

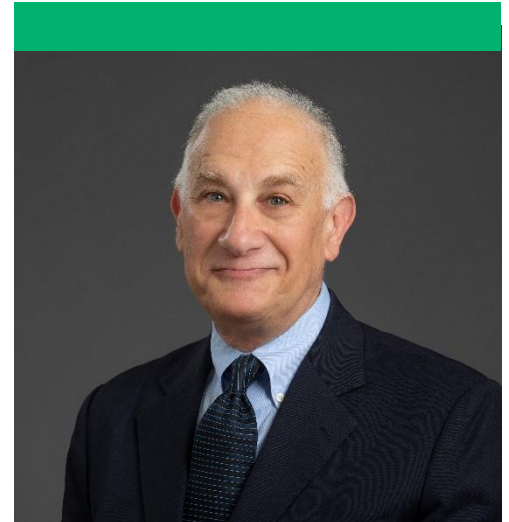
Robert A. Weinstein, MD

The C. Anderson Hedberg, MD, Professor
of Internal Medicine

Advancement of Medicine

In 2025, I continued to study long COVID. I have been the national principal investigator, or PI, for a Centers for Disease Control and Prevention-funded contract (“the INSPIRE Study”) to Rush and have extended data analyses this year to my co-PI to provide professional development opportunities for younger faculty. The first four years of our study focused on COVID-19’s natural history of infection by comparing the evolution of “long COVID” symptoms in those with and without SARS-CoV-2 infection. Rush serves as the lead site, and we have collaborated with medical researchers at Yale University; University of Washington in Seattle; University of California, Los Angeles; University of California, San Francisco; Thomas Jefferson University in Philadelphia; University of Texas Health Science Center at Houston; and University of Texas Southwestern Medical Center in Dallas to enroll approximately 6,000 participants nationally.

What have we found? So far, the evidence shows COVID-19 vaccination reduces the risk of long COVID. Importantly, the protective effect increases with each booster dose — a “dose-response effect” that supports the benefits and causal impact of vaccination. Chronic fatigue syndrome symptoms occur in 3-5% of COVID patients and also those with other infections during the pandemic. People with long COVID are also affected by a number of equity issues. We also found shifts over time in the types and prevalence of long COVID symptoms, with continued general improvement over three to 12 months and faster recovery for physical symptoms compared with mental symptoms. Long COVID significantly affects patients’ financial well-being and ability to work, but prior vaccination helps lessen these impacts. We also found the risk of long COVID was greater among patients with SARS-CoV-2 infection and self-reported obesity, raising an important question for further investigation: Could newer weight-loss medications improve pandemic preparedness in the future? Links to our INSPIRE Study publications and more details about our findings can be found on our study website at <https://www.covidinspire.org>.





In 2025, we expanded our study of patients with long COVID into a randomized, double-blind, placebo-controlled intervention trial. We are assessing the ability of an orally administered probiotic to modulate patients' gut-immune-system axis and improve symptoms of long COVID. Our intervention is based on a current understanding of potential mechanisms underlying the progression of COVID into long COVID. The effects of our intervention are being measured by highly validated study symptom instruments that we used for our natural history study. We are about halfway through this trial as of the end of 2025.

Based on INSPIRE Study data, we have 21 publications in peer-reviewed medical journals and another two manuscripts in journal pipelines. This publication record far exceeds (by many laps) the usual productivity of federally funded studies. The CDC used our data during the pandemic as a dashboard on its website to provide the research community and the public with information on long COVID rates.

Before COVID, my research focused on control of antibiotic-resistant bacteria and fungi. We have shown that intensive care units are epicenters of resistance in hospitals, and long-term care facilities play a role in the regional spread of resistant organisms. Importantly, our work has demonstrated novel and effective control measures to stem this spread. Specifically, we have shown that ill patients in hospitals, especially those in intensive care and in long-term care facilities, are like microbiologic chameleons, in that the skin of these patients often becomes covered with a "patina or veneer" of the host institution's most resistant bacteria and with bacteria more often found in the lower GI tract.

This finding of changes in the skin "microbiome" led to a key and unique infection control intervention — daily patient cleansing with disinfectant wipes — to remove this "patina of resistant bacteria." We developed and pioneered this intervention at Rush University Medical Center and John H. Stroger Jr. Hospital of Cook County. This cleansing strategy greatly reduces blood-borne infections and the spread of antibiotic-resistant bacteria, and it is now used in most U.S. intensive care units, many long-term care facilities and hospitals worldwide. This intervention continues to be actively studied, and multi-institutional research has repeatedly supported its effectiveness and impressive value.



