CONFIDENTIAL MEMORANDUM OF UNDERSTANDING

MODERNA AND THE SWISS GOVERNMENT COVID PANDEMIC RESPONSE

MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding ("**MOU**") is by and between ModernaTx, Inc. ("**Moderna**") and Federal Office of Public Health ("**FOPH**"), and is binding on each of them with respect only to those sections of this MOU identified below in the section entitled "Effect of Agreement". Each of Moderna and FOPH are hereinafter occasionally individually referred to as a "Party" and collectively, as the "Parties."

Parties: Moderna and FOPH.

Background: Moderna is currently advancing its vaccine candidate mRNA-1273 against SARS-CoV-2 infections through clinical development and is establishing sites outside of the United States at contract manufacturers for the large-scale manufacturing of formulated bulk product of mRNA-1273.

The Phase 1 study (NCT04283461), which dosed the first subject on March 16, 2020, is being conducted in the United States and is evaluating the safety and immunogenicity of three dose levels of mRNA-1273 (25, 100, 250 micrograms) administered as a two-dose vaccination regimen. The Phase 2 study will evaluate the safety, reactogenicity and immunogenicity of two dose levels of mRNA-1273 (50, 100 micrograms) with the same two-dose vaccination regimen as the Phase 1 study.

In addition to the interim positive Phase 1 Study data that was disclosed by Moderna on May. 18, 2020, certain safety and immunogenicity data may be available before the end of June 2020. Such data would inform Moderna's assumption of an optimal dose level of either 50 or 100 micrograms, which is currently based on existing data from its other vaccine programs and pre-clinical studies with mRNA-1273. Any data disclosed by Moderna to FOPH shall be disclosed confidentially and on an anonymized basis, and subject to strict compliance with Moderna's security protocols.

MOU Objectives: Moderna is planning on launching a formal demand confirmation process in June 2020 with a deadline of July 21, 2020 for the signature of a definitive agreement for the supply by Moderna of frozen formulated bulk product of mRNA-1273 ("**Supply Agreement**") to each participant in the demand confirmation process.

Since initial discussions indicate that demand is likely to exceed the anticipated supply capacity in 2021 and 2022, Moderna is looking to enter into this MOU with FOPH prior to June 9, 2020 establishing a preliminary order size ahead of the Supply Agreement process to secure such order size for FOPH.

Responsibilities under the Supply Agreement: The Supply Agreement shall provide that Moderna will be responsible for (1) the manufacture of the formulated frozen bulk product of mRNA-1273 ("**Moderna Vaccine**") for supply to FOPH or its designee, and (2) the storage, fill and finish of the Moderna Vaccine into vials within Moderna's network with the same dose per vial as for Moderna's other ex-US fill and finish activities in relation to the Moderna Vaccine. Moderna will use commercially reasonable efforts to procure the filling and finishing of the Moderna Vaccine in such a manner so as to allow administration within the scope of the product label authorized by the European

Medicines Agency. The costs related to storage, fill and finish of the Moderna Vaccine will be borne by FOPH.

The Supply Agreement shall also provide that FOPH will be responsible for the transportation (including shipping from the point of delivery), insurance, distribution to end-users, administration and all other activities following delivery (EXW - INCOTERMS 2020) of Moderna Vaccine (duly filled and finished into vials by Moderna) by or on behalf of Moderna to FOPH, and all related costs for the foregoing (collectively, the **"Country Obligations"**).

