



COVID-19 Digest Issue 35

December 24, 2020

CLINICAL PEARL

- **Immunity and COVID-19** (adapted from JAMA): Several studies have found that the SARS-CoV-2 seroprevalence has remained below 20% even in the most adversely affected areas globally, such as Spain and Italy. In a recent issue of *JAMA Internal Medicine*, [Bajema et al contributed new information on the shifting nature of SARS-CoV-2 seroprevalence in the US](#). The study used national data to expand on an earlier US Centers for Disease Control and Prevention study of seroprevalence of antibodies to SARS-CoV-2 in 10 US sites. Using serum samples from commercial clinical laboratories, the investigators found the highest level of seroprevalence in New York, which surged from 6.9% in March to a peak of approximately 25% before mid-August 2020. **For all but a few states, seroprevalence remained below 10% throughout the study period. New York was the only state where seroprevalence increased above 20%. In several states, seroprevalence stayed below 1%.** Seroprevalence tended to wane over time, although in a few states, such as Georgia and Minnesota, rates increased over the study period. **Thus, the primary takeaway from this study is that despite the pandemic raging across the US, most people do not have evidence of prior COVID-19 infection by antibodies to SARS-CoV-2.**

The unifying hope for ending the global COVID-19 pandemic is the development of adequate **population-level herd immunity** to halt the continuing cycles of infection and disease. Although no data exist to define the exact threshold necessary to achieve herd immunity against COVID-19, **modeling and extrapolation from similar diseases suggest that more than 60%, and perhaps up to 80%, of the population may need immunity for the viral replication rate to drop below 1, enabling a modest level of disease control.** Such immunity may be achieved via recovery of many individuals from widespread infection, or preferably via the availability of safe and effective vaccines. Unfortunately, history has shown that although herd immunity resulting from infection can curb pandemics, it does not eradicate diseases. The historical precedent that most closely approximates the current COVID-19 pandemic is the 1918 H1N1 influenza pandemic. After more than 2 years, 500 million infections, and 50 million deaths worldwide, sufficient levels of population-based herd immunity finally halted the continued spread of the virus, and society began to recover. Similarly, measles, mumps, rubella, polio, and smallpox are respiratory tract viruses that once killed or maimed millions of people annually across the globe, despite inducing long-term protective immunity against reinfection following natural infection. In the pre-vaccine era, immunity following natural infection allowed people to coexist with these viruses, but never eradicated them. Vaccines have reduced the disease burden of these viruses by more than 99%. As a matter of fact, smallpox remains the only disease in human history to have been eradicated, an achievement of vaccination, not natural immunity.

PUBLIC HEALTH UPDATES

- [FDA Takes Additional Action in Fight Against COVID-19 By Issuing Emergency Use Authorization for Second COVID-19 Vaccine](#)
 - [Moderna COVID-19 Vaccine](#)
 - [Fact Sheet for Healthcare Providers Administering Vaccines \(Vaccine Providers\) - EUA of the Moderna COVID-19 Vaccine to Prevent COVID-19](#)
 - Vaccines and Related Biological Products Advisory Committee Meeting December 17, 2020: [FDA Briefing Document Moderna COVID-19 Vaccine](#)
- [FDA Authorizes Antigen Test as First Over-the-Counter Fully At-Home Diagnostic Test for COVID-19](#)





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- European Centre for Disease Prevention and Control: [Threat Assessment Brief: Rapid increase of a SARS-CoV-2 variant with multiple spike protein mutations observed in the United Kingdom](#)
- [Preliminary genomic characterisation of an emergent SARS-CoV-2 lineage in the UK defined by a novel set of spike mutations](#)

GUIDANCE/GUIDELINES

- CDC
 - [Interim Considerations: Preparing for the Potential Management of Anaphylaxis at COVID-19 Vaccination Sites](#)

RESOURCES

- CDC
 - [ACIP Presentation Slides: December 19 and 20, 2020 Meeting](#)
 - [Moderna COVID-19 Vaccine](#)
 - [COVID-19 Vaccination: Clinical Resources on Each COVID-19 Vaccine](#)
 - [V-safe After Vaccination Health Checker](#)
 - [COVID Data Tracker](#)
- HHS [Vaccine Adverse Event Reporting System](#)
- UCSF Medicine Special Medical Grand Rounds: [Covid-19: The CDC, the Vaccine Roll-Out, and Ethics and Policy Issues Surrounding Immunity Passports](#)
- AMA Ed. Hub Podcast: [Can We Count on Herd Immunity to Control COVID-19?](#)
- COVID-19 Real Time Learning Network
 - [Moderna COVID-19 Vaccine](#)
 - [Pfizer-BioNTech COVID-19 Vaccine](#)
 - [Co-Infection and Antimicrobial Stewardship](#)

