



COMMENT

Children and the American Rescue Plan: countering COVID-19 vaccine hesitancy during a global pandemic

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This March, we commemorated the 1-year anniversary of the novel coronavirus, COVID-19's, official United States (US) designation as a national emergency. Over the past year, lockdowns, quarantines, mask mandates, temperature screening, "ZOOM"-ing, and social distancing became part of our daily vocabularies. As of this writing, there have been ~128 million global cases and 2.6 million deaths.¹ In the US, we are approaching 31 million cases and 551,000 fatalities.¹ Roughly 3.4 million cases, or >1 in 10 in the US, have been in children.² In this issue, Zhou et al. analyze 52 published case reports and series comprising 203 children to better identify risk factors for severe disease among children, with various degrees of illness upon initial presentation.³ The authors have provided preliminary data that will be valuable to frontline physicians attempting to triage children who may develop critical COVID-19 illness, and if replicated, may allow for better allocation of resources within pediatric departments and children's hospitals—information that appears even more important in the context of past reported hospital-bed shortages that occurred during the peak of the pandemic.⁴

While knowledge of COVID-19 has increased exponentially in the past year, the article highlights the need to better understand—not only the unique pathophysiology of the disease in children, but also the critical public health role children will play in preventing disease. This is especially true as over 577 million doses of vaccine have been administered as part of the global rollout of COVID-19 immunizations, but thus far only in adults.⁵

BURDEN OF COVID-19

Overall, children seem to be relatively spared direct biological consequences of the illness from COVID-19. Chronic obstructive pulmonary disease, diabetes, and obesity—the most common risk factors for serious COVID-19 illness are more common adult conditions.^{6,7} Children under 10 years represent ~1% of COVID cases.^{8,9} Pediatric patients (0–17 years), per the Centers for Disease Control and Prevention (CDC) comprise only 331 of US COVID-19 deaths.¹⁰ Compared to 5–17-year olds, risk of death is between 1100×–7900× higher for adults older than 65 years.¹¹ Clinical disease is also less severe in children than in adults younger than 65 years.^{12,13} Rates vary worldwide, but US data demonstrated a hospitalization rate of 17 per 100,000, with rates 40×–80× higher in adults over 85 years.^{11,12,14–16} However, as Zhou notes in this paper, within the pediatric population, infant and young children <4 years are more likely to be severely ill compared to older children.^{3,17} Children under 1 year of age, or with underlying

chronic disease are unsurprisingly, at even higher risk.^{16,18} Of course, these data also do not capture the psychosocial ills from the pandemic created by isolation from family, friends, and loss of in-person school.

State-reported data indicate all children represent ~13% of all COVID-19 cases reported.² However, in Italy and Canada, only ~2% of all clinical cases are in children, suggesting a sizeable asymptomatic burden of virus in children.^{16,19,20} This has created robust debate about this variation and the potential role of mandatory childhood COVID-19 vaccination in children, especially when adult immunization rates of ~70% may confer herd immunity.^{20,21} The ability to achieve such high rates of adult vaccination will be hindered by high rates of vaccination hesitancy.²²

In adults, the three vaccines authorized in the US exhibit 66–95% efficacy, yet there remain concerns about side effects, need for vaccination, and the rate at which the vaccines were developed.²³ Globally, adult hesitancy rates range from 10–45%.²¹ In the US, rates of hesitancy (reported in February 2021) toward COVID-19 immunization averaged 35%—with disparities in vaccine acceptance based on race and political affiliation.²⁴

VACCINATION HESITANCY AND THE AMERICAN RESCUE PLAN

Countering vaccine hesitancy in adults, despite their high burden of COVID-19 disease will require both patient and population-based interventions. Informed public policy, based on science and evidence has a strong role at both levels. Even prior to COVID-19, vaccine hesitancy, including among children, was an epidemic, declared by the World Health Organization as a "top 10" threat to global health in 2019.²² It is likely that personal counseling provided by an individual's physician may be the most effective means of combatting skepticism, regarding COVID-19 vaccines.^{25–28} A person's primary physician, data shows, holds a large reservoir of public trust, and may be the most influential in counseling hesitant patients toward immunization. However individual vaccine counseling sessions for up to 1/3 of the US population incurs significant cost. The recently passed American Rescue Plan has allocated \$1 billion to the CDC to increase vaccine confidence. Yet given the allocation to a public health agency, use of the funds to pay for direct physician counseling, while potentially most effective, is unlikely. Further, that patient vaccine counseling takes time, and is poorly reimbursed, which will likely also hamper efforts to attain high adult immunization rates.^{29–31} The federal government did increase payment for COVID-19 vaccine administration to 100%