The Supply Agreement shall provide that Moderna and FOPH will collaborate on defining a plan for obtaining the appropriate expedited or accelerated regulatory approval (i.e. marketing authorization) for the Moderna Vaccine. Moderna (or any designated Moderna collaborator) will exercise commercially reasonable efforts to lead such activities and secure such approvals, provided always that such efforts will not require Moderna to carry out any additional studies or clinical trials. Notwithstanding, FOPH will be responsible for all costs related to obtaining any required regulatory approval for distribution of the Moderna Vaccine in Switzerland. It is Moderna's intent that a Moderna entity will be the marketing authorization holder for the Moderna Vaccine in Switzerland, unless this is not permitted under local applicable laws, and that Moderna will pay the customary costs for such marketing authorization (excluding, for the avoidance of doubt, the costs of any additional studies or clinical trials required by Swissmedic). To this end, Moderna shall exercise commercially reasonable efforts to make available, at its own cost, to the competent Swiss regulatory agency all data package(s) and other information/documents reasonably required by the latter in relation to the approval of the Moderna Vaccine in Switzerland; provided, however, that (i) such efforts will not require Moderna to carry out any additional studies or clinical trials, and (ii) subject to applicable law, the competent Swiss regulatory agency keeps all such data, information and documents in confidence pursuant to the secrecy obligations to which it is legally bound upon any such filing.

The Supply Agreement shall contain reasonable product warranties and other related representations, warranties and remedies that are typical and customary for a life science/pharmaceutical supply agreement involving a novel and/or innovative medical treatment or solution. Subject to any reasonable qualifications and remedies, such warranties will include compliance with GMP (and, to the extent applicable, GDP), valid title with respect to the Moderna Vaccine and non-infringement of third parties' intellectual property rights.

MOU Order Size: FOPH aims to secure a preliminary order of 6 (six) million 100-microgram doses under the MOU (**"MOU Order Volume"**). The MOU Order Volume would be subject to any permitted revisions in the demand confirmation process or under the Supply Agreement as described below.

MOU Payment: Before June 14, 2020, and in consideration of Moderna establishing formulated bulk product manufacturing capacity outside the United States and reserving the MOU Order Volume for FOPH for the demand confirmation process, FOPH will pay Moderna an upfront payment of 25% (twenty five percent) of the MOU Order Price (the **"Upfront Payment"**), which will be denominated in US dollars. The **"MOU Order Price"** is defined as the MOU Order Volume multiplied by the Pandemic Access Pre-Purchase Price Per 100-microgram Dose.

The **"Pandemic Access Pre-Purchase Price Per 100-microgram Dose"** is US $30 (thirty US dollars), implying a price of US $60 (sixty US dollars) per vaccination regimen comprising two 100-microgram doses, for Moderna Vaccine Ex Works (EXW – INCOTERMS 2020), and excluding costs related to all Country Obligations and the related storage/fill/finish costs to be borne by FOPH.

Moderna Vaccine Demand Confirmation Process:

Following signature of this MOU and subject to payment in full by FOPH of the Upfront Payment to Moderna before June 14, 2020, FOPH shall be invited to take part in the demand confirmation process commencing on or before June 16, 2020, and shall be provided at that point with the form of Supply Agreement to be used. During the demand confirmation process, FOPH (i) shall have a right to reduce, at their discretion, the order size of its MOU Order Volume by up to 75% (seventy five percent) to a lower volume, or (ii) may seek to increase the order size above its MOU Order Volume.

FOPH must submit any change request to its MOU Order Volume to Moderna in writing by no later than 6pm US Eastern Daylight Time on June 30, 2020. On or before July 15, 2020, Moderna shall confirm to FOPH the final volume of Moderna Vaccine that will be made available to FOPH under the Supply Agreement (the **"Supply Agreement Commitment"**). In case of a change request reducing the MOU Order Volume by up to 75% (seventy five percent), Moderna shall be bound by the change request, and the Supply Agreement shall incorporate such reduced MOU Order Volume. Where FOPH seeks in the demand confirmation process to increase the order size above its MOU Order Volume, Moderna may, in its sole discretion, agree to some or all of the requested increase in order size based on aggregate demand for the Moderna Vaccine by all participants.

