CLINICAL PEARL

- Severe COVID-19 and subsequent cognitive impairment

  According to a recent study, cognitive impairment from severe COVID-19 is equivalent to losing 10 IQ points or 20 years of aging, and any recovery is slow at best.

  The researchers tested 46 COVID-19 patients that were admitted to a single hospital 6 to 10 months earlier, from March 10 to July 31, 2020, and matched controls. Sixteen of the COVID-19 patients (34.8%) had required mechanical ventilation.

  Participants underwent computerized cognitive assessment at an average follow-up of 6 months after their initial infection. The researchers transformed scores from patients and controls into standard deviations from expected scores for participants’ age and demographic characteristics and calculated global accuracy and response time composites. The team used linear modeling to predict composite score deficits from illness severity, mental health status at assessment, and time since hospitalization compared with scores from normal age-related cognitive decline and early-stage dementia.

  Relative to controls, COVID-19 survivors were both less accurate and slower in responding. COVID-19 severity, rather than mental health status, significantly predicted deviation from expected scores. The tasks most affected by COVID-19 dealt with higher cognition and processing speed, which was qualitatively different from those of normal aging and dementia but comparable to those of advancing from the age of 50 to the age of 70. The patients' deficits began to lessen over time since infection, but the trend didn't achieve statistical significance.

PUBLIC HEALTH UPDATES

- Message from San Mateo County’s Health Officer Regarding the Eligibility Criteria and Prescribing Protocol for the Treatment of COVID-19 with Paxlovid
- FDA Authorizes Moderna and Pfizer-BioNTech COVID-19 Vaccines for Children Down to 6 Months of Age
- FDA Expands Eligibility for Pfizer-BioNTech COVID-19 Vaccine Booster Dose to Children 5 through 11 Years
- FDA Authorizes First COVID-19 Test Available without a Prescription That Also Detects Flu and RSV
- FDA Memorandum Explaining Basis for Declining Request for Emergency Use Authorization of Fluvoxamine Maleate
- The White House
  - Biden Administration Announces Operational Plan for COVID-19 Vaccinations for Children Under 5
  - Biden Administration Announces Launch of First Federally-Supported Test to Treat Site
- CDC Rescinds Order Requiring Negative Pre-Departure COVID-19 Test Prior to Flight to the US
- NIH Immune modulator drugs improved survival for people hospitalized with COVID-19
- WHO
  - Interim statement on the composition of current COVID-19 vaccines
  - Interim statement on hybrid immunity and increasing population seroprevalence rates
  - Interim statement on the use of additional booster doses of Emergency Use Listed mRNA vaccines against COVID-19
  - Africa steps up targeted COVID-19 vaccination of most at risk people
  - Launch of the WHO compilation of innovative concepts to communicate science during the COVID-19 pandemic
  - WHO and MPP announce agreement with NIH for COVID-19 health technologies
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- European Centre for Disease Prevention and Control: *Implications of the emergence and spread of the SARS-CoV-2 variants of concern BA.4 and BA.5 for the EU/EEA*

GUIDANCE/GUIDELINES
- CDC Health Advisory: *COVID-19 Rebound After Paxlovid Treatment*
- CDC Recommendation for Masks and Travel

RESOURCES
- CDC/IDSA Clinician Call: *Therapy & Second Boosters: Updates and Perspectives on Protecting Our Most Vulnerable*
- IDSA
  - COVID-19 Podcast:
    - The Latest on Paxlovid
    - The Latest on COVID-19 Vaccine Boosters
  - Media Briefing: *Paxlovid – Updates on Its Use and Availability*
  - Cultural Awareness Series: *The Impact of the COVID-19 Pandemic on Patients and Providers*
  - Vaccine Education Roundtable Series: *The Future of Minoritized Communities in the COVID-19 Pandemic, Part 2 – Strategies to Drive Equity*
- Center for Infectious Disease Research and Policy (CIDRAP) Osterholm Update:
  - Episode 106: COVID Meteorology
  - Episode 105: COVID-19, Monkeypox, and Pediatric Hepatitis
  - Episode 104: Tougher than Rocket Science
  - Episode 103: Words Matter
  - Episode 102: Choose Your Own Path

