

# COVID-19 Baseline Risk Score Analysis Report

## MockCOVE Study

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# Chapter 1

## Disclaimers

- The data presented in the analysis originated from the Moderna Sponsored mRNA-1273-P301 clinical study and are provided to NIAID in accordance with Clinical Trial Agreement between the parties. The study was funded in part by BARDA under Government Contract No. 75A50120C00034
- The preliminary immunogenicity data presented here do not reflect the Sponsors statistical analysis plan and therefore should not be interpreted as a protocol defined read-out of the clinical study.
- These data are not to be disclosed without written permission of Moderna.

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## Chapter 2

### Baseline Risk Score (Proxy for SARS-CoV-2 Exposure)

Table 2.1: Variables considered for risk score analysis.

| Variable.Name        | Definition   | Total.missing.values | Comments |
|----------------------|--|----------------------|----------|
| MinorityInd          | Baseline covariate underrepresented minority status (1=minority, 0=non-minority) | 0/30000 (0.0%)       | NA       |
| EthnicityHispanic    | Indicator ethnicity = Hispanic (0 = Non-Hispanic)                                | 0/30000 (0.0%)       | NA       |
| EthnicityNotreported | Indicator ethnicity = Not reported (0 = Non-Hispanic)                            | 0/30000 (0.0%)       | NA       |
| EthnicityUnknown     | Indicator ethnicity = Unknown (0 = Non-Hispanic)                                 | 0/30000 (0.0%)       | NA       |
| Black                | Indicator race = Black (0 = White)   | 0/30000 (0.0%)       | NA       |
| Asian                | Indicator race = Asian (0 = White)   | 0/30000 (0.0%)       | NA       |
| NatAmer              | Indicator race = American Indian or Alaska Native (0 = White)                    | 0/30000 (0.0%)       | NA       |
| PacIsl               | Indicator race = Native Hawaiian or Other Pacific Islander (0 = White)           | 0/30000 (0.0%)       | NA       |
| Multiracial          | Indicator race = Multiracial (0 = White)   | 0/30000 (0.0%)       | NA       |
| Other                | Indicator race = Other (0 = White)   | 0/30000 (0.0%)       | NA       |
| Notreported          | Indicator race = Not reported (0 = White)  | 0/30000 (0.0%)       | NA       |
| Unknown              | Indicator race = unknown (0 = White)   | 0/30000 (0.0%)       | NA       |
| HighRiskInd          | Baseline covariate high risk pre-existing condition (1=yes, 0=no)                | 0/30000 (0.0%)       | NA       |
| Sex                  | Sex assigned at birth (1=female, 0=male)   | 0/30000 (0.0%)       | NA       |
| Age                  | Age at enrollment in years, between 18 and 85                                    | 0/30000 (0.0%)       | NA       |
| BMI                  | BMI at enrollment ( $\text{kg}/\text{m}^2$ )                                     | 0/30000 (0.0%)       | NA       |

Table 2.2: All learner-screen combinations (28 in total) used as input to the Superlearner.

| <b>Learner</b>     | <b>Screen*</b>  |
|--------------------|---|
| SL.mean            | all   |
| SL.glm             | all<br>glmnet<br>univar_logistic_pval<br>highcor_random |
| SL.glm.interaction | glmnet<br>univar_logistic_pval<br>highcor_random        |
| SL.glmnet          | all   |
| SL.gam             | glmnet<br>univar_logistic_pval<br>highcor_random        |
| SL.xgboost         | all   |
| SL.ranger.imp      | all   |

*Note:*

\*Screen details:

all: includes all variables

glmnet: includes variables with non-zero coefficients in the standard implementation of SL.glmnet that optimizes the lasso tuning parameter via cross-validation

univar\_logistic\_pval: Wald test 2-sided p-value in a logistic regression model  $< 0.10$

highcor\_random: if pairs of quantitative variables with Spearman rank correlation  $> 0.90$ , select one of the variables at random



Figure 2.1: Cross-validated AUC (95% CI) of algorithms for predicting COVID-19 disease status starting 7 days after Day 57.