ACADEMIC/RESEARCH PAPERS

- *medRxiv*
 - [Breath biomarkers of pediatric SARS-CoV-2 infection: a pilot study](#)
 - [Antigen rapid tests, nasopharyngeal PCR and saliva PCR to detect SARS-CoV-2: a prospective comparative clinical trial](#)
- *Cell Host & Microbe*
 - [D614G Spike Mutation Increases SARS CoV-2 Susceptibility to Neutralization](#)
- *Science*
 - [Transmission heterogeneities, kinetics, and controllability of SARS-CoV-2](#)
- *New England Journal of Medicine*
 - [Tocilizumab in Patients Hospitalized with Covid-19 Pneumonia](#)
 - [Safety and Efficacy of the BNT162b2 mRNA Covid-19 Vaccine](#)
 - [REGN-COV2, a Neutralizing Antibody Cocktail, in Outpatients with Covid-19](#)
- *JAMA*
 - [Household Transmission of SARS-CoV-2 - A Systematic Review and Meta-analysis](#)
 - [Association of Political Party Affiliation With Physical Distancing Among Young Adults During the COVID-19 Pandemic](#)





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- [All-Cause Excess Mortality and COVID-19–Related Mortality Among US Adults Aged 25-44 Years, March-July 2020](#)
- *Annals of Internal Medicine*
 - [Impact of Population Growth and Aging on Estimates of Excess U.S. Deaths During the COVID-19 Pandemic, March to August 2020](#)
- *Clinical Infectious Diseases*
 - [Evidence of Severe Acute Respiratory Syndrome Coronavirus 2 Reinfection After Recovery from Mild Coronavirus Disease 2019](#)
- *Brain*
 - [Epidemiological and cohort study finds no association between COVID-19 and Guillain-Barré syndrome](#)
- *Circulation*
 - [Association of Body Mass Index and Age With Morbidity and Mortality in Patients Hospitalized With COVID-19: Results From the American Heart Association COVID-19 Cardiovascular Disease Registry](#)
- *Blood Advances*
 - [Evidence of thrombotic microangiopathy in children with SARS-CoV-2 across the spectrum of clinical presentations](#)
- *Pediatrics*
 - [COVID-19 and Primary Measles Vaccination Rates in a Large Primary Care Network](#)
- *Lancet*
 - [Community prevalence of SARS-CoV-2 in England from April to November, 2020: results from the ONS Coronavirus Infection Survey](#)
 - [SARS-CoV-2 infection and transmission in educational settings: a prospective, cross-sectional analysis of infection clusters and outbreaks in England](#)
 - [Inclusion of pregnant women in COVID-19 treatment trials: a review and global call to action](#)
 - [Comparison of the characteristics, morbidity, and mortality of COVID-19 and seasonal influenza: a nationwide, population-based retrospective cohort study](#)
- *BMJ Journal*
 - [Comparative evaluation of clinical manifestations and risk of death in patients admitted to hospital with covid-19 and seasonal influenza: cohort study](#)
 - [Reserving coronavirus disease 2019 vaccines for global access: cross sectional analysis](#)
 - [Global, regional, and national estimates of target population sizes for covid-19 vaccination: descriptive study](#)
- *Emerging Infectious Diseases*
 - [Antibody Responses 8 Months after Asymptomatic or Mild SARS-CoV-2 Infection](#)
 - [Flight-Associated Transmission of Severe Acute Respiratory Syndrome Coronavirus 2 Corroborated by Whole-Genome Sequencing](#)
- *PLOS One*
 - [Universal screening for SARS-CoV-2 infection among pregnant women at Elmhurst Hospital Center, Queens, New York](#)
- *Psychotherapy and Psychosomatics*
 - [Brief Online Cognitive Behavioural Intervention for Dysfunctional Worry Related to the COVID-19 Pandemic: A Randomised Controlled Trial](#)
- *Open Forum Infectious Diseases*
 - [Why Temperature Screening for COVID-19 with Non-Contact Infrared Thermometers Doesn't Work](#)