ACADEMIC/RESEARCH PAPERS
- New England Journal of Medicine
  - Effects of Previous Infection and Vaccination on Symptomatic Omicron Infections
  - Association between Covid-19 Vaccination and Influenza Vaccination Rates
  - Effectiveness of Homologous and Heterologous Covid-19 Boosters against Omicron
  - Protection and Waning of Natural and Hybrid Immunity to SARS-CoV-2
  - Evaluation of mRNA-1273 Covid-19 Vaccine in Children 6 to 11 Years of Age
  - Efficacy and Safety of a Recombinant Plant-Based Adjuvanted Covid-19 Vaccine
  - Efficacy and Safety of the RBD-Dimer–Based Covid-19 Vaccine ZF2001 in Adults
  - Effectiveness of Ad26.COV2.S and BNT162b2 Vaccines against Omicron Variant in South Africa
- Pediatrics
  - Vaccine Effectiveness of BNT162b2 Against Delta and Omicron Variants in Adolescents
  - COVID-19–Associated Croup in Children
- bioRxiv
  - BA.2.12.1, BA.4 and BA.5 escape antibodies elicited by Omicron infection
- Nature
  - Long COVID after breakthrough SARS-CoV-2 infection
  - A multisystem, cardio-renal investigation of post-COVID-19 illness
  - Multisystem involvement is common in post-COVID-19 syndrome
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- Excretion and viability of SARS-CoV-2 in feces and its association with the clinical outcome of COVID-19

  - The Lancet
    - Risk of long COVID associated with delta versus omicron variants of SARS-CoV-2
    - Health outcomes in people 2 years after surviving hospitalisation with COVID-19: a longitudinal cohort study
    - Vaccine effectiveness against COVID-19 breakthrough infections in patients with cancer (UKCCEP): a population-based test-negative case-control study
    - COVID-19 vaccine effectiveness in patients with cancer: remaining vulnerabilities and uncertainties
    - Identifying who has long COVID in the USA: a machine learning approach using N3C data
    - Remdesivir and three other drugs for hospitalised patients with COVID-19: final results of the WHO Solidarity randomised trial and updated meta-analyses
    - Maternal mortality linked to COVID-19 in Latin America: Results from a multi-country collaborative database of 447 deaths

- JAMA
  - Association of Prior BNT162b2 COVID-19 Vaccination With Symptomatic SARS-CoV-2 Infection in Children and Adolescents During Omicron Predominance
  - Risk of Infection and Hospitalization Among Vaccinated and Unvaccinated Children and Adolescents in New York After the Emergence of the Omicron Variant
  - Comparative Safety of BNT162b2 and mRNA-1273 Vaccines in a Nationwide Cohort of US Veterans
  - Demographic and Clinical Factors Associated With Anti–SARS-CoV-2 Antibody Levels After 2 BNT162b2 mRNA Vaccine Doses
  - Concordance of SARS-CoV-2 RNA in Aerosols From a Nurses Station and in Nurses and Patients During a Hospital Ward Outbreak
  - Analysis of Postvaccination Breakthrough COVID-19 Infections Among Adults With HIV in the United States
  - Association Between COVID-19 Booster Vaccination and Omicron Infection in a Highly Vaccinated Cohort of Players and Staff in the National Basketball Association
  - Transmission and Infectious SARS-CoV-2 Shedding Kinetics in Vaccinated and Unvaccinated Individuals
  - Viral Shedding Kinetics and Transmission of Emerging SARS-CoV-2 Variants—Critical Components of Study Design
  - Risk and Phenotype of Multisystem Inflammatory Syndrome in Vaccinated and Unvaccinated Danish Children Before and During the Omicron Wave
  - Severity and Incidence of Multisystem Inflammatory Syndrome in Children During 3 SARS-CoV-2 Pandemic Waves in Israel
  - Association of COVID-19 Vaccination During Pregnancy With Incidence of SARS-CoV-2 Infection in Infants
  - Neurodevelopmental Outcomes at 1 Year in Infants of Mothers Who Tested Positive for SARS-CoV-2 During Pregnancy
  - Is It Exposure to the Pandemic or to Maternal SARS-CoV-2 Infection That Is Adversely Affecting Early Childhood Neurodevelopment?
  - Association of Zip Code Vaccination Rate With COVID-19 Mortality in Chicago, Illinois
  - Excess Mortality in Massachusetts During the Delta and Omicron Waves of COVID-19
  - Effect of Awake Prone Positioning on Endotracheal Intubation in Patients With COVID-19 and Acute Respiratory Failure - A Randomized Clinical Trial
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- **Racial and Ethnic Disparities in Estimated Excess Mortality From External Causes in the US, March to December 2020**
- **Neuropsychiatric Ramifications of Severe COVID-19 and Other Severe Acute Respiratory Infections**
- **Effect of Text Messaging and Behavioral Interventions on COVID-19 Vaccination Uptake - A Randomized Clinical Trial**
- **Childcare and Employment Disruptions in 2020 Among Caregivers of Children With and Without Special Health Care Needs**
- **Changes in Cancer Screening in the US During the COVID-19 Pandemic**
- **Racial and Ethnic Discrepancy in Pulse Oximetry and Delayed Identification of Treatment Eligibility Among Patients With COVID-19**