Research

Funds from the C. Anderson Hedberg, MD, endowment have enabled me to conduct the seminal infection control research described above and contribute to new research endeavors aimed at understanding the ongoing COVID pandemic and developing potential cures for long COVID.

Clinical Trials

In addition to leading our CDC-funded project, “Innovative Support for Patients with SARS-CoV-2 Infections (INSPIRE) Registry,” I have been a co-investigator on several CDC-, National Institutes of Health-, and Agency for Healthcare Research and Quality-funded studies.

Publication Highlights — Abbreviated

- I continue to co-author op-eds in *The Chicago Tribune* and other news outlets about COVID and other infectious diseases.
- A compilation of my 37 co-authored and other op-eds on COVID was published in 2024: [THE COVID DIARIES 2020-2024: Anatomy of a Contagion As It Happened](#) by Cory Franklin, MD, and Robert A Weinstein, MD, April 2, 2024. A review of this book can be found at <https://letstalkscience.eu/2024/04/23/covid-19-an-outbreak-of-books/>
- I continue to contribute chapters to the landmark textbook *Harrison's Textbook of Medicine* and to Bennett and Brachman's *Hospital Infections Textbook*.
- I continue to serve on the International Scientific Advisory Board for the European Clinical Research Alliance on Infectious Diseases, or ECRAID, and continue to serve as a subject matter expert reviewer for *UpToDate*.
- I served on Illinois and Chicago Health Department Advisory Committees; was an expert reviewer for multiple medical journals; served on the Editorial Board for *Infection Control and Healthcare Epidemiology*; served as an advisor on antibiotic resistance for the editors of the CDC-based journal *Emerging Infectious Diseases*; and have been an expert consultant for Boston University's CARB-X program, which funds startup pharmaceutical companies that are developing potential solutions to antibiotic resistance problems.

- In addition to op-ed pieces, I have been a co-author on more than 14 peer-reviewed publications in 2025. Some highlights include:
 - Antibiotic-resistance plasmid amplified among MRSA cases in an urban jail and its connected communities. *Nature Communications*. 2025
 - Work impairment and financial outcomes among adults with vs without long COVID. *JAMA Network Open*. 2025
 - Variability in long COVID definitions and validation of published prevalence rates. *JAMA Network Open*. 2025
 - Incarceration is a key driver of racial disparities in community-associated methicillin-resistant *Staphylococcus aureus* infections in Cook County, IL. *Annals of Epidemiology*. 2025
 - Effects of long COVID on healthcare utilization. *PLOS One*. 2025.
 - Participant engagement in a national longitudinal study of COVID-19: Insights from the INSPIRE study. *PLOS One*. 2025
 - Impact of SARS-CoV-2 on healthcare and essential workers: A longitudinal study of PROMIS-29 outcomes. *PLOS One*. 2025
 - The effect of SARS-CoV-2 reinfection on long-term symptoms in the innovative support for patients with SARS-CoV-2 infections registry (INSPIRE). *Clinical Infectious Diseases*. 2025
 - Association of SARS-CoV-2 with health-related quality of life 1 year after illness using latent transition analysis. *Open Forum Infectious Diseases*. 2025
 - Differences in long COVID severity by duration of illness, symptom evolution, and vaccination: a longitudinal cohort study from the INSPIRE group. *The Lancet Regional Health — Americas*. 2025
 - Assessment of health conditions from patient electronic health record portals vs self-reported questionnaires: an analysis of the INSPIRE study. *Journal of the American Medical Informatics Association*. 2025
 - Race, ethnicity, and gender differences in patient-reported well-being and cognitive functioning within 3 months of symptomatic illness during COVID-19 pandemic. *Journal of Racial and Ethnic Health Disparities*. 2025



The Year Ahead: 2026 and Beyond

We will continue the study of our patients with long COVID in our randomized, double-blind, placebo-controlled intervention trial described above. We expect to have data to analyze by mid- to late 2026.

With my colleagues, we will continue to refine our tracking and control of antibiotic-resistant bacteria and fungi at the regional, state and national levels. As part of this work, we will focus on intensive care units and long-term care facilities and consider refinements of a statewide hospital tracking system — the XDRO Registry — that we developed several years ago. The registry is now used by the Illinois Department of Public Health as an essential part of its antibiotic resistance control activities.

With Gratitude

It continues to be an honor and a privilege to be the C. Anderson Hedberg, MD, Professor of Internal Medicine and to have my role at Rush and my work supported by your generosity. Dr. Hedberg was a great man and a leader in American medicine. To occupy a professorship in his name is a great distinction, and I trust that my accomplishments are worthy of this honor. I treasure this position and the opportunities it has unlocked at Rush as well as at the regional, national and international levels.