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when compared with the standard group. Most of the improved outcomes in the innovation group are attributable to dislodgement and occlusion. Other limitations include a single center study, inclusion of patients from medical wards only, and no blinding. Therefore, generalisability to other locations and settings might be limited. Additionally, a cost assessment of each group has not been included in this study. The innovation group clearly would have been more expensive because of the proprietary devices used.

In conclusion, the authors have done a rigorous, large study on a topic with clinical practice, patient outcome, and policy implications. The superiority of chlorhexidine plus alcohol over povidone iodine plus alcohol is the key finding of this study, which is likely to influence the practice of skin preparation before peripheral venous catheters placement. More evidence is needed to prove the superiority of innovative peripheral infusion technologies over standard peripheral venous catheters.

We declare no competing interests.

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A prescription for fair housing during the COVID-19 pandemic



Before the COVID-19 pandemic, the USA was already struggling with racial and economic disparities pertaining to affordable and safe housing for its population. There were large areas within cities with reduced access to health care, neighbourhoods with older housing that were many decades old, low-income minority families living in close quarters, and a growing homeless population. The pandemic brought with it sweeping job loss with resulting loss of income and health insurance for many people, particularly low-income, immigrant, and minority families, with concerns of eviction in groups of people already facing structural racism and poverty. Largely comprised of essential workers, a combination of occupational hazards, residential overcrowding, and increased domestic caregiving responsibilities have played major roles in increased incidence rates (and mortality) of COVID-19. Housing insecurity has been a crucial social determinant of health during this pandemic and offers pertinent lessons for place-based discrimination for millions of Americans.

When evaluating the origins of housing discrimination and residential segregation, historical redlining comes to mind. A striking example of de jure segregation, the federally funded Home Owners' Loan Corporation produced maps in the 1930s that put forth a colour-coded schema to subdivide American neighbourhoods into a risk-based ranking for mortgage approvals. Such racially explicit policies diverted investment away from minority neighbourhoods and resulted in residents that were Black, low-income, or immigrant being constrained to hazardous neighbourhoods.

The effect of housing discrimination was swift and began quickly after such practices became national. Within 20 years of Austin, TX, USA, adopting a Home Owners' Loan Corporation map in 1934 to guide lending, the incidence of tuberculosis cases was already associated with redlined neighbourhoods with dilapidated homes.¹ Since then, the pervasive effect of redlining has been noted elsewhere: increased firearm injury rates in Philadelphia, PA,² alcohol outlet clusters in Baltimore, MD,³ increased premature births in New York, NY,⁴ emergency room

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visits for asthma in San Francisco, CA,⁵ and diagnosis with cancer at a later stage in Massachusetts.⁶

However, the history of housing discrimination is not limited to redlining alone. There had been precedent even before. For instance, during the influenza pandemic in Baltimore in 1918, there was initial hesitancy in imposing restrictions on the public. Soon many essential workers that worked as civilian contract labourers were infected. The city's immigrant population in east Baltimore bore a large brunt of the pandemic due to crowded and unsanitary housing, and although the Black population were in the same situation, they also only had access to Black-only hospitals for their care and overcrowded cemeteries for their deceased.⁷

The culmination of racist mortgage lending policies in the last century has resulted in striking inter-generational wealth inequalities. Home ownership is a key predictor of wealth building in the USA and played a large role in the rising middle-class prosperity that was observed after World War 2. However, such gains were not observed by the Black population who, due to a lack of access to credit and discrimination against minorities, were prevented from buying homes even in neighbourhoods where they resided that were also redlined. Today, the national homeownership rate is 44% for Black families, and 73.7% for White families.⁸ Previously redlined neighbourhoods, where Black families were more likely to be homeowners, also had a 52% reduction in personal wealth generated by property values since 1980 compared with a home in a greenlined neighborhood.⁸

Such staggering disinvestment in formerly discriminated neighbourhoods has resulted in reduced infrastructure for education, food, transportation, and economic opportunity, all closely linked to social mobility. There is a complex interplay between a patient's health and their surrounding neighbourhood. This complexity has been more visible during the COVID-19 pandemic. Crowded housing and lifting eviction moratoriums were associated with increased COVID-19 incidence.⁹ Testing locations at the start of the pandemic were disproportionately more available in White-majority neighbourhoods. Even initial vaccine rollout efforts have been hindered with most sites placed in White-majority neighborhoods.¹⁰ During the polar vortex in Texas in recent months, marginalised

communities already hit hard by the pandemic were the first to face power outages. None of this should come as a surprise as historically marginalised areas also bear a substantial portion of climate and environmental burdens, including higher land surface temperatures, flooding, traffic and noise pollution, and proximity to polluting industries.

