A future for the world's children? A WHO–UNICEF–*Lancet* Commission

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See **Editorial** page 538

See **Comment** page 541

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Executive summary

Despite dramatic improvements in survival, nutrition, and education over recent decades, today's children face an uncertain future. Climate change, ecological degradation, migrating populations, conflict, pervasive inequalities, and predatory commercial practices threaten the health and future of children in every country. In 2015, the world's countries agreed on the Sustainable Development Goals (SDGs), yet nearly 5 years later, few countries have recorded much progress towards achieving them. This Commission presents the case for placing children, aged 0–18 years, at the centre of the SDGs: at the heart of the concept of sustainability and our shared human endeavour. Governments must harness coalitions across sectors to overcome ecological and commercial pressures to ensure children receive their rights and entitlements now and a liveable planet in the years to come.

Invest in children's health for lifelong, intergenerational, and economic benefits

The evidence is clear: early investments in children's health, education, and development have benefits that compound throughout the child's lifetime, for their future children, and society as a whole. Successful societies invest in their children and protect their rights, as is evident from countries that have done well on health and economic measures over the past few decades. Yet many politicians still do not prioritise investing in children, nor see it as the foundation for broader societal improvements. Even in rich countries, many children go hungry or live in conditions of absolute poverty, especially those belonging to marginalised social groups—including indigenous populations and ethnic minorities. Too often, the potential of children with developmental disabilities is neglected, restricting their contributions to society. Additionally, many millions of children grow up scarred by war or insecurity, excluded from receiving the most basic health, educational, and developmental services.

Decision makers need a long-term vision. Just as good health and nutrition in the prenatal period and early years lay the foundation for a healthy life course, the learning and social skills we acquire at a young age provide the basis for later development and support a strong national polity and economy. High-quality services with universal health-care coverage must be a top priority. The benefits of investing in children would be enormous, and the costs are not prohibitive: an analysis of the SDGs suggests a financing gap of US$195 per person. To ensure stronger economic and human development, each government must assess how to mobilise funding using instruments that help the poorest proportion of the population to meet this gap for children, and frame these as the most powerful investments a society can make. But investments are not just monetary: citizen participation and community action, including the voices of children themselves, are powerful forces for change that must be mobilised to reach the SDGs. Social movements must play a transformational role in demanding the rights that communities need to care for children and provide for families.

Government has a duty of care and protection across all sectors

Countries that support future generations put a high priority on ensuring all children's needs are met, by delivering entitlements, such as paid parental leave, free primary health care at the point of delivery, access to healthy—and sufficient amounts of—food, state-funded or subsidised education, and other social protection measures. These countries make sure children grow up in safe and healthy environments, with clean water and air and safe spaces to play. They respect the equal rights of girls, boys, and those with non-conforming gender identities. Policy makers in these countries are concerned with the effect of all policies on all children, but especially those in poorer families and marginalised populations, starting by ensuring birth registration so that the government can provide for children across the life course, and help them to become engaged and productive adult citizens. The rights and entitlements of children are enshrined within the UN Convention on the Rights of the Child (CRC) ratified by all countries, except the USA. Countries might provide these entitlements in different ways, but their realisation is the only pathway for countries to achieve the SDGs for children's health and wellbeing, and requires decisive and strong public action.

Since threats to child health and wellbeing originate in all sectors, a deliberately multisectoral approach is needed to ensure children and adolescents survive and thrive from the ages of 0–18 years, today and in the future. Investment in sectors beyond health and education—such as housing, agriculture, energy, and transport—are

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needed to address the greatest threats to child health and wellbeing. Political commitment at executive level is needed to coordinate across sectors and leverage synergies across the life course, ensuring universal health coverage; good nutrition and food security for all; thoughtful urban planning; safe and affordable housing and transport; clean energy for all; and equitable social welfare policies. Multisectoral governance might take different forms in each country, but it will require strategic partnerships, cabinet-level coordination across ministries, and management of diverse partners, with clear roles for each, including for non-state actors and the private sector. Heads of state or prime ministers must designate a cross-cutting government ministry or equivalent to ensure joined-up action and budgeting for pro-child policies and to demand harmonised assistance from global stakeholders, whose support is currently fragmented and inefficient.

Measure how children flourish today, but also how countries' greenhouse gas emissions are destroying their future

Wealthy countries generally have better child health and development outcomes, but their historic and current greenhouse gas emissions threaten the lives of all children. The ecological damage unleashed today endangers the future of children's lives on our planet, their only home. As a result, our understanding of progress on child health and wellbeing must give priority to measures of ecological sustainability and equity to ensure we protect all children, including the most vulnerable. We assessed the feasibility of monitoring countries' progress through a new child flourishing and futures profile, developed on the basis of survive and thrive SDG indicators reported by 180 countries, territories, and areas (hereafter referred to as countries), and future threats to children's wellbeing using the proxy of greenhouse gas emissions by country. We also complemented the profile with existing measures of economic equity. The poorest countries have a long way to go towards supporting their children's ability to live healthy lives, but wealthier countries threaten the future of all children through carbon pollution, on course to cause runaway climate change and environmental disaster. Not a single country performed well on all three measures of child flourishing, sustainability, and equity.

The SDG indicators already provide a strong foundation for monitoring progress. However, we only found a very small amount of country data for the indicators used to track child health and wellbeing, which all countries agreed to collect. SDG monitoring needs a strong boost in investment to bridge the large data gaps in key indicators (with <50% of countries reporting data for many indicators), to allow for subnational disaggregation if governments are to monitor, review, and act. To ensure our children grow and flourish, we require timely and accurate population data on health, nutrition, educational access and performance, housing, and environmental security, among other entitlements. Harnessing the power of citizen accountability mechanisms will be essential to fill the data gaps. We also propose the development of user-friendly country dashboards to assess the effects on children's wellbeing and sustainable development. Given the urgency for action, regular reports on the SDGs to the UN General Assembly must be the anchor of strong advocacy on action for children everywhere.

Adopt a new protocol to the UN CRC to regulate against commercial harm to children

Although we recognise the role business plays in wealth and job creation, the commercial sector's profit motive poses many threats to child health and wellbeing, not least the environmental damage unleashed by unregulated industry. More immediately, children around the world are enormously exposed to advertising from business, whose marketing techniques exploit their developmental vulnerability and whose products can harm their health and wellbeing. Companies make huge profits from marketing products directly to children and promoting addictive or unhealthy commodities, including fast foods, sugar-sweetened beverages, alcohol, and tobacco, all of which are major causes of non-communicable diseases. Children's large and growing online exposure, while bringing benefits in terms of information access and social support, also exposes them to exploitation, as well as to bullying, gambling, and grooming by criminals and sexual abusers.

Industry self-regulation does not work, and the existing global frameworks are not sufficient. A far stronger and more comprehensive approach to regulation is required. We call for the development of an Optional Protocol to the CRC (ie, an additional component to the treaty that must be independently ratified), to protect children from the marketing of tobacco, alcohol, formula milk, sugar-sweetened beverages, gambling, and potentially damaging social media, and the inappropriate use of their personal data. Countries who have led the way in protecting children from the harms of commercial marketing, supported by civil society, can support a protocol for adoption by the UN General Assembly, providing impetus for further legal and constitutional protections for children at national level.

Children and young people are full of energy, ideas, and hope for the future. They are also angry at the state of the world. Worldwide, school-children and young people are protesting about environmental threats from fossil fuel economies. We must find better ways to amplify their voices and skills for the planet's sustainable and healthy future. The SDGs require governments to place children at the very centre of their plans to address this crisis. This Commission makes positive and optimistic recommendations–but we have no time to lose, and no excuses if we fail. A new global movement for child and adolescent health is today an urgent necessity.

Introduction

Prompted by the end of the Millennium Development Goal era, with its focus on child survival, a Lancet Commission to place children's health and wellbeing at the centre of the Sustainable Development Goals (SDGs) was formed in 2018. The Commission was co-chaired by Helen Clark, former Prime Minister of New Zealand and former Administrator of the UN Development Programme, and Dr Awa Coll-Seck, Minister of State in Senegal. The Commission aimed to consider the ways in which governments, medical professionals, and society as a whole can accelerate progress on child health and wellbeing strategies in the context of the SDGs.

We can no longer consider child health and wellbeing the prerogative of health professionals. Immunisation, antibiotics, antenatal and delivery care, and good quality health systems are of course essential,[1] but we urgently need a broader plan to accelerate progress in areas previously neglected, such as early years development, adolescent health, and disability, and the development of a coherent narrative to guide our work across sectors. More immediately, we must respond to environmental and existential threats, which jeopardise the future for children on this planet. We require a holistic view of the child, defined here as a person aged 0–18 years old, whose wellbeing is at the centre of humanity.

"Our house is on fire"

Over the past 50 years we have seen dramatic improvements in survival, education, and nutrition for children worldwide. Economic development, concerted international action, and political commitment have brought about rapid change. In many ways, now is the best time for children to be alive,[2] but economic inequalities mean benefits are not shared by all, and all children face an uncertain future. Climate disruption is creating extreme risks from rising sea levels, extreme weather events, water and food insecurity, heat stress, emerging infectious diseases, and large-scale population migration.[3] Rising inequalities and environmental crises threaten political stability and risk international conflict over access to resources. By 2030, 2·3 billion people are projected to live in fragile or conflict-affected contexts.[4]

Children have little voice in the shape of their future. Decisions that will affect their lives are taken by parents, local leaders, governments, and global economic decision makers, and by the captains of global corporations with enormous resources and purely commercial interests. Environmental harm to children now and in the future is intimately linked to our economic structures and commercial activity. When youth climate activist Greta Thunberg spoke at the World Economic Summit in Davos, Switzerland, in January, 2019, she told delegates, "I want you to act as you would in a crisis. I want you to act as if our house is on fire. Because it is."

Childhood is the ideal time to intervene

Childhood is a special time of vulnerability but also of opportunity. Pregnant women and girls are vulnerable to biological and social risks that increase their susceptibility to disease, disability, and preventable mortality. Interventions during pregnancy, childbirth, and infancy can have a major effect on the health of both mother and child. A healthy mother is a good outcome in and of itself; care and nutrition for mothers before and during pregnancy contributes to the programming of a child's healthy growth and development throughout their life course. After birth, breastfeeding provides personalised medicine to the newborn—a potent tool for improving health, if we can overcome the poor support for breastfeeding mothers and regulate the inappropriate promotion of formula milk by a $70 billion industry.[5] Interventions in the newborn period and good newborn care can also prevent long-term disability.[6] We can do far more to support the 10% of children with developmental delays and disabilities, who require special care and attention; most of whom do not receive the care they need.[7] Providing such care will allow these children to participate fully and equally, a huge gain for society.

Evidence from longitudinal studies reports that the benefits of healthy childhood development extend to older ages: birth weight, infant growth, and peak physical and cognitive capacities in childhood are associated with or predictive of older adults' physical and cognitive capacities, muscle strength, bone mass, lens opacity, hearing capacity, skin thickness, and life expectancy.[8–10] A meta-analysis of 16 independent studies concluded that a 1 SD advantage in cognitive test score assessed within the first two decades of life is associated with a 24% lower risk of death over a follow-up period of 17–69 years.[11] Good nutrition in childhood is the basis for many such gains. Yet the so-called double burden of malnutrition means that overweight and obesity can coexist with undernourishment and micronutrient deficiencies within a single population. WHO describes the rapid rise in childhood obesity as "one of the most serious public health challenges of the 21st century."[12] The number of obese children and adolescents increased ten times from 11 million in 1975 to 124 million in 2016. In part, urbanisation has increased access to junk food and reduced access to play areas and safe exercise spaces. Our societies created these challenges—meaning it is within our power to reverse them.

The adolescent period (defined as children aged 10–18 years in this Commission) is another window of opportunity, given its critical developmental timing in terms of identity, agency, and vulnerability.[13] In adolescence, patterns can be laid for a lifetime of poor nutrition, reduced exercise, alcohol and tobacco use, mental ill health, and interpersonal violence. Worldwide 10–20% of children and adolescents experience mental disorders,[14] but early intervention in this age group is largely absent—a huge opportunity to improve wellbeing

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throughout a person's lifespan. Adolescence presents an ideal time for conversations about nutrition, exercise, mental health, relationships, drug use—such as smoking, vaping, and alcohol consumption—domestic and gang violence, positive sexuality, and active and engaged political citizenship. Yet little research has been done on how to do so on a large scale.

Governance and voice

In the SDG era, country leadership requires a coherent national vision of child wellbeing, a necessary precursor to ensure aligned institutional frameworks and coordination mechanisms across ministries and sectors. Such a framing is already proposed by the UN Convention on the Rights of the Child (CRC), opened for signature in 1989 and ratified by all nations, except the USA. Yet so-called joined-up governance, which aims to coordinate and implement policies across government,[15] must emerge from local realities, to ensure communication across government departments, between a country's decision making centre and the most socially and politically isolated areas, and incorporate processes to ensure citizens (including children) participate in governmental decision making. Like the SDGs, strategies to improve child health and wellbeing cannot succeed unless they are truly multisectoral. The home, workplace, and places of learning are all opportunities for convergence of service delivery, but this will require significant changes in governance driven by strong and focused leadership.

Governance must also account for the fact that corporate power to reach individuals has never been greater. In our modern world, many multinational companies have larger financial capitalisations than medium-sized countries—with 69 of the 100 richest entities on the planet being corporations, not governments.[16] Additionally, the rapid spread of sophisticated digital and mobile communications means that children are exposed, as never before, to a torrent of commercial marketing pressures from corporate powers. The power of big business means government attempts to protect children from harmful commercial behaviour requires agile regulation, but this is often opposed by well-resourced lawyers and lobby groups. Commercial governance is essential to protect children from alcohol, tobacco, and insidious advertising which encourages formula feeding, junk-food diets, consumption of sugar-sweetened beverages, gambling, violent media and games, inappropriate sexual behaviour, and other risks.

The Commission

This Commission reports on urgent and actionable agendas for our children's future. First, we make the case for putting child wellbeing at the centre of SDG policies. Second, we describe what needs to be done: the package of entitlements that governments and other stakeholders should ensure each child receives, and the equity-focused investments and social mobilisation required to make it happen. Third, we describe how global, national, and subnational governance must be reconfigured to provide strong multisectoral solutions. Fourth, we address the enormous challenge of commercial regulation in keeping our children safe and healthy, and suggest new approaches to protect them. Fifth, we review how countries can build accountability through child-centred SDG measurements, and the immediate top-down and bottom-up action required to track progress. Finally, we offer 10 key recommendations to build a new global movement for the health and wellbeing of children and adolescents (panel 1). Although the scope and scale of our recommendations might seem daunting to rich governments of high-income countries (HICs), let alone those that struggle to provide their citizens with basic services, we believe positive change is possible at every level.

Placing children at the centre of SDG policies

Concern for future generations is already at the centre of the SDG endeavour. Here, we further theorise the concept of sustainability around children's health and wellbeing, and existing global frameworks, such as the Survive-Thrive-Transform framework of the Global Strategy for Women's, Children's and Adolescents' Health (2016–2030).[17] We also synthesise the evidence in favour of intervening in childhood to not only achieve child health goals, but also derive key benefits throughout the life course and for future generations. Finally, we set the stage by identifying key messages for stakeholders in all sectors, without whose collaboration child health goals cannot be met (panel 2).

Sustainability is for and about children

The threats to global health from disturbances in planetary health are profound and imminent.[3] More than 2 billion people, including half the world's poorest populations, live in countries where development outcomes are affected by political fragility and conflict, problems increasingly linked with climate change. In 2018, 1 billion people had moved or were on the move, with international migration increasing to 258 million people.[18] 22 million of these people were refugees, with 40 million people displaced by conflict, natural disasters, or climate change, including many children.[19] Even under best-case scenarios, these numbers will increase greatly as the face of the planet is remade by the effects of climate change.

In 2015, the world's governments adopted 17 SDGs, with 169 targets to achieve by 2030. The SDGs convey a dual vision: to protect our planet from a dangerous and uncertain future and to ensure that we deliver secure, fair, and healthy lives for future generations. Children are at the heart of this vision, with their own needs, rights, perspectives, and contributions. They are the bridge to the future, and they demand our commitment

Panel 1: **Recommendations for placing children at the centre of the Sustainable Development Goals (SDGs)**

- Heads of state should create a high-level mechanism or assign one overarching department to coordinate work with and for children across sectors, create an enabling environment to enact child-friendly policies, and assess the effect of all policies on children
- Heads of state and governments should create or designate a monitoring system to track budget allocations to child wellbeing, using this process to mobilise domestic resources, by means of fiscal instruments that benefit the poorest in society, for additional investment
- Government officials at the relevant ministry, national academics, and research institutions should develop strategies to improve data reporting for SDG indicators measuring child wellbeing, equity, and carbon emissions, using country information systems and citizen-led data and accountability
- Local government leaders should establish a cross-cutting team to mobilise action for child health and wellbeing, involving civil society, children themselves, and other stakeholders as appropriate
- UNICEF child-health ambassadors and other global children's advocates should mobilise governments and communities to adopt child-friendly wellbeing and sustainability policies, and advocate for rapid reductions in carbon emissions to preserve the planet for the next generation
- Leaders in children's health, rights, and sustainability should reframe their understanding of the SDGs as being for and about children, and the threat to their future from greenhouse gas emissions, mainly by high-income countries
- Children should be given high-level platforms to share their concerns and ideas and to claim their rights to a healthy future and planet
- Country leaders on child health and child rights should push for the adoption of new protocols to the UN Convention on the Rights of the Child to protect children from harmful commercial practices
- Country representatives to the UN should work together to create a simplified, effectively multisectoral UN architecture to reduce fragmentation and siloes, and to put action for children at the centre of the SDGs
- WHO and UNICEF leadership should meet with heads of other UN agencies to plan coordinated action to support countries to enact focused, effective policies to achieve the SDGs, and work with regional bodies to help countries to share progress and best practices

and accountability. Children are also the most vulnerable to the lifelong environmental effects caused by climate change arising from anthropogenic greenhouse gas emissions, and from industry-linked pollution of the air, water, and land.[20–22]

Fundamentally, the SDGs are about the legacy we bequeath to today's children. For that reason alone, children should be placed at the centre of the SDG endeavour. The SDGs are the agreed-upon global framework for working in the present to leave a legacy of a healthy, sustainable planet and future for our children; the UN Human Rights Council sees a clear link between the SDGs and the CRC, which is the world's most widely ratified human rights treaty. The case for putting children at the centre of the SDGs is based on their rights, sustainable economic development, a life course approach to wellbeing, and the notion of intergenerational justice and fairness. Furthermore, making children the human face of the SDGs helps us define progress towards sustainability.

In a world where social inequalities and anti-immigrant feeling are increasing and border walls are seen as a political solution, we need to build broader principles of inclusion, including intergenerational ones. The problems of the economy and environment are inherently linked as the root of conflict in our societies. Unjust economic policies have led to homelessness and hunger, even in the richest countries, as documented by the UN Rapporteur on extreme poverty and human rights on visits to the USA[23] and the United Kingdom.[24] Looking to the future, we emphasise the importance of humanitarian responses, safety from violence and displacement, and protection of children's and human rights in all contexts.

Panel 2: **Placing children at the centre of Sustainable Development Goals policies—key messages**

- Sustainability, and the Sustainable Development Goals, can be usefully conceptualised around action for the health and wellbeing of children
- The health of children, and their future, is intimately linked to the health of our planet
- Interventions to improve health and wellbeing during childhood have immediate, long-term, and intergenerational benefits, which compound synergistically
- The economic investment case for investing in children's health and education is irrefutable and is characterised by high benefit–cost ratios
- Within government, all sectors have a role to play in improving children's health and wellbeing

Children are speaking out about their world, and we share their concerns (panel 3). Children's concerns about their wellbeing focus on feelings of family togetherness, feeling safe, and enjoying healthy environments. These principles must guide us when building a world for this and the next generation of children. The consequences of not meeting our sustainability goals will fall upon children and young people—our most precious resource—and individual citizens who deserve health,

Panel 3: Children's wellbeing in their own words

We asked children aged 6–18 years to describe what made them feel happy and healthy in focus group discussions with indigenous Māori communities from rural New Zealand; disadvantaged urban neighbourhoods in Lebanon; relatively affluent communities from Ibadan, Nigeria; and very poor communities from La Plata, Argentina (appendix pp 1–2). In all settings, children cited key themes, such as family togetherness, safety from violence, clean environments, and access to culture and education, as most important for their happiness.

When asked about health and wellbeing, children cited their first priority as: "the things that will keep me happy and comfortable is that my parents love me and that we are complete in my family" (Nigeria), or "[being healthy is] playing with my whānau [extended family] and my mum and dad" (New Zealand). Children often linked their own happiness to the happiness of those around them, both within loving and caring families and in their broader neighbourhoods. "When other people are happy, we are happy," said a girl from Tyre, Lebanon. Children's joy in life was often expressed in simple pleasures: as one hearing-impaired child in Nigeria said, "It's fun to be a kid because you have opportunity to play."

Children were very sensitive to their environments, both within their homes (a "warm dry house" in New Zealand) and their local environment, which they sometimes described as marred by trash, noise, exhaust, pollution, or other contaminants. In Argentina, teenagers mentioned dogs and rats as threats to their health, and they were disturbed by garbage dumps. Children and youth often mentioned the desire to participate in cleaning up their local environments whether by clearing brush (Nigeria), cleaning up the beach (New Zealand), sweeping the roads (Lebanon), or generally "improving the country" (Argentina).

Children said their wellbeing was threatened by violence. In insecure environments, children frequently recounted being scared at witnessing violence, such as fights, shootings, or fatal car or motorcycle accidents. Drug use, absence of security, and prevalence of robberies was mentioned as an issue of community cohesion, as in Argentina: "If they know you, there is generally no violence against you. When people know each other, there is less violence." But in other cases, children spoke of being beaten or hit in their homes and said this was wrong: "[parents] should not be harsh on them; it is child abuse for small small children" (Nigeria). Often children worried about being bullied, sometimes for their religion, ethnicity, or nationality, or being sexually harassed.

Finally, children often cited a desire to attend school and learn about and participate in their culture. They said children should not have to work or marry: "Children should be in school, learning" (Nigeria). In Argentina, teenagers said schools gave them the information they needed to make the right choices in life and improved their mental health through art and music. Indigenous children from New Zealand also emphasised their connection to their culture ("Te Ao Māori"—the Maori world) and the importance of speaking their language and learning about traditions of song and storytelling. "It feels special when you're Māori," said one child.

See Online for appendix

wellbeing, and a planet capable of sustaining life into the future.

We take a life course-based approach, from preconception to adolescence, which makes the link to intergenerationality because the health and wellbeing of children is linked to that of their parents and other individuals making up their society, and their own future children and grandchildren. Children's specific factors of vulnerability, and protective factors across their life course are represented in the upper part (protective) and lower part (vulnerability) of our model (figure 1). The equity gap or gradient is represented by the distance between upper and lower curves, affected by the social and environmental determinants of health to the right of the gap arrow. While the equity gap is intergenerational in its mode of social reproduction, the smaller starting point in the early stages of life reflects the evidence that early childhood is a good window of opportunity to intervene and break the cycle of intergenerational poverty. Finally, the rights approach is shown by the upper curve, using a life course approach and incorporating the four foundational principles of the CRC. Thus, child wellbeing is anchored in rights and equity across their life course, with the aim of enhancing protective factors and mitigating vulnerability. The model also shows the inseparability of the agendas to promote women's and child's rights, health, and wellbeing, as put forth in the Global Strategy on Women's and Children's Health (2016–2030),[17] whose objectives and targets are aligned with the SDGs.

Intervening in childhood has lifelong, intergenerational benefits

"An ounce of prevention is better than a pound of cure," said Benjamin Franklin, and a rich body of theoretical and empirical literature describes how interventions in early childhood generate higher returns than remedial actions later in life. Early childhood, when brain plasticity and neurogenesis are intense, is a vital period for cognitive and psychosocial skill development.[25] Decades of developmental psychology research have reported the highly interactive process through which children develop the cognitive, social, and emotional capacities that are foundational for school achievement and adult economic productivity.[26] Investments and experiences during the early childhood period create the foundations for lifetime success.

