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## COVID-19 in pediatrics in Latin America: six years later

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### ABSTRACT

**Introduction:** Six years later, the impact of the COVID-19 pandemic on children in Latin America remains profound. Even though they were considered less susceptible to the disease, infants have emerged as one of the most affected populations, with the pandemic exposing deep inequities and magnifying vulnerabilities. This paper is presented as a perspective from SLIPE on COVID-19, providing expert insight into the current epidemiological situation in the region.

**Areas covered:** This review analyzes the effects of the COVID-19 pandemic on children’s health and wellbeing, education, and immunization efforts. Vaccination coverage against COVID-19 in children is suboptimal, particularly among those with high-risk underlying conditions, and the disruption of routine immunization programs has led to outbreaks of vaccine preventable diseases in the region.

**Expert opinion:** Addressing these challenges requires strengthening both COVID-19 vaccination strategies for high-risk pediatric populations and routine childhood immunization programs, along with effective communication to combat misinformation, prioritization of educational recovery, social protection, and resilient health systems. Recovery must focus on closing inequity gaps and placing children at the center of public policy to safeguard their future.

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## 1. Introduction

In 2021, the Pediatric Infectious Diseases Society of Latin America (SLIPE) highlighted equity as one of the most pressing challenges in confronting the pandemic. Social inequity, racism, and disadvantage, among other factors, significantly affected access to medical care and vaccination for the most vulnerable populations, especially children [1]. In Latin America, although children accounted for a lower proportion of severe COVID-19 cases compared to adults, the regional burden has been considerable, with large numbers of infections and documented cases of critical illness and mortality in pediatric populations across multiple countries [2]. Importantly, outcomes have been closely linked to social vulnerability, with higher mortality and worse clinical outcomes observed among children from disadvantaged settings [2,3]. Beyond direct morbidity, the pandemic has had profound indirect effects on children in the region, including disruptions in essential health services, routine immunization programs, and education, disproportionately affecting those in low-resource environments [4]. These impacts occurred in

a context of pre-existing structural inequities in Latin American health systems, which contributed to unequal access to timely care and amplified the effects of the pandemic on children [3,4].

### 1.1. The emergence of variants: reshaping the epidemiological landscape

In the early months of the COVID-19 pandemic, an apparent resilience of children to the disease was documented. While older adults and individuals with comorbidities filled hospital wards, children often experienced mild or asymptomatic infections. This phenomenon was attributed to several factors: lower expression of ACE2 receptors in the respiratory tract of children [5], a more active and efficient innate mucosal immunity [6], and recent exposure to seasonal coronaviruses that provided cross-immunity [7]. Nevertheless, this initial perception was later proven to be incorrect. As the pandemic unfolded, severe forms in children and adolescents were documented, including Multisystem Inflammatory Syndrome in Children (MIS-C), a recognized post-infectious complication associated with SARS-

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**Article highlights**

- This paper provides a perspective of the impact of the COVID-19 pandemic on children in Latin America with a particular focus on issues of equity in health and lessons learned for future vaccine strategies.
- The emergence of new variants, such as Delta and Omicron, led to increased disease severity, increased hospitalizations among children, and transmissibility, especially among those under six months of age, underscoring the importance of vaccination during pregnancy. Severe disease and MIS-C cases declined significantly following variants changing, population immunity, and expanded vaccination efforts.
- Beyond direct health effects in children, the COVID-19 pandemic caused massive disruption in education, social life, and emotional wellbeing. Over 70 million students in Latin America were affected by school closures and learning and emotional challenges, especially affecting those in resource-constrained settings.
- More than 117 million children missed essential vaccines, contributing to outbreaks of vaccine-preventable diseases across the Americas.
- By 2023, only 71% of children in Latin America received a primary vaccine series against COVID-19, and close to 40% a booster dose. Vaccination rates are especially low among children with underlying conditions at risk of a severe disease.
- Key recommendations for recovery include universal and equitable vaccination, combating misinformation, prioritizing educational recovery, strengthening social protection, and building resilient healthcare systems.

