PLACING CHILDREN AT THE CENTRE OF THE SUSTAINABLE DEVELOPMENT GOALS

A SIGHT–Swedish Society of Medicine Road Map on Global Child Health

Writing group: *Tobias Alfvén*, Johan Dahlstrand*, David Humphreys*, Daniel Helldén, Sofia Hammarstrand, Anna-Clara Hollander, Anton Lager, Mats Målqvist, Sahar Nejat, Peter Søgaard Jørgensen* *Equal contribution

Swedish Institute for Global Health Transformation (SIGHT)
& Swedish Society of Medicine's Committee for Global Health

Stockholm 2019

Svenska Läkaresällskapet

SIGHT. SWEDISH INSTITUTE FOR GLOBAL HEALTH TRANSFORMATION

CONTENTS

PREFACE

Established in January 2017 with support from the Bill and Melinda Gates Foundation, the Swedish Institute for Global Health Transformation (SIGHT) promotes an interdisciplinary approach to the field of Global Health.

Hosted by the Royal Swedish Academy of Sciences, SIGHT works to catalyse a transformative development agenda by creating synergies between Swedish research, education, government, and civil society institutions. In doing so, SIGHT provides a scientific basis for national and transnational collaborative policy work.

The Swedish Society of Medicine's Committee for Global Health stimulates research, education and implementation of knowledge in global health. The committee also places priority on strengthening interdisciplinary collaborations and student involvement aimed at achieving sustainable development and equitable health worldwide.

These two organisations have come together to collaborate on this road map, which was led by an inter-disciplinary writing and advisory group, through a process being described in detail in the box to the right.

We are very grateful for the many insightful comments and encouraging words from those who have participated in the process of developing this road map mentioned in Appendix 2. We would also like to dedicate a special thanks to Stefan Peterson (Chief of Health, Unicef), Zulfiqar Bhutta (Professor, Centre of Excellence in Women and Child Health, Aga Khan University, Karachi and Centre for Global Child Health, Hospital for Sick Children, Toronto), Göran Tomson (Senior Advisor, SIGHT, Stockholm, Sweden and Councelor UN Agenda 2030 at the President's office Karolinska Institutet, Stockholm, Sweden) and Peter Friberg (Director, SIGHT, Stockholm, and Professor, Sahlgrenska Academy, University of Gothenburg, for critical and constructive comments at different stages of the process. Lastly we would like to thank Johan Jarnestad for figure development and Ulrica Segersten for her layout and graphic input.

Placing children at the centre of the sustainable Development Goals

A SIGHT–Swedish Society of Medicine Road Map on Global Child Health

Writing group: *Tobias Alfvén*, Johan Dahlstrand*, David Humphreys*, Daniel Helldén, Sofia Hammarstrand, Anna-Clara Hollander, Anton Lager, Mats Målqvist, Sahar Nejat, Peter Søgaard Jørgensen* *Equal contribution

5.4

"Despite significant progress during recent decades, some **5.4 million** children under the age of five continue to die around the world each year – 15,000 every day – largely from preventable causes."

BOX 1: **OVERVIEW OF METHODOLOGICAL PROCESS**

The initial framework for this road map originated with a roundtable meeting hosted at the Royal Swedish Academy of Sciences by the Swedish Institute for Global Health Transformation (SIGHT) in Stockholm in April 2017.

The meeting framed a discussion around how Sweden may best contribute to global child health in the era of the Sustainable Development Goals (SDGs). From this roundtable a writing group was formed. The writing group consisted of contributors with backgrounds including medicine, public health, economics, and environmental sciences.