- **Emerging Infectious Diseases**
  - **Persistent SARS-CoV-2 Alpha Variant Infection in Immunosuppressed Patient, France, February 2022**
  - **Vaccine Effectiveness during Outbreak of COVID-19 Alpha Variant (B.1.1.7) in Men’s Correctional Facility, United States**
  - **Self-Reported and Physiologic Reactions to Third BNT162b2 mRNA COVID-19 (Booster) Vaccine Dose**
  - **Measuring Basic Reproduction Number to Assess Effects of Nonpharmaceutical Interventions on Nosocomial SARS-CoV-2 Transmission**
  - **Analyzing and Modeling the Spread of SARS-CoV-2 Omicron Lineages BA.1 and BA.2, France, September 2021–February 2022**
  - **Effect of Returning University Students on COVID-19 Infections in England, 2020**
  - **SARS-CoV-2 Delta–Omicron Recombinant Viruses, United States**
  - **Suspected Cat-to-Human Transmission of SARS-CoV-2, Thailand, July–September 2021**
  - **Type 1 Diabetes Mellitus Associated with Nivolumab after Second SARS-CoV-2 Vaccination, Japan**
  - **Persistent SARS-CoV-2 Alpha Variant Infection in Immunosuppressed Patient, France, February 2022**
  - **University-Associated SARS-CoV-2 Omicron BA.2 Infections, Maricopa County, Arizona, USA, 2022**
  - **Genomic Evidence of In-Flight SARS-CoV-2 Transmission, India to Australia, April 2021**
  - **Increased Stability of SARS-CoV-2 Omicron Variant over Ancestral Strain**
  - **Zoster Meningitis in an Immunocompetent Child after COVID-19 Vaccination, California, USA**
  - **Strongyloides Hyperinfection Syndrome among COVID-19 Patients Treated with Corticosteroids**
  - **Mental Health Conditions and Severe COVID-19 Outcomes after Hospitalization, United States**
  - **Risk Factors for SARS-CoV-2 Infection and Illness in Cats and Dogs**
  - **Expansion of L452R-Positive SARS-CoV-2 Omicron Variant, Northern Lombardy, Italy**
  - **Experimental Infection of Mink with SARS-COV-2 Omicron Variant and Subsequent Clinical Disease**
  - **Recombinant BA.1/BA.2 SARS-CoV-2 Virus in Arriving Travelers, Hong Kong, February 2022**
  - **Detection of SARS-CoV-2 Omicron B.1.1.529 (Beta) Variant through Wastewater Surveillance before Case Detection in a Community, Oregon, USA**
  - **Rapid Increase of Community SARS-CoV-2 Seroprevalence during Second Wave of COVID-19, Yaoundé, Cameroon**
  - **Introduction and Rapid Spread of SARS-CoV-2 Omicron Variant and Dynamics of BA.1 and BA.1.1 Sublineages, Finland, December 2021**
  - **Serum Neutralization of SARS-CoV-2 Omicron BA.1 and BA.2 after BNT162b2 Booster Vaccination**
  - **Detecting SARS-CoV-2 Omicron B.1.1.529 Variant in Wastewater Samples by Using Nanopore Sequencing**
  - **Multistate Outbreak of Infection with SARS-CoV-2 Omicron Variant after Event in Chicago, Illinois, USA, 2021**
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- **medRxiv**