CoV-2 infection, highlighting that although COVID-19 is generally milder in children, it can still lead to severe outcomes and requires careful clinical monitoring [8–10].

The scenario shifted with the arrival of more transmissible variants. In 2021, Delta subvariant was associated with greater clinical severity among pregnant women, with consequences on infants due to preterm delivery and other consequences to the newborn (isolation, separation, and high risk of infection among others) and increased pediatric hospitalizations [11–13]. Soon after, Omicron—although individually less severe—produced such a high number of infections that absolute hospital admissions among children increased substantially, particularly in infants younger than six months [8,14]. During the Omicron wave, hospitalization rates in infants were six times higher than during Delta [8]. In the 2024–2025 season, children under 17 years represented approximately 4% of all COVID-19 hospitalizations in the United States [14]. MIS-C displayed a declining trend with expanded vaccination: in 2023, only 117 cases were reported in the U.S., a 98% reduction compared to the 2020–2021 peak [9]. To date, there is no public regional system comparable to COVID-NET (U.S.A.) that consolidates and reports pediatric hospitalizations and mortality by age across all Latin American countries, highlighting a critical need to address the region's delay in providing updated data and to invest in near real-time epidemiological surveillance and reporting.

SARS-CoV-2 viruses that have predominated since January 2025 are all JN.1 descendants. They are more transmissible, evade the immune response, and cause a milder infection in healthy people. The JN.1/KP.2/LP.8.1 variants are the latest recommended for vaccination boosters, but although there are no real safety concerns, vaccine coverage is declining. On the other hand, the

effectiveness of oral antivirals in immunized people is marginal and the economic cost is not negligible, while in children, there is no availability of oral treatment for those younger than 12 years of age. Since January 2025, circulating SARS-CoV-2 viruses have largely belonged to JN.1-descendant lineages, and WHO has recommended updated vaccine antigens accordingly. However, uptake of booster vaccination continues to decline, and access to the most recently updated formulations has been heterogeneous across countries in Latin America. In parallel, the region still lacks robust pediatric surveillance data to identify which child populations remain at highest risk for severe disease and complications. WHO stated in May 2025 that updated COVID-19 vaccines should continue to target JN.1-lineage viruses [15].

## 2. A multidimensional impact on childhood

The pandemic's toll on children extended far beyond the clinic. It became a social, educational, and emotional phenomenon without precedent. More than 1.6 billion students worldwide were affected by school closures [16].

Although schools are now open, the scars remain: learning losses, gaps in basic competencies, and widening inequalities among children from low-resource settings [17]. Recent surveys show that over 40% of U.S. parents report persistent emotional disturbances in their children attributable to the pandemic [18]. In Latin America, domestic violence, child abuse, and substance use among adolescents all increased [19]. A 2025 Gallup update [20] showed that three in ten parents believed their children's academic skills in math (36%), reading (31%), or science (30%) were negatively affected, and about half of these parents reported ongoing effects. Fewer parents (23%) noted negative impacts on their children's physical health.

Growing evidence highlights the pandemic's clinical consequences for children. While the prevalence of long COVID in children appears to be lower than in adults, available evidence indicates that the risk is not negligible, particularly among adolescents, children with underlying medical conditions, and those who experienced moderate to severe acute disease [21–23]. In Latin America, the true burden of pediatric long COVID is likely underestimated due to limited access to longitudinal follow-up, diagnostic resources, and standardized surveillance systems. Early recognition, harmonized case definitions, regional research efforts, and the development of multidisciplinary care models are essential to mitigate the long-term consequences of post-COVID conditions in children [20–23].

At the population level, these individual health challenges were compounded by broader disruptions to essential child health services. Disruptions to immunization programs led to declines in coverage, leaving more than 117 million children without essential vaccines and contributing to a sustained global decrease in routine childhood immunization rates, with incomplete recovery after the pandemic and an increased risk of outbreaks of vaccine-preventable diseases [23,24,25]).

