Attachment—Additional Questions for the Record

Subcommittee on Health
Hearing on
"The Long Haul: Forging a Path through the Lingering Effects of COVID-19"
April 28, 2021

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The Honorable Robin Kelly (D-IL)

1. How do we help employers understand the plight of their employees experiencing long COVID to ensure they are not discriminated against in the workforce and are able to remain productive citizens, if they choose to?

NIH Response:

NIH-funded research helps provides a critical evidence base to inform health-related policies and patient protections, including protection against employment discrimination. Ongoing research, as well compelling, credible patient testimonials, tell us that the long-term effects of coronavirus disease 2019 (COVID-19) are real. While most people recover quickly and fully from infection with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), some experience symptoms lasting weeks or months after the acute infection has passed—also known as post-acute sequelae of SARS-CoV-2 infection (PASC). These symptoms can range from mild to debilitating and may include fatigue, shortness of breath, "brain fog," sleep disorders, heart palpitations, fever, gastrointestinal symptoms, anxiety, and depression. PASC is most often reported as persistent symptoms after acute COVID-19 (or long COVID) but can occur even among those who tested positive for the virus but never had acute symptoms. PASC has been reported in all age groups and demographics. The prevalence of PASC is unclear, but it is estimated that 10-30 percent of those who have had acute SARS-CoV-2 infection will experience persistent symptoms lasting at least one month.

NIH's Researching COVID to Enhance Recovery (RECOVER) initiative seeks to understand, and ultimately to prevent and treat, long COVID and other forms of PASC. At the heart of the Initiative is an observational study that will include adults and children recruited from ongoing studies of COVID-19, long COVID clinics, and other cohorts. The RECOVER Initiative is designed to significantly expand our knowledge about PASC, including helping to define the full spectrum of PASC, its prevalence, and outcomes over several years, and its underlying biology. Through RECOVER, NIH is also working to educate the public about PASC, including through a new website that will launch in early June 2021, recovercovid.org. The website will include a fact sheet about PASC that has been disseminated widely in partnership with medical and scientific societies. NIH leadership is also spreading the word about long COVID and PASC

through media interviews and town hall-style events, often in partnership with Members of Congress, to reach those communities hit hardest by COVID-19 and thus most vulnerable to long COVID.

The Honorable Cathy McMorris Rodgers (R-WA)

1. I have been hearing from individuals in my district who are unable to be accepted into a COVID-19 long-hauler clinic even though they are clinically similar to COVID-19 long-hauler patients, but for whatever reason were unable to obtain a positive COVID-19 test. What is being done to address this problem? How can we provide better access to care for these patients?

NIH Response:

The NIH RECOVER Initiative is supporting research to understand, and ultimately to prevent and treat, long COVID and other post-acute sequelae of SARS-CoV-2 infection (PASC). Patients are involved at every feasible step in planning and implementing this research. NIH believes that engaging people affected by PASC, and understanding their experience, needs, and priorities, are critical to the Initiative's success. In letters, emails, and calls—as well as a RECOVER virtual listening session to be held on June 2, 2021—a significant number of people have shared their frustration in being unable to receive a confirmed diagnosis of long COVID based on SARS-CoV-2 testing.[1] Many became acutely ill with COVID-19 when testing was not yet available to them; others had no acute illness but developed symptoms later. In either situation, these individuals tend to share a similar array of symptoms—including but not limited to fatigue, shortness of breath, and "brain fog"—that have persisted long after the virus would have been expected to clear from their bodies. Clinicians caring for patients with long COVID have shared similar accounts, including in published reports.[2]

One of the goals of the RECOVER meta-cohort study is to develop core defining characteristics and diagnostic criteria for long COVID and other forms of PASC. RECOVER is considering the use of alternative approaches to classify and diagnose long COVID in the absence of a positive SARS-CoV-2 test as it recruits study participants. Furthermore, in coordination with the NIH Rapid Acceleration of Diagnostics (RADx) program, RECOVER will explore the use of innovative tests for detecting past SARS-CoV-2 infection. For example, rather than seeking to detect the virus or antibodies to the virus, such tests could be designed to detect cellular responses to the virus that persist long after infection.

The Honorable Gus Bilirakis (R-FL)

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[1] videocast.nih.gov/watch=42174
[2] pubmed.ncbi.nlm.nih.gov/33780290/

1. One thing the hearing did not touch upon in any great detail was the role of early diagnosis in the treatment and prevention of progression of long-COVID-19. Could you elaborate on that in more depth?