A methodological approach was discussed and further developed during SIGHT's inception workshop in June 2017, from which an international interdisciplinary writing group were convened which included world leading experts Lawrence Gostin, Zulfiqar Bhutta and Nelson Sewankambo to explore child health interlinkages within the SDGs (results published in BMJ in January 2018. (1)

Early in the process a review of the vast literature concerning global child health was undertaken, with a particular emphasis on current trends and priorities within the post-2015 era. Several meetings of the writing group over a period of the ensuing months facilitated an interdisciplinary approach to content creation between the authors. Preliminary findings were presented and discussed at both the 2017 European Public Health Conference and the 2018 Swedish Global Health Research Conference. A second roundtable meeting engaging the wider writing group and other key stakeholders was convened prior to the paper's finalisation in June 2018. Lists of attendees at the roundtable meetings are included as part of the Appendix 2.

EXECUTIVE SUMMARY

KEY MESSAGES

In embracing the UN's 2030 Agenda for Sustainable Development, the global community is faced with a number of challenges – and opportunities – to maintain momentum towards improving the lives and livelihoods of children around the world.

Building upon achievements of the Millennium Development Goals (MDGs) that preceded them, the Sustainable Development Goals (SDGs) require an unprecedented multisectoral approach to accelerate progress on child health. Targeted interventions, whilst playing an important role, must be accompanied by macro-level progress towards realising a sustainable biosphere, society, and economy that will support future generations into perpetuity.

A key priority in Sweden's development agenda, improving the health of children locally and globally, both requires contributions that are inter- and multidisciplinary in scope and grounded in evidence.

This road map offers one such contribution. Authored by academics with diverse expertise across a breadth of fields and with input from policy-makers and civil society, it reflects the inherent multisectoral scope of child health and development. In so doing, it approaches the topic at a pivotal time in history:

- **Agreed upon by world leaders** at the United Nations Sustainable Development Summit in September 2015, the 17 SDGs represent the global community's most comprehensive and people-centred set of universal targets to date.
- **Children, being among society's** most vulnerable members as well as the true beneficiaries of our future development achievements, have the most to gain – or lose – if our global efforts are (un)successful.
- **In global child health children** are often defined in terms of under-five mortality, however in this report we define children according to the United Nations Convention on the Rights of the Child as "a human being below the age of 18 years unless under the law applicable to the child, majority is attained earlier".
- **Despite significant progress during** recent decades, some 5.4 million children under the age of five continue to die around the world each year – 15,000 every day – largely from preventable causes. However addressing preventable mortality should go hand in hand with preventing needless morbidity in order to set every child off on the best start in life – regardless of where they live.
- **Reducing such needless suffering** has the potential to reorientate the life trajectory of millions of children, whose livelihoods are impacted by malnutrition, toxic exposure to conflict and displacement, poor access to clean water and sanitation, infectious diseases against which vaccines exist, and inadequate availability of information of sexual and reproductive health and services.
- **This burden** of disease remains grossly unequal: disparities persist both between and within countries, where rural and urban poor populations suffer disproportionately. In many societies, children with disabilities continue to be marginalised and excluded, leaving their unique care needs unmet.
- **Broader social determinants** of child health – gender inequality, education, climate and the environment, safety, early childhood development, freedom – play a pivotal role in enhancing wellbeing and availing livelihood opportunities. However, important structural enablers struggle to be addressed in contexts plagued by poverty and political insecurity.

For gains towards the SDGs to be fully realised by the next and future generations, a revitalised and transformative agenda for child-centred development is required. To achieve meaningful and lasting progress on child health and wellbeing, this roadmap encourages the global community to harness the interlinking potential of the SDGs in order to accelerate progress whilst paying particular attention to the following five priority areas:

1. Redefining global child health in the post-2015 era: placing children at the centre of the SDGs through a life-course perspective (Figure 1, page 8)
Comprising 17 goals and 169 targets the SDGs present a complex conceptual framework, which from a child health perspective poses numerous challenges and opportunities. An increasing epidemiological diversity of illnesses and diseases and a more scattered development agenda impacting advocacy and cooperation efforts demands renewed efforts to highlight the importance of investing in the health and wellbeing of children and adolescents as part of the 2030 Agenda. This road map proposes a model for placing the health and wellbeing of children at the very heart of the SDGs and the three domains of sustainable development; the biosphere, the society and the economy. Such a compelling new narrative will increase the relevance of the SDG framework, simplify its complexity, promote meaningful cross-sectoral engagement, and galvanise public support for the goals.