Early investment should start before birth because the 9 months in utero is an essential period and conditions

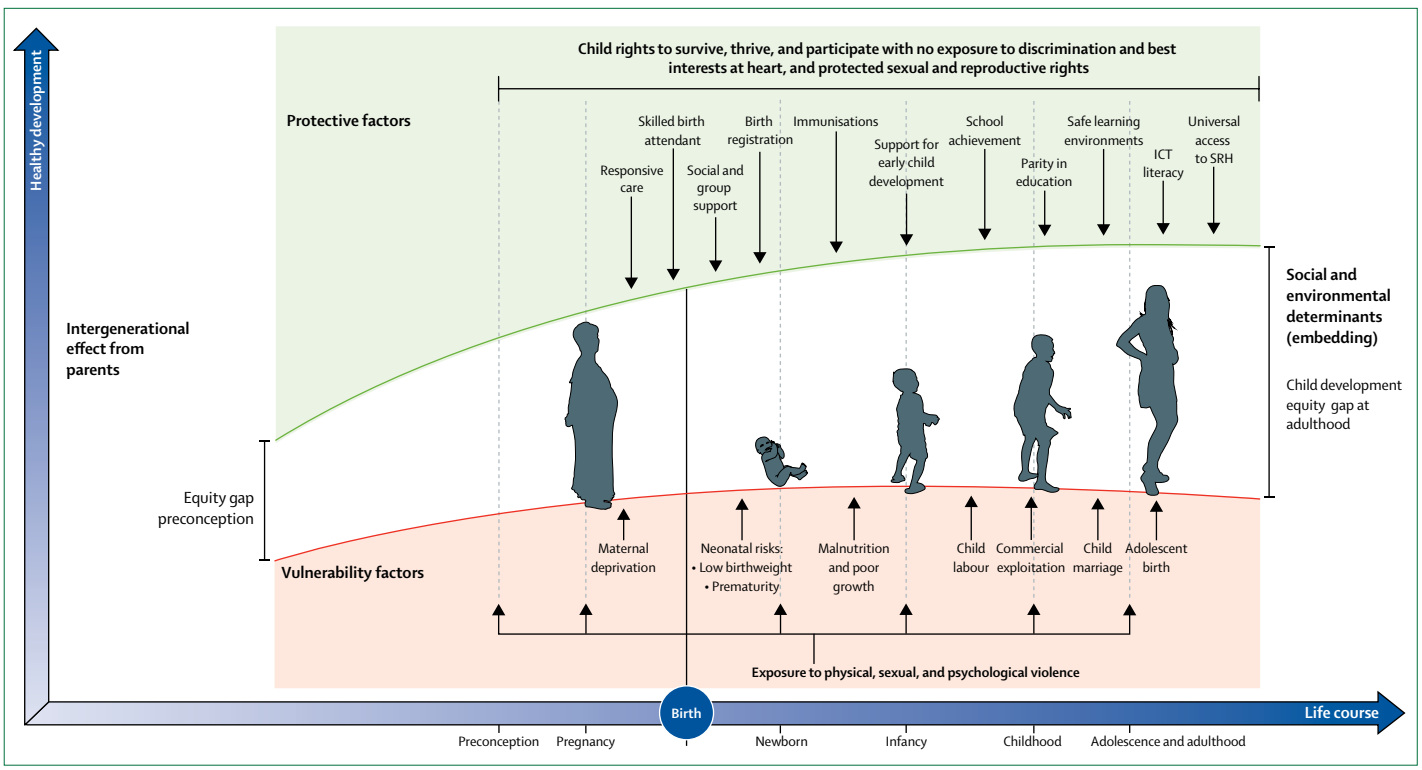


Figure 1: **Sustainable Development Goals measuring protective and risk factors for child wellbeing across the life course**
ICT=information communication technology. SRH=sexual and reproductive health.

during pregnancy shape the future trajectory of abilities and health.[27] Before pregnancy, women and adolescent girls should receive nutritional and counselling interventions to ensure they are healthy and equipped to make decisions about whether and when to become mothers. Maternal health interventions are critical to prevent, detect, and treat problems early during pregnancy and ensure women have access to high-quality care in case of complications. Food and iodine supplementation before or during pregnancy and antenatal corticosteroids for women at risk of preterm birth in HICs have beneficial effects on child development.[28,29] Smoking cessation during pregnancy, which can be supported by psychosocial programmes, also reduces low birthweight, and preterm births[30]—outcomes strongly related to improving early childhood development. Research has also shown the developmental origins of adult diseases like diabetes, heart attacks, and strokes.[31,32] Prenatal exposure to environmental contaminants is associated with epigenetic changes, such as DNA-methylation, linked to the development of diseases later in life.[33] For example, studies in Sweden on the radioactive fallout following the accident at the Chernobyl nuclear power plant, Pripyat, Ukraine, show that in-utero exposure affected educational attainment and income many years later.[34] Economists' work on fetal exposures has also suggested long-term economic effects, including reduced test scores and earnings.[35]

Fetal and early-life nutrition is also essential for long-term health, cognitive development, and economic outcomes.[36,37] Poor fetal growth or stunting in the first 2 years of life leads to irreversible damage, including reduced adult height, lower attained schooling, and lower adult income. Children who are undernourished in the first 2 years of life and who put on weight rapidly later in childhood or in adolescence are at high risk of obesity and later chronic diseases, such as diabetes, heart attack, and stroke.[37] Early-life nutritional interventions, such as the promotion of breastfeeding and iodine supplementation, consistently show benefit-cost ratios that exceed one.[38] Improving gender equality also has benefits for child nutrition, and is an independent predictor of child malnutrition and mortality in cross-country comparisons.[39]

Yet an estimated 250 million children younger than 5 years old in low and middle-income countries (LMICs) are at risk of not reaching their developmental potential.[40] At the same time, we know what children need for healthy development: nurturing and responsive care to promote their health, nutrition, security, safety, and opportunities for early learning.[41] Children with disabilities or an impairment of functioning require screening and early interventions so that they too can reach their full potential. Follow-up studies of children exposed to poverty, from a wide range of countries, show the beneficial effects of early childhood interventions for adult earnings, cognitive and educational achievement, health biomarkers,

reductions in violence, reduction of depressive symptoms and social inhibition, and growth (eg, increasing birthweight and head circumfrence) in the subsequent generation.[40]

In Jamaica, 2 years of psychosocial stimulation to growth-stunted toddlers increased earnings by 25% 20 years later, sufficient to catch up with individuals who were not stunted as children.[42] In the USA, the HighScope Perry Preschool programme had estimated annual social rates of return of 7–12% meaning that every dollar invested resulted in $7–12 benefit per person.[43,44] Much of the effects in adulthood come from changes in personality traits, such as academic motivation and aggressive behaviours, as opposed to cognitive improvements.[45] In making the economic case for early childhood interventions, wider benefits to society have been reported, including reductions in crime.[46] The benefits are personal, societal, and intergenerational: a recent analysis of wide-scale school construction in Indonesia between 1973 and 1979 found that increased parental education benefited children through increased household income, better living standards and housing, and paying higher taxes.[47] An increasing amount of evidence shows the synergistic benefits of interventions in early years being followed by later interventions in middle childhood and adolescence, particularly in populations who are exposed to high developmental risk.[48]

Life course investment frameworks highlight the so-called dynamic complementarities of human capability and the role of self-productivity.[49] Capabilities learnt early in life provide the foundation for increasing the productivity of investments later in life. In other words, investments at different stages of life are synergistic. Self-productivity refers to the idea that capabilities are self-reinforcing, for example better health promotes learning. Together, dynamic complementarity and self-productivity produce multiplier effects through which capabilities beget capabilities. Such frameworks provide a strong rationale to invest in early childhood, and to keep investing into middle childhood and adolescence.

Investments in children's health and education are highly cost-effective

Health is of value in its own right. People place great value on living longer, healthier lives. Parents prioritise the health of their children. In surveys around the world, health is typically found to be one of the most important determinants of happiness and life satisfaction.[50]

An extensive body of evidence reports on the cost-effectiveness of health interventions for children.[48,49] Scaling up integrated maternal, newborn, and child health packages to 90% coverage in 75 countries in which more than 95% of the world's maternal and child deaths occur could avert 849 000 stillbirths, 1 498 000 neonatal deaths, and 1 515 000 additional child deaths.[51] Increasing access to such packages is essential because complications from prematurity, intrapartum-related events, and infectious diseases—such as pneumonia—remain the leading causes of death in children younger than 5 years old.[53] Intervening early costs less than attempts to compensate for early deficits with remedial interventions at older ages.[41] An analysis, published in 2017, suggests that the cost of inaction for not improving child development through universal preschool and home visits, and reducing stunting, is substantial and could reach more than 10% of gross domestic product (GDP).[54]

Global investment cases that estimate the benefit-cost ratio of investing in health and other sectors are summarised in figure 2. Translating health gains into monetary values is challenging from an ethical and a methodological perspective, and can be done in multiple ways.[55] Although no shared consensus exists, estimates value a year of life in LMICs in the range of 1·5–2·3-times GDP per capita.[56,57] Using the more conservative value of 1·5, analyses suggest that the economic (eg, productivity) and social benefits (eg, health) of expanding a set of integrated interventions for women's and children's health are 7·2-times more than the costs in low-income countries (LICs) and 11·3-times greater in lower-middle income countries.[58] Valuing a year of life at 2·3-times GDP per capita, The *Lancet* Commission on investing in health produced higher benefit-cost ratios for a similar set of health interventions.[56]

Studies into global investment for education, founded on a wealth of evidence,[59] show that each $1 invested in education will generate an additional $5·2 of benefits through increased earnings in LICs and $2·5 of benefits in lower-middle income countries (figure 2). These benefit-cost ratios almost double when the health benefits—reduced adult and child mortality—of improving education are taken into account. Incorporating the monetary value of reductions in mortality means each $1 invested in education will generate an additional $9·9 of benefits in LICs and $3·7 of benefits in lower-middle income countries. These benefits could be an underestimate, given that studies show a range of other benefits of high-quality education on sexual and reproductive health, mental health, reduced risk of non-communicable diseases later in life, reduced tobacco smoking and drug use, and fewer incidents of violence.[60]

To thrive at school, children must be healthy and well nourished. A powerful economic argument for targeting the health and development of school-age children is that it promotes learning during their only opportunity for education.[61] Ill health and poor nutritional status impair learning. For example, malaria and worm infections reduce school attendance and are a leading cause of anaemia, which can negatively affect cognition and sustained attention.[62,63] Health interventions to prevent or treat infectious disease can have a positive effect on learning and in turn generate long-term economic benefits in the form of higher earnings.[62,64–67] These synergies suggest that health and education are two sides of the same coin. A global investment case for adolescents[68]

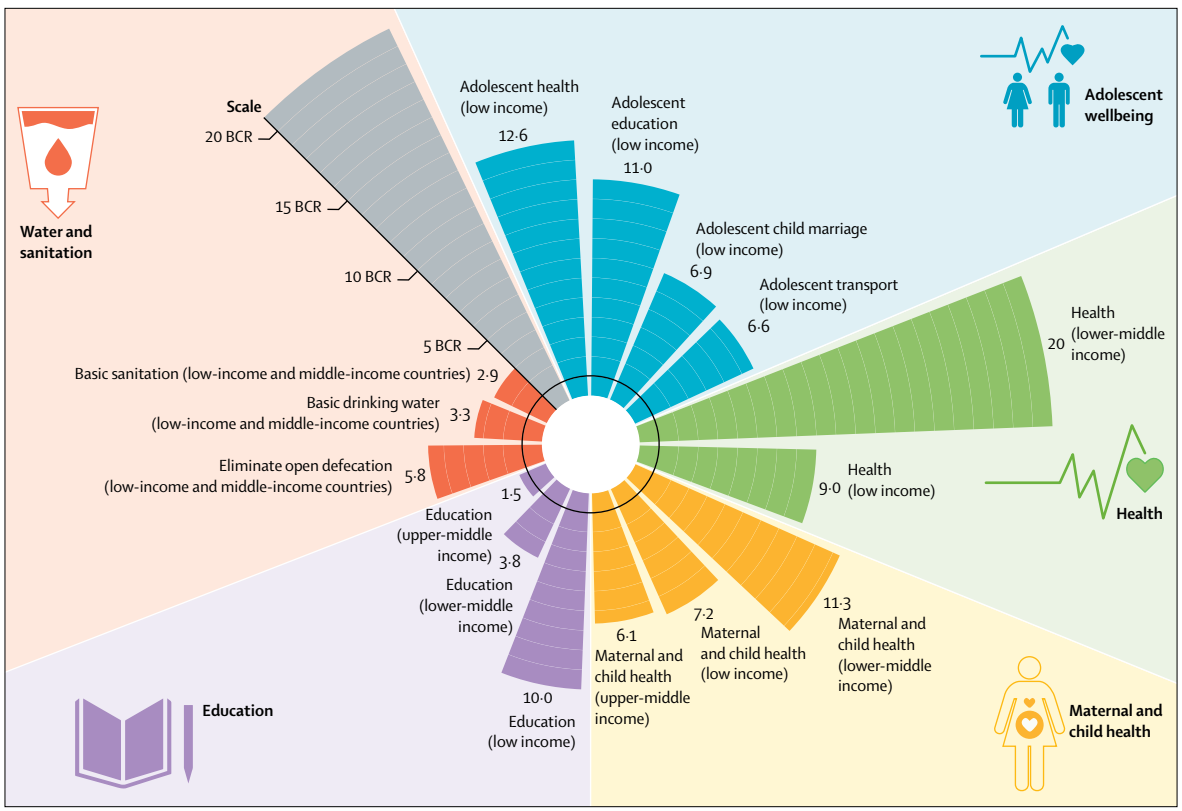


Figure 2: **Benefit-cost ratios: returns on every US dollar invested**
BCR=benefit-cost ratio. LMIC=low and middle-income countries. MCH=maternal and child health. A benefit-cost ratio of one (grey circle) indicates costs and benefits are the same. A ratio of more than one indicates that the benefits are more than the costs. Each concentric ring equals a BCR of 10. The majority of countries excluded are high-income countries with some exceptions. The figure shows high returns to investment in children's health and wellbeing across a variety of domains. BCR is calculated by dividing the monetary benefit of an intervention by the monetary cost of implmenting it.

shows that investing in strategies to reduce child marriage and road accidents will also generate benefits that far exceed costs (figure 2). Although no analogous benefit-cost ratio calculations exist outside the health and education sectors, interventions in all sectors are widely understood to be investments in current and future societal outcomes, rather than just spending.

All sectors are responsible for children's wellbeing

Sectors beyond health and education can, and must, work to improve the health and educational attainment of children, to capture valued societal and economic benefits. The socioecologic environment in which children live can be seen as a series of concentric circles.[69] At the centre is the home, surrounded by its immediate environs, locality, and wider urban or rural area. Each of these circles balances opportunity with exposure and constraint. In the home, potentially harmful exposures include indoor air pollution, tainted water and inadequate sanitation, overcrowding, excessive cold or heat, damp and mould, domestic hazards from accident or violence, electricity, burns, noise, fire, flood, earthquake, environmental toxins, and hazardous location (eg, close to water bodies, dumping grounds, railway tracks, or roads). Children might also be exposed to alcohol use and abuse, second-hand tobacco smoke, and unhealthy diets, with links to food policy and regulatory schemes upon which families have little direct influence.

Good housing is essential. The rush to urbanisation has created a planet of slums. Informal settlements, in which approximately 40% of the world's children currently live, intensify many of the previously mentioned threats through a combination of substandard housing or illegal and inadequate building structures. Residents face overcrowding and high density, unhealthy living conditions and hazardous location, poor access to basic services, poverty and social exclusion, and insecurity of tenure.[70] Although we have too few locally disaggregated data,[71] we require no more evidence that these exposures and constraints have harmful effects on child health. Furthermore, the common division of household labour means that the greatest burden of indoor air pollution from burning of biomass fuels is borne by women and children.[72] Meanwhile, access to clean water and adequate sanitation is rare in such settings, despite being one of the most effective public health interventions a society can provide to improve health and wellbeing.

Harmful exposures related to the environment outside the home include air pollution, vehicular and pedestrian accidents, crime and violence, and urban heat islands (created by heat-retaining land surfaces). Opportunity and constraint centre on shops, schools, and other services, such as health care, transport, exercise, and green space. There is good evidence for associations between exposure to air pollution and intrauterine growth restriction and poor childhood respiratory health.[72–74] In terms of constraint, important concerns for child health include neuropsychological development, the food environment, insufficient active transport and opportunities for exercise, and traffic accidents. One area that merits special attention is road safety because road injury is the leading cause of death for children and young people aged 5–29 years.[75] Interventions to improve road safety are simple and relatively uncontroversial and include speed restrictions, mandating the use of seat belts and helmets, and strong penalties for driving under the influence of drugs and alcohol, but enforcement remains a challenge.

Only a small amount of research on the effects of the surrounding neighbourhood on early child development has been done.[76,77] Neighbourhoods with amenities, such as libraries, schools, and recreation centres, are positively associated with child physical health, social competence, and wellbeing, and negatively with vulnerability to developmental delay.[78] UNICEF frames the idea of a child-friendly city within the UN CRC.[79] Urban planners have been attempting to modify the physical environment to increase exercise through walkability, leisure opportunities, and active transport.[80] Intuitively, and with some evidence, children's physical activity increases with access to safe roads, parks, and recreation areas, and decreases with traffic and crime exposure.[81,82] The idea of playability as a stimulus to exercise is receiving interest.[83] Children have a right to play,[84] and require spaces to do so. Neighbourhoods that are protected from traffic and have green spaces are more conducive to outdoor play and physical activity.[78] Some evidence shows a positive effect of green space on cognitive development and mental health,[85,86] and that green space is associated with improved obesity-related health indicators.[87] Given concerns about non-communicable diseases and obesogenic environments, modifying the food environment and increasing exercise are urgent, but the evidence base for action is small.[88]

Child health intersects inescapably with the planetary health and non-communicable disease agendas in the local community. Street connectivity, appropriate housing density, and walkability are win-win aspirations for health and the environment, but direct links with child health have been difficult to show.[74] People want environments safe from air and toxic pollution, road traffic accidents, crime and violence, places that offer social interaction, walkability and playability, and a range of services and amenities that have benefits for both health and environment. For example, traffic calming, and the existence of playgrounds are associated with both more walking and less pedestrian injury.[89]

For both planetary sustainability and child wellbeing, clean energy remains a huge development challenge. In 2016, around 3 billion people (1·9 billion in developing countries in Asia and 850 million in sub-Saharan Africa) were without clean cooking fuel or technologies, creating harmful indoor air pollution estimated to cause 3·8 million deaths per year.[3,90] The number of people without access to electricity fell from 1·7 billion in 2000 to 1·1 billion in 2016; however, most of the newly accessed electricity was generated with fossil fuels, a key challenge for decarbonised energy systems. Electricity growth in China and India is largely driven by coal-generated power stations; coal remains the main fuel used for electricity production worldwide, at 37% of the total.[91] A shift of investment towards clean energy technologies is happening, with accelerating growth in new low-carbon power generation, but overall global energy-sector carbon emissions remain largely unchanged.[3]

Energy and the industrial sector are linked inextricably with air pollution. Exposure to polluted air prenatally and during early postnatal life is associated with an increased risk of acute respiratory diseases in childhood, with considerable morbidity and mortality.[92,93] Furthermore, air pollution exposure impairs lung growth and reduces lung function;[92] increases the risk of cardiovascular disease,[94] obesity,[95] type 2 diabetes, and metabolic syndrome;[96] slows brain maturation; and impairs growth in cognitive function in schoolchildren.[97,98] Emerging evidence also suggests statistically significant effects of air pollution on intelligence quotient (IQ);[99] one study reports a four-point drop in IQ by the age of 5-years in a sample of children exposed to polluted air in utero.[100] Reducing air pollution can quickly improve children's health: for example, effective reduction of air pollutants in Southern California through legislation resulted in increased lung function growth and reduced respiratory symptoms in children.[101,102] However, regulation is complicated by the fact that air pollution can be a transnational issue (eg, spill-over of pollution between China and South Korea was associated with increased mortality from respiratory and cardiovascular diseases in South Koreans, including children younger than 5 years old).[103] Pollution control would improve child wellbeing, with children living in LMICs having the most to gain.

Summary

We have provided a rationale for placing children at the very centre of the SDGs and reviewed medical, public health, and economic arguments in favour of investing early in children's health and wellbeing, across all sectors. We now turn to the issue of children's entitlements, and how to deliver them, as a way of operationalising a new global movement for children's health and wellbeing.

How to ensure that children receive their entitlements?

Putting children at the centre of the SDG agenda will enhance our drive for sustainable development. Here, we define the actions needed to achieve this agenda by laying out a set of entitlements for children and detail the responsibility of families, communities, and governments, required to deliver them (panel 4).

What entitlements and rights should children expect?

Placing the SDGs in the service of children involves building on a legacy of commitments to human rights, beginning with the Universal Declaration on Human Rights, adopted by the UN General Assembly more than 70 years ago, that outline the inalienable entitlements of all people, at all times and in all places, as a foundation for freedom, justice, and peace in the world. The CRC, which recognises and affirms children's rights specifically, turned 30 years old in November, 2019. In many ways the CRC was a precursor of the SDG framework.[104] The CRC is comprehensive, and not only states children's rights to preventive, promotive, and curative health care, "… but also to a right to grow and develop to their full potential".[105] The CRC further declares that all children (aged 0–18 years) are entitled to survival, protection, development, and participation.

Every UN member state (except for the USA) is party to the CRC, which provides the foundation for the rights of children. As a convention it is legally binding; as a result, it goes beyond the voluntary SDG framework. While individual countries have turned the CRC into law and aim to report once every five years on the fulfilment of the CRC to the UN Committee on the Rights of the Child (Austria, Australia, Belarus, El Salvador, Mozambique, Rwanda, Tonga, Tuvalu, and Sri Lanka reported in 2018, with 17 other countries reporting in 2017),[106] the CRC has yet to be widely used to advocate for children in the context of the SDGs. Violations of children's rights are common across many domains, such as poverty; inadequate nutrition; violence and war; gender bias and discrimination against sexual minorities; poor access to clean water, shelter, education, and health services; and climate degradation and unsustainable use of planetary resources.

The Convention is a legal document that commits governments to fulfil the rights of all children living within their country. We extrapolate that an inclusive set of entitlements for children in the SDG era can be articulated and monitored, expanding the CRC's accountability framework to provide regular reporting of their fulfilment. The general comments to the CRC, considered authoritative interpretations of the rights articulated therein, provide the basis for this package of entitlements. The entitlements are organised across five over-arching rights and presented according to a continuum of children's ages (many of the rights apply to all children aged 0–18 years; figure 3). Because the entitlements are based on rights, granting them is not optional, although countries might use different policies or interventions to deliver them. Of note, one of the key prerequisites for these entitlements to be delivered is birth registration, yet a quarter of children younger than 5 years old worldwide are not registered.[107]

In many documents, including this Commission, children are defined by age group and their absolute or relative dependency on adult care, protection, and advocacy. However, in the sense that we all have (or have had) parents or caretakers, we are all children and exist in a set of relationships with corresponding rights and responsibilities. First, across families through time and generations—from ancestors, grandparents, parents and to future generations; second, within communities across geography and social place—where our families are from, our homelands, and our ways of life; third, in relation to local and national governments—where key services are planned, budgeted for, and coordinated, and bodies are empowered to guarantee rights, and where nations work together on transnational issues; finally, embedded within our environment—from the planet, to sources of food, water, and air, and places where we lay the dead to rest.

These dynamic relationships have parallels in how rights and responsibilities are balanced across society in order to respond to the entitlements of us all as children. We previously discussed our responsibility to protect and preserve our planet for children's present and future wellbeing. We now examine how children, families, communities, and governments, can help to fulfil children's entitlements under the CRC.

Panel 4: Ensuring children receive their entitlements—key messages

- Children's rights and entitlements are comprehensively defined by international treaties, including the Convention on the Rights of the Child, which are widely ratified
- Children are key stakeholders in an interconnected web of rights and responsibilities, which binds humanity together and to our planet in a shared endeavour of mutual care
- Children have a right to claim their entitlements and participate in discussions about how to deliver them
- Families can best provide nurturing care for children when the rights of their mothers and other caregivers are realised
- Communities are powerful forces for positive change in children's lives, especially when society allows for equitable participation
- Governments must do much more in terms of public financing of services, effective delivery, and equitable social protection, adequately financed to meet the Sustainable Development Goals

The pre-eminent role of children and families

Children themselves, as well as their families, must be at the centre of efforts to act collectively to ensure that

by 18 years of age they are optimally healthy, educated, engaged in productive citizenship, and act as stewards of the Earth. Families are the immediate environments in which children are born, grow, play, learn, and contribute.

Involving children's voices in policies and programmes

As children develop, they ideally increase their "substantive freedom… to achieve valuable functionings"[108] in society. Recognition is growing that promoting meaningful participation of children contributes to improved social cohesion, more egalitarian communities, and helps adolescents make a better informed, healthier, and more empowered transition into adulthood.[13] Furthermore the CRC stipulates children's right to be involved in decisions and actions that affect them, to be able to express their views, which are then duly recognised by adults. The UN affirms that only by engaging

Be protected	Be educated	Be healthy	Be treated fairly	Be heard
• Adequate standard of living • Safe, supportive, and nurturing family • Safe leisure and play facilities • Violence free home • Regulated media and protection from inappropriate and offensive material • Safeguarded from abuse and neglect, and alternative, affectionate care provided (if required) • Free from violence and exploitation (physical, mental, and neglect) • Free from harmful and exploitative work, including sexual exploitation • Minimum age of criminal responsibility at 14 years old • Safe and adequate housing • Violence free school and community • No death penalty or life imprisonment without parole • Regulation of online and recreational material and age classification of media, broadcasting, and films • Online safety information regarding cyber-bullying, grooming, trafficking, and sexual abuse and exploitation, and information on where to access help • Regulation of fast foods marketing • Protection, care, and proper treatment, including guardian and legal representation, of unaccompanied and separated children • Unaccompanied and separated migrant or refugee children not to be returned to a country with a substantial risk of harm • Protection from economic and sexual exploitation • State should attempt to preserve the family unit in the case of child protection systems, including in the context of migration • Controlling of firearms • Restricted access to alcohol and drugs and regulation of advertising • Protection from harmful traditional practices and violence • Laws and standards relating to business and labour, employment, health and safety, environment, taxation, and anticorruption • No immigration detention • Legal minimum age of consent, regardless of gender; not specified for sexual and medical treatment consent; to be a minimum of 18 years for marriage, armed forces recruitment, and alcohol and drug use • Protection and standards for children of working age in businesses • Protection from armed forces and gang recruitment	• Free primary education • High-quality and safe primary schools • Specific early childhood education for children with disabilities • Child-centred and child-friendly education • Inclusive education and schools that are physically and culturally accessible • Education about respect for natural environment and sustainable development • Schools that are free from and that challenge discrimination • Education about and challenging racism • Human rights education • Promotion of values of human rights • Life-skills education promoting healthy behaviour, including personal hygiene, stress management, nutrition, and self-care • Community-based education challenging gender roles and stereotypes and harmful practices • Schools with well functioning and safe facilities • Time and space for age-specific and inclusive play and creativity • Time with peers and social activities • Time for rest and leisure • Access to digital media and the internet, including online safety education and legislation and laws to tackle online abuse • High-quality and accessible secondary schools • Vocational guidance and information • Drug, alcohol, and substance use education • Sexual health education • HIV/AIDs education and information • Road safety and driving education	• Parenting education and counselling services • Prenatal and postnatal health care • New born care • HIV/AIDS counselling, testing, and treatment for mothers and babies • Exclusive breastfeeding for children younger than 6 months old, and alongside complementary foods until 2 years, except in cases of HIV-infected mothers where replacement feeding is recommended if feasible • Immunisation, antibiotics, and antiviral drugs • Child-care services, maternity protection and facilities • High standard of health care • High-quality and accessible primary, secondary, and tertiary health care • Early detection of disabilities, intervention, treatment and rehabilitation, and physical aids • Clean drinking water • Good nutrition • Adequate sanitation • Specialist health care for children affected by substance abuse (eg, mothers affected by alcohol or drug substance abuse and risk of early initiation to substance abuse) • Information and advice on personal wellbeing and physical and mental health, both in and out of school, through the media and youth, religious, and community groups • Mental health services, treatment, and rehabilitation • No age limit on confidential counselling and advice without parental consent, regarding the child's safety or wellbeing (distinct from giving medical consent) • Specific health information, guidance, and counselling, including for children with disabilities and gender specific • Sexual and reproductive health information and services, including contraception and safe abortion • Affordable, accessible, voluntary, and confidential HIV/AIDS prevention, care, treatment, and support • HIV/AIDS education and information • Specific HIV/AIDS services and information for vulnerable and discriminated against groups • Human papillomavirus vaccinations for girls • Confidential HIV testing and counselling services, particularly for vulnerable and marginalised groups, including girls and LGBT adolescents • Sexual and reproductive health information and services, including contraception, family planning, and safe abortion services • Right to privacy and confidentiality regarding medical information, advice, and counselling • To give consent for medical treatment, as well as parents or guardians, and, if of sufficient maturity, give sole consent without parental consent (age not specified)	• Access to health care, education, protection, and services without birth registration • Specific measures to ensure birth registration for vulnerable and marginalised groups, including children with disabilities, indigenous children, and children in street situations • Support for parents of children with disabilities • Free from discrimination, including children with disabilities, indigenous children, LGBT children, migrant children, children in the juvenile justice system, and HIV/AIDS affected children • Access to education for girls • Educational and economic opportunities for girls • Education free from discrimination and barriers for marginalised groups • Equal right to education, health care, and standard of living for marginalised children, including unaccompanied and separated children, migrant and refugee children, children in street situations, and children with disabilities • Vulnerabilities taken into account when looking at best interest • Separate juvenile justice system focusing on rehabilitation and restorative justice, with education, medical care, leisure time, and contact with family and community • Specific focus on protection for marginalised or vulnerable groups from economic and sexual exploitation and violence, including HIV/AIDS affected children, children in street situations, children with disabilities, and migrant children • Special measures for groups who are marginalised or hard to reach in order to realise their rights • Specific measures for those with intersecting and multiple vulnerabilities • Conservation, development and promotion of cultural traditions for minority, refugee, and indigenous groups, including names, families, and language • Free from negative stereotypes about adolescence • Free to express sexuality and gender identity • Free to practise religion • Support for adolescents in care, including reviews of their situations and support for education, and help for leaving care in gaining employment, housing, and psychological support • Culturally sensitive and appropriate services for indigenous children, relating to health, education, nutrition, recreational sports, social services, housing, sanitation, and juvenile justice • Support for adolescent mothers, fathers, and carers, including help to stay in education • Treated equally before the law, including vulnerable and discriminated against groups • Children younger than 18 years to be treated in accordance with the rules of juvenile justice • Services and support for adolescents with disabilities, minority and indigenous adolescents • Removal of criminal record at 18 years of age	• Have a name and nationality • Birth registration • Responsive parenting • Preserve identity • Free late birth certificates and civil registration • Feedback and input on education • Sufficient and effective ways to report abuse or violence • Express views freely and be listened to in schools and by families and the community • Know own rights • Express views in any decisions affecting them • Child-friendly, age-sensitive, safe, and voluntary ways to express views in decision making • Access to sensitive advice, advocacy and complaints procedures relating to corporal punishment, disability discrimination, juvenile justice, violation of rights by businesses and migration • To be heard and effectively participate throughout the process of juvenile justice • Involvement in decision making, policies, programmes, and procedures, relating to HIV/AIDS policies, disabilities, health provisions, harmful practices and gender discrimination, indigenous children, children in street situations, immigration and asylum process, education, health, economy, environment, and care • Adolescents express views on matters that concern them and safe and accessible complaints procedures

Figure 3: **Summary of child entitlements as laid out in the General Comments to the Convention on the Rights of the Child**

Panel 5: **Case study: U-Report**

U-Report is a free global platform open to individuals of any age. As of 2019, 28% of U-reporters worldwide are under the age of 20 years and 39% are between 20 and 24 years; 44% of all reporters are female.