- **Annals of Internal Medicine**
  - Effect of Molnupiravir on Biomarkers, Respiratory Interventions, and Medical Services in COVID-19 - A Randomized, Placebo-Controlled Trial

- **Clinical Infectious Diseases**
  - Effectiveness of Paxlovid in Reducing Severe COVID-19 and Mortality in High Risk Patients
  - Rebound Phenomenon after Nirmatrelvir/Ritonavir Treatment of Coronavirus Disease-2019 in High-Risk Persons
  - Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) Infection and Pregnancy in Sub-Saharan Africa: A 6-Country Retrospective Cohort Analysis
  - Prioritizing Pregnant Women for Coronavirus Disease 2019 Vaccination in African Countries
  - Antibody response of heterologous vs homologous mRNA vaccine boosters against the SARS-CoV-2 Omicron variant: interim results from the PRIBIVAC study, A Randomized Clinical Trial

- **Obstetrics and Gynecology**
  - Neighborhood Characteristics and Racial Disparities in Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) Seropositivity in Pregnancy

- **Science Advances**
  - Microfluidic particle dam for direct visualization of SARS-CoV-2 antibody levels in COVID-19 vaccinees

- **PLOS**
  - Occurrence and transmission potential of asymptomatic and presymptomatic SARS-CoV-2 infections: Update of a living systematic review and meta-analysis
  - Characterizing cancer and COVID-19 outcomes using electronic health records
  - Diagnostic accuracy of non-invasive detection of SARS-CoV-2 infection by canine olfaction

- **Open Forum Infectious Diseases**
  - Detection of SARS-CoV-2 by Canine Olfaction: A Pilot Study
  - Clinical Features and Duration of Viral Shedding Individuals with SARS-CoV-2 Omicron Variant Infection

- **BMJ**
  - Scent dogs in detection of COVID-19: triple-blinded randomised trial and operational real-life screening in airport setting
  - Effectiveness of heterologous and homologous covid-19 vaccine regimens: living systematic review with network meta-analysis
  - Short term, relative effectiveness of four doses versus three doses of BNT162b2 vaccine in people aged 60 years and older in Israel: retrospective, test negative, case-control study
  - Trajectory of long covid symptoms after covid-19 vaccination: community based cohort study
  - Are vaccines a potential treatment for long covid?

- **The Journal of Neuropsychiatry**
  - Post-Acute Sequelae of SARS-CoV-2 Infection: A Descriptive Clinical Study

- **Clinical Microbiology and Infection**
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- Symptoms Persist in Patients Two Years after COVID-19 infection: A Prospective Follow Up Study
  - Blood Advances
    - Impaired exercise capacity in post-COVID syndrome: the role of VWF-ADAMTS13 axis
  - Family Practice
    - Mortality in COVID-19 among women on hormone replacement therapy: a retrospective cohort study
  - Radiology
    - Lung Abnormalities Depicted with Hyperpolarized Xenon MRI in Patients with Long COVID
  - Sleep
    - 0735 Sleep Disturbances in Post-Acute Sequelae of COVID-19 (PASC)
  - Frontiers in Medicine
    - Association Between Vaccination Coverage Disparity and the Dynamics of the COVID-19 Delta and Omicron Waves in the US
    - Conspiratorial Beliefs About COVID-19 Pandemic - Can They Pose a Mental Health Risk? The Relationship Between Conspiracy Thinking and the Symptoms of Anxiety and Depression Among Adult Poles
    - The Impact of Initial COVID-19 Episode Inflammation Among Adults on Mortality Within 12 Months Post-hospital Discharge
  - Journal of Cardiac Failure
    - Association of Reduced Hospitalizations and Mortality Among COVID-19 Vaccinated Patients with Heart Failure
  - Antimicrobial Stewardship and Healthcare Epidemiology
    - Coinfections and antimicrobial use in patients hospitalized with coronavirus disease 2019 (COVID-19) across a single healthcare system in New York City: A retrospective cohort study
  - Geroscience
    - Persistent viral RNA shedding of SARS-CoV-2 is associated with delirium incidence and six-month mortality in hospitalized COVID-19 patients
  - Critical Care Explorations
    - Neurologic Manifestations of Severe Acute Respiratory Syndrome Coronavirus 2 Infection in Hospitalized Patients During the First Year of the COVID-19 Pandemic
  - American Journal of Roentgenology
    - Pneumonia Frequency and Severity in Patients With Symptomatic COVID-19: Impact of mRNA and Adenovirus Vector Vaccines
  - Journal of Community Health
  - Health Affairs
    - COVID-19 Vaccination Of People Experiencing Homelessness And Incarceration In Minnesota
  - Policing: An International Journal
    - Proportionate mortality and national rate of death from COVID-19 among US law enforcement officers: 2020
  - Eurosurveillance
    - SARS-CoV-2 Omicron variant BA.2 neutralisation in sera of people with Comirnaty or CoronaVac vaccination, infection or breakthrough infection, Hong Kong, 2020 to 2022
    - COVID-19 vaccine effectiveness against severe disease from SARS-CoV-2 Omicron BA.1 and BA.2 subvariants – surveillance results from southern Sweden, December 2021 to March 2022
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- **European Heart Journal**
  - The collateral damage of COVID-19 to cardiovascular services: a meta-analysis