2. Striving for equity: ensuring no child is left behind
Despite reductions in global infant and child mortality, progress has not been evenly distributed. A central tenant of the SDG agenda, reducing inequity must drive efforts to target and reach those specific populations most in need. In many societies, children constitute a vulnerable and disenfranchised group, lacking a political voice and decision-making power. This is even more the case for girls, children from culturally diverse and indigenous backgrounds, those with disabilities and children from socially and economically marginalised families. Investment in interventions proven to reduce child morbidity and mortality must be supported by ongoing contextual evaluation of their impact to ensure that no child is left behind. Further strengthening the programming for equity, and intra-country data collection, including age and sex-aggregated information, should inform policies and the delivery of tailored interventions to the most disadvantaged populations.

3. Enabling a child's right to thrive throughout the life-course
Transforming the perception of the child, from a medical to a holistic and relational perspective, acknowledges the unique rights children have from birth. Continued advocacy for a rights-based approach to child health will grant children everywhere the best opportunity to not just survive but thrive, including the right to education and safety. Corporal punishment must be abolished everywhere. Embracing a life-course approach and expanding a focus beyond 0–5 years to include the prenatal, older child and adolescent periods (including the right to sexual and reproductive health and rights) will ensure the health and wellbeing needs of children are met at each of their life stages in order to realise their full potential in adulthood.

4. Bridging the "know-do gap": facilitating evidence informed policy-making and implementation
In spite of rapid growth in knowledge and technological innovation, evidence-based preventive measures and life-saving interventions still fail to reach those who need them most. Projects such as the World Bank-led Disease Control Priorities (DCP3) initiative and the WHO Evidence-Informed Policy Network (EVIPNet) make cost-effective strategies available to assist governments and policy-makers to prioritise key interventions. Yet even in high-income settings, expanding translational and implementation-oriented research programs that also engage and build capacity within local communities can play a vital role in combating emerging challenges that threaten the lives and livelihoods of children. Involving young people in the design of policies and programs is essential.

5. Capitalising on interlinkages between the SDGs to galvanise multisectoral action
Identifying and capitalising on interconnections between the SDGs and their convergence on the health and wellbeing of children is fundamental for promoting effective multisectoral partnerships that can strengthen the sustainability and resilience of health and social systems. Studies suggest limited policy trade-offs occur between health and other priorities, thus highlighting the vital role of health as a catalyst for sustainable development.

This road map emphasises a new agenda for promoting child health and wellbeing in the SDG era. In doing so it places children firmly and deservedly at the heart of global development efforts. While much unfinished business remains, the global community must move beyond a mortality-focus to address the fundamental inequities which continue to disadvantage children both in Sweden and around the world. This will require evidence-based investments and can be achieved through multi-disciplinary partnerships under accountable leadership.

Swedish stakeholders both at home and abroad are invited to consider opportunities and develop ideas to make a strategic and meaningful contribution to this agenda. The Swedish voice for child health and wellbeing needs to be emphasised and supported at the highest political level.

Only by placing children at the centre of the Sustainable Development Agenda, will gains towards attaining the SDGs be truly realised by the next and future generations.

Figure 1: A new conceptual model placing children at the centre of the Sustainable Development Goals.

> "Investing in women and children's health and wellbeing reduces poverty and is cost effective."
>
> **David Nabarro**, UN Special Advisor for the 2030 Agenda for Sustainable Development[3]

INTRODUCTION

This road map presents an opportunity to re-orient the focus of the current global development paradigm. Published under the auspices of the Royal Swedish Academy of Sciences *(Kungl. Vetenskapsakademien)*, it reflects the multisectoral and multidisciplinary scope of child health and development and the contributions of those from a range of fields and expertise.