Prior to signature of the Supply Agreement, Moderna shall disclose to FOPH (i) the entities that will be manufacturing the Moderna Vaccine and their related ex-US manufacturing sites, (ii) the final microgram dose for the Moderna Vaccine regimen to be used in its first Phase 3 study and (iii) the related storage/fill/finish costs to be borne by FOPH; provided, however, that (a) where Moderna is unable to provide a definitive figure under (iii) for the storage/fill/finish costs prior to the signature of the Supply Agreement, it shall provide FOPH with a maximum amount for such costs, and (b) nothing contained in this MOU shall require FOPH to enter into the Supply Agreement.

Supply Agreement Payment:

The Pandemic Access Pre-Purchase Price Per 100-microgram Dose described above is being offered to countries that enter into a similar agreement with Moderna and participate in the demand confirmation process. The Supply Agreement will include a requirement that, within 15 days after the signature of the Supply Agreement, FOPH will pay Moderna the difference (if any) between the price of the Supply Agreement Commitment under the Supply Agreement and the Upfront Payment (the **"Balancing Payment"**).

Moderna shall exercise best reasonable efforts to ensure that at least 20% of the amounts paid to Moderna by FOPH under the MOU and/or the Supply Agreement shall be invested into, or committed to, Moderna Vaccine manufacturing and supply capabilities in Switzerland.

Supply Agreement Delivery Schedule: As part of the Supply Agreement, Moderna would include a preliminary forecast of the schedule for deliveries in 2021 and 2022 of Moderna Vaccine to FOPH. Under the terms of the Supply Agreement, Moderna would provide an updated reforecast to the delivery schedule on or about September 30, 2020 and would confirm the final delivery schedule on about December 15, 2020. Moderna intends to be able to start delivery of a portion of the order of Moderna Vaccine to FOPH in Q1 2021.

Variations to Supply Agreement Commitment: The Supply Agreement shall expressly provide that in the event that the revised delivery schedule provided by Moderna on or about December 15, 2020 should indicate that the production of Moderna Vaccine by or on behalf of Moderna will be materially delayed in comparison to the anticipated delivery schedule contemplated in the Supply Agreement, FOPH would have the option under the Supply Agreement, exercisable until December 31, 2020, to reduce the Supply Agreement Commitment by up to 25% (twenty five percent) and to be entitled to a refund of the same percentage of the sum of payments made to Moderna (Upfront Payment and Balancing Payment) as the percentage reduction in the Supply Agreement Commitment.

Furthermore, the Supply Agreement shall also provide that if by end of 2021, Moderna has not been able to deliver to FOPH at least 50% of the Supply Agreement Commitment (excluding for reasons outside of Moderna's reasonable control), FOPH would be entitled to cancel up to 50% of the remainder of its undelivered Supply Agreement Commitment (as revised above, if applicable), and will be entitled to a refund in an amount equal to the number of 100-microgram doses cancelled multiplied by the Pandemic Access Pre-Purchase Price Per 100-microgram Dose.

For the avoidance of doubt, the refund rights for FOPH in the two paragraphs above shall be available in the event that Moderna does not obtain a marketing authorization in respect of mRNA-1273 from either of the FDA or the EMA.

Variation in Equivalent Doses: FOPH acknowledges that if the ongoing clinical studies of the Moderna Vaccine result in a recommended dose that is different from 100 micrograms, then variance in number of equivalent doses delivered would be expected. However, neither the amount of the Moderna Vaccine nor the amount of, nor the obligation to pay, the Balancing Payment would be affected by such variance. For purposes of clarification by way of example, in the event that the dose required for the Moderna Vaccine regimen should increase from 100 mcg to 200 mcg (two (2) applications of 200 mcg doses per vaccination regimen), the Balancing Payment payable pursuant to the Supply Agreement shall remain unchanged while the number of Moderna Vaccine treatment regimens to be supplied pursuant to the Supply Agreement shall be reduced by 50%.

Any variation upwards of the microgram dosage required per regimen shall not increase the liability of FOPH under this MOU to pay an Upfront Payment of more than $45 million; provided, however, that nothing contained in this MOU shall require FOPH to enter into the Supply Agreement.