U-Report aims to encourage community participation, especially by youth, in a wide range of issues including health, education, water, sanitation and hygiene, youth unemployment, and HIV/AIDS and disease outbreaks through mobile technology and social media. Started through UNICEF funding in 2011 in Uganda, U-Report draws on the opportunity provided by widespread use of mobile technology to enable youth to voice their opinions.

U-Report uses messenger polls and alerts sent via direct message combined with real-time responses that are mapped on a website. Responses can be disaggregated by region, gender, and age group enabling policy makers to have insights into the needs and opinions of specific groups. Cross-country polls have been used to gather data on issues affecting youth across all participating countries, such as school bullying and universal health coverage.

In 2019, 50 mostly low-income and middle-income countries have U-report programmes worldwide, with almost 6 million subscribers. The UNICEF team analyses and interprets the responses to messenger polls and shares the results with national policy makers and on the country U-Report websites; following which action can be taken.

In Uganda, where the initiative was launched, every member of parliament has signed up for U-Report and district health managers have used it to strengthen immunisation campaigns and use the programme as an early warning system for health system challenges, such as drug shortages. In Indonesia, through U-Report, young girls were able to share their opinions about child marriage and a delegation of selected young U-reporters convened a 1-day meeting at the Ministry of Women's Empowerment and Child Protection, which resulted in nine recommendations on child marriage prevention. A similar process was undertaken in El Salvador where U-Report was used to bring the opinions of children on child marriage to the legislative assembly where a prohibition of child marriage was called for. In Tunisia, U-Report has been used to gather views from youth on rights to education. In Liberia, which has the fourth highest participation rate of U-reporters globally, the government has used the platform to raise awareness around prevention of transactional sex among school girls (so-called sex for grades). In conflict-affected areas of the Ukraine, U-Report launched the U-ambassadors peer-to-peer initiative, in which U-Report was used to monitor water, sanitation, and hygiene; education and humanitarian programmes; and to provide online counselling on safe migration.

The U-Report initiative could be harnessed as a mechanism for community monitoring of certain Sustainable Development Goal indicators and the data from polls could be an important contributor to country monitoring processes.

For more on **U-Report** see https://ureport.in

and working with children and youth will the international community be able to achieve peace, security, justice, climate resilience, and sustainable development for all. Recently, youth activists in the school strike for climate movement have made forceful arguments to lower the voting age to 16 years, to protect children's right to have a say in decisions that affect their future on the planet.[109]

Engagement with children can be consultative, collaborative, or adolescent led, depending on the specific context and purpose. In policy formulation, if the aim is to reach out to as many young people as possible, a consultative approach might be best, potentially using digital tools such as U-Report, a free global social media platform used in more than 50 countries (panel 5). UNICEF made use of U-Report to gather inputs from more than 385 000 young people before the Global Conference on Primary Health Care, held in Astana, Kazakhstan, Oct 25–26, 2018, to feed into a 1-day preparatory workshop attended by more than 100 young participants. However, consultative processes do not always result in children's voices being heard: in Uganda, local authorities only engaged a small number of children despite the programme being a national child wellbeing scheme, resulting in a deprioritisation of their needs.[110] Among the challenges for effective engagement are adultism, the notion that adults always know better than children; a reluctance of overburdened local authorities to take on additional duties of listening to children; tokenistic child participation; exclusion of the most marginalised children; and weak adult facilitators.[111,112]

Collaborative and adolescent-led approaches have had powerful positive effects. Adolescent-led initiatives, such as Greta Thunberg's school strikes for climate movement mobilised an estimated 1·5 million students in more than 2000 cities worldwide in March, 2019, showing that traditional models of incorporating children's voices into environmental and economic policy have not been successful, and that social media platforms present catalytic opportunities to harness young people's engagement. In 2019, there are 1·2 billion adolescents in the world (defined by WHO as persons aged 10–19 years), of whom nearly 90% live in LMICs.[113] Adolescents are better connected than ever before, attend school more than in previous generations, and are well placed to drive progress on sustainability.

Adolescents might require adults to provide the scaffolding for engagement, including access to safe

spaces and a credible audience that they can influence.[114] Certainly, investments are required to address social norms, implement laws, and adopt policies that enable adolescent rights and create sustainable opportunities for participation. When these are in place, adolescent-led initiatives can drive progress on local concerns, such as the movement of girls in Argentina to claim their sexual and reproductive rights (including the right to abortion); adolescent-led protests concerning road traffic safety in Bangladesh; the student movement in Chile that led to a more equitable education system; and the social movement for better gun control in the USA following the Parkland, FL, shootings. Equally, grassroots youth movements can be encouraged to take the initiative and engage politically in the context of their rights and responsibilities as citizens.

Worldwide, documentation of children's own experiences of their day-to-day lives through narratives has been largely absent from SDG monitoring processes. Focused, smaller-scale research can provide valuable insights into the status of children's wellbeing in diverse contexts, particularly for younger children. Since 2009, the Children's Worlds Study has obtained comparative multinational data on children's understanding of wellbeing. The surveys collected representative data (from up to 90 000 children from 24 countries) on children's lives and daily activities, their time use, and their own perceptions and evaluations of their wellbeing.[117] Results from the second survey wave found that children felt most satisfied with their family life and friends, less satisfied with their local environment and life as a student, with the lowest amounts of satisfaction relating to their own future, especially in LMICs, such as Ethiopia, Nepal, and South Africa.

Innovative methods to understand children's perceptions of their environments include crowd-sourcing via social media, photovoice, and community mapping. They can garner children's views on the policies that affect them and integrate their views into explicit policy and monitoring frameworks. For example, a study from South Africa found that children from poorer communities were more constricted in their mobility and unable to access safe natural spaces compared with children from wealthier communities. The authors recommended that town planning processes include children as key contributors using participatory frameworks, such as UNESCO's Growing up in Cities model.[116] Another promising model of a participatory system for child rights accountability internationally is Global Child Rights Dialogue, an international consultation project that aims to seek children's input on the attribution of their rights as articulated under the CRC, in 40 countries around the world.[117]

Families' rights and responsibilities in nurturing their children

The realisation of children's entitlements depends on families. Young children require a stable environment created by parents and other caregivers to ensure good health and nutrition, protection from threats, opportunities for early learning, and love and emotional support.

Beginning with the maternal-infant dyad, the child's biological and developmental trajectory is ideally set in the context of nurturing relationships. The rights, freedoms, and entitlements of children can only be advanced when the entitlements of their mothers and care givers are realised. Moves to promote gender equality will improve nurturing care in the early years of life. A study covering 116 LMICs from 1970 to 2012 explored the relationship between two readily available proxies of women's control over their lives: the number of girls enrolled in secondary education and the ratio of female to male life expectancy.[118] Improvement in these two indicators was associated with 32% of the decline in stunting, a common proxy for child development, over the 42 year period for these countries. Within this broader understanding of the place of families in raising children, we consider the diversity of families and their changing social contexts, before considering key power relations, barriers, and enablers that families face in raising children in the SDG era.

Considerable diversity exists in family composition. A child could live with a single parent, two married or cohabiting parents (of any sex or gender), a grandparent, foster family, adoptive parent, or another relative or guardian. A child might live with siblings in a nuclear, joint, polygamous, extended, or blended household whose members are at home or elsewhere. Some children are orphaned and do not live with their biological parents. In 2018, worldwide, there were 140 million orphans (defined as any person under the age of 18 years who has lost one or both of their parents due to death from any cause).[119] Double orphans have lost both parents and make up 15·1 million of those children. Orphans often lack the protective buffer that familial structures ideally provide. Other children might live with disabled parents or caregivers, or be disabled themselves, and do not have access to expert and peer support for families and caregivers, to which they are entitled. According to data from the Social Trends Institute's World Family Map, children in sub-Saharan Africa, the Americas, and western Europe are less likely to live with both parents than children in Asia, the Middle East, Oceania, and eastern Europe (figure 4).[120] With the exception of the Middle East, the proportion of births occurring outside marriage varies widely. Children around the world not infrequently become parents themselves, with 16 million girls aged 15–19 years and 2·5 million girls younger than 16 years old giving birth each year in LMICs.[121]

In addition to regional differences, family structures are changing, linked as they are with demographic trends, and influenced by social, political, and environmental variation. Worldwide, life expectancy and the age at which women have their first child are rising, and fertility rates are falling. Economic migration and urbanisation disrupt

traditional family structures, whether these are nuclear families in some contexts or extended families in other settings. Economic opportunities often take parents away from their children, even when their decision to leave is motivated by a desire to advance their children's welfare and opportunities, complicating understandings of family wellbeing. As industrialisation and urbanisation accelerate in many parts of the world, hundreds of millions of children are left behind by their parents seeking work, and they face increased risk of mental health problems and poor nutrition, with no evidence of any health benefit.[122]

In HICs, the already substantial proportion of single-parent families is expected to continue to rise, to up to 27-40% of households in the USA, Australia, Austria, Japan, and New Zealand by 2025–30.[123] Women who are divorced or separated and single-parent families are more likely to live in poverty, which has implications for the social determinants of health. Furthermore, in sub-Saharan Africa and central and South America families are more likely to have a head of household without secondary education compared with other parts of the world, and in sub-Saharan Africa the head of household is less likely to be employed (figure 4).

Meeting basic needs remains a challenge for many families living in deleterious social, political, and economic conditions. Many families are unable to ensure their children breathe clean air or have sufficient good-quality food and water, or live in a sanitary environment. Despite these odds, many are still able to meet their children's needs for love, belonging, respect, confidence, and self-esteem. Recognising such resilience and the ability of families to support and realise their children's rights and entitlements must also be matched by government policies to address challenges posed by sociopolitical, economic, and environmental threats. Thus policy change remains a powerful way of shaping a progressive society that supports healthy growth, development, and equality. For example, improving girls' completion of quality schooling, safe transportation options for girls and women, productive labour force participation by women, and paternity leave policies for men creates enabling environments for a more gender-equitable society.[124]

Families can also be the locus of violence in a child's life, in part because of structural issues, such as discrimination and poverty, with consequences across the lifespan of the child and for society. This is particularly the case for girls and young women, as well as children who have non-conforming gender identities and sexual orientations. More than 1 billion children—half of all children—are exposed to violence every year,[125] including about six in ten children worldwide who are subjected to violent discipline by their caregivers on a regular basis.[126] The enduring effect of violence against children is well known, including increases in the risk of injury, mental health problems, sexually transmitted infections and reproductive health problems, and non-communicable diseases—including cardiovascular disease, cancer, chronic lung disease, and diabetes.[127]

Violence against children also begets further violence: high proportions of incarcerated people experienced violence as victims before becoming perpetrators, representing costs to society as well as to children themselves. A cross-sectional study of more than 36 000 US men and women suggested that nearly half of antisocial behaviours in adults could be accounted for by harsh physical punishment or maltreatment when they were children.[128] Society has a responsibility to protect children from violence within families, but worldwide government intervention into intimate family situations for child maltreatment falls heaviest on marginalised populations, including indigenous families, and racial and sexual minorities. Further, domestic violence is more concentrated in communities that experience poverty and street violence and have poor access to services, yet the harm done to children by family separation, particularly for indigenous and minority populations, must also be understood as a type of structural violence. But the converse is also true: a poorly functioning social welfare and justice system regularly fails children who need to be removed from parents who abuse them, a fact rarely explicitly acknowledged by policy makers.

It takes a village: the community's role

The empirical evidence on the role of community engagement in improving health outcomes for children and families is compelling, although the concept is not yet fully theorised.[129,130] Definitions of community are based on people's sense of belonging together, and the idea of communitas—inspired fellowship—which refers to shared experience and togetherness strengthened by rites of passage. However, all communities have hurdles to belonging, and the management of rights and responsibilities is an ongoing project. Communities can include and exclude, or have different forms of political meaning internally and externally.[131] Rather than thinking of communities as empty spaces in which policy and programmes paternalistically mould families into modern behaviour, nominally consult traditional authorities, or enable time-bound, project-defined community activities, an expanded vision of communities recognises their own active role and layered power relations that influence child health and wellbeing.

Community stakeholders span public and private services, formal and informal associations, traditional and modern worlds and, at times, syncretically cross these boundaries. Community groups can improve child health and wellbeing by sharing information, supporting each other, and building capacity among local stakeholders; advocating for external resources from district authorities; and building the confidence of people in poverty to ask why their entitlements are not being met. A large amount of literature supports the value of self-help groups and participatory learning and action groups in

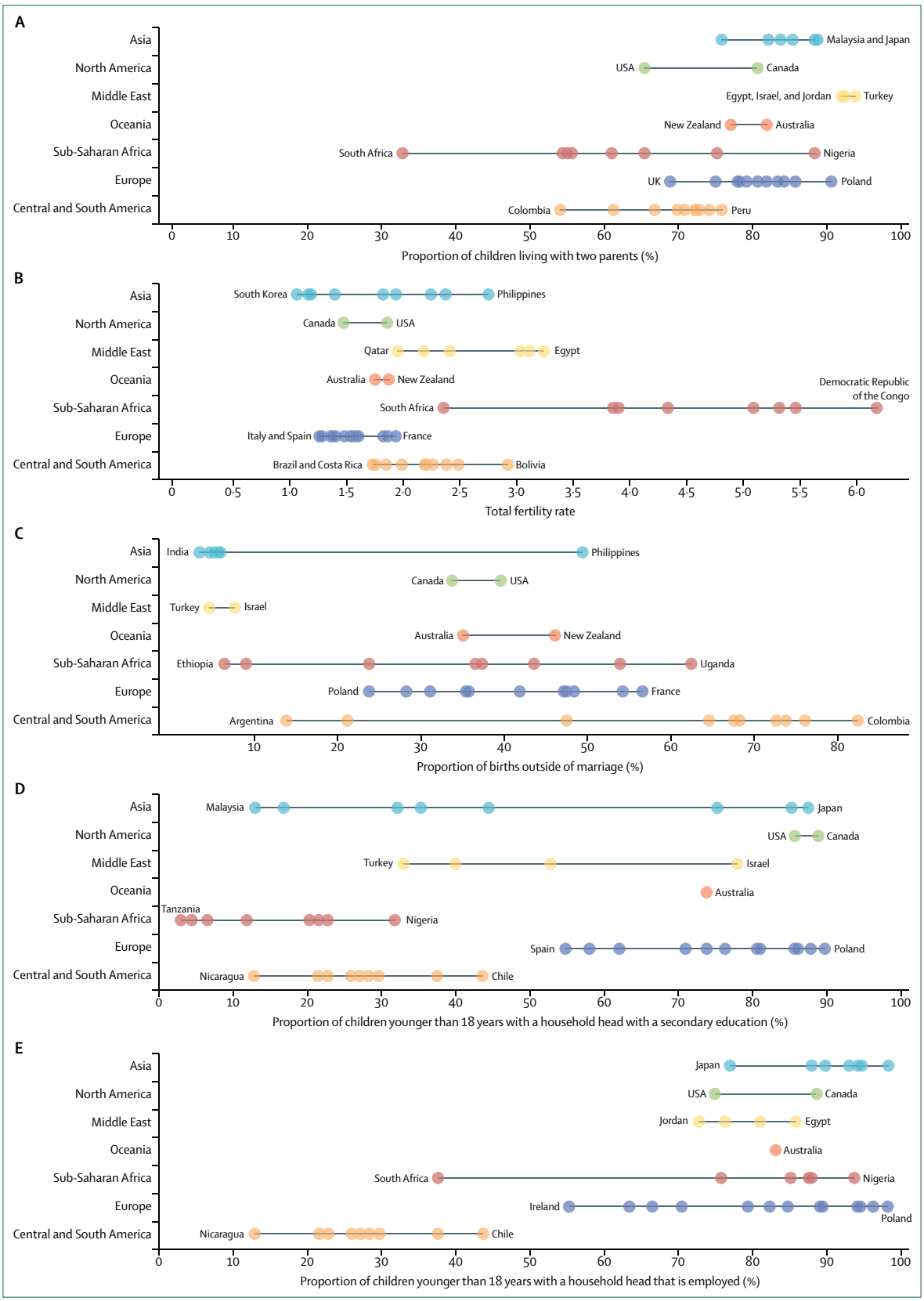


Figure 4: **Family characteristics in a sample of 60 high, middle, and low-income countries: proportion of children living in a household with two parents (A); total fertility rate (B); proportion of births outside marriage (C); proportion of children living with a household head who has a secondary education (D); proportion of children living with a household head who is employed (E)**

improving maternal, newborn, and child health. Analyses of national data in India showed respondents from villages with a self-help group had 19% higher odds of mothers delivering in an institution, 8% higher odds of an increase in colostrum feeding, and 19% higher odds of using family planning products and services.[132] Large-scale cluster trials of community participatory learning and action women's groups in Nepal, Bangladesh, India, and Malawi reported a 30% reduction in newborn mortality, with substantial changes in preventive behaviours among attendants at birth.[133] WHO formally recommended the participatory learning and action approach, particularly for rural populations where newborn mortality is high.[134] Subsequent studies of the participatory learning and action approach using some of the 1 million accredited social health activists in India showed a 31% reduction in newborn mortality, as effective as the proof-of-principle studies.[135] These effects in eastern India were replicable and sustained.

Effects of community-level interventions on child nutritional status, and on determinants thereof (such as water, sanitation, and hygiene), have been more difficult to achieve. A Cochrane review to evaluate the effect of interventions to improve water quality and supply sufficient to maintain hygiene practices, provide adequate sanitation, and promote handwashing with soap, on the nutritional status of children, concluded that very few studies provided information on intervention adherence, attrition, and costs.[136] In 2014, a trial of India's total sanitation campaign (which aims to change social norms and behaviours, with technical support and financial subsidies) showed only modest changes in the uptake of household latrines and in reducing the amount of open-air defecation.[137] A review of the literature reported that water, sanitation, and hygiene campaigns reporting an effect on child diarrhoea and linear growth achieved high adherence via frequent household visits.[138] Nonetheless as improved water and sanitation can improve children's health and wellbeing through other mechanisms, such as reducing time obtaining and transporting water and improving girls' school attendance after they begin menstruating, it should be delivered as a government-funded intervention, with the collaboration of communities.

Community engagement can be more challenging in informal, urban settlements than in more stable, rural communities. Services and resources are managed by place; however, more agile systems are required to maintain responsiveness to changing needs given the fluid nature of urban migration and unregulated settlement. Informality poses specific challenges, including the challenge of access to health resources in urban areas.[139] Yet, a large study in the slums of Mumbai, India, suggests that solutions exist: local resource centres delivering integrated activities to improve women's and children's health in informal urban settlements increased met need for family planning (by 31% in intervention clusters compared with control clusters) and child immunisation rates.[140]

Community health workers are widely seen as a practical path to reach child health goals, particularly in rural and low-income settings. A review of the effectiveness of unpaid, non-professional volunteers and paid, professional health workers in malaria prevention, health education, breastfeeding promotion, essential newborn care, and psychosocial support showed benefits of varying degree in all categories.[141] Children's early development can also benefit from community health workers. In Pakistan, children who received responsive stimulation in a trial of female health worker home visits had statistically and clinically significantly higher development scores on the cognitive, language, and motor scales than those who did not.[142] In California, USA, a randomised clinical trial of the provision of in-person help to navigate relevant community services statistically and clinically significantly decreased reports of social needs by families and improved children's overall health status compared with controls.[143]

However, evidence suggests a high attenuation of these positive effects when governments take proof-of-principle community health worker studies and implement them on a larger scale, and more research is needed on performance and quality of care provided.[144] Two systematic reviews considered interventions on how to improve the performance of community health workers.[145,146] Implementation factors, such as recruitment, supportive supervision, incentives, community embeddedness (whereby community members have a sense of ownership of the programme and positive relationships with the community health workers), continuous education, and adequate logistical support and supplies are crucial for success. For example, in South Africa, a trial of improved training, continuous quality improvement, and mentoring of community health workers, increased the number of mothers breastfeeding their children, the number and quality of visits made to mothers, and the knowledge of mothers.[147] But too often governments and practitioners do not assess the relevance and feasibility of these strategies before implementation of community health worker programmes. Too little attention is paid to health system decentralisation, social accountability, and governance. Simply training more and more community health workers, without adequate support, is unlikely to bring benefit.

Power relations are a core part of how communities are constituted and reconstituted over time, including how social boundaries and norms are shaped and enforced. Unequal or oppressive power relations exist not only between marginalised communities and overarching structures (such as governments), but also within communities. For example, sexual-minority youth are at two to three times higher risk of suicide compared with their peers, a fact linked to non-accepting social environments and poor emotional and social support.[148] However, some evidence suggests that focused interventions can lead to positive outcomes. Community dialogues around issues,

such as caste discrimination and female circumcision, require delicate negotiations around social identity and direct challenges to illegitimate uses of power, but have been shown to facilitate changes to social norms when done sensitively.[149]

Some observers have expressed scepticism that participation leads to empowerment or to lasting and meaningful social change. They see poor engagement as a result of underlying power dynamics, and an undue emphasis on voluntarism as a failure to tackle the difficult politics of disempowering elites through specific pro-equality approaches.[150] Whereas, others believe that participation can lead to truly transformative outcomes in development, provided the approach taken is political, rather than technocratic.[151] Social movements can broker political alliances to transform the lives of many, examples of which include the anti-dam movement in India; the shift in control from economic elites to political parties in Kerala, India; participatory budgeting in Brazil; and the control of forests by local users in Nepal.[152] Larger social movements have a role to play in demanding the rights that communities need to care for children and provide for families.

Government as a project of shared responsibility to children

Safeguarding the health and wellbeing of children, like the health of our planet and environment, requires concerted public action. Governments are the natural locus of our shared responsibility for these matters, as such they have a central role in financing services for children, ensuring the effective delivery of services, and providing adequate social protection for families. Specific governance arrangements at national and subnational levels are further developed later in the Commission, wherein we explore issues of multisectoral collaboration and links between different local, regional, and national governments.

In countries of every income, governments have a central role in the public financing of services for children. Only public financing (tax financing or social insurance) can ensure equitable access and provide financial protection against the cost of using services. Experiences from HICs show that different models of service provision for children and families can work, from predominantly public to mostly private, as long as public financing has a central role. In these countries, delivering children's entitlements—security, health care, immunisation, water and sanitation, education, and social protection—is a responsibility primarily for the public sector, which can alternatively contract out to private or non-governmental partners under government supervision.

In LMICs concerns exist that some governments face enormous challenges in delivering even the most basic services, and some evidence suggests that non-state actors can provide these services more effectively in some cases. For example, trials in Kenya and Liberia have shown in head-to-head comparisons that the same programmes are less effective when put in the hands of government compared with private providers.[153,154] A meta-analysis of trials evaluating a wide range of health, education and social assistance interventions finds that those implemented by government are on average less effective than non-state providers.[155] These studies typically focus on not-for-profit organisations and less evidence exists for the value of contracting for-profit providers, whose involvement remains controversial.[156]

However, in many LICs, government must retain the primary role for service provision for two reasons: first, only the government in these settings has the capacity and mandate to reach a large proportion of the population; and second, the ability of the national government is likely to be too weak to manage and monitor numerous complex contracts with private providers. These factors gives rise to the question: how can countries improve the effectiveness of their government bureaucracy? This question is government-wide, not about any one sector; therefore, it has resonance for delivering services to improve child health and wellbeing, which span multiple sectors.