- **European Journal of Emergency Medicine**
  - Burnout in emergency medicine professionals after 2 years of the COVID-19 pandemic: a threat to the healthcare system?

- **Canadian Medical Association Journal**
  - Excess mortality, COVID-19 and health care systems in Canada
  - The risk of death or unplanned readmission after discharge from a COVID-19 hospitalization in Alberta and Ontario

- **FAIR Health White Paper**
  - Patients Diagnosed with Post-COVID Conditions - An Analysis of Private Healthcare Claims Using the Official ICD-10 Diagnostic Code

- **Physics of Fluids**
  - Perimeter leakage of face masks and its effect on the mask's efficacy

**MMWR**

- Hospitalization and Emergency Department Encounters for COVID-19 After Paxlovid Treatment — California, December 2021–May 2022
- COVID-19 Cases and Hospitalizations Among Medicare Beneficiaries With and Without Disabilities — United States, January 1, 2020–November 20, 2021
- Ventilation Improvement Strategies Among K–12 Public Schools — The National School COVID-19 Prevention Study, United States, February 14–March 27, 2022
- COVID-19 Cases, Hospitalizations, and Deaths Among American Indian or Alaska Native Persons — Alaska, 2020–2021
- Post–COVID Conditions Among Adult COVID-19 Survivors Aged 18–64 and ≥65 Years — United States, March 2020–November 2021
- Effectiveness of a COVID-19 Additional Primary or Booster Vaccine Dose in Preventing SARS-CoV-2 Infection Among Nursing Home Residents During Widespread Circulation of the Omicron Variant — United States, February 14–March 27, 2022

**HOT OFF THE (LAY) PRESS**

- Medpage Today
  - ACIP Backs Moderna’s COVID Shot for Kids 6-17 Years — CDC expected to recommend longer dosing interval for adolescent males due to myocarditis risk

- New York Times
  - Despite another COVID surge, deaths stay near lows
  - C.D.C. advisers recommended Covid vaccines for children under 5. If the agency’s director endorses the move, immunizations could start Tuesday.
The F.D.A. authorized Moderna and Pfizer vaccines for children as young as 6 months. If the C.D.C. signs off, shots could be available next week.

F.D.A. advisers recommended that the Moderna and Pfizer coronavirus vaccines be authorized for children as young as 6 months old.

The Biden administration will end a requirement that travelers show a negative coronavirus test before entering the U.S., a top official said.

The White House outlines the beginning of a vaccination campaign for the youngest children

Youngest children could get Covid shots in late June, White House says

During the Omicron wave, death rates soared for older people

Covid’s known U.S. death toll has surpassed 1 million, according to a New York Times database. The milestone comes amid a growing wave of cases.

Nearly 15 million more people than expected died during the pandemic, the W.H.O. said, far exceeding Covid tolls reported by countries.