In accordance with applicable legal requirements, FOPH, or the competent Swiss authority/ies, may eventually opt to actually administer the Moderna Vaccine in Switzerland in a dose that is different from 100 micrograms and any such election would not trigger any change to the Pandemic Access Pre-Purchase Price Per 100-microgram Dose, provided always that nothing in this MOU shall require Moderna to perform custom filling or finishing activities to meet any variation of the dose levels requested or selected by FOPH or Swiss authority/ies.

Most Favoured Nations – Price & Supply:

In respect of the Supply Agreement Commitment, Moderna hereby confirms that supply to FOPH shall be priority supply, being supply on a pro rata basis in parallel to other governments or multi-country organizations, excluding the USA, who execute a Memorandum of Understanding in connection with mRNA-1273 on or before June 9, 2020 and/or a Supply Agreement with Moderna on or before July 21, 2020 with respect to the supply of Moderna Vaccine from ex-USA manufacturing facilities in the demand confirmation process (such governments or multi-country organizations being referred to as "**Demand Confirmation Beneficiaries**"); provided, however, that Moderna's obligation to make such pro-rated supply shall be subject to reasonable adjustments that Moderna makes to prevent inefficient periodic allocation and to allow for optimization that is more useful for governments in specific periods of time. Without prejudice to the pro rata supply regime described in the sentence above, Moderna shall not, without the consent of the FOPH, be entitled to (i) delay delivery to FOPH, or (ii) amend in a manner prejudicial to FOPH the delivery schedule as part of the updates to be provided in September 2020 and December 2020, in each case in order to provide preferential treatment to an order of Moderna Vaccine from a customer other than a Demand Confirmation Beneficiary.

The Pandemic Access Pre-Purchase Price Per 100-microgram Dose offered to FOPH in this MOU at its date of signature is and shall remain as favorable a price as the price for a 100-microgram dose offered to any other participant governments or multi-country organizations who shall have also executed a Memorandum of Understanding in connection with mRNA-1273 with Moderna on or before by June 9, 2020 and/or a Supply Agreement with Moderna on or before July 21, 2020 with respect to the supply of the Moderna Vaccine from Moderna ex-USA manufacturing facilities in the demand confirmation process. The Parties acknowledge that different financial terms may apply for the sale and delivery of the Moderna Vaccine to developing nations, either directly or indirectly through NGOs (such as CEPI and GAVI) and/or the World Health Organization.

Liability & Indemnifications:

Under the terms of the Supply Agreement, FOPH will provide Moderna (and all members of its group of companies and contractors in the supply chain for the Moderna Vaccine) with statutory immunity from all liability arising at any time in connection with the Moderna Vaccine so manufactured, supplied, distributed and used or administered under the Supply Agreement; provided, however, that such immunity shall always remain subject to the terms, standards, scope and limitations expressly provided in the PREP Act, 42 U.S.C. § 247d-6d (collectively, the "PREP ACT") and shall not exceed the scope of immunity set forth in the PREP ACT. Subject to the same limitations, FOPH will not use or administer, or permit or enable the use or administration of, the Moderna Vaccine under the Supply

Agreement unless such use or administration would, with respect to Moderna and its group companies and contractors in the supply chain for the Moderna Vaccine, be covered in full by such statutory immunity with respect to such manufacture, supply, distribution, use or administration.

Under the terms of the Supply Agreement, FOPH will indemnify Moderna and its group companies and contractors in the supply chain for the Moderna Vaccine in Switzerland, against all costs, claims and liabilities arising out of or in connection with (i) all clinical trials of the Moderna Vaccine in Switzerland required by Swissmedic, or (ii) the manufacture, supply, distribution and use or administration of the Moderna Vaccine pursuant to the Supply Agreement. Irrespective of the territory in which the breaching act or omission occurred, FOPH shall not have any obligation to indemnify Moderna (and its group companies and contractors in the supply chain for the Moderna Vaccine) in connection with any claims for death or serious injury in which it is demonstrated that such death or serious injury is caused by the willful misconduct of Moderna (or any of its group companies or contractors in the supply chain for the Moderna Vaccine).

