New Research
*note, PREPRINTS have not undergone formal peer review

COVID-19 related publications by Providence caregivers – see Digital Commons

Clinical Syndrome


Despite good overall concordance with viral genomic analysis, clinical and Ct value-based assessments failed to identify 33% of genomically-supported reinfections. Scaling-up genomic analysis for clinical use would improve detection of SARS-CoV-2 reinfections.

Epidemiology & Public Health


In April 2020, a rare but serious paediatric Multisystem Inflammatory Syndrome (PIMS-TS, also known as MIS-C) was identified, which was temporally and geographically associated with SARS-CoV-2. [[1]] In England, we estimated a PIMS-TS risk of 0.045% (95% credible interval, 0.035–0.068%) after SARS-CoV-2 infection in <15 year-olds, with a lag of 2–6 weeks.


Using electronic health record (EHR) data from 692,570 COVID-19 patients aged ≥20 years who sought medical care during January-July 2022, treatment with Paxlovid, Lagevrio, Veklury, and mAbs was assessed by race and ethnicity, overall and among high-risk patient groups. During 2022, the percentage of COVID-19 patients seeking medical care who were treated with Paxlovid increased from 0.6% in January to 20.2% in April and 34.3% in July; the other three medications were used less frequently (0.7%-5.0% in July). During April-July 2022, when Paxlovid use was highest, compared with White patients, Black or African American (Black) patients were prescribed Paxlovid 35.8% less often,
multiple or other race patients 24.9% less often, American Indian or Alaska Native and Native Hawaiian or other Pacific Islander (AIAN/NHOPI) patients 23.1% less often, and Asian patients 19.4% less often; Hispanic patients were prescribed Paxlovid 29.9% less often than non-Hispanic patients. Racial and ethnic disparities in Paxlovid treatment were generally somewhat higher among patients at high risk for severe COVID-19, including those aged ≥50 years and those who were immunocompromised. The expansion of programs focused on equitable awareness of and access to outpatient COVID-19 treatments, as well as COVID-19 vaccination, including updated bivalent booster doses, can help protect persons most at risk for severe illness and facilitate equitable health outcomes.

This report provides an updated analysis of dispensing rates by zip code-level social vulnerability and highlights important intervention strategies.

**Therapeutics**

Among outpatients with mild to moderate COVID-19, treatment with ivermectin, compared with placebo, did not significantly improve time to recovery. These findings do not support the use of ivermectin in patients with mild to moderate COVID-19.

Here, we tested the hypothesis that povidone iodine nasal solution and gargle would be effective in reducing nasal and oral SARS-CoV-2 RNA levels 8 hours after dosing in patients with acute COVID-19 infection.

Among patients achieving return of spontaneous circulation after out-of-hospital cardiac arrest, targeting an oxygen saturation of 90% to 94%, compared with 98% to 100%, until admission to the intensive care unit did not significantly improve survival to hospital discharge. Although the trial is limited by early termination due to the COVID-19 pandemic, the findings do not support use of an
oxygen saturation target of 90% to 94% in the out-of-hospital setting after resuscitation from cardiac arrest.

TRIAL REGISTRATION: ClinicalTrials.gov Identifier: NCT03138005.


Favipiravir does not improve the time to virological cure or clinical outcomes and shows no evidence of an antiviral effect when treating early symptomatic COVID-19 infection.

FUNDING: The study was supported in part by grants from the Commonwealth Bank Australia, the Lord Mayor's Charitable Foundation, Melbourne Australia and the Orloff Family Charitable Trust, Melbourne, Australia. JHM is supported by the Medical Research Future Fund, AYP, JT are supported by the Australian National Health and Medical Research Council.

**Vaccines / Immunology**


A single dose of AZD1222 in the general African population, where COVID-19 vaccine coverage is low and SARS-CoV-2 seropositivity is 90%, could enhance the magnitude and quality of antibody responses to SARS-CoV-2.


In this multinational study, a pooled 30% increased risk of thrombocytopenia after a first dose of the ChAdOx1-S vaccine was observed, as was a trend towards an increased risk of venous thrombosis with thrombocytopenia syndrome after Ad26.COV2.S compared with BNT162b2. Although rare, the observed risks after adenovirus based vaccines should be considered when planning further immunisation campaigns and future vaccine development.


Among the seemingly endless “unknown-unknowns” that the COVID era has foisted on policy makers, public health, health care providers, researchers, and the public is the apparently novel cardiac disease identified in this issue of the Journal of the American Heart Association (JAHA)1 as “myocarditis after COVID-19 vaccination,” elsewhere as “postvaccine myocarditis,” and perhaps in the future along the
lines of “vaccine-triggered, self-limiting, acute autoimmune myocarditis.” This potentially serious complication has been associated with serious harm, arguably most prominently through promotion of vaccine hesitancy, another complex mechanism underlying COVID19-mediated harm.

**Women & Children**


In this clinical trial of simulated school attendance, hand-to-face contacts did not differ among students required to wear face masks vs students not required to wear face masks; however, hand-to-mucosa contacts were lower in the face mask group. This suggests that mask wearing is unlikely to increase infection risk through self-inoculation.

TRIAL REGISTRATION: ClinicalTrials.gov Identifier: NCT04531254.


Plain Language Summary: This cohort study investigates the risk of SARS-CoV-2 reinfection among young children with and without spike-specific T-cell responses.


With the goal of standardizing care and reducing variability, while still ensuring safety, we propose this pathway to guide decision-making about triaging, testing, and treatment for all providers involved in the care of these patients, beginning in the emergency department, where most (if not all) patients will be triaged (Figure). We believe our pathway can be applied at all centers including those without immediate access to certain cardiology testing modalities (eg, continuous telemetry, pediatric echocardiography services, cardiac MRI). The terms myocarditis and myopericarditis (ie, myocarditis accompanied by inflammation of the pericardium) have been used interchangeably in the literature, and herein we follow the CDC convention of using myocarditis to include myocarditis, pericarditis, and myopericarditis.


Clinical outcomes were favorable in all infants. Matching peak IgG level after infection and higher IgG transplacental transfer might result in the most durable neonatal passive immunity.
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