

Covid-19 as a long multiwave event: implications for responses to safeguard younger generations

Mandeep Dhaliwal and colleagues call for urgent correction of the response to covid-19 to safeguard the development of children and young people

As we enter the third year of the covid-19 pandemic, the negative effects have cut across all of the sustainable development goals (SDGs) and led to severe health and developmental challenges.¹ Children and young people in particular continue to face numerous socioeconomic problems as a result of covid-19, including those related to health, poverty, nutrition, education, employment, orphanhood, violence, abuse, and exploitation. Evidence indicates that integrated solutions to mitigate the many different negative effects of the pandemic on children and young people can be delivered quickly and on a sufficient scale. To deliver solutions that help safeguard younger generations, we need to move beyond a narrow framing of covid-19 and use a multilevel, intersectoral response that takes into account the magnitude, complexity, and intergenerational dimensions of the pandemic.

Covid-19 as a multiwave, intergenerational event

After HIV was conceptualised as a long wave event in 1990, it was shown to have three main curves over time: HIV infection,

AIDS related deaths, and societal effects such as children being orphaned and food insecurity. Breaking down the HIV/AIDS epidemic into these curves showed the magnitude, complexity, and intergenerational dimensions of the problem. It highlighted the need for longer term projections of the effects of the HIV/AIDS epidemic and mitigation efforts, including tackling the links between HIV, health, and development.²

As with the HIV/AIDS epidemic, the full extent of the covid-19 challenge must be recognised. Infections, illness, and death related to covid-19 have many indirect health and socioeconomic effects in the immediate, medium, and longer term. These effects, which range from disrupted health service delivery and education to increased violence and malnutrition (box 1), disproportionately affect poor and vulnerable people, including children and young people.¹⁵ They are fuelled by and reinforce inequalities between and within countries, such as in the burden of covid-19, capacity to respond, and social determinants of health—for example, working conditions, housing, and access to healthcare including vaccines.¹⁶ The multiple curves of infection, illness, death, and societal effects from covid-19 are likely to reoccur, creating a multiwave of overlapping health and socioeconomic effects over time.

The duration and multiwave nature of the covid-19 pandemic is mediated by several factors: (a) vaccine inequity, expected to last until 2023 in many low income countries; (b) highly transmissible variants of concern such as the delta and omicron variants; (c) potential for new variants to partly or fully evade current covid-19 vaccines; (d) unpredictable waning of population immunity; and (e) nature and implications of long covid. These and other factors, including inequitable access to covid-19 diagnostics and therapies, varying societal support for public health and social measures, and animal reservoirs of SARS-CoV-2, make it nearly impossible to eradicate the virus.

Effects on children, young people

Children and young people presently account for a relatively small portion of direct illness and death from covid-19, although they are not immune and face risks of long covid.¹⁷ A narrow focus on the direct and immediate health effects of covid-19 obscures the extent to which the pandemic is affecting children and young people. Each wave of covid-19 infection, illness, and death makes children and young people vulnerable to many negative socioeconomic outcomes (box 1). These negatively reinforce each other and could combine given the long and multiwave nature of the pandemic. Consideration of the multiple effects of the pandemic has prompted the Human Rights Council to request a study on how to mitigate the effect of covid-19 on the human rights of young people.¹⁸

The covid-19 related crises affecting children and young people intersect and exacerbate each other. Being orphaned can trigger mental ill health, greater vulnerability to infectious diseases, physical abuse and sexual violence, and poverty.¹¹ Disrupted schooling interferes with access to and delivery of essential health and other services, such as nutritious foods. It increases girls' vulnerability to child marriage, early pregnancy, and gender based violence, making return to school less likely and HIV infection more likely.^{19 20} Disrupted schooling also causes parents, especially mothers, to leave work to provide care, reducing income which could support children and young people.²¹ In undermining the development of children and young people, such effects have profound consequences for societies. In December 2021, the World Bank, Unesco, and Unicef warned that the learning crisis alone could result in \$17tn (£12.5tn) in lost lifetime earnings at present value globally.²²

Children and young people in lower income countries will be most adversely affected by covid-19 because of inequities in covid-19 vaccination, fiscal capacity to respond, and social protection coverage. As