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- *Nature*
 - [Feasibility of continuous fever monitoring using wearable devices](#)
 - [Wearable sensor data and self-reported symptoms for COVID-19 detection](#)
 - [Pre-symptomatic detection of COVID-19 from smartwatch data](#)
 - [Coronavirus and public holidays: what the data say](#)
 - [How a torrent of COVID science changed research publishing — in seven charts](#)
 - [How COVID-19 is changing the cold and flu season](#)
- *Physics of Fluids*
 - [Effects of space sizes on the dispersion of cough-generated droplets from a walking person](#)
- *Science Advances*
 - [Partisan pandemic: How partisanship and public health concerns affect individuals' social mobility during COVID-19](#)

MMWR

- [The Advisory Committee on Immunization Practices' Interim Recommendation for Use of Moderna COVID-19 Vaccine — United States, December 2020](#)
- [The Advisory Committee on Immunization Practices' Updated Interim Recommendation for Allocation of COVID-19 Vaccine — United States, December 2020](#)

HOT OFF THE (LAY) PRESS

- *The New York Times*
 - [F.D.A. OKs the Moderna Covid Vaccine, Adding Millions More Doses to the U.S. Supply](#)
 - [An expert panel endorsed Moderna's vaccine, moving it closer to F.D.A. authorization and giving Americans another tool to fight the coronavirus.](#)
 - [Pfizer could provide tens of millions of additional vaccine doses to the U.S. under a deal that would give it better access to manufacturing supplies.](#)
 - [What It Was Like to Participate in a Covid-19 Vaccine Trial](#)
 - [Frontline Workers and People Over 74 Should Get Shots Next, C.D.C. Panel Says](#)
 - [The US has recorded over 250,000 cases in a day for the first time](#)
 - [How Full Are Hospital I.C.U.s Near You?](#)
 - [California counts the dead by the hour as its ICUs fill up](#)
 - [Millions are traveling in the U.S., despite warnings.](#)
 - [How Effective Is the Mask You're Wearing? You May Know Soon](#)
 - [Isolation appears to have helped homeless populations avoid the worst of the pandemic](#)
 - [Alarm over a virus mutation in Britain prompted more travel bans, in scenes reminiscent of the early days of the pandemic. European stocks tumbled.](#)
 - [Boris Johnson Tightens U.K. Lockdown, Citing Fast-Spreading Version of Virus](#)
 - [The U.K. Coronavirus Variant: What We Know](#)
 - [The Coronavirus Is Mutating. What Does That Mean for Us?](#)
- *Science Speaks: Global ID News*
 - [COVID-19: UK virus maybe more contagious, triggers European travel bans](#)
 - [COVID-19: Sweden advises new restrictions and masks on public transport](#)
- *Reuters*
 - [Explainer-The new coronavirus variant in Britain: How worrying is it?](#)
 - [Singapore study sheds light on pregnant women infected with COVID-19](#)