Notwithstanding anything to the contrary set forth in this MOU or the Supply Agreement (including, without limitation, both of the immediately preceding paragraphs of this Section), pursuant to the terms of the Supply Agreement, FOPH will neither be required to provide immunity nor to indemnify Moderna's contractors in the supply chain of the Moderna Vaccine: (i) in the case of willful misconduct; or (ii) for Moderna's contractors outside the US, in the case of gross negligence where liability for gross negligence cannot be excluded or limited under the laws of the jurisdiction of incorporation of the said contractors; or (iii) for a failure to comply with GMP and/or GDP as a result of the contractor's willful misconduct or gross negligence. As regards contractors outside the US, FOPH will not provide immunity nor indemnify Moderna for damages caused by the gross negligence of such contractors, in the case of Moderna having contractually or otherwise accepted exclusion or limitation of contractors' liability for gross negligence (where liability for gross negligence cannot be excluded or limited under the laws of the jurisdiction of incorporation of such contractors).

Confidentiality: This MOU (and its terms) are confidential to Moderna and FOPH and neither Party shall disclose it or the terms to others, except as agreed to in writing in advance by the Parties, or to a Party's advisors or as required by applicable law; provided that FOPH shall be permitted to discuss the MOU (and its terms) with personnel within the Swiss administration (including the Swiss government) and to the Swiss Parliament who (a) have a need to know such information in order to execute the MOU or the Supply Agreement or to pay any amounts or to make or approve any decisions thereunder, (b) are legally bound to keep such information confidential and not disclose such information to any other person or entity outside the Swiss administration, (c) are informed of the confidential nature of such information and (d) use such information solely for the permitted purpose. In addition, neither Party shall issue any written communication in relation to this MOU, or the subject matter hereof, without prior consultation with, and the consent of, the other Party, provided however that, following signature of the Supply Agreement by both Parties, FOPH either directly or through other Swiss authorities (including the Parliament, the government and the administration) may publicly announce their vaccination strategy, including general comments that they have entered into an agreement with Moderna on the reservation of production capacity and supply of

a vaccine for SARS-CoV-2. Any such comments made after the signature of the Supply Agreement may refer to the number of people that the Swiss authorities are aiming to vaccinate with the Moderna Vaccine, but none of the costs under the Supply Agreement, the price per dose or the pricing of any order by FOPH.

FOPH and the Swiss authorities (including the Parliament, the government and the administration) may communicate with authorities and governments of foreign states with which Switzerland will share the supply of the Moderna Vaccine to the extent the latter is at least in part manufactured in Switzerland provided that (i) such communications are required by applicable law in relation to the export of Moderna Vaccine to such foreign states and (ii) such communications shall not refer to the costs under the Supply Agreement, the price per dose or the pricing of any order by FOPH.

Expenses: Each Party will bear its own costs and expenses in connection with the negotiation and execution of this MOU and the Supply Agreement.

Law and Venue: New York law.

All disputes arising out or in connection with this MOU shall be finally settled under the Rules of Arbitration of the International Chamber of Commerce by three arbitrators appointed in accordance with the said Rules. The place of the arbitration shall be Paris (France).

Assignment: Moderna shall have the right to extend the rights, licenses, immunities, indemnities and obligations granted or imposed under this MOU to one or more of its affiliates, provided that Moderna shall remain liable to FOPH for any liability that has accrued prior to any such assignment.

As part of demand confirmation process, the Parties shall discuss in good faith a mechanism by which FOPH may have the right to provide a small proportion of the Supply Agreement Commitment to the Principality of Liechtenstein.

Effect of Agreement: Notwithstanding anything to the contrary contained in this MOU or elsewhere, in the event that no Supply Agreement is ever executed, delivered and concluded between the Parties, the maximum liability of FOPH under this MOU will not, under any circumstances other than the breach by FOPH of the terms of this MOU, exceed $45 million, which corresponds to the Upfront Payment.