Countries can improve the effectiveness of the government bureaucracy to provide the over-arching services children are entitled to by focusing on better management practices, particularly for middle-tier bureaucrats. Front-line public sector workers or so-called street level bureaucrats[157] have been the focus of many studies, which have tested ideas focusing on the selection and recruitment of public officials,[158] pay for performance,[159] prosocial motivation,[160] and career concerns.[161] However, the role of middle tier bureaucrats—those who sit between senior civil servants and front-line workers, responsible for transforming political preferences into policy and implementation—is often under-appreciated. In-depth studies in Nigeria[162] and Ghana[163] show that management practices are critical determinants of bureaucratic performance. Practices related to autonomy are positively associated with better public service delivery, but practices related to incentives and monitoring of bureaucrats are negatively associated with performance, suggesting that countries with low levels of state capability might benefit from providing public servants with more autonomy. Further work in this area emphasises the important role of management at the district level,[164,165] which is a key governmental tier for delivering child health services.[164]

In all cases, governments play an irreplaceable role in reaching the poorest and protecting the most vulnerable members of the population, and social protection for children and families is a key responsibility. According to the Social Protection Floor Initiative,[166] every person is entitled over their lifespan to basic health care and basic income security as part of a comprehensive social protection package. However, more than one in three people, and more than half in rural areas, worldwide do

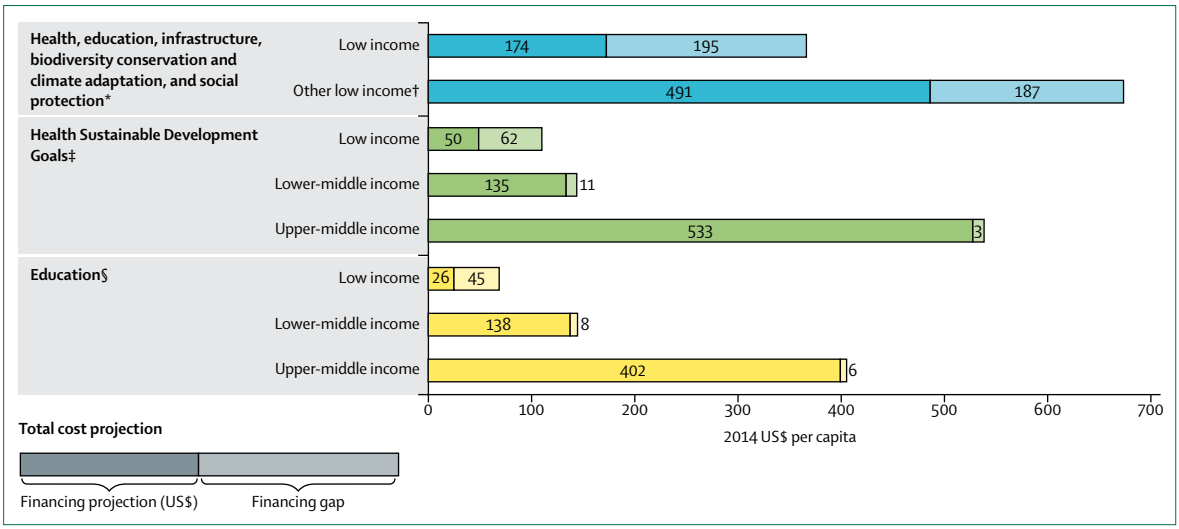


Figure 5: **Estimated costs & financing gaps for the Sustainable Development Goals**
*59 countries, 2018–30, US$2014 per capita. †Other low-income countries have a per capita income of between $996 and $2700. ‡Coverage expanded for close to 200 interventions recommended by WHO to advance the health Sustainable Development Goals, with associated costs for health system strengthening (67 countries, 2016–30, $2014 per capita); not all countries had a funding gap, if the subset of lower-middle income and upper-middle income countries with a financing gap were examined the gap would be $51 per capita for the lower-middle income countries and $66 for the upper-middle income countries. §Preprimary, primary, and secondary education (2015–30, $2014 per capita). For the methodology and sources see the appendix pp 3–4.

not have health protection by legislation, affiliation, or health insurance—although this is affordable in all countries.[167,168] In western and central Europe health care protection coverage is almost universal; whereas, in Asia and the Pacific 40% of the population and 70% of the population in Africa are without health-care protection, despite several studies showing protection affordability.[168,169] For families providing support to a disabled child the costs of health care might be prohibitive and place a huge burden on them. Many countries need to take further steps to develop strategies to harness existing resources, with analysis of the relationship between type of risk and health care protection financing.

Social protection measures (including social health insurance and tax financed health care), like all public expenditures, can be more or less equitable. According to the latest evidence from the World Bank ASPIRE database on the distribution of social protection spending, the richest fifth of the population takes up about three to four times more social insurance resources than the poorest fifth in the average country. Health insurance and social protection are important instruments to ensure universality and equitable access to health-care services by children and their families. The difference between urban and rural health-care coverage attests to the difficulties in relying on the community or other small scale ways of pooling resources and sharing risk. A universal approach, primarily funded through general (progressive) taxation (and with development assistance in the poorest countries), is the best option to finance health-care coverage for the entire population, in particular those who cannot contribute, such as informal workers or women excluded from the productive sectors.

Financing governments' efforts for children and the SDGs

To achieve the SDGs and deliver the entitlements previously outlined, many countries will need to invest in the scale-up of high-quality services across sectors. Several studies have investigated the cost of this scale-up through so-called SDG price tags and compared these costs with projections of financing likely to be available under different scenarios. Such analyses are not child specific and are inherently uncertain, but they do give a sense of the order of magnitude (figure 5). In the health sector, the cost of scaling up priority interventions and strengthening the health system to meet the SDGs by 2030 is estimated to be on average $112 per person in LICs and $146 per person in lower-middle income countries.[170] Projections suggest that some countries will not be able to finance these costs, generating a financing gap of $62 per person in LICs and $11 per person in lower-middle income countries (appendix pp 3–4). Equivalent figures are available for education.[60] In 2018, an analysis of all the SDGs that combine sector specific costs reported a substantial financing gap of $195 per person (figure reported according to the value of US$ in 2014 for comparison across studies).[171] These global estimates are preliminary, and more precise estimates will require country specific analyses based on local data.

Mobilising more public financing from domestic resources will be key to providing predictable and sustainable funding to achieve the SDGs. As trends in health and education over the past few years show, countries rely increasingly on government spending from domestic resources and less on development assistance.[60,172] To mobilise more domestic spending, countries will

***Panel 6*: Getting governance right for children—key messages**

- National governments are the lynchpin of efforts to deliver children's entitlements
- A powerful new framing of children at the centre of the Sustainable Development Goals can help build national political priority and raise domestic financing
- Deliberate design choices are required to ensure different sectors act jointly for children
- Local governments link national governments to families and communities, but require support, finance, and devolved power
- Fragmented global governance could be ameliorated by a powerful new framing around child rights and the Sustainable Development Goals

need to maintain economic growth, improve their taxation capacity, and prioritise the SDGs in national and subnational budgets. If countries increase taxes it should be done in a progressive manner. Countries should explore the wide range of options for domestic financing (discussed in further detail later). Considerable scope also exists to improve efficiency (eg, 20–40% of worldwide health expenditure is estimated to be wasted) by reducing waste, tackling corruption, and allocating government spending towards effective interventions both within and between sectors.[173]

Development assistance will continue to be a vital source of funding in the poorest countries. If bilateral donors were to increase spending to the 0·7 percent of GDP benchmark (adopted by the UN General Assembly in 1970 and repeatedly re-endorsed), this would increase international aid substantially. There is great potential to redirect and target existing aid to SDG-related activities in LICs, and away from middle-income countries (MICs), which currently receive a sizeable amount of aid in absolute terms (often earmarked for specific diseases or programmes). Beyond traditional channels, a range of other financing ideas have been proposed.[171] They include improving tax administration by addressing tax evasion strategies, such as profit-shifting by large multinational companies, and implementing a range of new taxes, such as a global carbon tax with the proceeds directed to the SDGs, a financial transaction tax, offshore accounts tax, high net-worth individual tax, and a tech tax on the natural monopolies emerging in the tech industry. Blended financing instruments, such as the Global Financing Facility, The Vaccine Alliance, and the Global Fund also hold promise in using development financing to leverage additional domestic and commercial resources towards the SDGs.

Summary

Here, we have laid out a set of entitlements for children. We examined how children themselves can participate in reclaiming their rights, and the responsibilities of families, communities and governments in ensuring them. Next, we take a detailed look at how multisectoral governance arrangements can be reshaped to deliver children's entitlements now and in the future.

Getting governance right for children

The task of achieving the SDGs should galvanise governments to deliver the rights and entitlements of children and young people, but child advocates and governments must generate the political priority and build fiscal and administrative capacities to do so. In the SDG era three leadership and governance challenges stand out: first, how to move interest in child health beyond the health sector to develop holistic, integrated national policies for children, with augmented governmental capacity to carry them out; second, how to empower subnational and local governments to take multisectoral action; and third, how to reform and integrate the global governance architecture and develop new global agreements pertaining to children to support such multisectoral action (panel 6).

National governance: how to make children a priority, mobilise funds, and organise action

National governments are the lynchpin of efforts to deliver child entitlements: realising the rights of children to health and wellbeing depends on the leadership and commitment of governments, aligned institutional incentives and accountability across sectors, increased financing, and robust legislation.

Building political priority and mobilising domestic resources

For national governments, child wellbeing is rarely an explicit concern for top political leaders (eg, heads of state and prime ministers), and usually is handled by specific government departments (eg, social welfare, health, education, or youth) that might not possess the political leverage required to work across sectors to achieve their aims. A handful of countries have developed over-arching policies backed by national programmes dedicated to child wellbeing, including Ireland, New Zealand, Uganda, and the UK, but policies in most countries are not cohesive and do not have sufficient political force, including those with national Children's Commissioners. Many programmes are under resourced. Moreover, attention given to various dimensions of child wellbeing is patchy, with some areas (such as child survival) receiving substantial resources and others (eg, protection against environmental pollution and violence) considerably less.[174]

Stakeholders must be deliberate about building political priority and mobilising domestic resources for children. Policy reform explicitly decides who receives valued goods in society, but power dynamics are underappreciated in policy processes of health and other social sectors.[175] Emerging literature on how to build nationwide political prioritisation for health issues provides some lessons. Specific policies can be advanced directly, when political authorities focus attention on issues, harness financial resources, control regulatory regimes and pressure policy actors, or indirectly, when they create institutional incentives and set up trade-offs with other priorities.[176–179] Case studies of successful advocacy efforts

suggest that strategies for positive change, although context-specific, pay heed to leaders' need to maintain political legitimacy (in whatever form),[177] as well as the formation of healthy coalitions that can support and propel policy ideas. Advocates for children have the advantage of possessing a winning argument from multiple standpoints: affective, ethical, economic, and financial. Advocacy and coalition-building efforts for children can benefit from the built-in infrastructure of countries' efforts towards the SDGs, newly reconceptualised around the figure of the child, as previously argued in this Commission.

Political prioritisation is a prerequisite of and an accompaniment to mobilising domestic resources in all countries—for all sectors that contribute to child health and wellbeing. LMICs fund most of their social sectors through domestic resources, with a few exceptions, and this reliance on domestic resources will only increase as official development aid continues to recede in importance for most countries' economies. Development assistance now accounts for less than 1% of all health spending, and projections suggest it will reduce further,[180,181] although for a handful of countries it remains an important, albeit volatile, source of financing (in many countries it still remains important for funding of activities for marginalised populations).

Given these trends, most governments will require even greater domestic financing to meet the investment needs of children.[182] As noted by the WHO Commission on the Social Determinants of Health[183] a decade ago, rich countries essentially choose their amount of child poverty through the redistribution policies they enact. In many emerging economies there is fiscal space to boost spending on children, across all sectors. Reprioritising spending towards the needs of children and improving efficiencies in the use of funds is possible in all countries, and doing so opens the opportunity to improve equity, as governments have the ability to pool resources and ensure financial protection for households. Enormous variation exists across countries regarding the extent to which governments prioritise health, education, and other social sectors within their budgets. Historical data can be useful in providing a benchmark for what might be feasible. For example, if the government of India were to spend 5% of GDP on health, matching the percentage spent by many LMICs, this would increase domestic government health spending by four times.[184]

In addition to reallocating existing funds, countries can also seek to increase the total amount of funds available. Governments can increase tax revenue through smart policies and administrative reform, to raise funds for children in the general budget (figure 6).[185,186] So-called health taxes, such as those on sugar, tobacco, and alcohol, are not only important for reducing consumption of unhealthy substances, but they can help generate revenue for health. However, mobilising a fair tax system

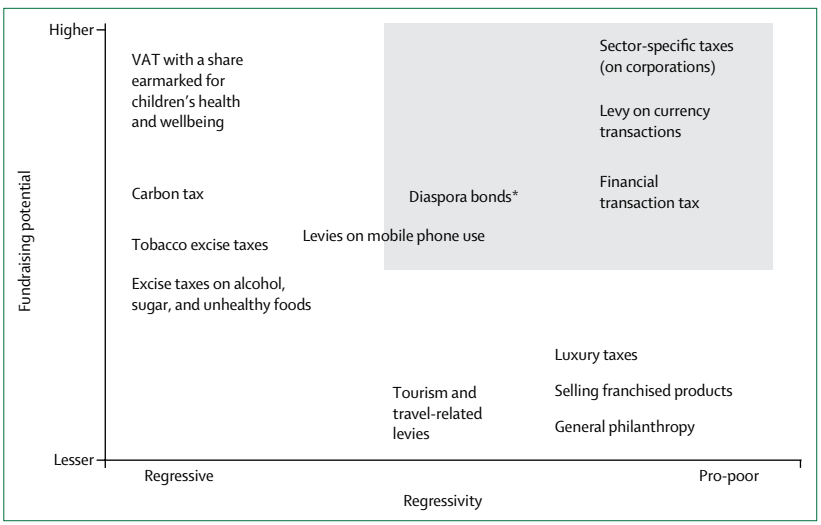


Figure 6: **Domestic financing initiatives available to policy makers**
VAT=valued added tax. *Diaspora bonds are financial instruments issued by countries targeting expatriates living in wealthy countries; diaspora members purchase bonds issued by the government despite lower interest rates and returns, typically for patriotic reasons. Such a system has been successfully implemented in Israel.

is much more important: one which uses all modalities, especially genuinely progressive income taxes, with a shift from income towards carbon taxes, and broad-based consumption taxes, which are regressive and need explicit balancing of their potential negative effects on income and wealth equity. Revenues should be shared across sectors contributing to improving child health and wellbeing, and the share of the budget devoted to children should be monitored by the national government and compared internationally.

The extent to which a country can tap into each of these channels will vary on a case-by-case basis; however, what is common across countries is the central role that the ministry of finance will play if domestic resources are to be mobilised for the SDGs, echoing the need for the prioritisation of child health and wellbeing by senior government members. Those advocating with finance ministers for more investment in children need to forcefully make the case that such spending is not only good for their wellbeing, but also for productivity and the economy. Advocates must engage with the national budgeting process and communicate using language that is understood by finance ministers.

Many economists, including Nobel prize winners Joseph Stiglitz and Paul Krugman, have described the harm done by neoliberal austerity policies. Clear evidence shows that austerity cuts welfare benefits, increases inequality, and harms the poorest families the most. The proponents of austerity say it is necessary to cut national debt. Yet these policies often actually increase the national debt burden—in the UK the national debt increased by £860 billion from 75% to 85% of GDP between 2010 and 2018. So, in arguing for investment for children, advocates should contest the arguments put

Panel 7: Case study of multisectoral partnerships: Chile Crece Contigo

Chile Crece Contigo, or Chile Grows With You, is a programme to help all children reach their full potential by providing coordinated services across public sectors, from the prenatal period to 4 years of age. The programme was introduced by then President Michelle Bachelet, a paediatrician by training, adopted by law in 2009, and implemented nationwide, financed by a permanent line in the national budget.

According to a case study by Milman and colleagues,[198] Chile Crece Contigo was found to be cost-effective and associated with a decrease in the proportion of children younger than 5 years old with a developmental delay, from 14% to 10% over the 10 years of its implementation. Nearly three-quarters of beneficiaries described the programme as being central to their experience of pregnancy and parenting, suggesting high satisfaction with its services.

The success of Chile Crece Contigo is predicated on a sophisticated design for multisectoral collaboration. First, the programme's introduction, in addition to being backed by senior political leadership, was characterised by deliberate consensus-building by a broad swathe of technical and political stakeholders at national and regional levels. Such early consultation led to buy-in and investment by all sectors. The programme is housed in the Ministry of Social Development, selected for its longer experience of coordination between sectors at national, regional, and communal levels, compared with the ministries of health and education, which are nonetheless highly involved in delivering services. Implementation of the programme builds on existing systems within all three ministries and pre-existing municipal networks for community-driven programming. Financing is centralised through the Ministry of Social Development, with transfer agreements for funds specifying technical standards for the government to monitor and manage quality of services.

Feedback loops for monitoring and evaluation, including periodic reviews, have identified some areas for systems strengthening, such as around fund transfers to institutions and integration with other government data systems. Ideally, these feedback loops will allow continued improvement in the Chile Crece Contigo programme and provide a basis for multisectoral collaboration that is broadly applicable to child health and wellbeing programmes in other countries.

forward for austerity policies being necessary for national debt reduction.

Finally, so-called child-friendly budgeting has been used in some countries to quantify total public spending on children and adolescents, including both direct expenses (such as for vaccination and primary education) and indirect expenses (including food support or cash transfers to families). In a review of 14 country experiences, ministries of finance and planning usually oversaw the process and involved stakeholders from diverse sectors.[187] In Mexico and Peru, measurement exercises were conducted during the preparation phase of the budget cycle, allowing for planned expenditures on children to theoretically influence budget decision making. Child-related expenditures did rise, although no direct evidence suggests that child-friendly budgeting processes were the cause of this increase. However, in all surveyed countries, the findings of measurement processes were publicly released, providing improved transparency of child-focused spending. Further research is required to determine whether child-friendly budgeting can be an effective tool to improve domestic resource mobilisation for child health and wellbeing.

Take deliberate action to coordinate and share responsibility for children across sectors

As previously discussed, all sectors have a role to play in promoting children's health and wellbeing, and the evidence is clear on the need for multisectoral action for children.[188] However, ministries responsible for different aspects of child wellbeing rarely coordinate well.[189,190] Several factors perpetuate this problem. One is national financing arrangements, which are siloed by ministries,[191–193] a problem compounded by poor impetus for multisectoral coordination in national cabinets. Inter-ministerial politics, competition for annual budgets, and interpersonal rivalries are further obstacles.[194] Insufficient country experience and capacity for planning policies across sectors is common, and stronger mechanisms are needed to help sectors coordinate.[195] Finally, even when policies are coherent, they are rarely backed by costed and funded implementation plans.[189,196]

The SDGs provide an opportunity to address these challenges head-on. Although the evidence for what works is not yet robust,[199] some key strategies are available to support improved multisectoral governance and execute the political push to move forward on a child-centred SDG agenda. Specifically, executive pressure must bring the sectors together; make clear roles and responsibilities for each sector, with clear accountabilities and indicators; ensure financing from a coordinating source to be used as incentive and facilitator; and use cross-cutting ministries (such as ministries of finance, planning, or social welfare) to validate, coordinate, and share data. In Chile, executive leadership and cabinet buy-in were essential to drive coordination across sectors, with the strong involvement of cross-cutting ministries. Chile's multisectoral programme for improving early childhood development (*Chile Crece Contigo*; panel 7) provides a model for defining roles and budgets across sectors, and financing and monitoring systems that encourage collaboration.[54,198]

Policies across sectors must be examined for their potential effect on child health and wellbeing. The content of these assessments could draw from the child entitlements framework, discussed earlier, and by reviewing existing guidance from UNICEF and the World Bank,[199] on integrating a child focus into poverty and social impact analysis, and from the work of national governments, such as New Zealand, which has introduced a budgeting approach in which cost-benefit analyses are based on current and future wellbeing. The Health in All Policies discourse also provides technical tools and resources.[200] These efforts should be flexible, ideally using mechanisms within each country government's own structures, and linked to existing country reviews taking place under the auspices of the CRC.

Success is predicated on the basis of a sophisticated understanding of the key actors, their incentives and constraints, and the functioning of the overall political ecosystem, with distributed leadership that engages a

broad coalition of stakeholders.[201] Tools for political economy and power analysis are available to map key actors and institutions and understand their potential interactions, but are under used. Such analyses, along with a sophisticated framing of child wellbeing that appeals to all, can be supported by global agencies, but must be led by country institutions as part of their political prioritisation and multisectoral action. The over-arching goal must be sharing the responsibility of child health and wellbeing beyond the health sector, and instituting mechanisms of governance, financing, and accountability to do so. Specific attention should be paid to changing the lens of the health sector itself to recognise the contributions of other sectors and work with them as equal partners. The pitfall of so-called health imperialism (in which stakeholders in the health sector assume that health interests predominate) can alienate other government departments that, understandably, hold different priorities.[202]

Empowering local government in municipalities and districts

As intermediaries between national governments and communities, local and municipal governments hold an essential responsibility in the improvement of child and youth wellbeing. However, local and municipal governments face a number of challenges and their capacity to effect change is often small. Strong local governments, with deliberate multisectoral governance models, can translate children's entitlements from national governments to families and communities.

Strong local governments link households and communities to national initiatives

Ideally, local governments address the local social determinants of health, implement public health policies and programmes for children and young people, and coordinate multisectoral action for the children most affected.[203] District and municipal authorities are often focal points in convening and coordinating the actions of multiple actors. The capacity of local government to manage relationships, improve synergies, constructively resolve conflict, and mobilise populations, is an essential role in the SDG era.

However, a review of child policies from countries as diverse as Moldova, Malawi, Jordan, and Cambodia revealed several common challenges.[190] Vertical coordination between national and subnational governments created challenges in balancing divergent priorities, revision of policies that did not account for local context, management of overly-centralised or overly-decentralised coordination mechanisms, and tension between national and local control over budget management often in the face of weak local capacity. Local governments are often caught between the competing priorities of governments, donors, and implementation partners, and sometimes the local interests of powerful extractive, agricultural, service, or manufacturing industries. Particularly in donor-dependent countries, poor local government capacity has prompted authorities to turn to international and local non-government organisations to assist with provision of services.[204]

Local authorities' ability to act depends on political circumstances, the status of decentralisation, and, most of all, budgetary power, coupled with the extent to which the national government supports the activities of local governments. One reason progress towards the implementation of child-focused initiatives is patchy is because of more or less successful modes of decentralisation.[205,206] Little evidence is available on the effects of decentralisation on equity and efficiency of service provision.[207] Countries often aim to use decentralisation to enhance local democracy, reduce bureaucracy, and promote client-oriented services (including high-income Nordic countries, such as Denmark and Sweden,[208] and lower-middle income countries, like Kenya[209] and Indonesia[210]). In countries with weak governance arrangements and budgets, such as Sierra Leone, fractured national mechanisms for child protection systems can be amplified locally[211] because of weak staff performance, poor understanding of cultural and social norms, and negative perceptions of central government.[212] Similarly, coordination efforts for child protection in South Sudan have been hindered by a decentralised system with unclear channels for communication across the national and local governments.[213] While devolved responsibility to local government makes sense to link children's families and communities to nation-wide initiatives, it requires thoughtful support and strengthening of local systems. Decentralisation is not a panacea, and it can be well or poorly executed, but it does offer opportunities to strengthen child health and wellbeing.

At the same time, local governments are meant to be accountable to the communities they serve. Certain legal, fiscal, and administrative frameworks are more effective when it comes to incorporating community voice and action, including that of children and youth. In Brazil, participatory management councils, which are part of municipal governments, are enshrined in the constitution, and municipal laws exist to support children's councils, which have a small budget at their disposal.[214] In Nicaragua, child and youth participation in local governance is facilitated by support from family and teachers, alliances between local authorities and civil society, and leadership in children.[111] However, such municipal councils might be harder to create and sustain if not protected by the law.

Similarly, child-friendly cities are those whose system of governance is committed to fully implementing the rights enshrined in the CRC. They translate national commitments into local action, often making institutional, legal, and budgetary transformations. For example, in Alexandria, Egypt, a child-friendly city initiative launched in 2006 established a coordinating mechanism to strengthen the protective framework for children, resulting in the identification and referral of more than 7000 children at risk to appropriate services.[215] However, in

many LMICs, governments that ratified the CRC do not have sufficient financial resources and political capital to support systemic reforms called for by the treaty.[216] In the poorest countries, budgets might remain unspent or be reallocated elsewhere. Efforts to support child-friendly cities are often spearheaded by non-government organisations, such as Child in the City, or development agencies, such as UNICEF, and not by local authorities themselves. These deficits can be mitigated by enhanced national political prioritisation of children.

Successful multisectoral governance at local level: the devil is in the detail

Local multisectoral governance represents a missed opportunity for efforts around child health and wellbeing. Multisectoral collaboration might be easier to achieve in local government given that different departments and personnel are often closely located and know one another.[217] Barriers to collaboration between local government and civil society organisations, citizen groups, and the private sector might include structural, procedural, financial, professional, and legitimacy issues.[218] However, solutions do exist, for example barriers associated with traditional hierarchical governance arrangements can be overcome by so-called network governance formations, in which a broader group of experts meets to solve problems in a neutral space, rather than some actors fulfilling the orders of others.[219]

Where local initiatives for children's wellbeing have proven sustainable and effective, certain conditions that encourage multisectoral action have been in place. In a review of Overseas Development Institute case studies, multisectoral partnerships and action with community groups, schools, places of work, and local interest clubs were particularly effective when there was clear decentralisation and task-shifting. Joint governance and service delivery models across education, water and sanitation, and other sectors were associated with improvements in health, equity, and more efficient use of resources.[188,220] Local governance can also link multiple sectors and governmental jurisdictions, and mobilise and convene communities and institutions, by attracting and empowering local champions and social entrepreneurs for child and youth wellbeing. In the UK support for multisectoral approaches (ie, between health and education), used local champions to establish partnerships, plan action jointly, and promote the required programme changes.[221]

Building strategic and operational capacity enables local authorities to operate autonomously. Effective programmes use strategic partnerships to take advantage of power distributed through networks and influential actors in the broader economy. Long-term partnerships; shifts from programmatic to systemic approaches; and networking with school boards, law enforcement, local business, and parent groups are essential to help local authorities. Another example are the after-school programmes for sports and other activities developed in the USA, developed when municipal leadership convened, built a vision, and used community mobilisation to leverage local policies and infrastructure, even in the absence of financial resources.[222] More broadly, political leadership and public participation were identified as the most important factors for multisectoral action across all stages, from initiation of an endeavour towards maintaining interest during the implementation phase.[217,223] Feedback loops to inform higher levels of government are also needed to allow scale-up of local innovations in successful programmes.

Global governance

In the age of globalised public health, many threats to child wellbeing cross national boundaries. Global governance arrangements influence a government's capacity to deliver for children, but these global schemes are currently fragmented and require urgent attention to be more effective.

