Overview
Dr. Elizabeth Oelsner, MD, MPH, a pulmonologist and MESA investigator at Columbia University, adapted the widely used FLU-PRO questionnaire, which asks about flu symptoms and severity, to capture diagnoses, symptoms, and medical interventions related to COVID-19.

The MESA COVID-19 questionnaire is a telephone-administered interview estimated to take 5 minutes (if the participant has not been diagnosed with COVID-19 and has no symptoms) to 30 minutes to administer. It is designed to collect data on the diagnosis, symptoms, and medical interventions associated with the newly identified disease called COVID-19 caused by infection with the SARS-CoV-2 virus.

Self-report of diagnoses, symptoms, and medical interventions will be collected during the interview. Any associated medical records will be collected, if required, after the interview.

Additional details for the interview questions are provided below. Clarifications and additional instructions are italicized.

1. Have you had COVID-19, or the illness caused by the novel coronavirus?
   - Yes, definitely → have a positive test result or confirmation of HCP
   - Yes, I think so → believe they have/had it but have not been tested or have not yet received test results, or HCP was unsure
   - Maybe → aren’t sure, any circumstance
   - No → have a negative test result or have no reason to believe they have had it

All responses continue to question #2.
2. Has a healthcare provider ever told you that you had COVID-19?
   - Yes, definitely  Participant is certain they have been told they have/had COVID-19  
     → Proceed to box below
   - Yes, I think so  Participant is not completely sure they have been told they have/had COVID-19  
     → Proceed to box below
   - No  → Proceed to question 3

If answered “Yes, definitely” or “Yes, I think so” to #2:

<table>
<thead>
<tr>
<th>Item</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ask all questions in this box</td>
<td>Did you have:</td>
</tr>
<tr>
<td>a) Symptoms of COVID-19</td>
<td>a) One or more of: cough, sore throat, fever, difficulty breathing, etc.</td>
</tr>
<tr>
<td>- Yes</td>
<td></td>
</tr>
<tr>
<td>- No</td>
<td></td>
</tr>
<tr>
<td>b) Close contact with someone who had COVID-19</td>
<td>b) “close contact”: within 6 ft or received goods from a person with COVID-19 as confirmed by a test or HCP</td>
</tr>
<tr>
<td>- Yes</td>
<td></td>
</tr>
<tr>
<td>- No</td>
<td></td>
</tr>
<tr>
<td>c) A positive test for COVID-19</td>
<td>c) “test”: laboratory test like nasal swab or serum (blood)</td>
</tr>
<tr>
<td>- Yes</td>
<td></td>
</tr>
<tr>
<td>- No</td>
<td></td>
</tr>
</tbody>
</table>

For ascertainment of medical records: Name of doctor/clinic/hospital where test or diagnosis was obtained:

_________________________

Address of doctor/clinic/hospital:

_________________________
3. Have you been tested for coronavirus or COVID-19?
   a. Yes Had a nasal, saliva, or serum test  
      → Proceed to box below
   b. No  
      → Proceed to question 4
   c. Unsure Unsure of the purpose of any tests received or doesn’t recall.  
      → Proceed to question 4

If answered “Yes” to #3:

<table>
<thead>
<tr>
<th>Item</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ask all questions in this box</td>
<td></td>
</tr>
<tr>
<td>Have you ever had a test for:</td>
<td></td>
</tr>
<tr>
<td>a. COVID-19 infection?</td>
<td>a. This is a test for the virus</td>
</tr>
<tr>
<td>b. COVID-19 immunity?</td>
<td>b. This is a test for and antibody to the virus</td>
</tr>
<tr>
<td>c. How many times have you been tested?</td>
<td>Count saliva, nasal, serum separately.</td>
</tr>
<tr>
<td>d. Can you provide details regarding your first COVID-19 test?</td>
<td></td>
</tr>
<tr>
<td>i. Date</td>
<td>Date test performed.</td>
</tr>
<tr>
<td>ii. Reason for testing:</td>
<td>ii. Response required for each item 1-4.</td>
</tr>
<tr>
<td>Item</td>
<td>Explanation</td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
</tr>
<tr>
<td>iii. Type of test</td>
<td>iii. Response required for each item 1-3.</td>
</tr>
<tr>
<td>iv. Result</td>
<td>iv. “Unsure” includes if test result is pending or inconclusive.</td>
</tr>
<tr>
<td>e. Can you provide details regarding your most recent COVID-19 test?</td>
<td>e. If participant has only had one test, skip item e and proceed to item f (this happens automatically in REDCap).</td>
</tr>
</tbody>
</table>
4. Have you had any x-ray or computed tomography (“cat”) scans for suspected or diagnosed COVID-19?
   f. Yes → Proceed to box below.
   g. No → Proceed to question 5.