Figure 2.2: CV-estimated predicted probabilities of COVID-19 disease 7 days after Day 57 by case/control status for top 2 learners, SuperLearner and Discrete SL.



Figure 2.3: ROC curves based off CV-estimated predicted probabilities for the top 2 learners, Superlearner and Discrete SL.



Table 2.3: Weights assigned by Superlearner.

| Learner            | Screen                          | Weight |
|--------------------|---------------------------------|--------|
| SL.gam             | screen_highcor_random           | 0.488  |
| SL.glmnet          | screen_all                      | 0.253  |
| SL.ranger.imp      | screen_all                      | 0.139  |
| SL.glm.interaction | screen_glmnet                   | 0.120  |
| SL.mean            | screen_all                      | 0.000  |
| SL.glm             | screen_all                      | 0.000  |
| SL.xgboost         | screen_all                      | 0.000  |
| SL.glm             | screen_glmnet                   | 0.000  |
| SL.glm             | screen_univariate_logistic_pval | 0.000  |
| SL.glm             | screen_highcor_random           | 0.000  |
| SL.glm.interaction | screen_univariate_logistic_pval | 0.000  |
| SL.glm.interaction | screen_highcor_random           | 0.000  |
| SL.gam             | screen_glmnet                   | 0.000  |
| SL.gam             | screen_univariate_logistic_pval | 0.000  |

Table 2.4: Predictors in learners assigned weight &gt; 0.0 by Superlearner.

