaxin <i>Heart failure</i>	mRNA-0184						Worldwide
	PD-L1 <i>Autoimmune hepatitis</i>	mRNA-6981						Worldwide
 Cancer vaccines & therapeutics	Individualized neoantigen therapy (INT)	mRNA-4157						50-50 global profit sharing with Merck
	KRAS vaccine	mRNA-5671						Worldwide
	Checkpoint vaccine	mRNA-4359						Worldwide
 Intratumoral immunology	OX40L/IL-23/IL-36γ (Triplet) <i>Solid tumors/lymphoma</i>	mRNA-2752						Worldwide
	IL-12 <i>Solid tumors</i>	MEDI1191						Worldwide
 Localized regenerative therapeutics	VEGF-A <i>Myocardial ischemia</i>	AZD8601						Worldwide
	Propionic acidemia (PA)	mRNA-3927						Worldwide
	Methylmalonic acidemia (MMA)	mRNA-3705						Worldwide
 Systemic intracellular therapeutics	Glycogen storage disease type 1a (GSD1a)	mRNA-3745						Worldwide
	Ornithine transcarbamylase deficiency (OTC)	mRNA-3139						Worldwide
	Phenylketonuria (PKU)	mRNA-3283						Worldwide
 Inhaled pulmonary therapeutics	Crigler-Najjar syndrome type 1 (CN-1)	mRNA-3351						Provided to ILCM free of charge
	Cystic fibrosis (CF)	VX-522						Vertex to pay milestones and royalties

Anticipated pipeline milestones in 2023



COVID-19 vaccines

sBLA approval/authorization of new XBB.1.5 vaccine; ACIP Fall booster recommendations



Flu vaccines

mRNA-1010 P303 update in 3Q



RSV vaccine

Complete FDA rolling submission in 3Q with priority review voucher (PRV)



CMV vaccine

Complete Phase 3 CMVictory study enrollment



Individualized Neoantigen Therapy (INT)

Expand development program to additional tumor types, including NSCLC



PA

Advance PA program to dose expansion