If answered “Yes” to #4:

<table>
<thead>
<tr>
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<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Did you have a chest X-ray?</td>
<td>a. Record response.</td>
</tr>
<tr>
<td>b. Did you have a CT scan of your lungs?</td>
<td>b. Record response.</td>
</tr>
<tr>
<td>c. Are you willing to have your lung images shared with the study?</td>
<td>c. If yes, arrange for results to be sent.</td>
</tr>
</tbody>
</table>
5. Have you ever had an overnight stay in a hospital for suspected or diagnosed COVID-19?
   h. Yes → Proceed to box below
   i. No → Proceed to question 7.

If answered “Yes” to #5:

<table>
<thead>
<tr>
<th>Item</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. How many nights were you in the hospital?</td>
<td>Record number of days</td>
</tr>
<tr>
<td>i. Date arrived at hospital:</td>
<td>a.i. If date of arrival and formal admit date are different, record the earlier date.</td>
</tr>
<tr>
<td>ii. Date discharged from hospital:</td>
<td></td>
</tr>
<tr>
<td>b. Did you require any of the following treatments?</td>
<td>b.i. to b.v. “# Days needed” calculated as the difference between calendar days treatment started and treatment stopped.</td>
</tr>
</tbody>
</table>

For ascertainment of medical records: Name of doctor/clinic/hospital where test or diagnosis was obtained:

______________________________

Address of doctor/clinic/hospital:

______________________________

Contact number:

______________________________
6. If you were hospitalized for suspected or diagnosed COVID-19, how were you discharged?
   Where did the participant live after being discharged?
   - Home: Record response.
   - Nursing facility: Any facility in which nursing care is available or necessary. Record response.
   - Other: If answer to a and b was “no”, record response to c. If answer to a or b was “yes”, do not record a response.

7. If you know, or believe, that you had COVID-19: have you recovered to your usual state of health?
   To be answered if participant answered question #1 as “Yes, definitely” or “Yes, I think so” or “Maybe”. If not, proceed to question #8 on page 8.
   - Yes: Record response to the follow-up item:
     a. How long did it take for you to recover?
        - Days calculated as the difference in calendar days between day first felt symptoms and first day returned to usual health.

Proceed to the boxed items on page 6, prefaced with If yes to Q7: For participants who have recovered from symptoms related to COVID-19 illness:

   - No: Proceed to the boxed items on page 7, prefaced with “If no to Q7: For participants who continue to have symptoms related to COVID-19 illness:”
If yes to Q7:

For participants who have recovered from symptoms related to COVID-19 illness:

- For each symptom (row), record response to A. If A is “yes”, record response to items B and C. If A is “No”, proceed directly to next symptom (row).
- B: response options 1 to 5 correspond to: 1 (“Not at all”), 2 (“A little bit”), 3 (“Somewhat”), 4 (“Quite a bit”), and 5 (“Very much”).
- C: Calculated in days as the difference between calendar days symptom started and symptom stopped.
- Item: Overall, when these symptoms were at their worst, when you had these symptoms, how bad or bothersome were they?
  - Record response as “Mild”, “Moderate”, “Severe”, or “Very Severe”
- Item: Overall, when these symptoms were at their worst, did they interfere with your daily activities?
  - Record response as “Not at all”, “A little bit”, “Somewhat”, “Quite a bit” or “Very much”
- After completing page 6, proceed directly to question #9.
If no to Q7:
For participants who continue to have symptoms related to COVID-19 illness:

- For each symptom (row), record response to A. If A is “yes”, record response to items B and C. If A is “No”, proceed directly to next symptom (row).
- B: response options 1 to 5 correspond to: 1 (“Not at all”), 2 (“A little bit”), 3 (“Somewhat”), 4 (“Quite a bit”), and 5 (“Very much”).
- C: Calculated in days as the difference between calendar days symptom started and symptom stopped.
- Item: Overall, when these symptoms were at their worst, when you had these symptoms, how bad or bothersome were they?
  - Record response as “Mild”, “Moderate”, “Severe”, or “Very Severe”
- Item: Overall, when these symptoms were at their worst, did they interfere with your daily activities?
  - Record response as “Not at all”, “A little bit”, “Somewhat”, “Quite a bit” or “Very much”
- After completing page 7, proceed directly to question #9.
8. If you have not had diagnosed or suspected COVID-19 illness, have you had any of the following symptoms since our last call?

For participants who do not report diagnosed or suspected COVID-19: To be answered only if participant answered question #1 as “No”.

- For each symptom (row), record response to A. If A is “yes”, record response to items B and C. If A is “No”, proceed directly to next symptom (row).
- B: response options 1 to 5 correspond to: 1 (“Not at all”), 2 (“A little bit”), 3 (“Somewhat”), 4 (“Quite a bit”), and 5 (“Very much”).
- C: Calculated in days as the difference between calendar days symptom started and symptom stopped.
- Item: Overall, when these symptoms were at their worst, how bad or bothersome were they?
  - Record response as “Mild”, “Moderate”, “Severe”, or “Very Severe”
- Item: Overall, when these symptoms were at their worst, did they interfere with your daily activities?
  - Record response as “Not at all”, “A little bit”, “Somewhat”, “Quite a bit” or “Very much”
- After completing page 8, proceed to question #9.
9. If you had any of the symptoms we talked about, did you take any medicines?
   - Yes  Proceed to the table of medicines. For each group of medicines (each row), record response to:
     - Did you take it?
     - Was it prescribed by health care professional?
     - What was the date when you started to take it?
     - What was the total number of days that you took it?
       - Difference in calendar days between date started and date stopped.
     - What was the specific name of the medication?
       - This would be the name on the bottle, trade name, etc.
   - No  Proceed to question #10.
10. Has anyone in your household (or, the place you are residing) been tested for COVID-19?
   - Yes  Proceed to the boxed items.
     a. When were the tests conducted? ___________
     b. What was the result of that test(s)?
       - Positive
         • Did you change your behavior at home? (As a result of the test performed on the household member/s)
           - Yes  Record whether or not the participant implemented each of the 3 behaviors listed. Then continue to question #11.
           - No  Proceed to question #11.
     - Negative  Proceed to question #11.
     - Unsure  Proceed to question #11.
   - Repeat questions a and b for up to four COVID-19 tests
   - No  Proceed to question #11.
   - Unsure  Proceed to question #11.

11. What actions have you taken to reduce your risk of exposure to COVID-19?
    Record a response for each of the following items a. to l.
    a. Washing hands and/or using sanitizer frequently
    b. Staying at least 6 feet away from others
    c. Avoiding large gatherings
    d. Not going out to restaurants or bars
    e. Cancelled planned travel
    f. Wearing a face mask
    g. Not shaking hands or touching people
    h. Staying home when I am sick
    i. Not going to work
    j. Wiping down surfaces with disinfectant
    k. Following government guidelines or rules to stay at home and limiting contacts with other people
    l. Placed under full quarantine by local authorities
    Continue to question #12.
12. Do you currently use any tobacco products?  
   Record response for each item a. to e. Note that item a has a follow-up question if answered “yes”.  

13. Did you receive vaccination for influenza (“the flu shot”) between September 2019 and March 2020?  
   Record response.  

14. Have you had a test for influenza since January 2020?  
   - Yes  Proceed to boxed items a. and b.  
     a. What was the result of the flu test?  
     b. Was this test performed at the same time as a COVID-19 test?  
     -------------------------------  
     MESA-COVID interview completed.  
   - No  MESA-COVID interview completed.