KEY MESSAGES

- The covid-19 pandemic is a long and multiwave event
- Children and young people are at disproportionately higher risk of the effects of covid-19
- A multilevel, intersectoral response is needed to mitigate the negative effects of the pandemic on children and young people, with a focus on long term planning, layering of effective interventions, and scaled investments
- Evidence from other epidemics suggest investment in social protection, evidence based parenting support, education re-enrolment, and child health promotion can mitigate the effects of covid-19

Box 1: Covid-19 related problems affecting children and young people**Physical and mental health**

- By May 2020, disruption of routine immunisation services for young children in 68 countries had already put about 80 million children under the age of 1 at risk of contracting vaccine preventable infections
- Six months of disrupted prevention services for perinatal HIV transmission could lead to an additional 124 000 children contracting HIV³
- Contraceptive interruptions for around 12 million women (because of disruptions to supplies and services) led to an estimated 1.4 million unplanned pregnancies in 2020⁴
- Younger people are among the most affected by the effect of the pandemic on major depressive disorder (more than 50 million additional cases) and anxiety disorders (more than 75 million additional cases).⁵ Service disruptions for children and young people with mental health conditions or disabilities have been substantial since the pandemic began⁶

Learning

- 1.6 billion children, or 94% of students globally, were out of school in April 2020⁷
- In April 2021, an estimated 50% of the world's children (enrolled in pre-primary, primary, lower secondary, and upper secondary education) were still affected by partial or full school closures⁸
- About one third of schoolchildren worldwide (463 million children) did not have access to remote learning technologies or policies in 2020. Three quarters of these children were living in rural areas or the poorest households⁹

Employment

- One in six young people (17%) employed before the pandemic stopped working
- Disruption of work or education makes young people twice as likely to report as "probably affected by anxiety or depression"¹⁰

Poverty

- 140 million more children in developing countries are projected to be living in poverty because of the pandemic
- An estimated 150 million more children have been pushed into multidimensional poverty; a 9% increase compared with levels before covid-19³

Nutrition

- 6-7 million more children under 5 had wasting or acute malnutrition in 2020
- 62 million fewer children received two-dose vitamin A supplementation in 2020 compared with 2019
- 44 million children may have gone hungry in 2020 and 370 million may have missed nutritious school meals³

Protection

The pandemic "has created a scale of family loss not seen since AIDS."¹¹ From March 2020 to October 2021, five million children lost a primary caregiver because of deaths associated with covid-19.^{7,12} By 2030, up to 10 million more girls could be pushed into early marriage because of the pandemic.¹³ The pandemic has also led to increases in violence against children and women, sexual violence and exploitation of children, intimate partner violence, and domestic violence.¹⁴

of 12 January 2022, just 11.4% of people in low income countries had received at least one covid-19 vaccine dose compared with 67.6% in high income countries.²³ At a time when over 60% of low and middle income countries are highly vulnerable to debt,²⁴ poorer countries would need to add hundreds of millions of dollars to their existing public debt to cover the cost of vaccinating 70% of their population.²³ Even if they were able to do this, it could compromise investment in other measures to protect children and young people, such as healthcare and nutrition. Furthermore, while the pandemic has driven unprecedented investment in emergency social protection measures, 87% of social spending from March 2020 to May 2021 was by high income countries, compared with just 4.7% by low and middle income countries. Income support programmes appear to have mitigated overall increases in poverty in upper middle income countries, at least temporarily, but have been insufficient to do so in low income countries.²⁵ More than four billion people, including three in

four children, still lack any social protection such as support grants or bursary schemes.²⁶

Planning and investing to safeguard generations
Understanding covid-19 as a long and multiwave event can inform multilevel, intersectoral responses to mitigate its negative effects on children and young people, thus protecting their health and wellbeing in the short and longer term. Stronger and more resilient systems for health must be at the centre of intersectoral efforts. Such systems are crucial to reduce the spread of the virus, deliver vaccines and other essential health services, and strengthen pandemic preparedness and response. Empowerment and inclusion of young people can help ensure effective, equitable, and rights based approaches. The multilevel, intersectoral responses should focus on longer term planning, layering of effective interventions, and scaled investments.