In agreeing upon a new Agenda for Sustainable Development in 2015, global leaders acknowledged that the Sustainable Development Goals (SDGs) will not be achieved under a business as usual approach. (2) Despite significant success stories under the Millennium Development Goals (MDGs) which preceded them, the SDGs comprise a broader, more ambitious whole-of-development agenda within which an expanded list of (sometimes competing) priorities needs navigating. However, in spite of such complexity "the interlinkages and integrated nature of the SDGs are of crucial importance in ensuring that the purpose of the new Agenda is realised". (2)

This paper frames the child[2] as a central narrative that unites the SDGs, and their many interlinking targets, to unify development priorities with today's children and future generations in mind. Mobilising this common narrative requires action against several important challenges: discussion of which forms the body of this report.

In exploring these challenges, the following pages are divided into three sections. The first, entitled *Context: Global child health today*, summarises the current state of child health around the world whilst outlining the contextual rationale – the "what" and the "why" – for this work.

The second section and main part of this paper is dedicated to presenting and discussing the following **five key priority areas:**

1. Redefining global child health in the post-2015 era: placing children at the centre of the SDGs through a life-course perspective.
2. Striving for equity: ensuring no child is left behind.
3. Enabling a child's right to thrive throughout the life course.
4. Bridging the "know-do gap": facilitating evidence informed policy-making and implementation.
5. Capitalising on interlinkages within the SDGs to galvanise multisectoral action.

The third and final section, *The need for a revitalization of child health and well-being*, concludes by discussing the next steps – the "where to" – towards realising a Sustainable Development Agenda which has a healthy future for the world's children at its heart.

Importantly, an exclusive focus on child and adolescent health should not be regarded as the sole solution to achieving progress towards the SDGs. Rather, today's children are vulnerable beneficiaries whose livelihoods we need to nurture and protect. In recognising the next and ensuing generations as the true beneficiaries of development, a focus on improving the lives and livelihoods of the world's children is both a moral imperative and a sound investment. (3)

[2] The United Nations Convention on the Rights of the Child defines a child as "a human being below the age of 18 years unless under the law applicable to the child, majority is attained earlier". In this report we define children as a human being below the age of 18 years.
[3] WHO PAHO. Placing women, children, and adolescents at the centre of actions is essential to achieving the SDGs. Press release: 25 May 2016. Geneva. Accessed online (January 2018):

The SDGs and child health: more than unfinished business

Uniting around eight common goals, the Millennium Declaration signed by the United Nations (UN) member states in 2 000 spurred the global community into concerted action against time-bound and quantifiable targets to address extreme poverty in its many dimensions. (4)

Within this framework, economic and political investment saw global childhood mortality fall at the highest rate since 1990. However, fewer than one third of countries succeeded in reaching the universally adopted fourth Millennium Development Goal (MDG) of reducing this rate by two-thirds by the end of 2015 (5). Modelling based on present trends suggests 4.4 million children will still die unnecessarily in the year 2030 (6).

Launched in 2015 after extensive consultation from civil society and governments around the world, the 2030 Agenda for Sustainable Development and its accompanying seventeen Sustainable Development Goals (SDGs) represent the next push to eradicate extreme poverty, reduce inequality, and protect the natural environment (7). Whilst not legally binding, the goals represent a foundation for partnerships to progress towards a sustainable future that ensures health and dignity for all.

However, when contrasted against the MDGs this more diverse agenda gives rise to a more limited focus on health. Only one of the seventeen goals, Goal 3, directly concerns health and, in particular, only its accompanying Target 3.2 specifically addresses the health and wellbeing of children:

- **Goal 3:** Ensuring healthy lives and promoting the wellbeing for all at all ages
- **Target 3.2:** By 2030, end preventable deaths of newborns and children under five years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-five mortality to at least as low as 25 per 1,000 live births.