The Parties agree that only the following sections of this MOU are binding on each of them: Responsibilities under the Supply Agreement, MOU Order Size, MOU Payment, Moderna Vaccine Demand Confirmation Process, Variation in Equivalent Doses, Liability and Indemnifications, Confidentiality, Expenses, Law and Venue, Assignment, and Effect of Agreement. Notwithstanding any of the foregoing, with respect to those provisions of this MOU which may not be considered legally binding upon the execution of this MOU, each of the Parties hereby agrees and acknowledges that (1) the non-binding provisions contained in this MOU are material, and (2) the Parties have entered into this MOU with the expectation that each of those other non-binding provisions shall be accurately reflected in the Supply Agreement in a form substantively similar to what has been agreed in this MOU.

Counterparts: This MOU may be executed in two or more counterparts, including by facsimile or PDF signature pages, each of which will be deemed an original, but all of which together will constitute one and the same instrument.

[the signatures page follows]

CONFIDENTIAL MEMORANDUM OF UNDERSTANDING

Each of the Parties has caused its duly authorized representative to execute this MOU effective upon the date of the last of the undersigned signatures.

MODERNATX, INC.

By: [redacted]

Name:

Title:

Date: 06/03/2020

FEDERAL OFFICE OF PUBLIC HEALTH

By: [redacted]

Name: Pascal Strupler

Title: Director-General

By: [redacted]

Date: 9. VI. 2020

Name: Nora Kronig

Title: Vice-director-general

Date: 09.06.2020

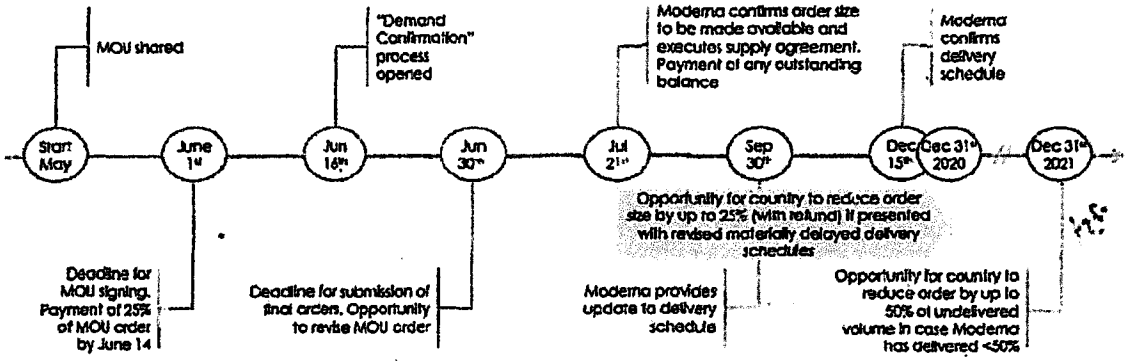
APPENDIX 1

Schedule A: mRNA-1273: background and progress to date (based on public company disclosures)