| Learner       | Screen                | Weight | Predictors           | Coefficient | Odds.Ratio | Importance |
|---------------|-----------------------|--------|----------------------|-------------|------------|------------|
| SL.gam        | screen_highcor_random | 0.488  | (Intercept)          | -2.873      | 0.057      | NA         |
| SL.gam        | screen_highcor_random | 0.488  | s(Age,2)             | 0.829       | 2.290      | NA         |
| SL.gam        | screen_highcor_random | 0.488  | s(BMI,2)             | -0.046      | 0.955      | NA         |
| SL.gam        | screen_highcor_random | 0.488  | MinorityInd          | -0.052      | 0.950      | NA         |
| SL.gam        | screen_highcor_random | 0.488  | EthnicityHispanic    | 0.004       | 1.004      | NA         |
| SL.gam        | screen_highcor_random | 0.488  | EthnicityNotreported | 0.043       | 1.044      | NA         |
| SL.gam        | screen_highcor_random | 0.488  | EthnicityUnknown     | -0.073      | 0.930      | NA         |
| SL.gam        | screen_highcor_random | 0.488  | Black                | 0.004       | 1.004      | NA         |
| SL.gam        | screen_highcor_random | 0.488  | Asian                | 0.069       | 1.071      | NA         |
| SL.gam        | screen_highcor_random | 0.488  | NatAmer              | 0.015       | 1.016      | NA         |
| SL.gam        | screen_highcor_random | 0.488  | PacIsl               | -0.013      | 0.987      | NA         |
| SL.gam        | screen_highcor_random | 0.488  | Multiracial          | -0.046      | 0.955      | NA         |
| SL.gam        | screen_highcor_random | 0.488  | Other                | 0.064       | 1.066      | NA         |
| SL.gam        | screen_highcor_random | 0.488  | Notreported          | 0.003       | 1.003      | NA         |
| SL.gam        | screen_highcor_random | 0.488  | Unknown              | 0.003       | 1.003      | NA         |
| SL.gam        | screen_highcor_random | 0.488  | HighRiskInd          | -0.026      | 0.974      | NA         |
| SL.gam        | screen_highcor_random | 0.488  | Sex                  | -0.001      | 0.999      | NA         |
| SL.glmnet     | screen_all            | 0.253  | (Intercept)          | -2.665      | 0.070      | NA         |
| SL.glmnet     | screen_all            | 0.253  | MinorityInd          | 0.000       | 1.000      | NA         |
| SL.glmnet     | screen_all            | 0.253  | EthnicityHispanic    | 0.000       | 1.000      | NA         |
| SL.glmnet     | screen_all            | 0.253  | EthnicityNotreported | 0.000       | 1.000      | NA         |
| SL.glmnet     | screen_all            | 0.253  | EthnicityUnknown     | 0.000       | 1.000      | NA         |
| SL.glmnet     | screen_all            | 0.253  | Black                | 0.000       | 1.000      | NA         |
| SL.glmnet     | screen_all            | 0.253  | Asian                | 0.000       | 1.000      | NA         |
| SL.glmnet     | screen_all            | 0.253  | NatAmer              | 0.000       | 1.000      | NA         |
| SL.glmnet     | screen_all            | 0.253  | PacIsl               | 0.000       | 1.000      | NA         |
| SL.glmnet     | screen_all            | 0.253  | Multiracial          | 0.000       | 1.000      | NA         |
| SL.glmnet     | screen_all            | 0.253  | Other                | 0.000       | 1.000      | NA         |
| SL.glmnet     | screen_all            | 0.253  | Notreported          | 0.000       | 1.000      | NA         |
| SL.glmnet     | screen_all            | 0.253  | Unknown              | 0.000       | 1.000      | NA         |
| SL.glmnet     | screen_all            | 0.253  | HighRiskInd          | 0.000       | 1.000      | NA         |
| SL.glmnet     | screen_all            | 0.253  | Sex                  | 0.000       | 1.000      | NA         |
| SL.glmnet     | screen_all            | 0.253  | Age                  | 0.444       | 1.559      | NA         |
| SL.glmnet     | screen_all            | 0.253  | BMI                  | 0.000       | 1.000      | NA         |
| SL.ranger.imp | screen_all            | 0.139  | MinorityInd          | NA          | NA         | 9.100      |
| SL.ranger.imp | screen_all            | 0.139  | EthnicityHispanic    | NA          | NA         | 9.685      |
| SL.ranger.imp | screen_all            | 0.139  | EthnicityNotreported | NA          | NA         | 9.247      |
| SL.ranger.imp | screen_all            | 0.139  | EthnicityUnknown     | NA          | NA         | 6.908      |
| SL.ranger.imp | screen_all            | 0.139  | Black                | NA          | NA         | 9.156      |
| SL.ranger.imp | screen_all            | 0.139  | Asian                | NA          | NA         | 7.256      |
| SL.ranger.imp | screen_all            | 0.139  | NatAmer              | NA          | NA         | 5.381      |
| SL.ranger.imp | screen_all            | 0.139  | PacIsl               | NA          | NA         | 2.553      |
| SL.ranger.imp | screen_all            | 0.139  | Multiracial          | NA          | NA         | 5.054      |
| SL.ranger.imp | screen_all            | 0.139  | Other                | NA          | NA         | 6.375      |
| SL.ranger.imp | screen_all            | 0.139  | Notreported          | NA          | NA         | 6.779      |

Table 2.4: Predictors in learners assigned weight &gt; 0.0 by Superlearner. (continued)