Recognising housing insecurity and its associated inequities might seem far upstream from the practice of daily clinical care of our patients. However, its effects are insidious, accumulating over generations, and make our patients that much more vulnerable to social, economic, and health shocks. There is a need at multiple levels—local, state, and federal—to tackle this problem. In the short-term, solutions have included the economic stimulus payments to households, funds to local and state governments for rent relief, utility shut off moratorium in some states, and extending the eviction moratorium as the US administration under President Biden and the Centers for Disease Control and Prevention have done (which will end in June, 2021). However, in the long-term, there will need to be a concerted effort for more institutional-local partnerships between hospitals and the neighbourhoods in which they deliver care, and expansion of local health department services to address data gaps in measuring ongoing health inequities. These endeavours must also include larger policy-level efforts in combating exclusionary zoning, upholding community reinvestment act, expanding housing vouchers to promote social mobility, and repealing discriminatory protections to make housing more affordable. A prescription for fair housing might go much further than any novel health care we could deliver at this moment.

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Contextualising evidence-based recommendations for the second wave of the COVID-19 pandemic in India



During the second wave of the COVID-19 pandemic in India, which began in March, 2021, demand on the health-care system has far exceeded capacity. Despite crippling shortages, patients are prescribed a battery of ineffective therapeutic interventions.¹ Ivermectin, hydroxychloroquine, and herbal cocktails continue to receive state patronage.^{2,3,4} On May 8, 2021, 2-deoxy-D-glucose was given emergency authorisation, stating that it will “save precious lives” without any published evidence that it impacts mortality.⁵ An entrenched culture of polypharmacy and gestalt-driven practice among physicians has resulted in indiscriminate and unwarranted use of remdesivir, favipiravir, azithromycin, doxycycline, plasma therapy, and most recently bicitanib and bevacizumab, regardless of disease severity or drug efficacy. Excessive and inappropriate use of steroids could be contributing to the alarming rise of mucormycosis in patients recovering from COVID-19.

In rural India, where health-care infrastructure is threadbare, and families are poor, patients can ill afford such expensive mistakes. Honing in on the most high yield and affordable interventions, we propose recommendations for testing and management, optimised to India's current resource-constrained context (table). Every clinical touchpoint should be used to underscore masking, distancing, and vaccination.

Where RT-PCR test turnaround time is lengthy, or when tests are unavailable, CT scans are being routinely prescribed for diagnosing infection from SARS-CoV-2. Serial scans are prescribed for prognostication; high CT severity scores—regardless of clinical presentation—then inadvertently trigger unwarranted hospitalisations. This practice is neither standard of

care nor an option for most patients. In fact, we argue that in the throes of this surge, it would be prudent to initiate treatment for presumed infection if clinically warranted, and have all with mild symptoms isolate for 14 days or until a test result is available.⁶ In early May, 2021, national guidelines were finally relaxed to allow such syndrome-based diagnosis, ending a year of delayed or denied hospital admissions due to slow or unavailable testing.

When options for oxygenation or timely transport to higher levels of care are available, oxygen saturation, a reliable predictor of mortality in COVID-19, and measured via cheaply and widely available pulse-oximeters, should suffice for risk stratification.⁷ Routinely prescribed expensive laboratory tests such as C-reactive protein, ferritin, interleukin-6, and D-dimer, will have little bearing on clinical outcomes where there are no viable options for basic therapeutic care. Even in urban India, physicians must consider recommending such tests only when there is evidence that interventions are based on their interpretation change outcomes and are actually feasible.

For nearly a year, patients were being advised institutional isolation, regardless of disease severity or ability to isolate at home. For patients with mild disease, home-based care and self-monitoring with a pulse oximeter—as has long been appropriate—has finally gained widespread traction, from sheer necessity. Clear directives (and telemedicine support, where possible) will prevent unwarranted presentations to the hospital. Most patients with hypoxia might only need oxygenation and proning. Current evidence supports the use of steroids such as dexamethasone only among

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