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of the Federal Medical Assistance Percentage within Medicaid; however, pediatricians will only realize this financial incentive upon vaccination, meaning counseling that does not result in a caregiver or child obtaining immunization will remain poorly compensated. It is also unclear what role pediatricians will play in immunizing caregivers of eligible patients, and what priority pediatric practices will be given regarding vaccine allocation. These issues must be considered to better operationalize COVID-10 vaccination.

Most likely, American Rescue Plan funds will be allotted toward a robust public health campaign encouraging immunization. However the effectiveness of traditional public health campaigns is mixed. Anti-tobacco campaigns have been shown to be both cost-effective and encourage reduced tobacco use.^{32–34} Comparatively, immunization campaigns have only been moderately successful, increasing vaccination rates in only 11% in one study.^{35,36} As public health messaging is developed and implemented, novel approaches should be considered. Specifically, effectiveness may require a stronger pivot to social media, where vaccine hesitancy myths are perpetuated and anti-vaxxers thrive.³⁷ Though social media organizations have curtailed availability and monetization of anti-vaccine content, exposure to negative social media content regarding immunization is associated with a greater refusal.³⁸ Lessons from social media content regarding human papilloma virus vaccination are instructive.³⁷ Since the anti-vax demographic displays less trust in government, pharmaceutical and medical authorities—expert content may not be influential.³⁹ Use of well-respected charitable organizations and age-appropriate “influencers” sharing personal reasons for vaccination may be more effective.

THE NEED FOR A SPECIAL FOCUS ON CHILDREN AND CONGRESSIONAL HEARINGS ON CHILDREN AND COVID-19 VACCINATION

There is evolving consensus on the need to vaccinate children against COVID-19.^{20,40} As reservoirs of disease, immunizing children may be a required public health strategy. Children are not often net direct vectors of disease, implicated as index cases in 0.5–10% of infectious in households.^{41–44} Yet since they exhibit higher viral loads, targeting children for immunization may reduce the amount of circulating disease and secondarily protect adults—a strategy that has been effective in mitigating influenza disease.^{20,45,46} Further, immunization of children is expected to reduce the burden of the COVID-associated multisystem inflammatory system in children.^{47,48} Articulating the need for vaccinating children when they are not frequently severely ill will be difficult, particularly to a skeptical public.

As of this writing, two vaccine preparations have completed enrollment in children 12 years and older, with studies in children 6 months–12 years currently enrolling.^{49,50} But the ideal approaches to raise vaccination rates in children if indicated, is not known. Further, blueprints to counter hesitancy in adults may not be applicable in motivating them to permit vaccination of their children, where decision-making can be vastly different.^{51,52} To offer maximal transparency regarding the need for potential childhood COVID-19 immunization, and openly review the safety, and efficacy data—and most importantly the limits, of ongoing trials, congressional hearings on COVID-19 vaccination and children should be a high priority. These hearings would play an important role in establishing trust about a relatively new vaccine, spotlight what is known about the role of children in COVID-19 transmission, openly acknowledge what is unknown and requires further inquiry—highlighting potential research priorities. This information would also be timely as schools wrestle with challenge to reopen amidst changing CDC guidelines, disease variants, and varying public opinion about potential COVID vaccine mandates for children should the vaccines prove safe and effective in this population.⁵³

A year into the pandemic, Zhou et al.’s work reminds us that children were not unscathed by this disease. Addressing the complexities of vaccination will require thoughtful and open policy, individual physician–patient advocacy and collective understanding.

ADDITIONAL INFORMATION

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