Redesign global governance for the SDGs with the narrative of children at the centre

Global health governance is a highly contested sphere,[224] and a powerful new vision has yet to replace child survival, used as the dominant heuristic from the 1990s through the Millennium Development Goals era.[225] Nominally organised around the Survive-Thrive-Transform framework of the Global Strategy for Women's and Children's Health (2016–2030);[134] nonetheless, global governance for child health and wellbeing is fragmented and disjointed. Although the CRC offers a framing focused on rights, some organisations have argued that the case for children should be based on wellbeing, with a focus on objective and subjective assessments of life satisfaction.[226,227] Others say the rights and wellbeing framings are compatible, or offer framings focusing on human capital and capabilities.[228]

All of these frameworks capture important aspects of the health and welfare of children, but to-date few have offered a comprehensive narrative that conceptualises placing children's health and wellbeing at the centre of the SDGs and the notion of sustainability.[229] Such a framing is urgently required, not only to propel political momentum and provide a common vision for international organisations, national governments and civil society institutions, but also to breathe life into reforms of the global governance architecture, including the UN. The SDGs disperse discussion of the child across multiple goals—an intentional decision because the SDG agenda is meant to be indivisible and integrated. But, despite much rhetoric, international institutions have not been transformed and have seen their budgets stagnate, and global governance remains structured to deliver the Millennium Development Goals rather than the SDGs.[230]

As the key UN agencies concerned with children's health and wellbeing, UNICEF and WHO must lead on a

new and integrated SDG agenda, with children at the centre. The leadership of these agencies must heed recent learnings about global health networks, which are most effective when they strategically frame their issue and succeed in establishing political coalitions that extend beyond the health sector.[231] Findings from the Global Health Advocacy and Policy Project suggest that while new technical advances, global agreements, or initiatives to counter industry can be key in fomenting global movements, in all cases, success is predicated upon collective action taken by united stakeholders who had previously worked in isolation. To unite diverse stakeholders in the SDG era, child health and wellbeing must be framed both as preconditions and outcomes of sustainable development, to involve other sectors in an integrated manner.[232] Fortunately, the connections between child health and other SDG priorities are strong and reciprocal: the first step to establishing partnerships between sectors is to map these connections and assess their strength and directionality.[233]

International organisations largely pursue sectoral rather than holistic strategies to advance the rights and wellbeing of children. They focus not on the child per se, but rather on discrete aspects of child wellbeing—health or specific diseases, education, nutrition, care, protection, violence, youth employment, or another concern—despite the fact that these dimensions are intertwined.[234–236] Some organisations appear to be exceptions to this sectoral orientation, such as UNICEF and Save the Children; but even these institutions divide themselves into multiple programmatic areas. Sectoral divisions parse problems to make them manageable; for example asking an immunisation programme to promote literacy is unreasonable, but suggesting that interactions with children and families around immunisation could provide an opportunity to address other social concerns around the child is plausible. Integration must be achieved at an institutional level: UN institutions, such as WHO and UNICEF, should be leaders in creating partnerships internally, with each other and with other UN and international institutions, modelling what will be required nation-wide to work across sectors. Specific technical expertise on organisational design and management might be needed from experts in this area, backed by a strong mandate from institutional leadership.

Making global governance work for countries

Since Jan, 2017, António Guterres, UN Secretary General, has tried to reduce fragmentation by bringing together the UN architecture to enhance lateral collaboration. Separate UN funding streams, turf wars, duplication of plans, and bureaucratic inefficiencies abound. An umbrella strategy across agencies could enable multiple actors to work in tandem for the child and their families, provide concrete strategies to deliver entitlements, and uphold principles pertaining to rights and access to services. To lead on this agenda, WHO must reorient from its historically biomedical vision and work with UNICEF to engage with ministries other than departments of health. The UN Committee on the Rights of the Child, the expert body tasked with monitoring compliance with the CRC, could also play a role in supporting the roll out and management of such a strategy to achieve the agenda laid out in this Commission. Whether such coordinated action can succeed in pushing forward this programme will be the measure of our global leaders' ability to go beyond the usual ways of doing business to fulfil our responsibility towards children and their future.

One major and well known obstacle to more coordinated global governance is that the priorities of global institutions often do not align with the needs of individual countries.[237,238] Institutions like the World Bank, the United States Agency for International Development, The Vaccine Alliance, the Global Fund, and the Bill & Melinda Gates Foundation possess major financial and technical resources, which their leaders often use to, in effect, impose priorities on national governments. Global bodies are often criticised for being insufficiently attentive to the expertise and understanding of local needs and local actors. The result is a plethora of initiatives concerning the child, which do not necessarily align with national priorities, and divide and distort governmental attention and resources.[227] Commitments made by global leadership bodies (WHO and UNICEF) in 2018 have the potential to mitigate many of these challenges, but their realisation is still pending.[239]

Global norms, such as the ones considered and advocated for in this Commission, are often refracted and altered when translated to regional, national, and local governments, a process that has been described as norm localisation.[240] The legitimacy and authority of global norm-setting exercises, including Commissions published by *The Lancet*, rarely reach implementation level. Over the past few decades, regions have become substantially more important sites of cooperation in the architecture of world politics.[241] Regional bodies might be useful in mediating and translating proposed norms around child wellbeing, sustainability, and the SDGs. Regional bodies can also advance policy issues in ways that can inform global policies and recommendations, as seen with the work on data protection and online privacy for children by the EU, advocacy for malaria control by African Union, or the support of the South Asian Association for Regional Cooperation for child nutrition initiatives.

Summary

Here, we reviewed challenges and opportunities for improved governance at national, subnational, and global levels, and discussed how flatter, networked models might need to replace traditional hierarchical modes to implement the multisectoral SDG agenda for children. The fragmented global governance architecture also needs major surgery, with a shift towards the involvement

***Panel 8*: Regulating commercial marketing to children—key messages**

- In countries around the world, children are highly exposed to the marketing of products that are harmful to their health and wellbeing, through techniques that exploit their developmental vulnerabilities
- Children's online exposure makes them vulnerable to the exploitation of their data, images, and person; however, internet access also creates opportunities for accessible and effective health promotion activities
- Ample evidence shows that voluntary self-regulation by industry does not work
- Adding an Optional Protocol to the Convention on the Rights of the Child on the regulation of commercial marketing would be a strong step towards protecting children from its harmful effects, and should be pursued by a broad coalition of countries, UN agencies, and civil society organisations

of regional bodies. We now extend this discussion of improved governance structures to the commercial sector.

Regulating commercial marketing to children

Unregulated commercial activity poses many well documented threats to children, not least environmental ones. However, commercial marketing of products that are harmful to children represents one of the most underappreciated risks to their health and wellbeing (panel 8). We have examined the harms children suffer from commercial marketing, looked at the insufficiency of voluntary regulation, and propose a political process to control commercial marketing to children by developing an Optional Protocol to the CRC (ie, an additional component to the treaty that must be independently ratified).

Children are enormously exposed to harmful commercial marketing

Children around the world are exposed to severe threats from the commercial sector, by advertising and marketing that exploits their vulnerability, by governments not regulating products that harm their growth and development, and by use of their data and images without their knowledge and permission. According to Kickbusch and colleagues[242] approaches to health promotion have "totally underestimated globalised corporate power combined with its global marketing onslaught and its transnational influence on political decision making," a discussion that has yet to be explicitly extended to children. Countries and civil society organisations have not been able to check the power of commercial entities, especially multinational corporations, which exacerbate social and health inequities.[243]

Awareness is growing of the harm of products marketed to adults for use by children. For example, inappropriate use of breastmilk substitutes is associated with lowered intelligence, obesity, and increased risk of diabetes and other non-communicable diseases, collectively accounting for an estimated loss of $302 billion.[244] But marketers also target children specifically. Marketing of products to children and adolescents provides excellent dividends for companies, driving household spending, and creating brand loyalties across the lifespan. Large companies incorporate the science of the life course approach into their marketing, to achieve the adherence and fidelity of children to capture future consumption. This life course brand loyalty constitutes an even more valuable target than the spending children currently direct or influence.

Children around the world are enormously exposed to advertisements: the average young person in the USA sees 13 000–30 000 advertisements just on television each year.[245] A systematic review showed that the most commonly reported persuasive techniques used on television to promote food to children were the use of premium offers, promotional characters, nutrition and health-related claims, the theme of taste, and the emotional appeal of fun.[246] Additionally, the channels to reach children and adolescents have grown and diversified, often blurring the line between entertainment and advertising. Social media advertising has exploded in the past decade; however, little research is available to understand the effects of reaching children directly with commercial messaging.[247] Newer techniques, such as the use of so-called kidfluencers (social media endorsement deals for children and teenagers), are barely on the radar of parents and regulators.[248] Although children younger than 7–8 years old are understood to believe what they see and not to recognise the persuasive intent of commercial advertising and marketing, much less is known about how emerging technologies potentially exploit children's developmental stages for the purposes of profit making.

Children are the frequent targets of commercial entities promoting addictive substances and unhealthy commodities, including fast foods and sugar-sweetened beverages, but also alcohol and tobacco, all major causes of non-communicable diseases.[249–252] Unhealthy food advertising on television is an important contributor to childhood obesity, with attendant effects across the lifespan. A review of 23 studies in Latin America reported that advertising exposure was associated with a preference for and purchase of unhealthy or low-nutritional value foods by families and children with high body-mass index, overweight, and obesity.[253] A study, published in 2016, showed that the link between television viewing and poor diet was strongest for children who watched the most commercial television, and for those who were actually exposed to advertisements embedded within programmes.[254] In Iran, food advertising during children's programmes is dominated by food items that are potentially harmful to oral health,[255] as are nearly two-thirds of food adverts during UK children's television.[256]

One study has also expressed concerns that toy advertisements on television, which target children, promote sedentary play.[257]

Children worldwide are also highly exposed to advertising for products nominally for use by adults only, such as alcohol, tobacco and e-cigarettes, with exposure to advertising associated with greater consumption. In Australia, alcohol advertising and audience viewing data were purchased for all football, cricket, and rugby league TV programmes for 2012, with a cumulative audience of 26·9 million children and adolescents, and 32 million young adults. Results showed that children and adolescents were exposed 51 million times to alcohol adverts, with 47% of this exposure occurring during the daytime.[258] In a study of 11–14 year olds from Los Angeles, CA, USA, African-American youth were exposed to an average of 4·1 alcohol adverts per day and Hispanic youth were exposed to an average of 3·4 alcohol advertisements per day, nearly twice as many as non-Hispanic white youth, who were exposed to 2·0 advertisements per day. Girls of all ethnicities were exposed to 30% more alcohol advertisements than boys.[259] Furthermore, existing inequities are reproduced by marketing to the next generation of consumers (eg, in the USA, African-American youth viewed approximately 50% or more adverts for unhealthy foods than did white youth of the same age).[260] Children in LMICs are also highly exposed: in a sample of 2423 5- and 6-year-olds in Brazil, China, India, Nigeria, and Pakistan, 68% could identify at least one cigarette brand logo, ranging from 50% in Russia to 86% in China.[261]

E-cigarettes are a new but worrying threat, particularly in HICs. Exposure to e-cigarette adverts was prevalent in US youth, who had medium-to-high exposure to e-cigarette adverts from the internet (38·6%), newspapers (29·6%), shops (53·2%), and TV (35·4%).[262] E-cigarette advertising is not regulated in the USA, where youth exposure to television e-cigarette advertisements, measured by target rating points, increased by 256% from 2011 to 2013,[263] with young adult exposure increasing by 321% over the same period. Adverts for these products in the USA reach more than 24 million young people.[264]

Additionally, new technologies are exacerbating and creating new threats to children that are not well understood. Gambling is a potentially large and unaddressed public health challenge for children.[264,265] The public health harms associated with gambling include anxiety and stress, disruption of work or study, and relationship conflict and breakdown. Moreover, children become socialised to gambling at an early age, with indications that exposure is associated with consumption intention.[266] The UK has 340 000 adult problem gamblers and 1·7 million more people suffering some harm—in a country where one in eight children aged 11–16 years follow a gambling company on social media.[267] In the UK, as in most countries, gambling adverts on TV sport events, which are accessible to children, are unregulated. In Australia children had detailed recall of sports betting advertisements and an extensive knowledge of sports betting products and terminology.[268]

Children's online exposure

Children's online exposure is nothing short of enormous. A review in the UK, published in 2018, showed that children aged 5–15 years, spend on average 2 h online on a weekday and 3 h per day at the weekend.[269] Children aged 11–16 years post on social media 26 times a day, adding up to tens of thousands of posts by age 18 years.[270] At the same time parents of children aged up to 13 years share an average of 100 photos and videos of their child each year.[271] Between 2010 and 2015 the global volume of data increased eight-times and by 2020 the introduction of new technologies will increase the volume 40-times.[272]

Online behaviour can bring both harm and benefits to children. Although some studies have found that social media use is not predictive of impaired mental health functioning,[273] social media is increasingly understood as creating or exacerbating risks around young people's self-esteem, wellbeing, and risky behaviours.[274–276] Social media can affect children's sleep, mental and physical health, and their social lives. In a systematic review of the relationship between internet use and self-harm and suicidal behaviour, online exposure was found to normalise self-harm, trigger abnormal behaviour and competition between users, or act as a source of contagion and harmful information for vulnerable individuals.[277] More commonly, children and young people develop so-called problematic use of the internet, a proposed umbrella term for a range of repetitive impairing behaviours,[278] including excessive and compulsive video gaming, compulsive sexual behaviour, bullying, gambling, and social networks use. The health and societal costs of problematic use of the internet across the lifespan are unknown, but they could be huge. Exposure to violent pornography is also a major concern and attempts to regulate access by age are often easily bypassed.

Vulnerable youth can also be targeted for radicalisation by militant groups, which occurs daily in many countries, across all income groups and security situations. Children are more easily intimidated and easier to control, physically and mentally, than adults. Children are also more inclined to show loyalty to authority figures.[279] Militant groups develop precise propaganda strategies to generate empathy and highlight the advantages of joining the group, which can include status and prestige, smart uniforms, and weapons. Social media platforms, including email, chat rooms, e-groups, message boards, video recordings, and applications are popular grooming and recruitment tools.[280] Much more research and attention is needed to protect children and young people from the negative effects social media can have on their risk-taking behaviours, mental health, and wellbeing.

However, the internet can bring great benefits through crisis support, reduction of social isolation, delivery of

therapy, and outreach. Young people use social media to communicate their distress, particularly to peers. Social media is a potentially accessible, inexpensive way to have conversations about mental health, including to promote health-seeking and reduce isolation.[281] Online friends can be an important source of social support for LGBT, queer or questioning, and intersex youth, and a growing amount of literature suggests that the internet can be a safe haven for some young people belonging to sexual minorities.[282] For families of children with disabilities and illnesses like cerebral palsy, social media can provide a platform for emotional support and forming connections, sharing information and advice, and learning about services,[283] but the quality of information is variable.[284] Interventions using artificial intelligence, such as chatbots, also have promise in engaging adolescents about health issues, such as obesity.[285] Adolescents in particular are avid users of technology for health, and can be reached through digital platforms with health messages and to participate in chat and support groups online. More research is required to understand ways to engage with them positively in this medium.[286]

Use of children's data and images by commerce

Online data has the potential to threaten a child's safety, development, and social interaction by normalising surveillance and increasing the risk of identity theft, fraud, and profiling. Children and young people are often the first to adopt new digital devices, services, and content, as such they are especially vulnerable, especially to data manipulation through non-transparent and biased algorithms (eg, based on race or ethnicity).

As a result, internet safety is a major concern, leading a small but growing number of countries to make it part of the school curriculum. Data collected online includes information given directly (eg, date of birth on a social media profile), data given unknowingly (eg, captured through web cookies or app-based location data), and data that is inferred (eg, based on algorithms and predictions analysed by companies). Data can also be collected through the internet of things, such as smart speakers, internet-connected toys, or baby cameras; and outside the home, from tracking watches, school databases, study and behaviour apps, biometric data in schools, digital personal health records, travel passes, and retail loyalty cards.[269]

Of course, data collection can have major benefits: general practitioners and hospitals can share data to enable early identification of patients, audit of services can improve accountability, analysis can prevent harm and promote positive health outcomes, and digital health and development records can expedite care. But governments and parents have major concerns, and many questions remain. Could data about a child's language development or educational performance play some role in their university application outcomes? Will parents' shopping habits affect the products and services their children are targeted with through advertising? Could personal health data impair access to insurance in future? And how safe is our data? Both public sector bodies and commercial organisations have failed to ensure privacy, transparency, security, and redress when handling children's data. These concerns frequently intersect (eg, when unregulated commercial activity around internet-based genetic testing erodes public trust in government programmes developed using more rigorous scientific methods).[287] Within the confines of government programmes, child centred-data raises both promising avenues and reasons to worry. For example, predictive risk modelling has been embraced both as a powerful tool for preventing and detecting child abuse, and criticised for individualising social problems and reifying oppressive frameworks of risk and abuse.[288] In the UK, a database created in 2004 to enhance child protection by improving information sharing between services was decommissioned in 2010, following criticisms by civil liberties groups that it was intrusive and that the data was not securely stored.

The European General Data Protection Regulation has attempted to tighten regulation on data protection and privacy, including for children. Article 5 states that "data must be processed lawfully, fairly and in a transparent manner"[289] and asks for special protection for children's data "for the purposes of marketing or creating personality or user profiles and the collection of personal data with regard to children when using services offered directly to the child."[289] The General Data Protection Regulation goes further to protect children's "right to be forgotten,"[289] requiring age-appropriate privacy notices and expressed consent for personal data to be used. However, national governments face the unenviable task of policing such regulation in a fast-moving field where technological innovation is constant.

Voluntary regulation and existing global frameworks are not sufficient

When seeking to protect children from harmful commercial exploitation, self-regulatory schemes have had a very small effect on marketing to children or in protecting use of their data. In Mexico, companies that had signed up for self-regulation focused 93% of their advertisements on unhealthy food and beverages.[290] In Canada companies promoted unhealthy foods and beverages at similar rates during programmes with high numbers of child viewers, whether or not they participated in the Canadian Children's Food and Beverage Advertising Initiative.[291] In New Zealand, 88% of unhealthy food advertisements were shown during children's peak viewing times, in contravention of a number of self-regulation agreements by industry.[292] In Australia, children's exposure to unhealthy fast-food advertising did not change following the introduction of self-regulation.[293] In Spain, non-compliance with the Spanish code of self-regulation of food and drinks advertising directed at

children under the age of 12 years has only increased between 2008 and 2012.[294] In Sri Lanka, of all food and beverage-related advertisements, 78% were child-focused, and of these 74% claimed health benefits, many of which were unsupported.[295] In the USA only 1·4% of all child-targeted food adverts met all aspects of Interagency Working Group on Foods Marketed to Children guidelines.[296] Additionally, alcohol brands popular with underage drinkers were more likely than others to advertise in magazines with high underage readerships, despite voluntary advertising industry guidelines to protect underage youth from high and disproportionate exposure to alcohol advertising.[297] Children in countries with weaker government regulation might be at greater risk of advert exposure: a 2008 report by the BBC suggested that British American Tobacco, London, UK violated its own voluntary international marketing standards in Nigeria, Malawi, and Mauritius.[298]

Current national schemes of regulation and engagement with commercial companies thus leave children highly exposed. Although global institutions have offered some guidance, and the EU has advanced some initiatives in this respect, shared principles are needed on good governance of relationships with the commercial sector for protecting the rights and wellbeing of children. As Woodrow and Press reported,[299] we must be wary of a so-called commercialised view of childhood, and acknowledge the responsibility of societies to protect children from profit-making at the expense of their wellbeing.

The CRC and associated Optional Protocols[300] provide standards against which agreements, services, and other actions might be measured for their effect on children and their rights, and a UNICEF[300] toolkit outlines steps businesses should take to ensure that their interactions with and influences on children do not adversely affect their welfare. Furthermore, global guidance is provided by the UN High Commissioner for Human Rights,[302] with additional guidance on Children's Rights and Business Principles.[303] These resources describe not only how commercial enterprises, including their suppliers, advertisers, marketers, and other associates should consider child labour, protection, safety, and the local environment in their activities, but also whether their activities, products, or services adversely affect children's wellbeing. The responsibilities of national governments regarding the relationship between the commercial sector and child wellbeing has also been emphasised by global authorities, with a General Comment issued under the CRC in 2013.[304]

Notwithstanding these standards and guidance, a small amount of evidence exists regarding businesses considering child wellbeing in their decisions and actions, and many enterprises consider it irrelevant or inimical to their activities.[305] Existing guidance is seen as soft and optional, with corporate behaviour dependent on "reputational accountability and the coercive strength of the web of accountability that is created through networks of organisations and overlapping and complementing soft law regulations."[306] Collins,[305] in an extensive mixed-method review of these issues, considers both the commercial and rights perspectives, and cites the former chair of the UN Committee on the Rights of the Child Jaap Doek who described the "insincere eloquence" of some corporate social responsibility activities, and the inseparability of issues of corporate behaviour and children's rights.

Given such considerations and rising concerns about the health effect of inappropriate marketing practices, the Independent Accountability Panel under the Every Woman Every Child initiative called for the adoption of a legally binding global convention to regulate the food and beverage industry in 2018.[307] The Independent Accountability Panel recommendations included specific mention of the International Code of Marketing of Breast-milk Substitutes (which is not a legally binding instrument), and the need to bring together the Code and other existing international standards on marketing for and to children and adolescents. However, the development and adoption of such a treaty would likely be a challenging process.

Initiating a political process to secure a legally binding instrument on marketing products to and for children

A legally binding instrument to effectively regulate commercial appeals to children would be a tangible and desirable product of the SDG era, even if this only covers part of the commercial harms to children, which also includes products marketed to adults (such as guns and ammunition and products containing chemicals harmful to children—such as bisphenols, phthalates, and lead paint), alongside a panoply of environmental harms that threaten life on this planet more generally.

Specifically, we propose adding an Optional Protocol to the CRC regarding commercial marketing and targeting of children, which would require national governments to prohibit or regulate the types of products that should not be marketed to or for children (including sugary beverages, unhealthy foods, alcohol, tobacco, e-cigarettes, gambling products, and breastmilk substitutes); regulate specific methods of marketing to children (via television shows, games, and social media used by children and youth, and sponsorship of youth activities); and control the gathering and exploitation of children's data and images for commercial purposes. Given the cross-border effects of commercial marketing, including through the internet and social media, and the multisectoral nature of the threat and needed response, an Optional Protocol to the CRC adopted by the UN General Assembly could address the transnational elements of the problem and simultaneously drive national action for legal protection.

A coalition of countries that have taken leadership in protecting children from commercial harms, supported by UN and civil society partners, could bring the

proposal for adding a protocol to the CRC to the UN General Assembly. Importantly, if such a protocol were to be adopted, establishment of a new monitoring mechanism would not be needed because the existing global oversight body under the UN Committee on the Rights of the Child would automatically monitor national implementation efforts. Having ratified the additional protocol, national governments would need to submit periodic reports on implementation of the provisions contained therein for review and scrutiny by the committee, with observations and recommendations made public. Regional bodies could be recruited to help steer implementation. National oversight could be initiated through government departments responsible for women's and children's development, commerce, health, education, and media and information, with additional independent monitoring by national human rights institutions and civil society partners.

Such a protocol could build upon the precautionary principle, introduced in environmental science in the 1990s in recognition of vulnerable groups, especially children. The principle holds that when an activity raises threats of harm to human health or the environment, precautionary measures should be taken to mitigate this action, even if cause-and-effect relationships are not fully established scientifically.[308] The precautionary principle has been widely used by environmental scientists and regulatory authorities,[310,311] but it has been insufficiently applied to protect children from commercial marketing—commercial entities can market products to children with little evidence that they do not pose a threat to their wellbeing. Although evidence is emerging on the harms of commercial sector marketing to children, the fast-paced nature of technological change means children are actively being harmed while the body of evidence grows.

One component of the precautionary principle is to shift the burden of proof to the proponents of the activity. This has been called reverse onus, when the burden of proof (ie, safety) or the analytical burden is shifted from the risk mitigator (ie, government regulators) to the risk generator (ie, industry).[310] The EU's Registrations, Evaluation, Authorisation, and Restriction of Chemicals regulation has adopted this approach to some extent. Given the conflicts between industry interests and public good objectives, many researchers have reported that a spectrum of risk exists.[311–313] These debates have led to guidance from UN committees on monitoring private sector policies, practices, and partnerships relating to the food industry[314] and global research consortia,[313] which could provide a framework for outlining a system of risk classification with respect to potential harms to children.

In addition, further work is needed to counter other harms to children, such as those outlined in the Framework Convention on Tobacco Control, efforts to reinforce the International Code on Marketing of Breast-milk Substitutes, unhealthy food advertising and sponsorship (reported by Swinburn and colleagues)[315] and fossil fuels, which go beyond the purview of this Commission. Experiences with regulating tobacco and sugar suggest that direct regulation of industries whose behaviour adversely effects children will be difficult.[316] Progress in tobacco control, including the adoption of the Framework Convention on Tobacco Control, was hard fought over decades, with corporate efforts to discredit the evidence linking tobacco consumption or exposure with ill health. Implementation of the tobacco framework was hampered by global conglomerates with enormous resources to fight regulation of tobacco product marketing and sales, and by country governments protecting local producers. Reports have emerged of similar efforts to distract lines of research or discredit scientific evidence of links between sugar consumption and non-communicable diseases by the sugar-sweetened beverage industry.[317] These efforts will likely be redoubled given increasing global calls for taxes on sugar, tobacco, and alcohol to reach the SDGs.[318] Further, implementation of such treaties might be slow to evolve because of challenges in domestic courts stemming from the interests of industries and corporations, which in some cases have acquired the same rights as people to fight government regulation.[319]

Such potential obstacles are all the greater given that many multinational corporations have resources larger than some national governments and they are willing to defend their presumed rights in global tribunals, using existing agreements, such as those developed by the World Trade Organization. Furthermore, country governments are often faced with competing incentives, such as promoting business and commercial enterprises, even those involving unhealthy products, in the interest of economic development. New international law on this topic would aid governments to apply and strengthen domestic legal frameworks, including constitutional law, in the interest of children's health and wellbeing. Notwithstanding its likely arduous gestation, an Optional Protocol to the CRC to protect children from commercial marketing would also attract many proponents, and would provide a strong precedent across other sectors for balancing public goods and commercial interests.

Meanwhile, indirect efforts that heighten public awareness of related risks (eg, banning advertising of or public communication on harmful products, or their consumption in public; taxation; and public advocacy or awareness-raising) have been successful in changing public opinion and corporate behaviour, and have survived corporate challenge in the courts. While any such treaty is being negotiated, global awareness of the rights of children to be protected against such influences must be raised through similar indirect efforts.

Summary

We reviewed the many potential and actual harms to children from commercial marketing, via traditional advertising and in the digital space, and proposed a

process for adopting an Optional Protocol to the CRC to provide a strong protective riposte. We now step back to examine the broader data and accountability landscape for children in the SDG era, and look at how to monitor, review, and act on data to achieve child health and wellbeing goals.

How to monitor, review, and act on SDG progress for children?

Compared with the Millennium Development Goals, the SDGs encompass a more comprehensive view of development, which poses greater challenges for the data and information required to make the best policy choices, track SDG progress, and ultimately, deliver on the targets of the global goals.[320] The data needs for children range from monitoring survival, intervention coverage, and disease prevalence to indicators related to growth, education, and wellbeing, including socioeconomic and environmental determinants of health.

Despite poor-quality systems for data collection, analysis, and information dissemination in most LMICs, the number of goals has doubled, from eight Millennium Development Goals to 17 SDGs, with 232 indicators and 169 targets. Reporting requires collation of hugely diverse data sources for social, political, economic, and environmental measures, and disaggregation of these to monitor equity (panel 9).