Long term planning

Current global and national plans for responding to the effects of covid-19 on

health, development, and society are rarely longer than 18 months and are typically shorter. These plans are also severely underfinanced.²⁷ To better account for the multiwave effects of the pandemic on children and young people, longer term and fully financed covid-19 plans are needed, covering 24 month surge efforts and 36 month plans. The surge efforts should focus on maintaining essential child health services, ensuring age appropriate remedial support through education, comprehensive social protection, and equitable access to vaccines. The 36 month plans should seek to mitigate and reverse losses in human capital by making use of advances necessitated by covid-19, for example increased use of digital technology for healthcare and education as well as greater emphasis on the mental health of children and young people.

Approaches used during the covid-19 pandemic can guide longer term planning. For example, in what could be seen as part of a surge effort, Liberia, Nepal, and Senegal have employed

various mitigation strategies to maintain routine immunisation.²⁸ Countries that have safeguarded nutrition and maternal and child health during other crises, such as Bangladesh, Liberia, Peru, and Rwanda, also provide lessons to guide covid-19 planning and investment.²⁹ Other examples of potential surge efforts include the provision of financial aid to children orphaned by covid-19 in Brazil and Peru,³⁰ and parenting support for violence prevention to 210 million people in 198 countries, delivered by Parenting for Lifelong Health, together with United Nations agencies and other academic and development partners, through 34 national government programmes.³¹ In terms of making use of advances for the future, the pandemic has generated cross country lessons and principles on the effective delivery of remote learning, including the need to have effective teachers, suitable technology, and engaged learners.³² As regards mental health, recognising that the covid-19 pandemic has the “seeds of a major mental health crisis,”³³ the Philippines launched a mental health investment case to assess the most cost effective responses, including to protect young people (eg, school based socioemotional learning), and to broaden coalitions for mental health.³⁴

UN instruments to support planning, financing, and implementation of measures to advance sustainable development at the country level, building from the UN comprehensive response to covid-19, offer opportunities to tackle the multiwave nature of covid-19. Engaging young people in national vaccination plans for covid-19 could reduce demand side barriers and thus enhance equity and effect. Merging national covid-19 response plans into longer term planning to achieve the SDGs is an opportunity to further strengthen protection of the current and future lives of children and young people. Integrated national financing frameworks, which support countries to finance and implement their sustainable development priorities, can promote effective and innovative strategies targeted to children and young people. For example, health taxes on sugary beverages can reduce consumption of an unhealthy product while raising resources to invest in the development of children and young people.³⁵

Layering of effective interventions

Interventions to safeguard children and young people need to mitigate as many important effects of covid-19 as possible.³⁶

They also need to be cost effective given reduced resources and increased need.³⁷ Evidence from other epidemics indicates the potential of accelerator approaches (eg, government cash transfers, violence prevention and sexual and reproductive health services) to simultaneously tackle several of the overlapping effects of covid-19 on children and young people.³⁸ Studies in the sub-Saharan Africa have identified services that together can improve health, education and sexual health for children and young people in the context of HIV and Ebola virus disease.³⁹ These studies have found consistent evidence of the beneficial effects on many SDGs of social protection combined with evidence based parenting support, sexual and reproductive health and rights education and/or safe school access, and essential child health and nutrition services (fig 1).^{40 41} The findings suggest the value of layering additional child-focused services, such as parenting programmes and adolescent-friendly health services, into covid-19 social protection responses.

Interventions also need to be delivered on an adequate scale within current systems and with minimal disruption even during lockdown and to families experiencing covid-19 illness and death.⁴² Digital methods can help deliver packages of support, for example, cash transfers and evidence-based violence prevention

programmes, and have inbuilt monitoring systems that can provide evidence of use and effect even when more formal evaluations are limited. New low cost smartphones, innovations in offline first applications that do not require internet access, and cost savings on in-person services may allow provision of basic telephones to support remote service delivery.