As this report highlights, interlinkages within and between the expanded list of seventeen goals and their associated one hundred and sixty-nine targets are inextricable. These interlinkages present both important opportunities as well as significant challenges.

The challenge of competing priorities

This broader and more comprehensive set of SDGs, while more inclusive, brings with it added challenges associated with competing priorities. And we are already falling behind. Latest data suggest current progress in many areas is far slower than needed to meet the prescribed 2030 targets (8).

The health and wellbeing of children stand to benefit, stagnate, or regress depending on progress against other development indicators. In other words, it is impossible to untangle the health of children from their social, natural and economic environments. (9) Adding empirical evidence, it has been demonstrated that approximately half of the reduction in under-five mortality between 1990 and 2010 can be attributed to investments outside of the health sector. (10)

It is clear that a business-as-usual approach will be insufficient if truly transformative change is to be realised. Investment in evidence-based, locally adaptable and scalable interventions that can sustain progress over time is more prescient than ever to ensure the gains in child health achieved to date are capitalised on and the benefits realised by those most in need.

Without losing sight of the unfinished progress on reducing global child mortality, it is high time to aspire beyond to a world in which all children not only *survive* but *thrive* in order to realize their potential to transform communities. (11)

45%

The first twenty-eight days of life account for approximately 45 percent of childhood deaths, mainly from preterm complications, intra-partum events and infectious causes.

The Global Burden of Disease as it applies to children

In health terms, childhood is unique. The first week of life is riddled with nearly two-hundred times the disease burden of the average week of adult life. (12) This burden is driven nearly exclusively by premature mortality: the first twenty-eight days of life account for approximately 45 percent of childhood deaths, mainly from preterm complications, intra-partum events and infectious causes. (13, 14)

Indeed, almost 87 percent of Disability Adjusted Life Years (DALYs) borne by children are due to premature death (15). Globally, for young children under the age of five these causes include neonatal conditions, lower respiratory tract infections, gastrointestinal disease, and malaria (Figure 2, to the right). However, these causes vary between different countries and contexts the world over.

The most recent figures report a global under-five mortality rate of 39 deaths per 1,000 live births in 2017, representing a 49 percent reduction since 2000. Mortality rates during the neonatal period have reduced from 31 to 18 per 1,000 live births globally during the same time frame, representing a 42 percent reduction. However, the proportion of under-five deaths now occurring within the first 28 days of life is increasing, which represents the lagging global progress in reducing neonatal mortality. (13) Addressing the stubborn rate of stillbirths in low and middle income countries – 2.6 million in 2015 – which has not changed much for several years, is a significant and neglected global challenge. About half of all stillbirths occur in the intrapartum period, despite the fact that over two thirds of births now being in health facilities, representing the greatest time of risk and the result of inadequate care during labour and delivery. (16)

In broadening the development agenda and promoting absolute targets, the SDGs provide a benchmark from which to monitor progress at a country level: and for the global community to rightly focus its attention on the settings with the most progress yet to achieve. (17) For instance, in sub-Saharan Africa mortality rates for children under the age of five remain high – over 76 per 1,000 live births – well above the global average and resulting in 1 in 13 children dying from a potentially preventable cause in that region every year. (13)

Whilst neonatal and child mortality remain important indicators for monitoring progress on health gains in childhood, mortality alone does not provide a comprehensive picture of the burden of disease borne by individuals in different populations. Capturing the impact of illness on wellbeing necessitates a broadening of metrics. High quality, disaggregated data play a critical role in improving our understanding of the contributors to preventable morbidity and mortality in childhood.

First coined in 1990 as a summary measure to give an indication of overall burden of disease, DALYs were used to compare the impact of diseases that cause premature death but little disability with diseases that seldom cause death but contribute to disability. (15) The graphs in Figure 3 depict the progress made since 1990 in reducing the global burden of disease in children under the age of five, as well as the close association between mortality reduction and DALYs lost.