Addressing the data gap for children

Focused on leaving no one behind, the SDG agenda places the world's most vulnerable and marginalised people—including children—at the top of the global development agenda. UNICEF categorises the child-related indicators around five dimensions of children's rights: survive and thrive; learning; protection from violence and exploitation; safe and clean environment; and a fair chance in life;[321] we use the same five categories to describe indicators. The roadmap for achieving the SDGs for women's, children's, and adolescent's health is laid out in the Global Strategy for Women's, Children's and Adolescents' Health (2016–2030).[17] The strategy focuses on three main domains: survive (end preventable deaths), thrive (ensure health and wellbeing), and transform (expand enabling environments).[17]

Of the 232 SDG indicators, 47 are directly relevant to child health and wellbeing (appendix pp 5–18). Indicators have been classified into three tiers by the Inter-Agency and Expert Group on SDG Indicators based on the availability of data and standardised methodologies for assessment. Of the 47 child-related indicators, 17 are designated tier 1, 21 tier 2, and 9 tier 3 (figure 7), suggesting that 30 (64%) of the child-related indicators are not regularly produced by countries, or that definitions and standards for measurement have not been developed. Even in instances where data are available, there might be too few datapoints to establish a trend or calculate projections towards targets.

Panel 9: Monitoring, reviewing, and acting on the Sustainable Development Goals (SDGs)—key messages

- Data needs for measuring and monitoring progress towards child health and wellbeing targets are high, but most countries do not regularly collect comparable data for a large proportion of child-related SDG indicators
- Because disaggregation is key to make sure no one is left behind, greater investments are needed to strengthen the systems for the collection and use of routine and administratively collected data to complement reporting on equity, for which household surveys are the main source
- Child flourishing can be measured for all countries using indicators that are reported, but a complete picture requires accounting for sustainability and the health of our planet, as in our proposed child flourishing and futures profile
- Data openness and citizen participation, including youth-led initiatives, can harness new energy and capacities to overcome the barriers to collecting data towards SDG progress, as well as fulfilling rights to participation, co-ownership, and community responsibility

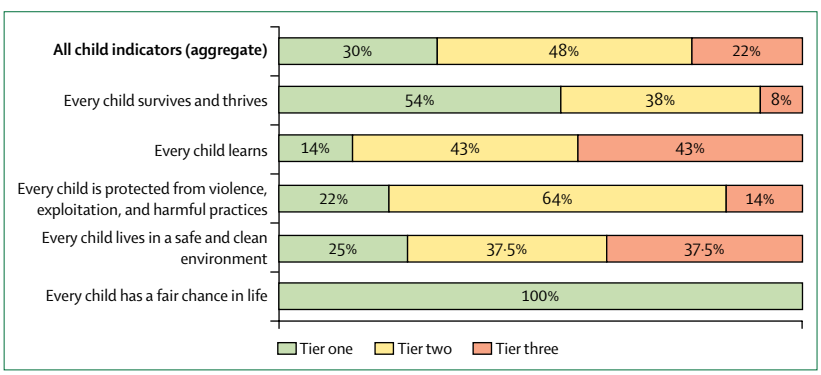


***Figure 7*: Child-related Sustainable Development Goals indicators by tier status**
Tier one=indicator is conceptually clear, has an internationally established methodology and available standards, and data are regularly produced by countries for at least 50% of countries and of the population in every region where the indicator is relevant. Tier two=indicator is conceptually clear, and has internationally established methodology available standards, but data are not regularly produced by most countries. Tier three=no internationally established methodology or standard are available for the indicator, but methodology and standards are being (or will be) developed and tested.

The indicators that are most regularly reported by countries are related to poverty and health (especially mortality and health care intervention coverage). The newer and least well established indicators on thrive and transform (including climate, sustainable cities, gender equality, and quality education) have large data gaps, these gaps also exist for the survive indicators for children older than 5 years.

The availability of data on child-related SDG indicators varies between LICs, MICs, and HICs (figure 8). Data availability in LICs is highest in Senegal and lowest in Comoros. Of the MICs, Mexico has reported on the greatest number of child-related indicators and Kosovo the least, and of the HICs, Norway has reported on the

greatest number of indicators. However, no country has reported on more than 70% of the child-related SDG indicators. For many HICs the low number of indicators reported on is because they are already meeting the targets. Analysing the amount of available data for each indicator within the five domains of children's rights across all country income groups (figure 9) shows that few, if any, data are available for indicators on education, violence and exploitation, and safe environment.

SDG indicators take a life course approach and include measures of health and wellbeing from preconception to the end of adolescence, while acknowledging there are intergenerational effects on health and wellbeing (figure 1). However, the indicators vary in terms of quality and reliability. Birth and infancy indicators have better data availability than late childhood and adolescence indicators. For example, very few LMICs report data on indicators related to violence (physical, sexual, and psychological) for adolescent women (indicator 5.2.1 and 5.2.2). Information on the prevalence of child marriage (5.3.1), child labour (8.7.1), literacy and numeracy (4.1.1), and information communication technology literacy (4.4.1) are also infrequently reported (appendix pp 5–18 for a summary of each child-related SDG indicator).

Data on children are derived from multiple sources, including household surveys, routine facility reporting, facility assessments, and administrative data (such as health workforce and financing data, civil registration, and vital statistics). Facility reporting systems are an important source of data for output and service utilisation data, but quality can be problematic.[322] 33 of the 47 child-related indicators are dependent on national household surveys as their primary data source. However, household data, mainly obtained through the implementation of Demographic and Health Surveys and Multiple Indicator Cluster Surveys, cannot meet the demand for annual monitoring because they are done every 3–5 years, or for subnational data, especially at the district level, because most national surveys are designed to provide only regional estimates.[323] Furthermore, lag time can be more than a year between data collection and reporting, and even longer for datasets to be available for secondary analysis.

The global SDG indicator framework has an overarching principle of data disaggregation for income, gender, age, race, ethnicity, migratory status, disability, and geographic location.[324] Although SDG indicators that are compiled from household survey data can be disaggregated (eg, gender and geographic location) population samples are often too small to obtain reliable subgroup estimates.[325] Data for global reports on national and regional estimates are often too sparse to be disaggregated; in other cases, analyses are restricted to strata with sufficient data, such as rural or urban location and gender. Some stratifications might be sensitive to collect in certain contexts, such as for race, ethnicity, religion, or sexual orientation.

Disaggregation is essential to make existing gradients objective and tangible. To view the situation of children through national averages risks masking their realities, especially when attempting to pinpoint the inequities and violations of rights that affect them. Disaggregation must be done sensitively, for example to avoid ignoring transgender and non-binary people when classifying by sex. However, children with disabilities, refugee and migrant children, children belonging to indigenous groups, or other ethnic or racial minorities, among others, are at risk of being left behind if they remain invisible in national monitoring processes. Only 18% of countries have reported on indicator 4.a.1, which measures the proportion of schools with access to adapted infrastructure and materials for students with disabilities, and several of those countries report that no schools have suitable adaptions. The Washington

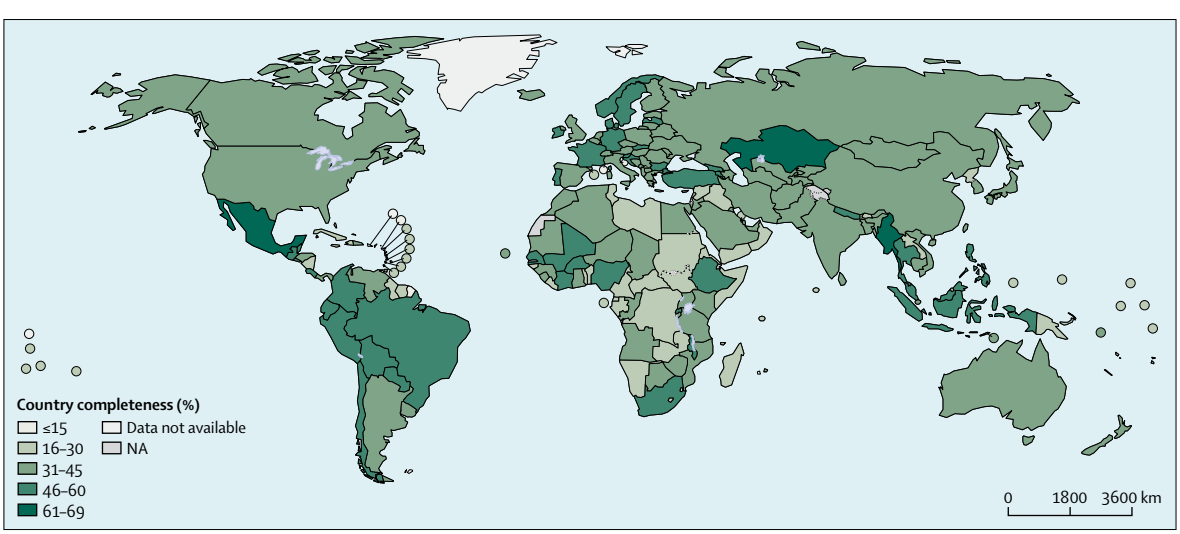


Figure 8: **Availability of data on child-related Sustainable Development Goals indicators by country**
The figure shows the percentage of child-relevant SDG indicators with at least one datapoint reported since 2015.

Group on Disability Statistics, a UN-sponsored group, and UNICEF, in partnership with Disabled People's Organizations, have developed a new way of gathering information on child disability. New questions to identify children with disability have been included in UNICEF's Multiple Indicator Cluster Survey and are being piloted in around 40 LMICs.[321]

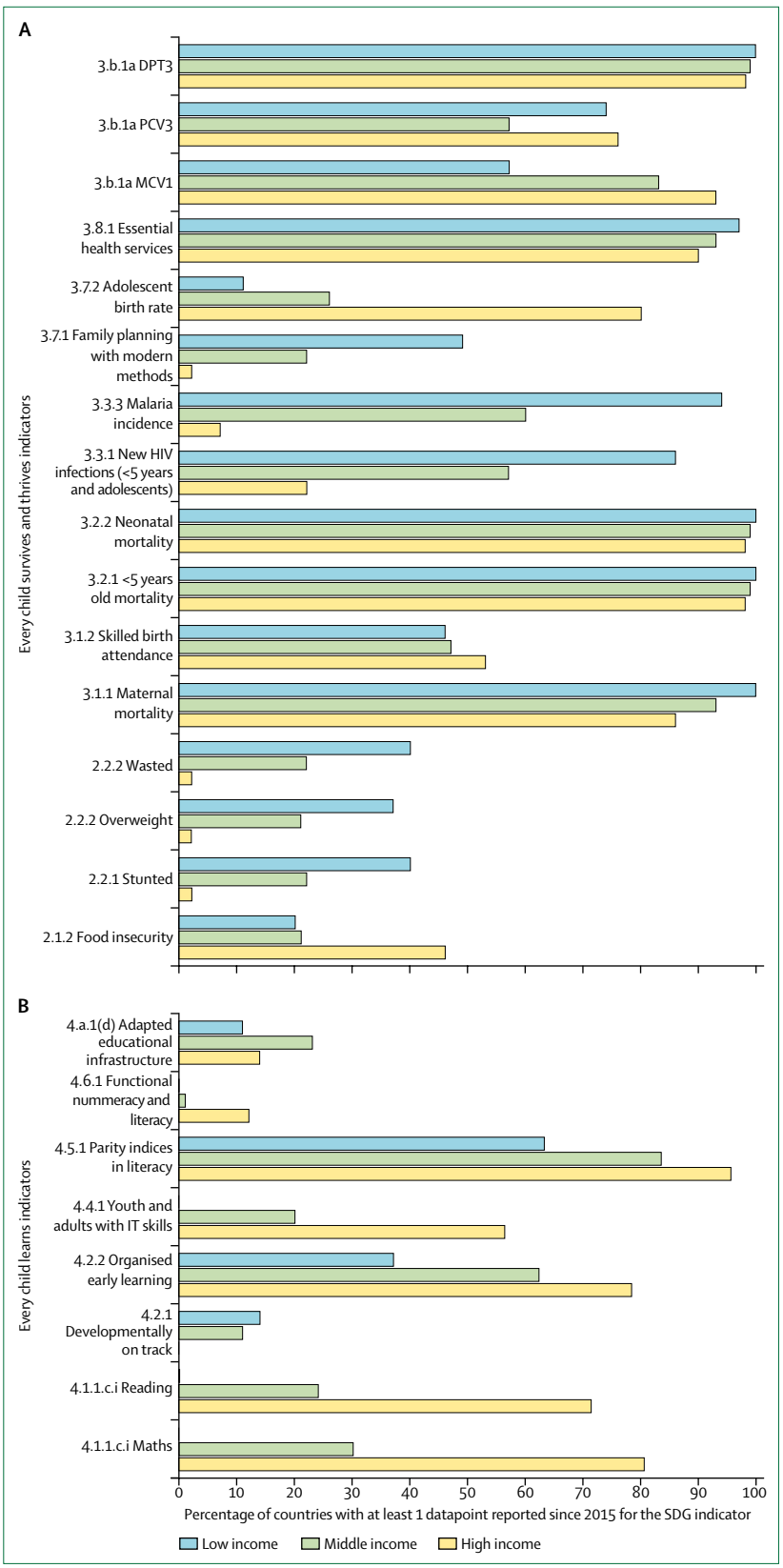
How to get good-quality data

In 2016, 22 countries did national SDG reviews and submitted reports to the UN High-level Political Forum on Sustainable Development. In 2017, the number nearly doubled to 43 countries. Many LMICs struggled to present national and disaggregated statistics for most child-related SDG indicators (figures 8 and 9). The reality of national planning and budgeting processes means that interventions and outcomes for which data are scarce do not get prioritised.

For many LMICs the data burden is far too onerous. Many government departments and national statistical offices face capacity and financial constraints, making data collection and completion of regular surveys difficult.[323] Consequently, reports do not give a comprehensive picture of child wellbeing.[326] Moreover, given the number of informal dwellers, surveys in urban locations are far more difficult to do than surveys in relatively stable rural communities.

Targeted investments are required to strengthen national information systems within and across sectors, particularly in countries with weak information systems. UN agencies, such as WHO and UNICEF, work with academic institutions and carry out country consultations to produce global health estimates on child health and wellbeing using complex modelling processes. In 2018, WHO announced a collaboration with the Institute of Health Metrics and Evaluation to produce the Global Burden of Disease estimates. Funding agencies, especially the Bill & Melinda Gates Foundation, are making major investments in global health estimation. These efforts are important for regional and country comparisons and for global advocacy purposes. Nonetheless, the estimates can give a false impression of an abundance of data.[327] The reality is that most data on children, usually from household surveys, are out of date or subject to long recall periods. Analysis and presentation are rarely helpful to authorities for planning subnational action and strategies.[327]

Large data gaps can be filled with greater involvement of citizens and communities in monitoring progress and enabling local action and accountability.[328] Furthermore, we must focus on improving the collection of data for populations that are hardest to reach or for which little data exists, such as children with disabilities. Strengthening of national information systems is a priority that has been largely ignored. Little investment has been made into building capacity for collection and use of information and for enhancing accountability locally.



(Figure 9 continues on next page)

This is not just a technical issue, but a rights-based public policy imperative deriving from the principle of information as a global public good.

Applying a life course approach to monitoring requires the integration of data systems for mothers and children.

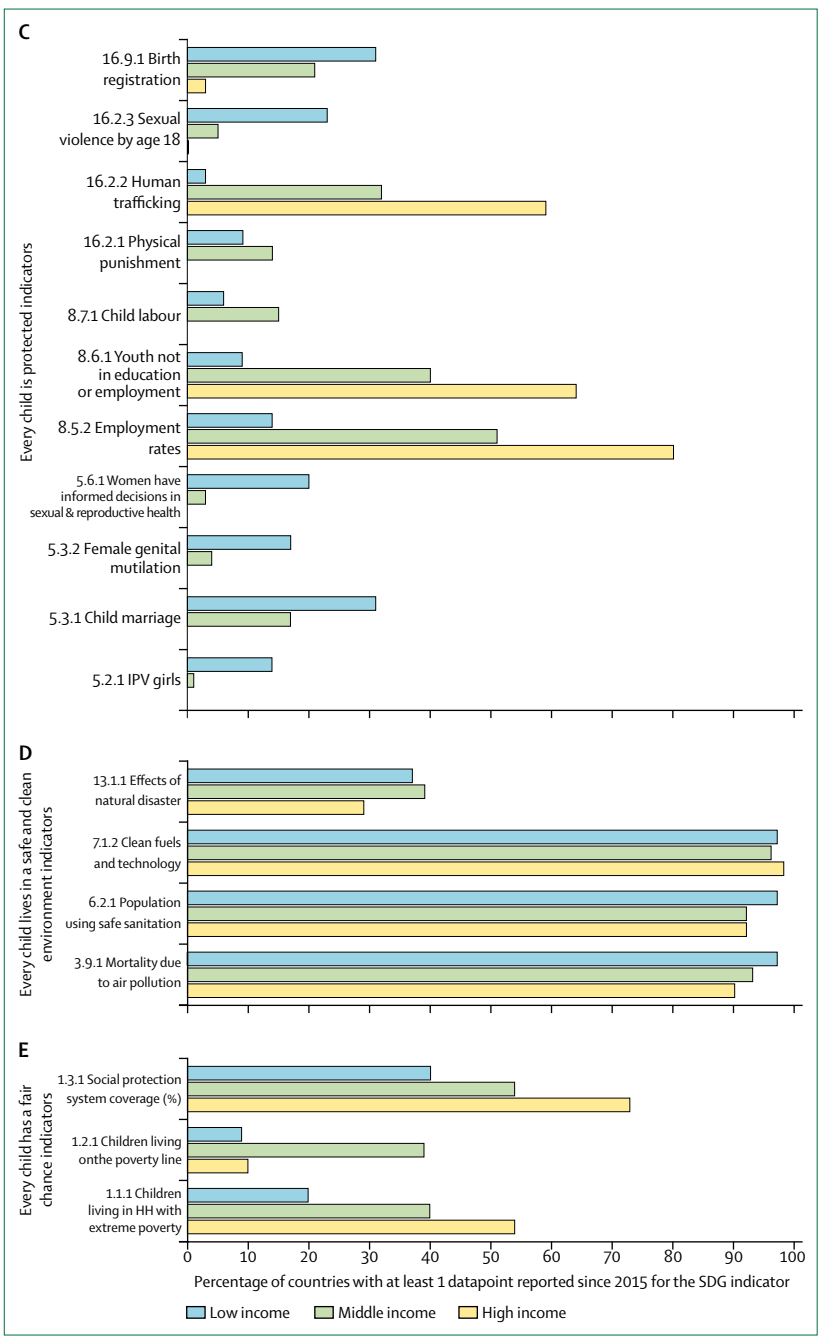


***Figure 9*: Completeness of child-related SDG indicators data for each of the five each domains of children's rights (at least one datapoint since 2015): every child survives and thrives (A); every child learns (B); every child is protected from violence, exploitation, and harmful practices (C); every child lives in a safe environment (D); every child has a fair chance in life (E) from low-income, middle-income and high-income counties**

IT=information technology. SDG=Sustainable Development Goal. IPV=intimate partner violence. HH=household. See appendix pp 5–18 for full indicator definitions.

In the siloed global aid architecture used nowadays, integrating systems is difficult to achieve with separate programme-specific monitoring and funding streams[329] (eg, for newborn health or family planning), which compete within a narrow space for attention and funding.[164,236,239]

Some SDG indicators could be captured through national civil registration and vital statistics systems or routine information systems (eg, immunisation coverage and birth registration), which is why LMICs require support to strengthen their health management information systems. Brazil is one example of a MIC that has invested in strengthening its routine health information system as part of a process of broader health system reform. This included the establishment of the Sistema Único de Saúde Hospital Information System, the Mortality Information System and the Live Births Information System, which was launched in 1990 to provide standardised data collection procedures at all hospitals; by 2002 the Live Births Information System included data for 86% of all livebirths.[322] The data from these systems is brought together using interinstitutional coordination to build and standardise indicators, and disseminate basic data, indicators, and health status assessments in an organised manner through the Interagency Health Information Network.[330] Brazil has not undertaken a Demographic and Health Survey since 1996, opting instead to undertake their own nationally planned and implemented surveys that enable the country to report on the majority of child related SDG indicators. As more MICs shift away from Demographic and Health Surveys to independent national surveys, a need exists to ensure that such national surveys adopt internationally-standardised questionnaires and measurement protocols, so that their results can be compared with those of other countries.

The open source district health information system 2[331] is the world's largest health management information systems platform and is operational in 67 LMICs, and it is also used in some countries (eg, Zambia) to capture education data. Very few indicators (3 of 47) use data from routine sources; improving these routine systems will be a long process, and it is absolutely essential to invest in doing so. The district health information system captures data on services at facilities, from primary to tertiary level, and in many countries also includes activities by community health workers and environmental health officers. The district health information system is an important source of information for SDG monitoring, but it does not contribute to reporting on many SDG indicators for several reasons. First, the district health information system only provides information on individuals who access care; therefore, they are not representative of the entire population, especially where health care utilisation is low; second, data from the private sector is usually not included; third, district health information system data is owned by governments and access to the information

for agencies compiling global monitoring databases requires negotiations around data ownership; and finally, the quality of routinely collected health information is often poor.

Despite these challenges, district health information system 2 could monitor health service coverage indicators in settings with high utilisation of services or reliable information from censuses on population denominators, and for local monitoring via the development of automated score cards for community-facility monitoring activities.

Again, many SDG indicators cannot be monitored through routine information systems that only include citizens who attend a health facility or a school. These data are not nationally representative because they do not capture those citizens who do not attend these facilities. Indicators measuring essential issues such as nutritional status, intimate partner violence, child poverty, and clean fuel access will continue to require household surveys.[325] A balance is needed between reducing the existing reliance on surveys and overloading routine systems, on the basis of a holistic assessment of each country's policies around data and information systems.

A child flourishing and futures profile: a new way to understand country progress

The ultimate aim of the SDGs is to ensure that all children are able to flourish and lead happy, meaningful lives, now and in the future. If countries are to create national and subnational accountability towards the SDGs, particularly regarding child health and wellbeing, they need a summary index of country performance for planning and cross-country comparison. We constructed a new national profile to measure the foundational conditions for children aged 0–18 years to survive and thrive today (table), and act as a proxy measure of future environmental threats to children based on projected greenhouse gas emissions excess in 2030. These two measures of child flourishing and environmental sustainability threats combine to produce our child flourishing and futures profile (figure 10).

Constructing the flourishing index from the SDG indicators

Our flourishing index was constructed first by comparing dimensions proposed by major conceptual frameworks for child wellbeing and human flourishing in HICs, MICs, and LICs, namely UNICEF's Five Dimensions of Children's Rights in the SDG Era;[321] the UN Global Strategy for Women and Children's Health;[17] Martha Nussbaum's basic capabilities for human flourishing;[332] VanderWeele's seven dimensions of human flourishing;[333] the systematic review of indicators of child wellbeing by Pollard and Lee;[334] and framework of positive child wellbeing by Lippman and colleagues.[335] We selected indicators—primarily SDG indicators—and aggregation methods to match those domains.

	Rank	Flourishing*	Surviving	Thriving	World Bank classification
Central African Republic	180	0·06	0·01	0·38	Low income
Chad	179	0·10	0·03	0·28	Low income
Somalia	178	0·12	0·03	0·40	Low income
Niger	177	0·12	0·06	0·26	Low income
Mali	176	0·14	0·06	0·33	Low income
Guinea	175	0·17	0·08	0·35	Low income
Nigeria	174	0·18	0·08	0·38	Lower-middle income
South Sudan	173	0·19	0·11	0·33	Low income
Sierra Leone	172	0·22	0·13	0·35	Low income
Afghanistan	171	0·22	0·13	0·38	Low income
Mozambique	170	0·24	0·16	0·38	Low income
Liberia	169	0·25	0·16	0·40	Low income
Benin	168	0·25	0·18	0·35	Low income
Democratic Republic of the Congo	167	0·26	0·16	0·43	Low income
Guinea-Bissau	166	0·26	0·16	0·43	Low income
Madagascar	165	0·27	0·18	0·40	Low income
Malawi	164	0·28	0·21	0·38	Low income
Burkina Faso	163	0·29	0·21	0·40	Low income
Côte d'Ivoire	162	0·29	0·20	0·43	Lower-middle income
Angola	161	0·29	0·20	0·43	Lower-middle income
Lesotho	160	0·30	0·21	0·43	Lower-middle income
Papua New Guinea	159	0·30	0·28	0·33	Lower-middle income
Yemen	158	0·31	0·25	0·38	Low income
Cameroon	157	0·32	0·23	0·45	Lower-middle income
Burundi	156	0·32	0·21	0·50	Low income
Togo	155	0·32	0·23	0·45	Low income
Mauritania	154	0·32	0·28	0·38	Lower-middle income
Ethiopia	153	0·33	0·30	0·35	Low income
Uganda	152	0·33	0·25	0·43	Low income
Haiti	151	0·35	0·25	0·48	Low income
Congo	150	0·35	0·28	0·45	Lower-middle income
Sudan	149	0·36	0·30	0·43	Lower-middle income
Zambia	148	0·36	0·30	0·43	Lower-middle income
Eritrea	147	0·37	0·30	0·45	Low income
Zimbabwe	146	0·37	0·33	0·43	Low income
Tanzania	145	0·37	0·33	0·43	Low income
Nepal	144	0·38	0·35	0·40	Low income
Bangladesh	143	0·38	0·40	0·35	Lower-middle income
eSwatini	142	0·38	0·30	0·48	Lower-middle income
Comoros	141	0·39	0·35	0·43	Low income
Pakistan	140	0·39	0·35	0·43	Lower-middle income
The Gambia	139	0·39	0·35	0·43	Low income
Kenya	138	0·39	0·30	0·50	Lower-middle income
Laos	137	0·40	0·30	0·53	Lower-middle income
Senegal	136	0·40	0·35	0·45	Low income
Timor-Leste	135	0·43	0·33	0·58	Lower-middle income
Equatorial Guinea	134	0·43	0·38	0·50	Upper-middle income
Ghana	133	0·43	0·38	0·50	Lower-middle income
Vanuatu	132	0·44	0·43	0·45	Lower-middle income
India	131	0·44	0·45	0·43	Lower-middle income
Rwanda	130	0·45	0·38	0·53	Low income
Solomon Islands	129	0·45	0·50	0·40	Lower-middle income

(Table continues on next page)

	Rank	Flourishing*	Surviving	Thriving	World Bank classification
(Continued from previous page)					
Guatemala	128	0·45	0·40	0·50	Upper-middle income
South Africa	127	0·45	0·40	0·50	Upper-middle income
Namibia	126	0·46	0·43	0·50	Upper-middle income
São Tomé and Príncipe	125	0·46	0·48	0·45	Lower-middle income
Gabon	124	0·47	0·40	0·55	Upper-middle income
Djibouti	123	0·47	0·43	0·53	Lower-middle income
Kiribati	122	0·47	0·53	0·43	Lower-middle income
Iraq	121	0·51	0·53	0·50	Upper-middle income
Myanmar	120	0·53	0·43	0·65	Lower-middle income
Suriname	119	0·54	0·53	0·55	Upper-middle income
Bolivia	118	0·54	0·45	0·65	Lower-middle income
Indonesia	117	0·54	0·48	0·63	Lower-middle income
Guyana	116	0·55	0·58	0·53	Upper-middle income
Dominican Republic	115	0·55	0·55	0·55	Upper-middle income
Cambodia	114	0·55	0·58	0·53	Lower-middle income
Bhutan	113	0·55	0·55	0·55	Lower-middle income
North Korea	112	0·55	0·45	0·68	Low income
Honduras	111	0·56	0·60	0·53	Lower-middle income
Philippines	110	0·56	0·55	0·58	Lower-middle income
Cape Verde	109	0·58	0·65	0·53	Lower-middle income
Ecuador	108	0·60	0·68	0·53	Upper-middle income
Venezuela	107	0·60	0·60	0·60	Upper-middle income
Botswana	106	0·60	0·60	0·60	Upper-middle income
Morocco	105	0·61	0·68	0·55	Lower-middle income
El Salvador	104	0·61	0·68	0·55	Lower-middle income
Egypt	103	0·61	0·63	0·60	Lower-middle income
Panama	102	0·62	0·60	0·65	High income
Nicaragua	101	0·62	0·65	0·60	Lower-middle income
Paraguay	100	0·64	0·60	0·68	Upper-middle income
Samoa	99	0·64	0·63	0·65	Upper-middle income
Tajikistan	98	0·65	0·63	0·68	Low income
Peru	97	0·65	0·65	0·65	Upper-middle income
Kyrgyzstan	96	0·66	0·58	0·75	Lower-middle income
Saint Vincent and the Grenadines	95	0·66	0·73	0·60	Upper-middle income
Belize	94	0·66	0·70	0·63	Upper-middle income
Fiji	93	0·66	0·68	0·65	Upper-middle income
Jamaica	92	0·66	0·68	0·65	Upper-middle income
Ukraine	91	0·66	0·68	0·65	Lower-middle income
Brazil	90	0·68	0·68	0·68	Upper-middle income
Seychelles	89	0·68	0·70	0·65	High income
Mexico	88	0·68	0·68	0·68	Upper-middle income
Tonga	87	0·68	0·63	0·75	Upper-middle income
Argentina	86	0·68	0·75	0·63	High income
Algeria	85	0·69	0·63	0·75	Upper-middle income
Mongolia	84	0·70	0·73	0·68	Lower-middle income
Saint Lucia	83	0·70	0·68	0·73	Upper-middle income
Colombia	82	0·70	0·73	0·68	Upper-middle income
The Bahamas	81	0·70	0·70	0·70	High income
Romania	80	0·71	0·65	0·78	Upper-middle income
Russia	79	0·71	0·78	0·65	Upper-middle income
State of Palestine/oPt†	78	0·71	0·75	0·68	Lower-middle income

(Table continues on next page)

For Surviving, we selected maternal survival, survival in children younger than 5 years old, suicide, access to maternal and child health services, basic hygiene and sanitation, and lack of extreme poverty. For Thriving, the domains were educational achievement, growth and nutrition, reproductive freedom, and protection from violence. Each domain is measured by one or two key trace indicators. Good availability of data for most countries was an important factor in indicator selection, as was the need to shine a spotlight on issues including violence against women, child marriage, stunting, or educational achievement. Further details of index construction and scoring as well as individual indicator values by country are available in the appendix pp 19–66.