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- [U.S. hospitals try 'MAB squads,' infusion sites to boost use of COVID-19 antibody drugs](#)
- [COVAX programme doubles global vaccine supply deals to 2 billion doses](#)
- *NPR/KQED*
 - [FDA Researchers Endorse Moderna COVID-19 Vaccine](#)
 - [7.9 Million Doses Of Vaccine Ready For Distribution Next Week](#)
 - [Santa is Safe: 'I Vaccinated Santa Claus,' Fauci Tells Kids](#)
 - [California Activates 'Mass Fatality' Program As State Sets New Virus Records](#)
 - [Hundreds of People at San Quentin Petition for Release as COVID-19 Surges](#)
 - ['Losing A Generation': Fall College Enrollment Plummetes For First-Year Students](#)
 - [SF's In-Person 'Learning Hubs' Had Zero COVID-19 Outbreaks. What Does This Mean for Reopening Public Schools?](#)
 - [The Environmental Upside To The COVID-19 Pandemic Lockdowns](#)
- *Science*
 - [COVID-19 is 10 times deadlier for people with Down syndrome, raising calls for early vaccination](#)
- *STAT News*
 - [Adults over 75, frontline essential workers should be in second Covid-19 vaccine priority group, says CDC advisory panel](#)
 - [FDA scientists endorse Moderna Covid-19 vaccine, as documents provide new hints on efficacy](#)
 - [A guide to who can safely get the Pfizer/BioNTech Covid-19 vaccine](#)
 - ['Frustrated and panicking': For some rare disease patients, shortages of protective gear pose a continued threat](#)
 - [The coronavirus at 1: A year into the pandemic, what scientists know about how it spreads, infects, and sickens](#)
- *USA Today*
 - [States were left scrambling after finding out they'd get 20-40% less vaccine than they expected. Here's why.](#)
- *CNN*
 - [In California, wealthy patients are offering top dollar to cut the line for a Covid-19 vaccine](#)
- *HuffPost*
 - [As a Doctor, I Plead With You to Cancel Your Holiday Plans](#)
- *The Wall Street Journal*
 - [Covid-19 Precautions Are Thwarting the Flu](#)
- *The New Yorker*
 - [Reconstructing a Pandemic](#)
 - [African-American Resistance to the COVID-19 Vaccine Reflects a Broader Problem](#)
 - [As the Vaccine Arrives, Death and Denial Rage in a California Coronavirus Epicenter](#)
- *AP News*
 - [1 in 5 prisoners in the US has had COVID-19, 1,700 have died](#)
- *Washington Post*
 - [FDA investigating rare allergic reactions to Pfizer coronavirus vaccine, but says roll out will continue](#)
- *The Los Angeles Times*
 - [Next in line for California's COVID-19 vaccine? Teachers and first responders, panel says.](#)
 - [Newsom relies on education over fines to enforce virus edicts. New York is different.](#)
 - ['We're going to be New York': L.A. hospitals brace for the worst.](#)
 - [California breaks daily coronavirus case record again as deaths continue to rise.](#)





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- [LA County outlines wrenching moves to ration health care if COVID-19 hospital crisis worsens](#)
- [COVID-19 spreading with astonishing speed- 100,000 new cases in L.A. County in little more than a week.](#)
- [California quelled virus surge with March stay-at-home order. Why isn't this one working?](#)
- *SF Gate*
 - [Stanford Medicine apologizes after doctors protest administrator vaccines](#)
- *Mercury News*
 - [Yes, Bay Area, COVID cases exploded after Thanksgiving. Could Christmas surge be next?](#)
- *San Francisco Chronicle*
 - [California opens field hospitals to cope with crush of coronavirus cases](#)
 - [ICU availability plummets to all-time low, as California goes into strict lockdown](#)
 - [As California ICU bed availability falls below 2%, officials plead: Don't gather for Christmas](#)
 - [Bay Area airports all but deserted amid pleas to avoid travel](#)
 - [Will Bay Area's coronavirus surge get as bad as L.A. County's? Experts compare the crises.](#)
 - [Bay Area falls to 12.9% ICU availability, triggering state's stay-at-home order in San Mateo, Napa, Solano counties](#)
 - [California sued over new coronavirus workplace rules](#)
 - [Coronavirus cases growing at 'staggering rate' in California as deaths hit one-day record](#)
 - ['Surge upon a surge': Experts fear the dire situation in California hospitals will get worse](#)
- *KRON4*
 - [Daly City gym breaks stay-at-home orders](#)

EPIDEMIOLOGY UPDATES

- **US Leads the World in Confirmed COVID-19 Cases** per [Johns Hopkins University Center for Systems Science and Engineering Dashboard Website](#)
- [Johns Hopkins COVID-19 in the USA](#) – daily summary of key data on COVID-19 in the U.S.
- **California COVID-19 by the numbers** are available on the [CDPH Website](#) and the [NYT Map and Table](#) (includes data by county)
 - **California [COVID-19 Statewide Update](#) as of December 24, 2020**
- [San Mateo County COVID-19 Dashboard](#)
- [Santa Clara County COVID-19 Dashboard](#)

ADDITIONAL COVID-19 RESOURCES

- [San Mateo County COVID-19 Guidance and Resources for Clinicians and Facilities – COVID-19 Digests](#)
- [Palo Alto Online tracking the coronavirus in San Mateo and Santa Clara counties](#)
- [California COVID-19 Data and Tools](#)
- [CDPH COVID-19 Assessment and Modeling Tool](#)
- [California Department of Corrections and Rehabilitations Population COVID-19 Tracking Dashboards](#)
- [COVID-19 Nursing Home Data](#)
- [HHS Coronavirus Data Hub](#)
- [CDC Interactive Serology Dashboard for Commercial Laboratory Surveys](#)