DALYs throughout childhood

For babies born at term, free from complications of prematurity, neonatal disorders, congenital abnormalities, and without complications of delivery, the neonatal period has the potential to be among the most disease-free of all. Yet for those born into poverty, the following years confer significant vulnerability to infections and malnourishment. Hence, a large proportion of causes of disability are associated with long-term sequelae of conditions present at birth and complications from a variety of infections and nutritional deficiencies. (17)

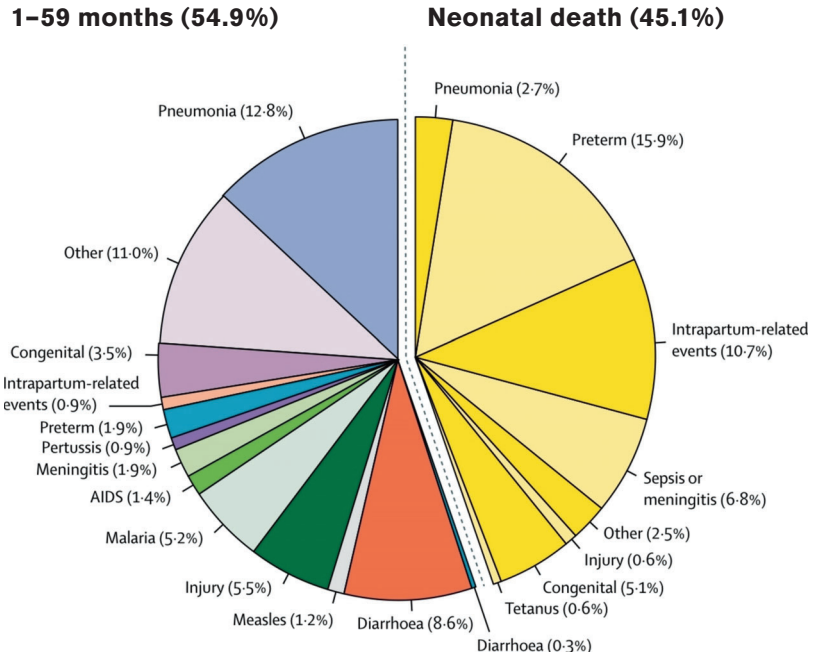


Figure 2: Global causes of under-five mortality, adapted from Liu et al. (6)

