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Announcing the *Lancet* Commission on Vaccine Refusal, Acceptance, and Demand in the USA

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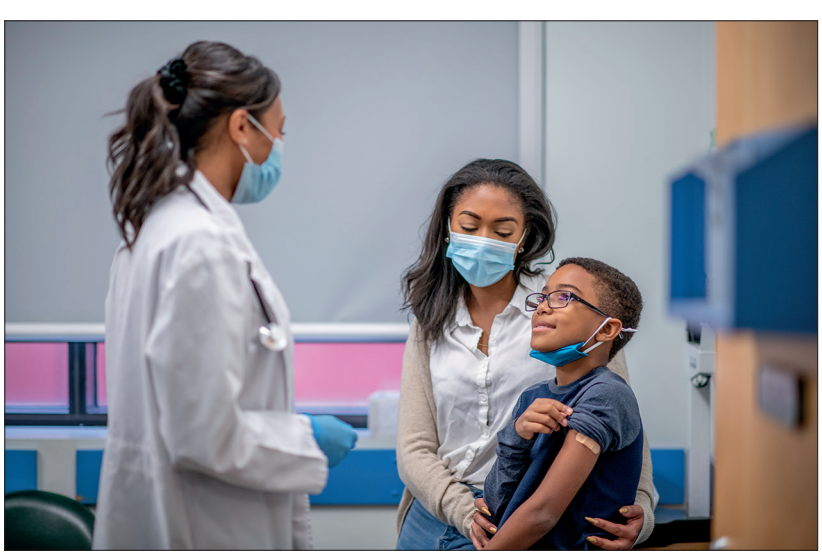
Vaccines are one of the most effective tools for the prevention of infectious diseases.[1] However, the success of immunisation programmes depends on widespread acceptance and high coverage of vaccination.[2] Over the past decade, vaccine refusal has accelerated in the USA, with increased non-medical exemptions to school immunisation requirements that have been linked to outbreaks of vaccine-preventable diseases.[3] Although vaccine refusal is not uniformly spread across the USA and national childhood vaccination rates remain high, vaccination has declined in many communities and school districts that are consequently at increased risk of outbreaks of vaccine-preventable diseases.[4]

Achieving optimal and uniform vaccine acceptance is a complex challenge, especially because early evidence suggests that key factors affecting vaccine acceptance may have shifted over the past few years. Anti-vaccine activities are prominent,[5] but are only a part of why vaccine refusal has increased. Other factors include ongoing distrust of the medical community, particularly among socially vulnerable communities, and poor or inconsistent public communications on the safety of vaccines to prevent emerging pandemic threats.

Organised anti-vaccine activities are a concern. In the past, the US anti-vaccine movement generally operated at the fringes of society, but it has now expanded its reach through increased political activities and amplification on the internet, social media, and e-commerce platforms.[5] Homegrown anti-vaccine organisations at the state and national levels, combined with weaponised health attacks from some foreign nations, now dominate the internet through coordinated disinformation.[5–8] One recent study found that just two homegrown anti-vaccine organisations were responsible for more than half of all anti-vaccine advertisements on Facebook.[9] National and international organisations now host regular anti-vaccine conferences and stage rallies.[7] Additionally, in many states, such as California, Oklahoma, and Texas,



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political action committees influence or lobby state legislatures, often through libertarian or far-right legislators touting so-called health freedom.[7] This movement has built on a growing interest in non-pharmaceutical interventions and alternative medicine, and heightened scepticism of the drug industry.[10]

The repercussions of these efforts cost lives. The number of measles cases in the USA increased in the past few years;[11] in 2019, there were more than 1200 cases of measles and multiple hospitalisations and intensive care unit admissions.[12] Adolescents are also unnecessarily placed at risk for human papillomavirus cancers as are adults,[13] and many Americans die every year from influenza.[14] The USA is potentially facing frequent and costly public health crises due to outbreaks of infectious diseases arising from low vaccine acceptance.

Racial, ethnic, and economic disparities are issues that need to be addressed in efforts to build vaccine acceptance. COVID-19 transmission, morbidity, and mortality have disproportionately affected essential workers, Americans living in low-income neighbourhoods, and communities of colour, which reflects the effects of systemic racism.[15] Similar disparate health outcomes have occurred in other pandemics, such as the H1N1 influenza pandemic in 2009, and they are likely to arise in future disease outbreaks.[16] Vaccine refusal is partly linked to distrust resulting from historical exploitation[17] and current mistreatment of socially vulnerable communities.[18,19] In some cases, anti-vaccine groups specifically target vulnerable populations. Effective outreach and engagement are needed to encourage acceptance of vaccines and support communities that are most vulnerable to outbreaks.