Briefly, surviving and thriving indicators comprise the two main dimensions of our flourishing index (we also use school education, which is a transform indicator under the UN Global Strategy). Scores for surviving and thriving are calculated separately after categorising each indicator and taking an arithmetic mean weighting each indicator equally within each domain and each domain equally within each dimension. The scores for each dimension are combined into an overall score using a geometric mean. An overall score close to 0 indicates very poor, with 0·25 indicating poor, 0·50 neither poor nor adequate, 0·75 adequate, and 1·00 good flourishing.

Scores and ranks were calculated for 180 individual countries with available data (table). At the higher end of the scale are HICs such as Norway, South Korea, and the Netherlands that typically satisfy the basic conditions for child survival, but still have room for improvement on child thriving. At the lower end of the scale are LICs, such as Central African Republic, Chad, and Somalia, that perform poorly on both child survival and thriving; generally, these countries perform worse on survival than thriving. Countries in the middle of the ranking include a mixture of income levels, such as Myanmar (lower-middle income, 120th), Brazil (upper-middle income, 90th), and Turkey (upper-middle income, 60th). In creating this index, we had to contend with large gaps in data availability with respect to indicators of child development, protection, and wellbeing. Many indicator values, such as maternal mortality or injuries, were drawn from heavily modelled data. This poses well known problems because the validity of modelled estimates depends on a combination of the validity of model assumptions and model robustness to deviations from its assumptions.[336,337]

In some instances, neither modelled nor raw data were available. Indicators on opportunity for participation and voice in local, national, and international affairs are also largely absent from the SDGs. These domains are core elements of a flourishing life across multiple conceptual frameworks.[332–334] Indicators of adolescent happiness, life satisfaction, and positive peer relationships are missing, and indicators for practical reason, meaning, purpose, and autonomy are only represented for girls within

indicators of female empowerment. Measuring these constructs in children is complex because of their subjective and context-specific nature. Collecting information and capturing the voices and experiences of children is also difficult; parents or caregivers are often asked to provide information about their children, but this might introduce bias because of long recall periods[338] or social acceptability.[339] Nonetheless, the global medical community has called for indicators of people's participation in health systems to be included in the next set of SDGs.[340]

Furthermore, current population-based measures of child development rely predominantly on proxy measures, such as stunting and poverty. Accurate assessment of child development is needed to monitor developmental progress from birth through to school entry.[341] Data on the proportion of children younger than 5 years who are developmentally on track with regard to health, learning, and psychosocial wellbeing are available for 66 countries, but this data currently excludes many LICs and HICs.[342] Universal population based measures designed to quantify child development are urgently needed, particularly for the youngest children. New tools for measuring early child development in children younger than 3 years old are under development (panel 10).

Because of data limitations, we envision our child flourishing index as a first step in the process of raising awareness regarding the need to measure and promote conditions fundamental to child wellbeing. Our index is primarily an illustrative tool for showing how SDG indicators can be used to construct a measure of child flourishing at a national level. The index might constitute a base from which more comprehensive indices can be developed as the depth and breadth of global monitoring indicators expands. In the future, countries developing strong subnational information systems might apply our index at district levels.

A proxy sustainability index for the future

Promoting today's national conditions for children to survive and thrive must not come at the cost of eroding future global conditions for children's ability to flourish. Under widely used business-as-usual scenarios, there is a 93% chance that global warming will exceed 4°C by the year 2100.[343] This would have devastating health consequences due to disruption of water and ecosystems, rising ocean levels, inundation of coastal cities and small island nations, increased mortality from heatwaves, proliferation of vector-borne disease, and a crisis of malnutrition because of disruption to food production systems.[3]

Both the 2015 Paris agreement and the Intergovernmental Panel on Climate Change have called on governments to restrict warming to below 1·5°C.[344] Achieving this will require substantial changes to global economic, political, and social systems.[344] Under realistic assumptions about possible trajectories towards

	Rank	Flourishing*	Surviving	Thriving	World Bank classification
(Continued from previous page)					
Azerbaijan	77	0·71	0·73	0·70	Upper-middle income
Georgia	76	0·71	0·70	0·73	Lower-middle income
Costa Rica	75	0·72	0·80	0·65	Upper-middle income
Libya	74	0·72	0·75	0·70	Upper-middle income
Lebanon	73	0·73	0·73	0·73	Upper-middle income
Maldives	72	0·73	0·80	0·68	Upper-middle income
Uzbekistan	71	0·74	0·70	0·78	Lower-middle income
Grenada	70	0·74	0·78	0·70	Upper-middle income
Albania	69	0·74	0·75	0·73	Upper-middle income
Sri Lanka	68	0·74	0·88	0·63	Lower-middle income
Mauritius	67	0·74	0·85	0·65	Upper-middle income
Uruguay	66	0·74	0·85	0·65	High income
Trinidad and Tobago	65	0·75	0·83	0·68	High income
Thailand	64	0·75	0·83	0·68	Upper-middle income
Iran	63	0·75	0·80	0·70	Upper-middle income
Jordan	62	0·75	0·80	0·70	Upper-middle income
Oman	61	0·75	0·80	0·70	High income
Turkey	60	0·75	0·78	0·73	Upper-middle income
Kazakhstan	59	0·75	0·78	0·73	Upper-middle income
Vietnam	58	0·75	0·73	0·78	Lower-middle income
Tunisia	57	0·75	0·73	0·78	Lower-middle income
Armenia	56	0·75	0·73	0·78	Upper-middle income
Moldova	55	0·75	0·73	0·78	Lower-middle income
Qatar	54	0·76	0·83	0·70	High income
Chile	53	0·76	0·83	0·70	High income
Turkmenistan	52	0·76	0·78	0·75	Upper-middle income
Barbados	51	0·76	0·78	0·75	High income
Antigua and Barbuda	50	0·76	0·78	0·75	High income
United Arab Emirates	49	0·78	0·90	0·68	High income
Serbia	48	0·79	0·75	0·83	Upper-middle income
Bahrain	47	0·79	0·90	0·70	High income
Cuba	46	0·80	0·83	0·78	Upper-middle income
Bulgaria	45	0·80	0·80	0·80	Upper-middle income
Malaysia	44	0·81	0·90	0·73	Upper-middle income
China	43	0·81	0·80	0·83	Upper-middle income
Kuwait	42	0·82	0·88	0·78	High income
Lithuania	41	0·82	0·85	0·80	High income
North Macedonia	40	0·83	0·83	0·83	Upper-middle income
USA	39	0·84	0·88	0·80	High income
Bosnia and Herzegovina	38	0·84	0·85	0·83	Upper-middle income
Latvia	37	0·84	0·83	0·85	High income
Saudi Arabia	36	0·85	0·93	0·78	High income
Belarus	35	0·85	0·90	0·80	Upper-middle income
Montenegro	34	0·85	0·88	0·83	Upper-middle income
Poland	33	0·85	0·85	0·85	High income
New Zealand	32	0·86	0·95	0·78	High income
Greece	31	0·86	0·93	0·80	High income
Slovakia	30	0·87	0·90	0·85	High income
Hungary	29	0·88	0·88	0·88	High income
Croatia	28	0·88	0·88	0·88	High income
Estonia	27	0·88	0·88	0·88	High income

(Table continues on next page)

	Rank	Flourishing*	Surviving	Thriving	World Bank classification
(Continued from previous page)					
Italy	26	0·89	0·93	0·85	High income
Slovenia	25	0·89	0·88	0·90	High income
Israel	24	0·90	0·98	0·83	High income
Cyprus	23	0·90	0·98	0·83	High income
Portugal	22	0·90	0·98	0·83	High income
Canada	21	0·90	0·95	0·85	High income
Australia	20	0·90	0·95	0·85	High income
Austria	19	0·90	0·95	0·85	High income
Malta	18	0·91	1·00	0·83	High income
Spain	17	0·91	1·00	0·83	High income
Finland	16	0·91	0·98	0·85	High income
Switzerland	15	0·92	1·00	0·85	High income
Germany	14	0·92	1·00	0·85	High income
Sweden	13	0·92	1·00	0·85	High income
Singapore	12	0·92	1·00	0·85	High income
Luxembourg	11	0·92	1·00	0·85	High income
UK	10	0·92	0·98	0·88	High income
Iceland	9	0·92	0·98	0·88	High income
Belgium	8	0·94	1·00	0·88	High income
Japan	7	0·94	1·00	0·88	High income
Denmark	6	0·94	0·98	0·90	High income
Ireland	5	0·95	1·00	0·90	High income
France	4	0·95	1·00	0·90	High income
Netherlands	3	0·95	1·00	0·90	High income
South Korea	2	0·95	1·00	0·90	High income
Norway	1	0·95	1·00	0·90	High income

*Flourishing is the geometric mean of Surviving and Thriving. An overall score close to 0 indicates very poor, with 0·25 indicating poor, 0·50 neither poor nor adequate, 0·75 adequate, and 1·00 good flourishing.
†oPt should be understood as referring to the occupied Palestinian territory, including east Jerusalem.

Table: **Child flourishing index rankings**

sustainable greenhouse gas emissions—so-called shared socioeconomic pathways[344]—models predict that global carbon emissions need to be reduced from 39·7 gigatonnes to 22·8 gigatonnes per year by 2030[347] to maintain even a 66% chance of keeping global warming below 1·5°C.

A predicted world population of 8·1 billion by 2030[347] corresponds to a target of 2·7 tonnes of CO_2 emitted per capita by 2030 after adjusting for bunker fuels used aboard vessels. This can be considered a minimum target for high-emission countries because it allocates equal per capita emissions to all countries irrespective of their historical role in emitting carbon. Using data from the Global Carbon Atlas,[348] we can create a Sustainability Rank that ranks countries on excess carbon emissions compared with the 2030 target. This provides a convenient and available proxy for a country's contribution to sustainability in future.

Although many HICs rank extremely highly on the flourishing (survive and thrive) index; they are near the bottom in terms of performance on contributions to global ecological sustainability, and vice versa for LICs (figure 11). For example, Norway, South Korea, and the Netherlands are ranked number 1st, 2nd, and 3rd on current child flourishing, but these countries are 156th (Norway), 166th (South Korea), and 160th (the Netherlands) on global sustainability list, all of them with per capita carbon emissions more than 210% higher than the sustainability target for 2030. Therefore, the two country ranks provide us with our child flourishing and futures profile, a combination of a country's achievement on surviving and thriving today, with the damage they might cause through greenhouse gas emissions to children in future.

A focus on equity

Equity is essential to ensure that efforts to promote children's present and future flourishing truly leave no one behind. The child flourishing and futures profile paints a picture of differences in achievement between countries. However, equity within countries across multiple axes, including geographical, social, ethnic, gender, and indigenous versus non-indigenous populations, is just as crucial. But data on these inequities is often scarce, meaning that within-country differences are often obscured, even though these often dwarf inter-country differences.

Equity data on child health and nutrition indicators is primarily available for LMICs, but data on economic inequality using the Gini coefficient is available for most countries (appendix pp 67–71). Plotting countries by their income-based Gini coefficient (a more appropriate measure of inequality than consumption-based Gini coefficient) against their child flourishing index score shows that, generally speaking, poorer countries with lower child flourishing scores tend to have greater economic inequality (figure 12). However, exceptions exist: the USA is a HIC that ranks as the 11th most unequal country in the world (among countries for which we have data on income inequality). Moreover, the child flourishing rank of the USA (39th) is also poor compared with many other HICs, and even some MICs.

Data and information for children at country and local level

A framework for action and feedback between levels

Monitoring of SDG targets is only possible if governments act efficiently and equitably, and citizens have the agency to transform their communities. Although global monitoring initiatives have an important role, they are just one part of a larger bidirectional system of information collection, analysis, and feedback that includes community, subnational, and national actors. Monitoring progress towards the SDGs requires high-quality and complete population data to inform policy, service delivery, and economic decision making. Increased attention and investment in strengthening national information systems within and across sectors, particularly in countries that have historically had weak monitoring systems, is an essential priority. This requires ongoing support for

household surveys, building national statistical capacity, and developing routine administrative systems and other subnational data systems.[349]

We propose a framework outlining how SDG indicators can be collated and monitored to enable accountability for child health and wellbeing (figure 13). Four overarching principles should guide country SDG monitoring plans. First that data collected should be aligned with national priorities. Second, data should be locally relevant. Third, data should be timely and feasible to collect. Finally, the information should contain sufficient detail to enable disaggregation by important measures of equity. National data, which contributes to global databases, comes largely from household surveys and censuses. Data openness is essential, yet roughly half of surveys and censuses are still not publicly available or are reported after long delays. This delay means national planners often have to make decisions on the basis of information that was collected several years previously or cannot undertake disaggregated analysis (eg, by rural or urban area or measures of wealth status) to inform targeted national plans.[349] Subnationally, regional or district planners and managers require locally relevant information, representative of their geographic area, that enables them to take decisions regarding the effective functioning of facilities and services across sectors.

Individuals and communities want information to assess whether services meet their needs. Data generated by citizens could be used to support improved monitoring of local sustainability activities and service delivery, as well as the effectiveness of new policies from their local government. But, what SDG indicators are suitable for community monitoring? For example, monitoring access to safe water and sanitation within schools, access to public transport, and safe spaces for recreation within communities, and coverage of essential health services are obvious candidates. Although data requirements vary for different levels of decision making and action, they are linked along a continuum with feedback loops and underscored by a commitment to upholding child rights and equity.

A dashboard for country action to improve child and adolescent wellbeing

Numerous global accountability frameworks exist to assess country progress towards the achievement of the SDGs. Countdown to 2030 and its predecessor Countdown to 2015 have played an instrumental and pioneering role in accountability for women's, children's, and adolescents' health, by generating country and equity profiles (among other successes); the Global Strategy for Women's, Children's, and Adolescents' Health (2016–2030) also translates the SDGs into concrete guidance on how to accelerate progress. The nurturing care framework is grounded in a rights-based orientation for promoting early childhood development (for which there is an SDG indicator). These components parallel those embedded in the CRC, and include good health, adequate nutrition,

Child flourishing index	Excess CO_2 emissions relative to 2030 targets (%)
1–40	<0
41–80	1–100
81–120	101–200
121–160	201–300
161–180	>300

	Sustainability rank	Flourishing rank	CO_2 per capita	Excess CO_2 emissions relative to 2030 targets (%)	World Bank classification
Qatar	180	54	49·18	1716	High income
Trinidad and Tobago	179	65	29·72	998	High income
Kuwait	178	42	25·24	832	High income
United Arab Emirates	177	49	24·66	810	High income
Bahrain	176	47	23·08	752	High income
Saudi Arabia	175	36	19·28	612	High income
Australia	174	20	16·90	524	High income
USA	173	39	16·24	500	High income
Kazakhstan	172	59	16·07	493	Upper-middle income
Luxembourg	171	11	15·93	488	High income
Canada	170	21	15·64	477	High income
Estonia	169	27	15·13	458	High income
Oman	168	61	14·06	419	High income
Turkmenistan	167	52	12·63	366	Upper-middle income
South Korea	166	2	12·08	346	High income
Russia	165	79	11·76	334	Upper-middle income
Singapore	164	12	11·34	319	High income
Iceland	163	9	10·39	284	High income
Mongolia	162	84	9·88	265	Lower-middle income
Germany	161	14	9·73	259	High income
Netherlands	160	3	9·63	256	High income
Japan	159	7	9·45	249	High income
Belgium	158	8	8·76	223	High income
Poland	157	33	8·56	216	High income
Norway	156	1	8·44	212	High income
Libya	155	74	8·37	209	Upper-middle income
Ireland	154	5	8·35	208	High income
Finland	153	16	8·32	207	High income
Iran	152	63	8·28	206	Upper-middle income
Malaysia	151	44	8·05	197	Upper-middle income
South Africa	150	127	8·05	197	Upper-middle income
Austria	149	19	8·01	196	High income
Israel	148	24	8·00	195	High income
New Zealand	147	32	7·65	183	High income
Bosnia and Herzegovina	146	38	7·60	181	Upper-middle income
Slovenia	145	25	7·02	159	High income
China	144	43	6·98	158	Upper-middle income
Bulgaria	143	45	6·93	156	Upper-middle income
Greece	142	31	6·81	151	High income
Slovakia	141	30	6·50	140	High income
The Bahamas	140	81	6·49	139	High income
Belarus	139	35	6·48	139	Upper-middle income
Seychelles	138	89	6·43	137	High income
Cyprus	137	23	6·37	135	High income
Spain	136	17	6·07	124	High income
Denmark	135	6	6·03	122	High income
Italy	134	26	5·99	121	High income

(Figure 10 continues on next page)

	Sustainability rank	Flourishing rank	CO_2 per capita	Excess CO_2 emissions relative to 2030 targets (%)	World Bank classification
UK	133	10	5·81	115	High income
Turkey	132	60	5·55	105	Upper-middle income
Antigua and Barbuda	131	50	5·54	105	High income
France	130	4	5·48	102	High income
Portugal	129	22	5·31	96	High income
Equatorial Guinea	128	134	5·30	96	Upper-middle income
Hungary	127	29	5·18	91	High income
Serbia	126	48	5·13	89	Upper-middle income
Iraq	125	121	5·08	88	Upper-middle income
Venezuela	124	107	4·99	84	Upper-middle income
Ukraine	123	91	4·80	77	Lower-middle income
Thailand	122	64	4·79	77	Upper-middle income
Switzerland	121	15	4·73	75	High income
Chile	120	53	4·69	73	High income
Lithuania	119	41	4·63	71	High income
Barbados	118	51	4·63	71	High income
Argentina	117	86	4·62	70	High income
Sweden	116	13	4·19	55	High income
Montenegro	115	34	4·18	54	Upper-middle income
Croatia	114	28	4·10	51	High income
Romania	113	80	4·06	50	Upper-middle income
Azerbaijan	112	77	3·89	44	Upper-middle income
Mexico	111	88	3·80	40	Upper-middle income
Latvia	110	37	3·68	36	High income
Suriname	109	119	3·65	35	Upper-middle income
Algeria	108	85	3·64	35	Upper-middle income
Maldives	107	72	3·60	33	Upper-middle income
North Macedonia	106	40	3·48	29	Upper-middle income
Botswana	105	106	3·44	27	Upper-middle income
Mauritius	104	67	3·38	25	Upper-middle income
Malta	103	18	3·35	24	High income
Lebanon	102	73	3·21	19	Upper-middle income
Cuba	101	46	3·18	17	Upper-middle income
Uzbekistan	100	71	3·10	15	Lower-middle income
Georgia	99	76	2·80	3	Lower-middle income
Gabon	98	124	2·73	1	Upper-middle income
Jamaica	97	92	2·69	–1	Upper-middle income
Guyana	96	116	2·67	–1	Upper-middle income
Grenada	95	70	2·56	–5	Upper-middle income
Panama	94	102	2·45	–9	High income
Tunisia	93	57	2·44	–10	Lower-middle income
Saint Lucia	92	83	2·42	–11	Upper-middle income
Ecuador	91	108	2·33	–14	Upper-middle income
North Korea	90	112	2·28	–16	Low income
Brazil	89	90	2·27	–16	Upper-middle income
Egypt	88	103	2·24	–17	Lower-middle income
Jordan	87	62	2·20	–19	Upper-middle income
Albania	86	69	2·18	–20	Upper-middle income
Vietnam	85	58	2·08	–23	Lower-middle income
Saint Vincent and the Grenadines	84	95	2·02	–25	Upper-middle income
Peru	83	97	2·01	–26	Upper-middle income
Uruguay	82	66	1·98	–27	High income

(Figure 10 continues on next page)

responsive caregiving, security and safety, and opportunities for early learning. Other monitoring frameworks are embedded in strategies like the Every Newborn Action Plan, FP2020, the global Accelerated Action for the Health of Adolescents strategy, and WHO's new data portal for maternal and child health.

National governments should do formal, comprehensive child effect assessments every few years (as previously discussed); the question is how they can use these existing accountability mechanisms to construct a simple tool that can graphically display current status and gaps at different time intervals. A user-friendly tool would help highlight areas that are not on track and point to areas of success that can be learned from. The tool would be used by those involved in planning and policy making, or in advocating for children's rights. The groundwork is already well defined: the ingredients needed for children to survive, thrive, and flourish are spelled out comprehensively in the CRC. Making these ingredients available for all requires actions at multiple governmental tiers, across and within sectors, and that specific actions will depend upon the biological, social, and cognitive development of a child as they get older, and the specific context where they live.

This Commission recommends the urgent development of an adaptable country dashboard, based on country consultation and expert advice. The elements for a dashboard will make the status of children visible and catalyse investigation and action. The dashboard will be based on the rights derived from the CRC and informed by the entitlements (discussed earlier), and will monitor contextual variables that affect children's wellbeing. The CRC document emphasises environment and pollution (Article 24),[350] and the importance of environmental education (Articles 29).[350] Therefore, environmental action must be monitored to understand how well we are doing in creating a world we want for our children. As such, this dashboard could be seen as a detailed, actionable companion to the child flourishing and futures profile.

Because different development and life circumstance issues exist for different age groups throughout childhood (ie, different circumstances for infants, young children, school-age children, and adolescents), the dashboard could use a 5-year age interval, a rough, but still useful, categorisation that fits the convention of many current data collection approaches. Criteria for the selection of indicators could be those that are tier one in the SDG framework or other relevant global accountability frameworks, or which have a strong evidence base regarding what works for children and adolescents. Agreement will be needed on how to use traffic-light indicators (eg, green, yellow, red) and which cutoffs should be used to reflect good progress, moderate progress, and insufficient progress. A composite score for each country could be calculated by summing the numbers of indicators coloured green, yellow, or red. This would enable comparison of progress across

countries, particularly across countries within the same region.

Indicators should be disaggregated by key stratifiers (eg, gender, wealth quintiles, urban or rural location, ethnicity, and geographic region) where possible. A companion national equity dashboard could be considered. The indicator estimates or values would be presented along with the colour coding so that the user of the tool has a clear sense of which indicators in each domain or CRC rights area are performing well or poorly. Only datapoints for each indicator within the past 5 years will be shown on the dashboard.

We believe such a dashboard should be a high priority for governments and international bodies, and that development assistance for poorer countries should focus on strengthening data collection and analysis for priority indicators.

Citizen engagement for action and accountability

Community action will be a key determinant of countries' ability to improve children's health and wellbeing and create a sustainable world for their future. Community engagement was of course a fundamental principle of the Alma Ata declaration,[351] in 1978, and the World Development Report 2004,[352] which provided a central message that public services can be improved by strengthening accountability mechanisms between policy makers, providers, and citizens, and proposed a framework for public accountability. The SDG era, with universal rights embodied in the goals, is an opportunity to revitalise a commitment to citizen participation and engagement in monitoring with resultant action stimulated through the process.