Scaled investments

Bold investments are needed to mitigate the socioeconomic effects of the pandemic on children and young people while accelerating longer term progress. This investment includes immediately ending covid-19 vaccine inequity, which persists despite an estimated cost of just \$50bn (£37bn) to vaccinate the world.⁴³ Covid-19 vaccination not only protects health, including the health of parents and caregivers of children and young people, but also helps to recover human capital loss by reducing the need for lockdowns and enabling health systems, schools, economies, and early childhood development services to function.⁴⁴ Investments can reach beyond mitigating the effects of covid-19, in line with commitments of countries and the international community, to build better systems going forward. Ambitious but feasible investments across the SDGs can help the world exceed the development

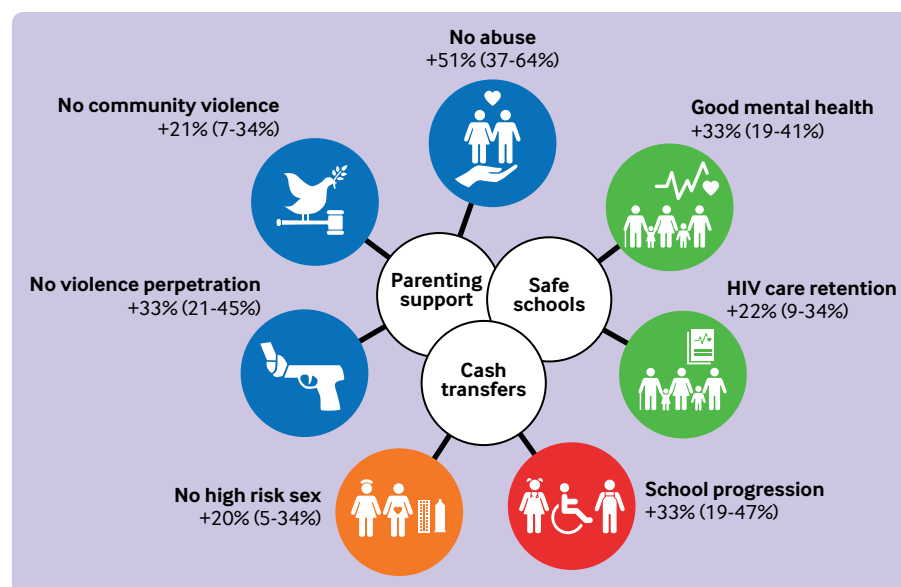


Fig 1 | Effects of layered support for children and young people affected by HIV showing percentage point improvements (with 95% CIs) in percentage probabilities of SDG aligned targets, for adolescents with access to layered safe schools, parenting support, and government cash transfers, compared with no intervention. Each outer circle represents an SDG target within SDGs 3 (health), 4 (education), 5 (gender equality), and 16 (violence prevention). Adapted from Cluver et al⁴⁰

trajectory it was on before the pandemic. For example, an SDG push for education, which includes targeted investments in governance, social protection, and digital innovation, could result in an additional 25 million children obtaining upper secondary education every year by 2030, compared with the pre-pandemic development path, that is if covid-19 had never happened.⁴⁵ A monthly investment of just 0.07% of the gross domestic product of low and middle income countries could provide financial security to 613 million women of working age living in poverty.⁴⁶ Going beyond a temporary basic income to a universal basic income would further protect children and young people, particularly if combined with universal health coverage.

Global support to lower income countries is crucial to protect the world's children and young people. The WHO director general recently noted that "Vaccine inequity and health inequity overall were the biggest failures of last year".⁴⁷ These failures have added to the broader development divergence of the past five years⁴⁸ characterised by failures to invest adequately in shared, intergenerational challenges such as pandemic preparedness and response and the climate crisis. To reinvest solidarity among countries and between generations, in line with the UN secretary general's report *Our Common Agenda*,⁴⁹ a sustained boost in development assistance for health and development is needed.⁵⁰

Conclusion

Understanding covid-19 as a long and multiwave event helps us to understand the pandemic's profound effect on children and young people, both now and in the future. This understanding also points to the need for proportional, evidence based strategies for longer term planning, layering of effective interventions, and scaled investments in order to mitigate the effects of covid-19 on children and young people, which will benefit entire societies. This will require greater investment in multilevel, intersectoral responses and stronger and more resilient systems for health.

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