C.D.C. advisers recommended Pfizer vaccine boosters for children 5 to 11, who will be eligible immediately upon the C.D.C. director’s sign-off.

A third of Americans live in areas with such high coronavirus levels that they should consider wearing masks indoors, U.S. officials warned.

Some universities and schools in the U.S. are reimposing indoor mask mandates

The F.D.A. authorized booster shots of the Pfizer-BioNTech vaccine for children 5 to 11.

Emergent BioSolutions, the contractor that contaminated millions of coronavirus vaccine doses, hid evidence of problems from the F.D.A.

Health officials in parts of the U.S. see signals in wastewater data hinting at a worsening virus wave.

- The Wall Street Journal
  - Latest U.S. Covid-19 Surge Moves West as Pressure Eases in Northeast
  - Paxlovid Becomes Household Name for Covid-19 Patients
  - Covid-19 Cases Rise in Parts of U.S. With High Vaccination Rates

- ABC News
  - Americans keep getting reinfected with COVID-19 as new variants emerge, data shows
  - Breakthrough deaths comprise increasing proportion of those who died from COVID-19

- The Washington Post
  - White House shifts pandemic money to vaccines, cutting other programs
  - GOP opposition leaves covid aid in peril as White House warns of surge

- NPR
  - Pro-Trump counties continue to suffer far higher COVID death tolls

- AP News
  - Pandemic gets tougher to track as COVID testing plunges
  - CDC restates recommendation for masks on planes, trains

- Reuters
  - EU regulator hopes to approve COVID variant-adapted vaccines by autumn

- Kaiser Health News
  - States Have Yet to Spend Hundreds of Millions of Federal Dollars to Tackle Covid Health Disparities
  - COVID-19 Vaccination Rates Among Nursing Home Staff Have Risen by 25 Percentage Points Since the Biden Administration Announced a Vaccination Mandate for Health Care Workers Last Year

- EurekaAlert!
  - COVID-19 pandemic stress impacts ovulation
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- Effects of COVID-19 contamination on the thyroid gland are still present after one year, study finds
  - San Francisco Chronicle
    - Why we’re still living with ‘wily’ COVID a year after California’s reopening
    - COVID in California: One in five infected adults experiences long COVID, CDC says
    - Bay Area COVID cases surpass 2021 winter surge, but far fewer hospitalized
    - 1 million Americans have died of COVID-19. Data shows California’s role in the staggering toll.
    - ‘Living with COVID’ in the Bay Area might mean coping with big swells in cases for years
    - ‘Zero COVID deaths’: Why officials are pushing Paxlovid to defang the coronavirus

- The Mercury News
  - Chart: Look how Bay Area’s COVID death rates compare to the 140 largest U.S. counties

- Los Angeles Times
  - CDC recommends COVID-19 vaccines for children as young as 6 months
  - New Omicron subvariants in California bring new questions about coronavirus outlook
  - Alameda County reinstates mask order as coronavirus cases soar
  - California coronavirus spread significantly worsens: cases double in some areas
  - Is Paxlovid, the COVID-19 pill, reaching those most in need? The government won’t say

- Pfizer Press Releases
  - Pfizer to Invest $120 Million to Produce COVID-19 Oral Treatment in the U.S.
  - Pfizer-BioNTech COVID-19 Vaccine Demonstrates Strong Immune Response, High Efficacy and Favorable Safety in Children 6 Months to Under 5 Years of Age Following Third Dose

- Moderna News
  - MODERNA ANNOUNCES OMICRON-CONTAINING BIVALENT BOOSTER CANDIDATE MRNA-1273.214 DEMONSTRATES SUPERIOR ANTIBODY RESPONSE AGAINST OMICRON

- Sanofi Press Releases
  - Sanofi-GSK next-generation COVID-19 booster delivers strong immune response against variants of concern, including Omicron

EPIDEMIOLOGY UPDATES

- CDC COVID-19 Community Levels
- CDC COVID Data Tracker
  - Variant Proportions
  - Wastewater Surveillance
  - COVID-19 Vaccinations in the United States
- 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 June 24, 2022

ADDITIONAL COVID-19 RESOURCES

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