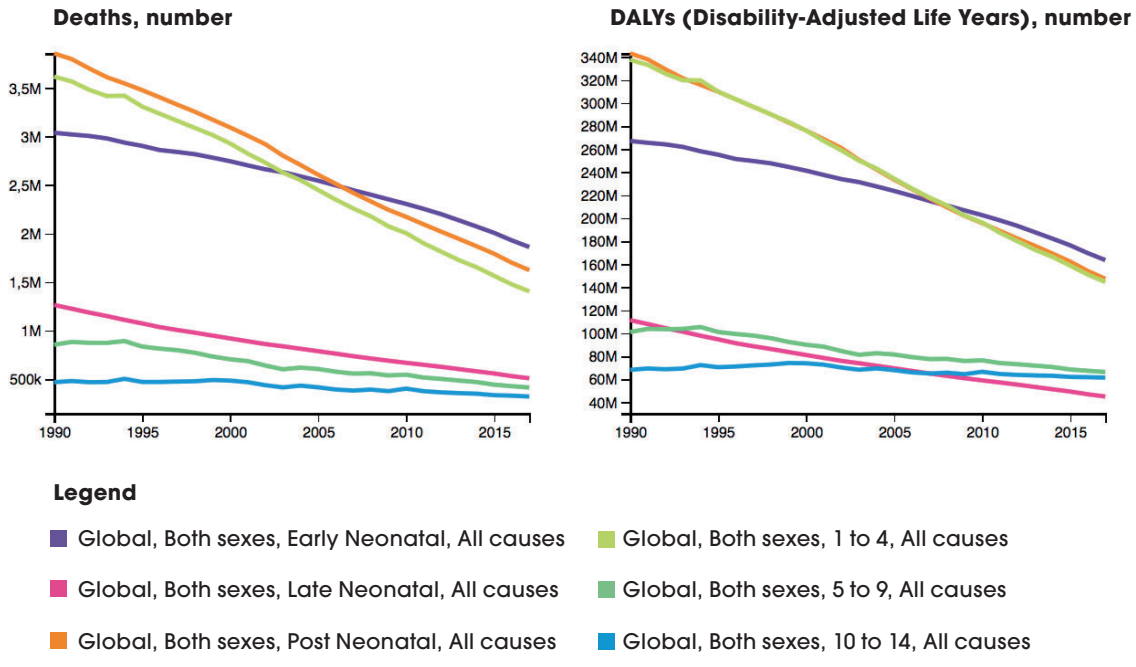


Figure 3: Comparison of global morbidity and mortality rates among children from 1990 to 2017, demonstrating the significant contribution of mortality on DALYs. (12)

CONTEXT: GLOBAL CHILD HEALTH TODAY

Between the ages of 10–14 years chronic disease begins to contribute to childhood DALYs. Although the burden from non-communicable diseases (NCDs) in this age is still relatively low – compared with contributing to one-third of the burden at age 60–64 – mental illness can begin to manifest with life-long repercussions.

Whilst life expectancy continues to increase in many countries around the world, for the first time in history children in high-income settings face the real possibility of living shorter lives than their parents. (18) High rates of childhood obesity, early onset type-2 diabetes, mental illness and other NCDs contribute to a rapidly expanding burden of lifestyle and genetic-related morbidity in adulthood.

Figure 5 (pages 16–17) depicts the DALY burden as it transitions throughout childhood. The more complex epidemiological picture, among older children presents a variety of challenges to focussing targeted interventions. Further discussion on the arguably neglected health needs of adolescents is included in Priority 3 of this report.

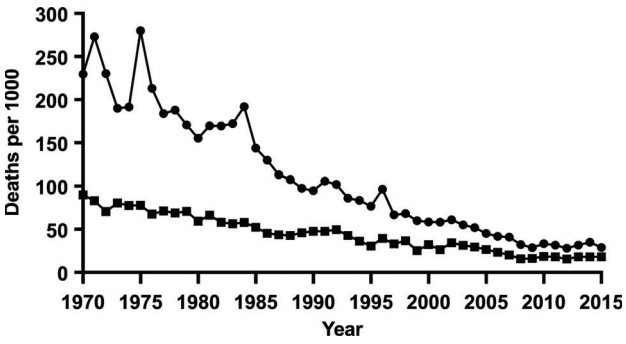
The impact of externalities

Natural and human-induced disasters have the capacity to significantly potentiate burdens of childhood morbidity and mortality. Among society's most vulnerable, children are often disproportionately affected and afflicted by both the direct and indirect consequences of armed conflict, drought, famine, and many other external insults, particularly in contexts where local resources are overrun and a society's capacity to cope exceeded.

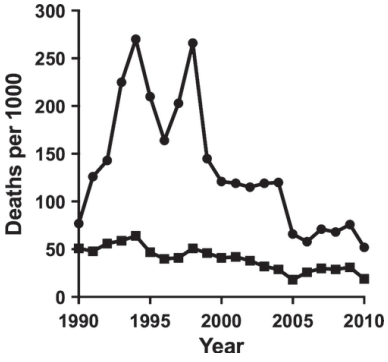
In analysing the data from surveillance sites in four low and middle-income countries, progress in reducing neonatal and under-five mortality was found to be linked with external influences. Overall mortality curves showed dramatic reductions over time, however peaked significantly during wars and catastrophes (Figure 4). (19) Yet arguably the present generation's largest externality – climate change – has the potential to influence the lives of children the world over most significantly. Through a multitude of direct and indirect effects, the impacts of a changing climate are being felt today, and future projections represent an unprecedented risk to human health. (20) The priority of addressing human-induced climate change is discussed in the following pages.