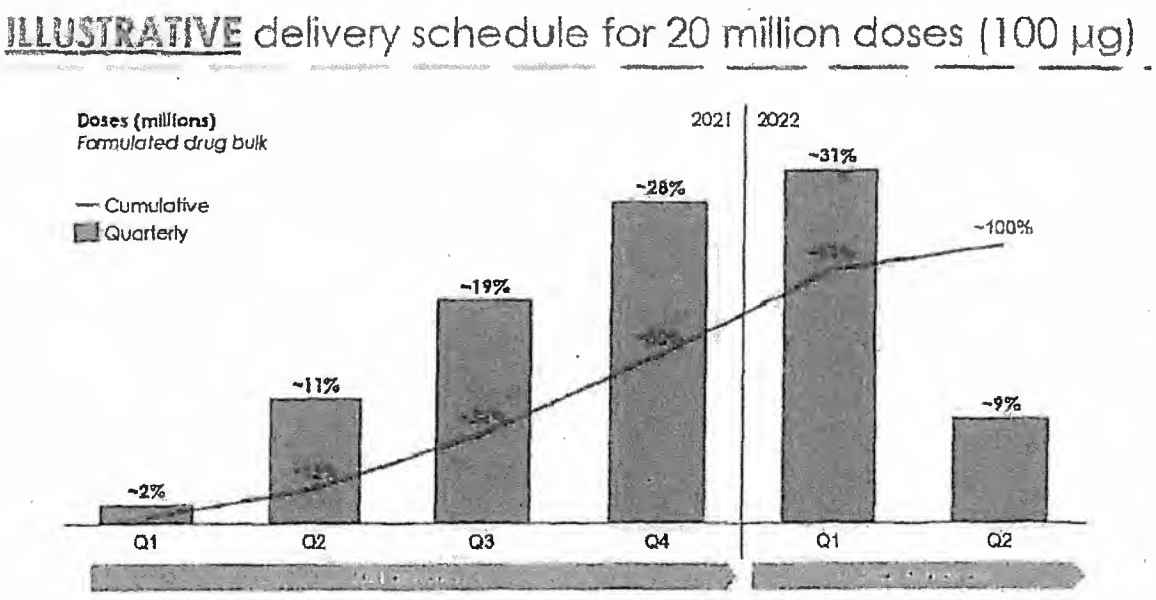
mRNA-1273 is an mRNA vaccine against SARS-CoV-2 encoding for a prefusion stabilized form of the Spike ("S") protein, which was selected by Moderna in collaboration with investigators from the Vaccine Research Center ("VRC") at the National Institute of Allergy and Infectious Diseases ("NIAID"), a part of NIH. The first clinical batch, which was funded by the Coalition for Epidemic Preparedness Innovations, was completed on February 7, 2020 and underwent analytical testing. It was shipped to NIH on February 24, 42 days from sequence selection.

The Phase 1 study, which dosed the first participant on March 16, 2020, is evaluating the safety and immunogenicity of three dose levels of mRNA-1273 (25, 100, 250 micrograms) administered on a two-dose vaccination schedule, given 28 days apart. Participants will be followed through 12 months after the second vaccination. The primary objective is to evaluate the safety and reactogenicity of a two-dose vaccination schedule of mRNA-1273. The secondary objective is to evaluate the immunogenicity to the SARS-CoV-2 S protein. On April 16, enrollment was completed for the three initial cohorts and the study was expanded to an additional six cohorts of older adults and elderly adults. On April 27, 2020 Moderna announced the filing of an Investigational New Drug application to enable a company sponsored Phase 2 study to begin in the second quarter of 2020. The Phase 2 study will evaluate the safety, reactogenicity and immunogenicity of two dose levels (50, 100 micrograms) with the same two-dose vaccination regimen as the Phase 1 study. Subject to data from these studies and discussions with regulators, a Phase 3 study could begin as soon as July 2020.

Schedule B: key dates for MOU and demand confirmation process and any subsequent revisions



Schedule C: permitted revisions of an MOU order size of 20 million doses through December 31, 2020

MOU in May (example)		Demand Confirmation Period			Revised delivery schedule	
MOU Order Size:	20m doses	*Example #1:* Supply Agreement Commitment	100% of MOU Order Size (also option to go above)		Principle	Can reduce order by up to 25%
		Vol. ordered and pre-paid by July	20m	→	Revised order	15m
Pandemic Access Pre-Purchase Price:	$30 / 100mcg dose	Balancing Payment	$450m		Refund	($150m)
Equivalent volume pre-paid in May	5m doses	*Example #2:* Supply Agreement Commitment	25% of MOU Order Size		Principle	Can reduce order by up to 25%
		Vol. ordered and pre-paid by July	5m	→	Revised order	3.75m
Upfront Payment:	$150m	Balancing Payment	$0		Refund	($37.5m)

Schedule D: illustrative delivery schedule for a 20 million dose order