This created opportunities for outbreaks of vaccine-preventable diseases in the region. In 2025, the Region of

the Americas has reported over 10,000 confirmed measles cases and 18 associated deaths across 10 countries, and approximately 212 confirmed yellow fever cases with 85 deaths — reflecting a resurgence of diseases once under control. By contrast, while outbreaks have also occurred in other regions such as North America (more than 200 measles cases in the United States, and over 4,500 in 2025), the scale and geographic spread in the Americas remain a particular concern, underscoring persistent immunization gaps. Data specific to 2025 pertussis cases in the Region are not yet consolidated in a single public source, but global reports indicate increasing outbreaks of vaccine-preventable diseases in Mexico and various countries in Central and South America [26,27]. Routine immunization coverage remains insufficient, with over 1.4 million children missing routine vaccines in 2024, perpetuating vulnerability to preventable diseases [28].

### 3. The scientific and public health legacy of the COVID-19 pandemic in Latin America

The COVID-19 pandemic left a profound scientific legacy in Latin America, catalyzing advances in immunology and virology understanding, fostering greater trust in evidence-based medicine, and transforming health communication and international collaboration. The improved knowledge in vaccine science by physicians in medical subspecialties other than in the pediatric, infectious disease and immunology fields facilitated a multidisciplinary engagement during the crisis response [29].

Most of the empirical research output from Latin America and the Caribbean was related to epidemiological and clinical studies, but there were also multicenter vaccine trials, highlighting the importance of an enhanced international scientific collaboration [30,31]. The rapid generation and dissemination of research findings, facilitated by open-access platforms and preprint servers, underscored the necessity for open science and transparent data sharing to accelerate public health interventions and inform policy decisions [32,33]. This innovative development, however, also revealed challenges in ensuring the accuracy and responsible reporting of the scientific data, emphasizing the relevance of robust peer review and educational commitment to mitigate misinformation and its dangerous consequences.

Social networks and digital platforms played a pivotal role in health communication, both amplifying misinformation and serving as tools for targeted outreach and community engagement. In regions with high vaccine hesitancy, tailored communication strategies combined with outreach delivery models can improve uptake. For example, in rural Guatemala, the 'Health on Wheels' strategy—mobile brigades coupled with culturally sensitive community engagement—was associated with a 2.4-fold, 2.2-fold, and 2.6-fold greater increase in first-, second-, and third-dose COVID-19 vaccination, respectively, compared with non-intervened communities [34]. These experiences highlight the critical need for clear, transparent, and context-specific communication to foster public trust in evidence-based medicine.

Finally, the pandemic hastened the implementation of improved database systems for health surveillance and

research, enabling real-time data sharing and analysis across countries. This infrastructure is essential for future pandemic preparedness and for identifying evidence gaps and knowledge needs in the region. These advances have left a lasting impact on Latin America's public health systems, making them more resilient, collaborative, and evidence based.

### 4. COVID-19 vaccination coverage: an unfinished agenda

In Latin America and the Caribbean, coverage with the primary COVID-19 vaccine series reached 71%, and boosters just 42%, by 31 December 2023. Importantly, by this period COVID-19 vaccines—including formulations authorized for pediatric use—were available across countries in the region through national immunization programs with the support of PAHO procurement mechanisms; therefore, persistent gaps in pediatric coverage largely reflect challenges in access, delivery, risk perception, and demand rather than vaccine supply alone. Despite broad regional availability, implementation and uptake of pediatric COVID-19 vaccination varied substantially across countries and within vulnerable populations [30]. Still, 195 million people had not received a single dose. The gap is most evident among children and adolescents: while older adults were prioritized, pediatric vaccination was delayed [31]. In recent hospital-based studies conducted during the Omicron period, fewer than 5% of admitted children had received the recommended COVID-19 vaccine dose [32], although these data are not specific to Latin America and should be interpreted in context. Children with comorbidities remain at risk if boosters are not administered [31–33].