Young people as citizen monitors

In light of the large gaps in information on children, we need transformative approaches to monitoring, including community-collected information,[353,354] grounded in lived-experiences, for credible and valid decision making on local policies and programmes. This opens the opportunity for a new role for children and youth in measuring and monitoring their own wellbeing—as active participants. More than half the world is younger than 30 years, many of whom are the hardest hit by poverty, climate change, and inequality. Young people are frequently at the forefront of change and development, through mass citizen and digital activism. Moreover, for the SDGs to meet the ambition of being truly transformative, the monitoring and accountability framework, from local to global authorities and agencies, must be people-centred, inclusive, transparent, and participatory.[353]

Citizen-generated data can provide timely information on issues that matter to the population, including those who are marginalised and hard to reach.[355,356] Furthermore, citizen-generated data can fill gaps on issues of social injustice, economic inequality, and more hidden concerns, such as disability or environmental degradation. Citizens,

	Sustainability rank	Flourishing rank	CO_2 per capita	Excess CO_2 emissions relative to 2030 targets (%)	World Bank classification
Dominican Republic	81	115	1·98	–27	Upper-middle income
Armenia	80	56	1·93	–29	Upper-middle income
Bolivia	79	118	1·89	–30	Lower-middle income
Indonesia	78	117	1·84	–32	Lower-middle income
India	77	131	1·84	–32	Lower-middle income
Costa Rica	76	75	1·77	–35	Upper-middle income
Morocco	75	105	1·76	–35	Lower-middle income
Kyrgyzstan	74	96	1·73	–36	Lower-middle income
Colombia	73	82	1·66	–39	Upper-middle income
Namibia	72	126	1·60	–41	Upper-middle income
Belize	71	94	1·50	–45	Upper-middle income
Fiji	70	93	1·48	–45	Upper-middle income
Bhutan	69	113	1·44	–47	Lower-middle income
Tonga	68	87	1·32	–51	Upper-middle income
Lesotho	67	160	1·26	–53	Lower-middle income
Moldova	66	55	1·26	–54	Lower-middle income
Guatemala	65	128	1·23	–54	Upper-middle income
Philippines	64	110	1·22	–55	Lower-middle income
Angola	63	161	1·19	–56	Lower-middle income
Samoa	62	99	1·19	–56	Upper-middle income
Honduras	61	111	1·15	–57	Lower-middle income
Sri Lanka	60	68	1·11	–59	Lower-middle income
Cape Verde	59	109	1·10	–59	Lower-middle income
El Salvador	58	104	1·10	–60	Lower-middle income
Pakistan	57	140	1·01	–63	Lower-middle income
eSwatini	56	142	0·98	–64	Lower-middle income
Papua New Guinea	55	159	0·90	–67	Lower-middle income
Nicaragua	54	101	0·87	–68	Lower-middle income
Paraguay	53	100	0·86	–68	Upper-middle income
Djibouti	52	123	0·85	–68	Lower-middle income
Yemen	51	158	0·67	–75	Low income
Benin	50	168	0·67	–75	Low income
Vanuatu	49	132	0·66	–76	Lower-middle income
Congo	48	150	0·65	–76	Lower-middle income
Mauritania	47	154	0·64	–76	Lower-middle income
Tajikistan	46	98	0·64	–76	Low income
Kiribati	45	122	0·63	–77	Lower-middle income
Zimbabwe	44	146	0·63	–77	Low income
Senegal	43	136	0·59	–78	Low income
Ghana	42	133	0·58	–79	Lower-middle income
São Tomé and Príncipe	41	125	0·57	–79	Lower-middle income
Nigeria	40	174	0·56	–79	Lower-middle income
Bangladesh	39	143	0·53	–80	Lower-middle income
Cambodia	38	114	0·50	–82	Lower-middle income
Côte d'Ivoire	37	162	0·48	–82	Lower-middle income
Myanmar	36	120	0·47	–82	Lower-middle income
State of Palestine/oPt*	35	78	0·47	–83	Lower-middle income
Sudan	34	149	0·45	–83	Lower-middle income
Timor-Leste	33	135	0·43	–84	Lower-middle income
Solomon Islands	32	129	0·39	–86	Lower-middle income
Togo	31	155	0·38	–86	Low income
Afghanistan	30	171	0·37	–86	Low income

(Figure 10 continues on next page)

	Sustainability rank	Flourishing rank	CO_2 per capita	Excess CO_2 emissions relative to 2030 targets (%)	World Bank classification
Mozambique	29	170	0·35	–87	Low-income
Cameroon	28	157	0·32	–88	Lower-middle income
Kenya	27	138	0·32	–88	Lower-middle income
Nepal	26	144	0·31	–89	Low-income
The Gambia	25	139	0·30	–89	Low-income
Laos	24	137	0·29	–89	Lower-middle income
Zambia	23	148	0·28	–90	Lower-middle income
Haiti	22	151	0·27	–90	Low-income
Tanzania	21	145	0·25	–91	Low-income
Comoros	20	141	0·23	–91	Low-income
Guinea	19	175	0·23	–92	Low-income
Liberia	18	169	0·23	–92	Low-income
Sierra Leone	17	172	0·18	–93	Low-income
Guinea-Bissau	16	166	0·18	–93	Low-income
Burkina Faso	15	163	0·17	–94	Low-income
Eritrea	14	147	0·16	–94	Low-income
South Sudan	13	173	0·15	–95	Low-income
Uganda	12	152	0·13	–95	Low-income
Ethiopia	11	153	0·13	–95	Low-income
Madagascar	10	165	0·12	–95	Low-income
Niger	9	177	0·12	–96	Low-income
Mali	8	176	0·09	–97	Low-income
Rwanda	7	130	0·08	–97	Low-income
Malawi	6	164	0·07	–97	Low-income
Central African Republic	5	180	0·07	–98	Low-income
Democratic Republic of the Congo	4	167	0·06	–98	Low-income
Somalia	3	178	0·05	–98	Low-income
Chad	2	179	0·05	–98	Low-income
Burundi	1	156	0·05	–98	Low-income

***Figure* 10: Ranking of countries and territories on sustainable levels of carbon emissions relative to 2030 targets as a measure of a country's threat to future children, compared with child flourishing rank**
*oPt should be understood as referring to the occupied Palestinian territory, including east Jerusalem.

For more on **Infomex** see https://infomex.org.mx/gobiernofederal/home.action

For more on **FixMyStreet** see https://www.fixmystreet.com/

For more on **Trac FM** see https://tracfm.org/

For more on **HarassMap** see https://harassmap.org/en/

For more on **Ushahidi** see https://www.ushahidi.com/

For more on **I Paid A Bribe** see http://www.ipaidabribe.com

For more on **ForestWatchers** see http://cybermappr.unige.ch/

For more on **Uwezo** see https://www.uwezo.net/

including children and youth, can use information to raise awareness and realise rights, as outlined in Article 12 of the CRC.[350] Methods include participatory budgeting, child consultation activities, and community-based monitoring using score cards, social audits, mobile technology, and social media.[357]

Community-based monitoring ensures greater accountability in local service provision, underscored by a human-rights based approach[357] that acknowledges citizens as active agents of change who can solve problems in their own communities. A meta-case study analysis of 100 case studies of citizen engagement from 20 countries found that 75% of all cases reviewed had positive outcomes across four areas: construction of citizenship; practices of citizen participation; responsive and accountable states; and inclusive and cohesive societies. Negative outcomes included tokenistic participation, violent or coercive state responses, reinforcement of social hierarchies, and exclusion.[356] Although most evidence for community monitoring comes from small-scale studies,[357] one randomised controlled trial of citizen report cards in Uganda showed 19% less nurse absenteeism, higher immunisation uptake, a 16% higher prevalence of facility utilisation, and a 33% reduction in child mortality compared with communities who did not receive the report card intervention.[358] A similar trial done 10 years later, in a different region of Uganda, did not achieve an effect on health care utilisation prevalence or health outcomes (child mortality), but it did show a modest positive effect on treatment quality and patient satisfaction, but this effect was not mediated through citizen monitoring.[359] More evidence is needed, but positive examples exist, including an study from India which shows how change can be driven through citizen action (panel 11).

Many countries have embraced mobile technology, social media, and online platforms for citizens to hold governments to account. These initiatives are created or owned by citizens or civil society and use open-access data to track what is important to them.[362] Some examples include Infomex (Mexico), a web portal for the receipt, processing, and answering of information requests that citizens make to state government entities; FixMyStreet (UK), TXT CSC (Philippines), and Trac FM (Uganda) provide mechanisms for citizens to enquire, complain, or commend government entities on service provision; HarassMap (Egypt), Ushahidi (global), and I Paid a Bribe (12 countries globally), which collect and track information on street harassment, election violence, and petty corruption; ForestWatchers (international), a platform that collects data on deforestation; and Uwezo (Kenya, Tanzania, and Uganda) which does annual, citizen-led large scale statistically representative household assessments to measure literacy and numeracy ability in children.

Young people have driven many highly effective social movements over the past few years—including movements focusing on climate change and inequalities—characterised by self-organisation and the use of new technologies. Youth-led action can help or challenge governments to fill gaps in implementation of programmes and policy (panel 5).[362]

These youth-led social accountability mechanisms hold lessons for scaling up data collection more rapidly. Citizen-generated data, especially of a qualitative nature, on topics that affect people's lives the most, does not need to be representative to enhance our understanding of progress against SDG related targets. Furthermore, the localised nature of most citizen-generated data is exactly why they add so much value. They shed light on what is actually taking place on the ground, which can be a far more useful tool for policy making than statistical data based on national averages.[353] Although technologies hold much promise as tools for youth engagement, there could be contexts in which use of technologies might exclude certain youth from participation, such as those who are illiterate or reside in remote areas without good internet or mobile network access.

Panel 10: Case study: a new method for measuring early child development

Accurate assessment of child development is needed to monitor children's developmental progress from birth through to school entry. Measurement tools are not necessary only for tracking progress toward global policy goals, but also to inform resource allocation and programming. However, population-based measures of child development rely predominantly on proxy indicators, such as stunting and poverty, and existing instruments to measure specific domains of individual child development are often proprietary, with commercial publishers controlling availability, cost, and standardisation. Neither the proxy nor the individual measures are adequate for programme evaluation. As of 2019, no universal measures exist that assess domains of development for children younger than 3 years old.

Three groups have recently developed new tools for measuring domains of development in children younger than 3 years old: the Infant and Young Child Development group, the Caregiver Reported Early Development Instruments group, and the Global Child Development Group. The three measures are being harmonised to develop a single measure, with a programmatic (long-form) version sensitive enough to allow quantification of the relative effects of different interventions administered within research programmes. This measure will be able to assess how study participants change and respond to interventions over time and scores will be comparable across studies; it will also permit identification of populations of children at risk of poor developmental trajectories.

The population level (short-form) version of the tool will contain a maximum of 40 questions and will be of adequate psychometric quality to inform the agreed indicator for Sustainable Development Goal 4.2.1 by generating one score for overall child development. It will be applicable to cross-sectional assessment by lay people, take a maximum of 10 minutes to administer, and be adequately sensitive to detect changes in child development over time and measure geographical, nutritional, and socioeconomic differences at population level. It is envisaged that the short-form tool will be integrated into Multiple Indicator Cluster Surveys, Demographic and Health Surveys, and other population level surveys. This version, piloted in 2019, will allow policy makers to map child development status worldwide and draw attention to vulnerable populations in humanitarian emergencies and other fragile contexts. The absence of a robust early child development instrument has hindered efforts to track progress on ensuring that children thrive and not only survive. A new method, approved by global experts, will enable policy makers, investigators, clinical personnel, and other stakeholders to assess interventions, examine data within and across countries, and use contextual data for understanding associations between predictors of development and scores on the tools. Such efforts must be seen as accompanying and driving a push toward universal early detection of developmental disabilities through appropriate screening programmes in all countries, not just in high-income countries.

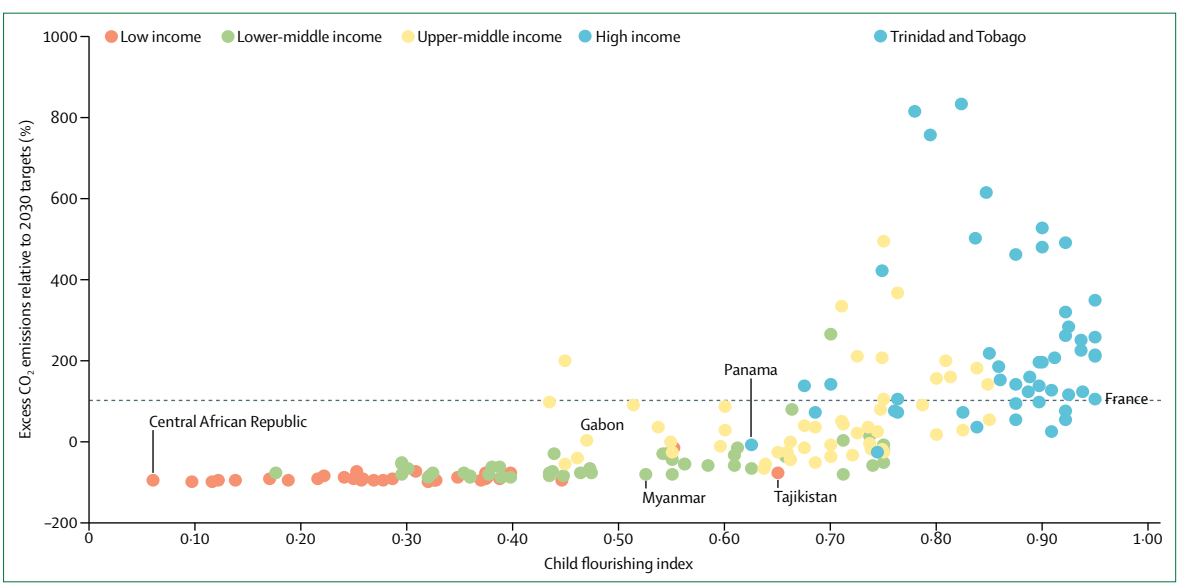


***Figure* 11: Countries' level of carbon emissions relative to 2030 targets as a measure of a country's threat to future children, compared with coefficient of child flourishing**

Data for countries and territories reporting >1000% excess CO_2 emissions are not shown in the figure.

Artificial intelligence as a support to social accountability

Artificial intelligence presents a major opportunity for engagement and accountability in the next decade. Although genuine concerns exist about artificial intelligence, the technology could be harnessed towards public good and humanitarian action in many ways. A team of scientists at Stanford University, Stanford, CA, USA, for example, have combined machine learning with high-resolution satellite

imagery to provide new data on socioeconomic indicators of poverty and wealth. Data from publicly available sources can be applied with minimal training. Georeferenced data on economic outcomes can provide important information on the distribution of poverty within countries to assist prioritisation in national planning and resource allocation.[363]

Artificial intelligence has also been applied to youth employment opportunities in South Africa, which has one of the highest youth unemployment rates in the world. Harambee, a Swahili word meaning all pull together, is a social enterprise that uses artificial intelligence to match youth with employment opportunities through geographical (including transport routes) and behavioural metrics. Youth can register without any fee and more than 1 million youth have interacted with the platform.[364]

Whether information is citizen-generated or through artificial intelligence or machine-learning processes, sustained political engagement from local politicians, decision makers, and the private sector is needed to provide dialogue on solutions. Political engagement should work across systems and sectors rather than consisting of one-off consultations addressing only single sectors (eg, health). Data provides real leverage to push for remedial action, but only if it is accompanied by a review process to discuss the implications for action. Without this engagement, social accountability mechanisms will not lead to change and the power divides between citizens and government will remain.[365]

Local government arguably has a disincentive to initiate processes that make visible their failings and inefficiences. However, from a human rights-based perspective, a responsive local government should be open to engaging with citizens and committed to implementing action to ensure progress. We need to persuade politicians that coalitions with citizens are electorally popular and can support transformational change for sustainable development.

However, without political will, or a budget to support the participation and actions of citizens, the high opportunity cost for the poorest and marginalised makes their participation less likely, which could deepen equity divides.[357] Furthermore, the skills and capacity of both government and civil society organisations to support

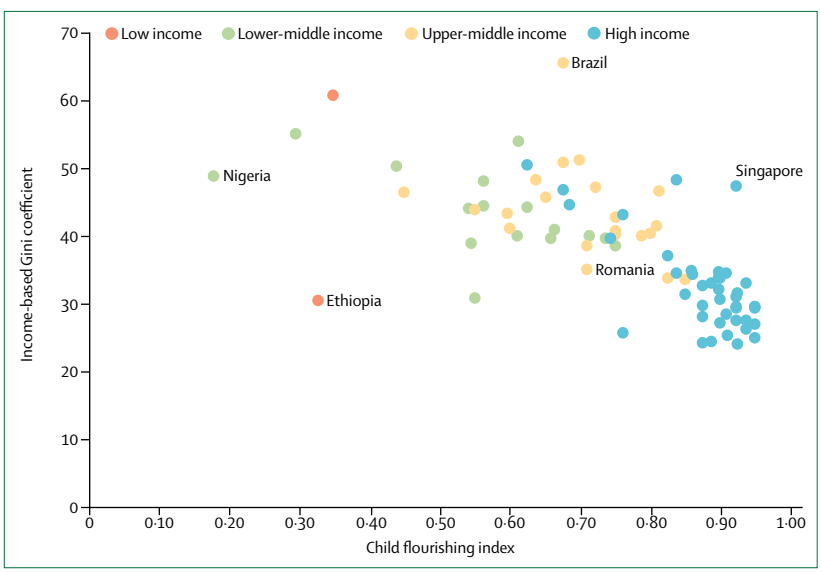


Figure 12: **Countries' level of income inequality, measured by the income-based Gini coefficient, compared with coefficient of child flourishing**
N=85 countries.

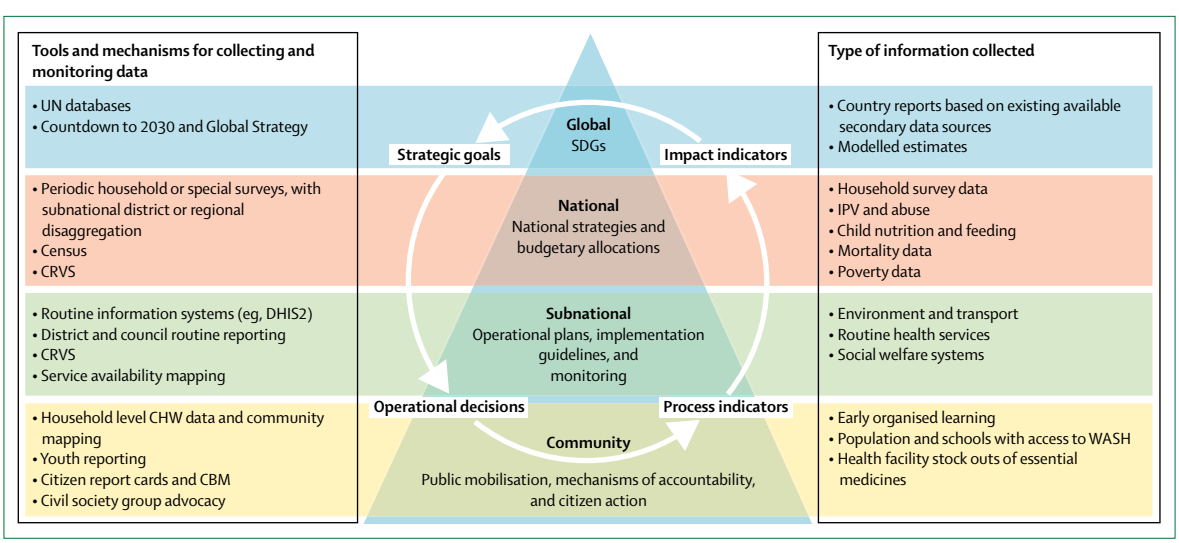


Figure 13: **Framework of levels of information collection and utilisation**
SDGs=Sustainable Development Goals. CRVS=civil registration and vital statistics. IPV=interpersonal violence. DHIS2=district health information system 2. CHW=community health workers. CBM=community-based monitoring. We propose a framework for the collection and use of data for country SDG monitoring. It is underscored by four over-arching principles: Alignment to national priorities, collection of locally relevant information, data that is timely and feasible to collect, and disaggregation of the data to ensure equity. The tools and mechanisms for data collection are outlined as is the type of information required at global, national, subnational, and community levels. A feedback loop is critical to ensure that information is shared between different levels of decision making and action.

Panel 11: **Case study: community-based monitoring and planning of health services in Maharashtra, India**

The National Rural Health Mission, launched in India in April, 2005, has developed a comprehensive framework for community-based monitoring, which aims to improve access to high-quality health care, especially among poorer populations and women and children in rural areas. Community-based monitoring has been piloted in nine states in India. In the state of Maharastra, 500 villages are covered with plans to expand coverage to 750 villages.

Process

Village meetings, distribution of educational materials, expansion and strengthening of village health committees (VHCs), and training of VHC members are used to enhance community awareness and involvement in the process of health accountability. Multistakeholder community monitoring committees are formed at primary health-care centres at block and district levels. These committees include community members, civil society representatives, elected political representatives, and public health staff. Committee members periodically collect information about health service delivery using simple, pictorial semi-quantitative tools, and rate these through publicly displayed report cards, with each service being rated as good, partly satisfactory, or bad. This data is collected both in villages (concerning outreach services) and in health-care facilities.

Public hearings, or Jan Sunwai, with mass participation are organised at primary health-care centres, to present report cards and cases of health-care denial. Health-care officials are called upon publicly to respond regarding remedial actions. Periodic state-wide events enable dialogue between civil society monitoring committee members and the state health department, seeking resolution of unresolved and systemic issues, and help reinforce government support for the community-based monitoring process.[360]

Outcomes

According to state officials, communities have increased public awareness of their rights and empowerment to demand these rights. For example, public involvement in the Jan Sunwai (public hearings) has helped people realise the importance of antenatal care check-ups and improved access and demand for these services. There has also been enhanced accountability from government officials who are confronted on an egalitarian platform through dialogue, and who have addressed long-neglected concerns, such as timely maintenance of clinics, or taken action against corrupt providers.[361]

Community-driven data collection and periodic review has the potential to effectively monitor the provision of entitlements, medicine stocks, human resource deployment, quality of care and attitudinal issues. However, more research is needed on whether so-called bottom-up initiatives for community-driven collection and use of data can effectively contribute to monitoring and planning health policies and programmes, including those relevant to children's health and wellbeing, and their potential for wider scale-up.

social accountability are essential. To effectively support community monitoring and social accountability, civil society organisations need not only funding but also literacy, technical skills, and knowledge of their rights.[357]

A collaborative approach between governments, civil society organisations, and other stakeholders can build local social accountability mechanisms, in which citizens and civil society play a decisive and formal role,[366] and should be embedded as part of the fabric of people's day-to-day lives.

Summary

Here, we reviewed the data and accountability landscape around child health and wellbeing, with a focus on how to monitor, review, and act on data in the SDG era. We reviewed the large gaps in current data processes and highlighted the urgency of investment to strengthen country information systems and capacities to collect, analyse and act on information capitalising on suitable technology to reduce the burden on the public work force. We then proposed some solutions, including a colour-coded child flourishing and futures profile (figure 10) largely on the basis of available country data from the SDGs and carbon emissions, a compact and actionable dashboard to help countries guide their action, and citizen and youth-led monitoring to fill in the gaps. We now turn to our conclusions and key recommendations (panel 1) around how to build a new global movement for children's health and wellbeing at the centre of the SDGs.

Conclusion

We live in an era like no other. Our children face a future of great opportunity, but they stand on the precipice of a climate crisis. Working together, the world's countries have agreed to the SDG framework to usher future generations into a cleaner, healthier world, but the SDG agenda has yet to gain traction. Our challenge is great and we seem to be paralysed.

This Commission proposes a new global movement to place children at the centre of the SDGs. The CRC is the world's most ratified human rights treaty, showing the power of children to unite us for the common good. Working to improve children's health and wellbeing can motivate all of us to save our planet for them and for ourselves.

In this Commission, we have purposefully taken a high-level view of the problem of child health and wellbeing. First, we have argued for a life course and intergenerational approach to show that the benefits of intervening to improve child health and wellbeing are multiplied many times over the life of the child and their descendants. The economic and ethical case is unbeatable. We also show

how all sectors are responsible for children and lay out an agenda to unite them to work together.

Second, we operationalised this agenda by summarising a set of entitlements for children that have already been agreed upon by the world's countries. We have also described how families, communities, and governments can mobilise to deliver them. The effort required is enormous, but if we cannot deliver for our children, what is the measure of our civilisation?

Third, such an enormous collective project requires governance. We have laid out the changes to governance required at national, local, and global levels. Given that children's health and wellbeing is the concern of all sectors, we paid special attention to multisectoral collaboration, as well as vertical coordination between the various governance levels, to make sure our efforts are synergised for maximum effect.

Fourth, we extended our discussion of governance to discuss the regulation of commercial marketing. The commercial threats to children's health are dangerously underappreciated, and we propose strong, specific actions for global and national actors to protect children from rapacious, unregulated commercial practices.

Finally, what gets measured, gets done. We have taken a hard look at data and accountability under the SDGs, and find that current efforts are severely wanting. Only the participation of citizens, communities, and children themselves can overcome the enormous data gaps for the SDGs, and because assessment of countries' performance must include a measure of sustainability to protect our children's future and their present, we have proposed a children's flourishing and futures profile to do just that.

Although awed by the scale of our task, this Commission is also optimistic about our chances to change our world for the better, for and with children. It will require bold politicians, courageous community leaders, and international agencies that are willing to radically change the way they work. No excuses, and no time to lose.

Contributors

Initial sections of the Commission were contributed by writing teams led by ASG, JSh, TD, TP-J, and SA. LG designed the child flourishing index and child futures profile. Full drafts were prepared by a core writing team led by AC and SLD, based on contributions from writing team members. All commissioners participated in creating Commission content, shaping the overall Commission structure, writing and editing drafts, and formulating conclusions and recommendations. The Commission was prepared under the general direction of HC, AMC-S, and AC. Further data gathering and analyses were done by a supporting team listed in the Acknowledgments. The authors alone are responsible for the views expressed in this Commission and they do not necessarily represent the views, decisions or policies of the institutions with which they are affiliated, or those of WHO or UNICEF. The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of WHO and UNICEF concerning the legal status of any country, territory, city, or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Declaration of interests

This Commission was funded by the Bill & Melinda Gates Foundation (Seattle, WA, USA) and all authors received support from the foundation via WHO to attend meetings. AB, KR, KS, NR, and JSi are employees of WHO; and SP, DBH, and JR are employees of UNICEF. AC received grants from WHO; and received personal fees from the Bill & Melinda Gates Foundation. SLD received personal fees from the Bill & Melinda Gates Foundation and WHO for the submitted Commission and for work outside of the published work. LG received personal fees from the Bill & Melinda Gates Foundation (via WHO). YRS received personal fees from the Bill & Melinda Gates Foundation (via WHO). SSR received personal fees from the Bill & Melinda Gates Foundation (via WHO). AB received funding from the Bill & Melinda Gates Foundation. JB received a grant from the Bill & Melinda Gates Foundation. JSi received a grant from the Bill & Melinda Gates Foundation AG reports grants from the United States Agency for International Development Center for Accelerating Innovation and Impact, UNICEF, Rockefeller Foundation, and World Bank outside of the submitted work. MT has received grants from the Conrad Hilton Foundation outside of the submitted work. ASG is supported by the South African Research Chair's Initiative of the Department of Science and Technology and National Research Foundation of South Africa (Grant No 82769) and the South African Medical Research Council. All other authors report no competing interests.

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Editorial note: the *Lancet* Group takes a neutral position with respect to territorial claims in published maps and institutional affiliations.

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