Despite the high number of COVID-19 cases, hospitalisations, and deaths in the USA,[20] many Americans report that they will not take a COVID-19 vaccine.[21] Potential reasons for refusal include concern over the speed of COVID-19 vaccine development, politicised comments by national leaders, organised efforts by anti-vaccine groups, and hesitancy while COVID-19 vaccine clinical trial data are not yet readily available. Reluctance to vaccinate with safe and effective COVID-19 vaccines will impede achievement of the high vaccination coverage needed to prevent COVID-19 mortality and SARS-CoV-2 spread.

For the **Commission website** see https://www.vaccine-commission.com/

The Lancet has established the Commission for Vaccine Refusal, Acceptance, and Demand in the USA to design a multisectoral plan for public policy to support high acceptance of safe and effective vaccines in the USA. Our goal is to understand and report on the state of vaccine acceptance and its potential link to vaccine hesitancy. Additionally, we will work to identify and predict future trends in vaccine acceptance and impacts on the public health community. We will also identify and assess demand-side vaccine uptake interventions and solutions to counter anti-vaccine information.

Our Commissioners, comprising a group that is diverse across discipline, gender, and career stage, include leaders in vaccinology, public health, social and behavioural science, law, and public policy. Together, these Commissioners will collaborate on six areas. First, we will examine trends in vaccine hesitancy, refusal, and acceptance at the state, county, and school district levels, and their effects on public health. Second, we will model the public health implications of what will happen in the future if present trends in vaccine hesitancy, refusal, and acceptance continue. Third, Commissioners will determine the role of anti-vaccine organisations (and in some cases foreign governments) in suppressing vaccine acceptance through media or political activities. Fourth, we will evaluate vaccine refusal among low-income populations and communities of colour. Fifth, Commissioners will assess approaches to detect and mitigate the impact of anti-vaccine activities on social media, such as the spread of misinformation and politicisation of vaccines. Finally, we will make recommendations to shape a new public policy for ensuring high vaccine acceptance in the USA. We intend our recommendations to be relevant for the US Congress, US federal agencies, state legislatures, and academic and non-governmental societies and organisations, and to encompass interagency responses for addressing vaccine refusal.

The Commission had its first meeting in 2020, and we aim for a first interim report on COVID-19 vaccines in the coming months. We expect to present a comprehensive report on broader vaccine acceptance and hesitancy in the USA by 2022. We will post updates about the Commission's ongoing work on the Commission website. We are hopeful that confidence in and acceptance of vaccines in the USA can be improved through a cooperative strategy.

The *Lancet* Commission on Vaccine Refusal, Acceptance, and Demand in the USA is co-hosted by the Yale Institute for Global Health and the Baylor College of Medicine. PJH is a developer of a COVID-19 vaccine construct, which was licensed by Baylor College of Medicine to Biological E Ltd, a commercial vaccine manufacturer for scale-up, production, testing and licensure. RMB reports personal fees from Ascension Health Alliance, Kaiser Hospital and Health Plan, CPSI, Convatec Plc, Oak Street Health, and PDI, Inc, outside the submitted work. NTB reports grants and personal fees from Merck, outside the submitted work. RMC reports grants from Novo Nordisk Foundation (Denmark), outside the submitted work. RL reports grants from Pfizer, GlaxoSmithKline, Sanofi Pasteur, and Merck and personal fees from BIO, outside the submitted work. YAM is a member of a Data Safety Monitoring Board for Pfizer, outside the submitted work. MMM reports personal fees from law firms representing retail pharmacies and generic drug companies that have sued other drug companies for antitrust law violations, outside the submitted work. DJO reports grants from the US National Institutes of Health and Agency of Healthcare Research and Quality, outside the submitted work. DRR reports her family own stocks in GlaxoSmithKline, a vaccine manufacturer, and she served in an unpaid, volunteer capacity on Moderna's ethics allocation committee. DAS reports grants and personal fees from Merck, grants from Walgreens, and personal fees from Janssen, outside the submitted work. The other authors declare no competing interests.

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