### 5. Conclusions

Six years have passed since the start of the pandemic. SARS-CoV-2 has transitioned to an endemic pattern of circulation since the later stages of the pandemic, with ongoing seasonal transmission and continued impact on vulnerable populations. However, COVID-19 can be still life-threatening in the elderly, immunocompromised individuals, and small children. Long COVID and other post-infectious sequelae in children require earlier recognition, standardized case definitions, and multidisciplinary follow-up pathways adapted to local health-system capacity. Recovery policies should include protected budgets for child health, educational recovery, and catch-up immunization, particularly in the most vulnerable populations. In parallel, Latin America urgently needs prospective pediatric research and coordinated surveillance systems to quantify the long-term clinical, educational, and social consequences of COVID-19 and to guide evidence-based recovery strategies. Latin American children carry the long shadow of a crisis that magnified their vulnerabilities. The pandemic effects have not ended; they have transformed into an endemic challenge requiring an equally transformed response. The message can no longer be only 'do not repeat mistakes.' It must be: 'learn from them to build fairer, more resilient systems.'

Recovery will not be measured solely by case declines, but by each country's ability to prioritize children at the center of public policy, to close the inequity gaps widened by the pandemic, and to ensure every child has access to health, education, and protection from vaccine preventable diseases. The future of Latin America depends on how we safeguard its youngest generation from the long-term consequences of this crisis. The task is formidable, but the cost of inaction would be catastrophic.

## 6. Expert opinion

### 6.1. SLIPE recommendations: from 'rethinking strategy' to 'not repeating mistakes'

Six years after the onset of the COVID-19 pandemic, the experience in Latin America has underscored the urgent need for resilient, equitable, and child-centered public health strategies.

While progress has been made in understanding the evolving epidemiology and mitigating the direct health impacts on children, persistent gaps in vaccination coverage, social protection, and educational recovery highlight the ongoing challenges faced by the region. Vaccination continues to be the most important tool of prevention for children that are at higher risk of complications. In addition, antiviral therapies must be accessible and used when clinically indicated, and severe manifestations or complications—such as MIS-C—should be recognized and treated promptly. Although post-COVID conditions in children appear to be less frequent than in adults, the risk is real and must be acknowledged, monitored, and evaluated appropriately.

Drawing on lessons learned and current evidence, this expert opinion aims to synthesize key recommendations and actionable priorities to guide future policy and practice, ensuring that children remain at the forefront of pandemic response and recovery efforts.

In 2020, the Latin American Society of Pediatric Infectious Diseases (SLIPE) warned that the 'hammer and dance' strategy needed adaptation to regional realities [35]. Six years later, our recommendations, based on hard lessons, are more urgent than ever and must be tailored to Latin America:

- (1) Universal and equitable vaccination: Vaccination strategies should prioritize children at higher risk of severe disease, including those with underlying medical conditions, while aligning with evolving national and international recommendations.5.2 Prioritizing educational recovery: Invest in large-scale academic catch-up and psychosocial support programs in schools.
- (2) Strengthened social protection: Build social safety nets so families in poverty can comply with isolation without choosing between health and livelihood.
- (3) Resilient health systems: Building resilient health systems requires reinforcing the integration of primary care to ensure continuity of pediatric and vaccination services, while simultaneously investing in robust disease reporting and surveillance systems and strengthening vaccine safety monitoring.

- (4) Combating misinformation with culturally tailored risk communication: Misinformation and disinformation emerged as major challenges during the COVID-19 pandemic in Latin America, undermining public trust in health authorities and negatively affecting vaccine acceptance, particularly among caregivers of children. Social media platforms amplified false or misleading information related to vaccine safety, fertility, and long-term effects in children, disproportionately affecting populations with limited access to reliable health information. Evidence from the region shows that culturally tailored communication strategies—including engagement of community leaders, healthcare workers, and trusted local institutions—were effective in improving vaccine confidence and uptake. Mobile vaccination brigades combined with targeted risk communication proved particularly valuable in underserved communities. These experiences highlight that combating misinformation is not only a communication task, but a core public health intervention essential for sustaining pediatric immunization programs. These lessons directly inform the need for culturally appropriate communication strategies to counter misinformation and sustain vaccination efforts in children [29].

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## Declaration of interest

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