   NIH Response:

   The NIH RECOVER initiative will increase our understanding of the early signs and symptoms of long COVID, as well as help lead to intervention strategies. At the heart of RECOVER will be a large diverse cohort that will include patients from, for example, long COVID clinics, NIH's COVID studies and trials, and other long-standing cohort studies. This meta-cohort will include tens of thousands of adults and children with acute infection as well as those experiencing PASC long COVID and other post-acute sequelae of SARS-CoV-2 infection (PASC). Understanding the acute phase of SARS-CoV-2 infection, its trajectory, and the factors that lead to full recovery or prolonged symptoms, are critical to early diagnosis, treatment, and prevention of PASC.

   NIH released the first funding opportunities for RECOVER in February 2021, and in June 2021, the initiative will fund a Clinical Science Core that will assemble the meta-cohort, and will work to identify key clinical features of PASC, establish early diagnostic criteria, investigate mechanisms of disease, and identify potential targets for drug therapies or other interventions. As this information evolves, the initiative will support interventional trials. In addition, it is hoped that many of the ongoing clinical trials currently focused on treating acute COVID-19 will point to potential interventions for long COVID.

2. I was impressed by how patient-centric your and Dr. Brooks' remarks were. It is obvious patients are at the center of what both your agencies are doing to solve the many mysteries of long-COVID-19. I understand that you are working with the Social Security Administration and others to determine a case definition for long-COVID which I assume would be for disability determinations. But before that, if a patient suspects he or she has long-COVID, what steps will their primary care provider go through to make a determination that it is, in fact, long COVID?

   a. And related to that, we touched briefly on the role of diagnostics at the hearing. What diagnostic methods exist to help diagnose long-COVID?

NIH Response:

While there is much to learn about long COVID and other post-acute sequelae of SARS-CoV-2 infection (PASC), current diagnostic protocols generally include physical, cognitive, and psychological assessments. A growing body of scientific literature reports a constellation of common yet variable symptoms—such as fatigue, shortness of breath, brain fog, and heart palpitations—that also have been associated with other syndromes theorized to have a viral origin, including chronic fatigue syndrome. NIH's RECOVER Initiative seeks to understand the full spectrum of PASC, is supporting a long-term cohort study of tens of thousands of individuals

who have experienced SARS-CoV-2 infection and/or PASC symptoms to help establish diagnostic criteria. A positive test for SARS-CoV-2 infection can be helpful in making a determination of PASC. However, NIH recognizes the need to consider alternative diagnostic criteria, especially because many patients experiencing PASC did not have access to testing during the time that the virus or antibodies would have been detectable.

With respect to neurological sequelae, there is high variability in both the type of symptoms associated with long COVID and in their severity. NIH supports a Neuro Databank/Biobank that is being leveraged to investigate the full range of neurological outcomes associated with PASC.

Finally, NIH supports the Medical Imaging and Data Resource Center (MIDRC), which is harnessing artificial intelligence (AI) and medical imaging to respond to COVID-19. This project can translate scientific findings into practical imaging tools expected to benefit patients with acute COVID-19 and long COVID. For example, MIDRC is creating a repository of chest images combined with clinical symptoms and other clinical data that will be used to develop AI to assess COVID-19 status, including post-acute sequelae.

3. You mentioned that NIH intends to "bring in the insights of small businesses" on long-COVID. What will that process be?

   a. If a small business wanted to follow up on that, whom would they contact?

NIH Response:

The NIH RECOVER initiative will assemble a meta-cohort of individuals with acute SARS-CoV-2 infection, as well as individuals with post-acute sequelae of SARS-CoV-2 (PASC), to understand the full clinical spectrum and potential causes of PASC, including long COVID. In June 2021, NIH will begin funding the RECOVER Clinical Science Core (CSC), which will take the lead in building the meta-cohort, harmonizing and coordinating data, and developing study protocols, including regular laboratory and clinical tests to monitor patients' health status and to identify potential biomarkers of PASC.

The CSC will establish a vetting process for proposals from small businesses and other organizations engaged in long COVID research. NIH encourages such researchers to check the RECOVER website (recovercovid.org) as well as the COVID-19 Open Funding Opportunities webpage (covid19.nih.gov/funding/open-funding-opportunities) for updates. RECOVER will soon solicit proposals for the use of mobile health apps and digital health strategies to recruit individuals from community settings and collect real world data from participants.[3] Small businesses focused on mobile and/or digital health are eligible to apply.

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[3] covid19.nih.gov/sites/default/files/2021-04/NOITP_Data_Rep_MHP_FINAL_4-19-21.pdf

NIH points of contact for small businesses include the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs,[4] as well as the NIH RADx program; this initiative to speed innovation in COVID-19 testing has supported companies ranging from small start-ups to publicly held corporations.[5]

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[4] sbir.nih.gov/

[5] www.nih.gov/news-events/news-releases/nih-delivering-new-covid-19-testing-technologies-meet-us-demand