| Learner            | Screen        | Weight | Predictors                            | Coefficient | Odds.Ratio | Importance |
|--------------------|---------------|--------|---------------------------------------|-------------|------------|------------|
| SL.ranger.imp      | screen_all    | 0.139  | Unknown                               | NA          | NA         | 4.201      |
| SL.ranger.imp      | screen_all    | 0.139  | HighRiskInd                           | NA          | NA         | 17.116     |
| SL.ranger.imp      | screen_all    | 0.139  | Sex                                   | NA          | NA         | 17.890     |
| SL.ranger.imp      | screen_all    | 0.139  | Age                                   | NA          | NA         | 182.028    |
| SL.ranger.imp      | screen_all    | 0.139  | BMI                                   | NA          | NA         | 231.544    |
| SL.glm.interaction | screen_glmnet | 0.12   | (Intercept)                           | -2.963      | 0.052      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | EthnicityNotreported                  | -0.075      | 0.928      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | EthnicityUnknown                      | -0.283      | 0.753      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Black                                 | -0.043      | 0.958      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Asian                                 | 0.023       | 1.023      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Multiracial                           | -0.422      | 0.656      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Other                                 | 0.074       | 1.077      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | HighRiskInd                           | -0.057      | 0.945      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Age                                   | 0.849       | 2.337      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | BMI                                   | -0.065      | 0.937      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | EthnicityNotreported:EthnicityUnknown | NA          | NA         | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | EthnicityNotreported:Black            | 0.039       | 1.039      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | EthnicityNotreported:Asian            | 0.002       | 1.002      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | EthnicityNotreported:Multiracial      | -0.525      | 0.592      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | EthnicityNotreported:Other            | 0.034       | 1.035      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | EthnicityNotreported:HighRiskInd      | -0.069      | 0.934      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | EthnicityNotreported:Age              | 0.001       | 1.001      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | EthnicityNotreported:BMI              | 0.043       | 1.044      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | EthnicityUnknown:Black                | 0.008       | 1.008      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | EthnicityUnknown:Asian                | -0.067      | 0.936      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | EthnicityUnknown:Multiracial          | -0.529      | 0.589      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | EthnicityUnknown:Other                | 0.066       | 1.068      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | EthnicityUnknown:HighRiskInd          | -0.009      | 0.991      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | EthnicityUnknown:Age                  | 0.114       | 1.121      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | EthnicityUnknown:BMI                  | -0.061      | 0.941      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Black:Asian                           | NA          | NA         | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Black:Multiracial                     | NA          | NA         | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Black:Other                           | NA          | NA         | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Black:HighRiskInd                     | -0.018      | 0.982      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Black:Age                             | 0.012       | 1.012      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Black:BMI                             | -0.028      | 0.972      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Asian:Multiracial                     | NA          | NA         | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Asian:Other                           | NA          | NA         | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Asian:HighRiskInd                     | 0.031       | 1.032      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Asian:Age                             | 0.018       | 1.018      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Asian:BMI                             | -0.025      | 0.976      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Multiracial:Other                     | NA          | NA         | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Multiracial:HighRiskInd               | -0.082      | 0.921      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Multiracial:Age                       | 0.103       | 1.108      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Multiracial:BMI                       | 0.000       | 1.000      | NA         |

Table 2.4: Predictors in learners assigned weight &gt; 0.0 by Superlearner. (continued)

| Learner            | Screen        | Weight | Predictors                            | Coefficient | Odds.Ratio | Importance |
|--------------------|---------------|--------|---------------------------------------|-------------|------------|------------|
| SL.glm.interaction | screen_glmnet | 0.12   | Other:HighRiskInd                     | 0.036       | 1.037      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Other:Age                             | -0.019      | 0.981      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Other:BMI                             | 0.036       | 1.037      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | HighRiskInd:Age                       | 0.025       | 1.026      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | HighRiskInd:BMI                       | -0.090      | 0.914      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Age:BMI                               | 0.012       | 1.012      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | (Intercept)                           | -2.963      | 0.052      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | EthnicityNotreported                  | -0.075      | 0.928      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | EthnicityUnknown                      | -0.283      | 0.753      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Black                                 | -0.043      | 0.958      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Asian                                 | 0.023       | 1.023      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Multiracial                           | -0.422      | 0.656      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Other                                 | 0.074       | 1.077      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | HighRiskInd                           | -0.057      | 0.945      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Age                                   | 0.849       | 2.337      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | BMI                                   | -0.065      | 0.937      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | EthnicityNotreported:EthnicityUnknown | NA          | NA         | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | EthnicityNotreported:Black            | 0.039       | 1.039      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | EthnicityNotreported:Asian            | 0.002       | 1.002      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | EthnicityNotreported:Multiracial      | -0.525      | 0.592      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | EthnicityNotreported:Other            | 0.034       | 1.035      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | EthnicityNotreported:HighRiskInd      | -0.069      | 0.934      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | EthnicityNotreported:Age              | 0.001       | 1.001      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | EthnicityNotreported:BMI              | 0.043       | 1.044      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | EthnicityUnknown:Black                | 0.008       | 1.008      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | EthnicityUnknown:Asian                | -0.067      | 0.936      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | EthnicityUnknown:Multiracial          | -0.529      | 0.589      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | EthnicityUnknown:Other                | 0.066       | 1.068      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | EthnicityUnknown:HighRiskInd          | -0.009      | 0.991      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | EthnicityUnknown:Age                  | 0.114       | 1.121      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | EthnicityUnknown:BMI                  | -0.061      | 0.941      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Black:Asian                           | NA          | NA         | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Black:Multiracial                     | NA          | NA         | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Black:Other                           | NA          | NA         | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Black:HighRiskInd                     | -0.018      | 0.982      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Black:Age                             | 0.012       | 1.012      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Black:BMI                             | -0.028      | 0.972      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Asian:Multiracial                     | NA          | NA         | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Asian:Other                           | NA          | NA         | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Asian:HighRiskInd                     | 0.031       | 1.032      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Asian:Age                             | 0.018       | 1.018      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Asian:BMI                             | -0.025      | 0.976      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Multiracial:Other                     | NA          | NA         | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Multiracial:HighRiskInd               | -0.082      | 0.921      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Multiracial:Age                       | 0.103       | 1.108      | NA         |

Table 2.4: Predictors in learners assigned weight  $> 0.0$  by Superlearner. *(continued)*

| Learner            | Screen        | Weight | Predictors        | Coefficient | Odds.Ratio | Importance |
|--------------------|---------------|--------|-------------------|-------------|------------|------------|
| SL.glm.interaction | screen_glmnet | 0.12   | Multiracial:BMI   | 0.000       | 1.000      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Other:HighRiskInd | 0.036       | 1.037      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Other:Age         | -0.019      | 0.981      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Other:BMI         | 0.036       | 1.037      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | HighRiskInd:Age   | 0.025       | 1.026      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | HighRiskInd:BMI   | -0.090      | 0.914      | NA         |
| SL.glm.interaction | screen_glmnet | 0.12   | Age:BMI           | 0.012       | 1.012      | NA         |



Figure 2.4: Superlearner predicted probabilities of COVID-19 disease in vaccinees 7 days after Day 57 by case/control status.



Figure 2.5: ROC curve based off Superlearner predicted probabilities in vaccinees.

MOCK



## Chapter 3

# Appendix

- This report was built from the [CoVPN/correlates\\_reporting](https://github.com/CoVPN/correlates_reporting/commit/86f9fa61b146788dddf0db20c23fd97ef9c771a7) repository with commit hash 86f9fa61b146788dddf0db20c23fd97ef9c771a7. A diff of the changes introduced by that commit may be viewed at [https://github.com/CoVPN/correlates\\_reporting/commit/86f9fa61b146788dddf0db20c23fd97ef9c771a7](https://github.com/CoVPN/correlates_reporting/commit/86f9fa61b146788dddf0db20c23fd97ef9c771a7)
- The sha256 hash sum of the raw input file, “COVID\_VEtrial\_practicedata\_primarystage1.csv”: 83d0f55d1745ffd42be124d8f9ec9a9903abcc13cd22f95e537542a08b41300a
- The sha256 hash sum of the processed file, “moderna\_mock\_data\_processed.csv”: 28964ce20cfd70a621aff9df412c42b1178d5e749e0f49ddd79fbff2dc7c90a