Multiple studies have explored the short and long-term impact of conflict on the mental health of children and adolescents, demonstrating affects that last well into adulthood. (21) Further, if born within 50 km of an armed conflict a newborn has an increased risk of up to 27 percent of dying before reaching one year of age compared to the same region without conflict. Staggering figures show that for the entire continent of Africa between 1995 and 2015 the number of infant deaths related to conflict, primarily through effects on maternal health, malnutrition and infectious disease risk, were between 2.6 to 3.6 times the direct deaths from armed conflicts. (22) The physical and psychological scars of war – the result of violence, imprisonment, torture, sexual abuse, abduction, and other unconscionable cruelties – manifest in a generation of lasting casualties. In committing atrocities towards children, perpetrators destroy the foundation for a nation's future. (23)

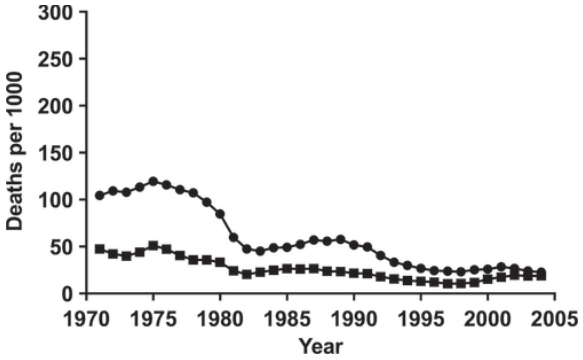
Safeguarding the rights of children, as enshrined in the United Nations Convention, remains as critically important today as it was thirty years ago. (24) In circumstances the world over, both in peacetime and in war, children continue to bear a disproportionate burden of suffering. Reducing the impact of externalities – be they effects of climate change, migration, or violent conflict – requires active efforts to improve the social resilience capacity of affected communities.



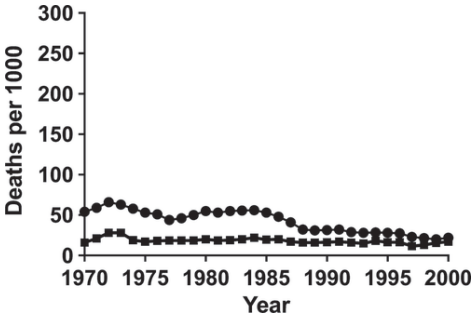
The under-five mortality rate (circles) and the neonatal mortality rate (squares)in Matlab, Bangladesh, 1970–2015



The under-five mortality rate (circles) and the neonatal mortality rate (squares)in Rwanda 1990–2010



The under-five mortality rate (circles) and the neonatal mortality rate (squares)in León, Nicaragua 1970–2005



The under-five mortality rate (circles) and the neonatal mortality rate (squares)in Ba Vi, Vietnam 1970–2000

Figure 4: Under-five and neonatal mortality rates over time in Bangladesh, Nicaragua, Rwanda and Vietnam, highlighting the impact of externalities. (19)

27%

If born within 50 km of an armed conflict a newborn has an increas ed risk of up to 27 percent of dying before reaching one year of age compared to the same region without conflict. (22)

GLOBAL BURDEN OF DISEASE 0 - 19 YEARS

The estimates below are taken from the Global Burden of Disease study as of 2017. Included are all estimates for causes that account for above 1.5% of the global burden of disease, measured in disability adjusted life years (DALYs), for each period of life. The causes are specified at level 3 according to GBD methology, except for 0–7 days, 7–365 days when all neonatal disorders that exist in the study are specified. All diseases marked with a asterix* account for more than 1.5% of all DALYs for all ages.

The width of the bars are relative to the amount of DALYs for each age cohort.

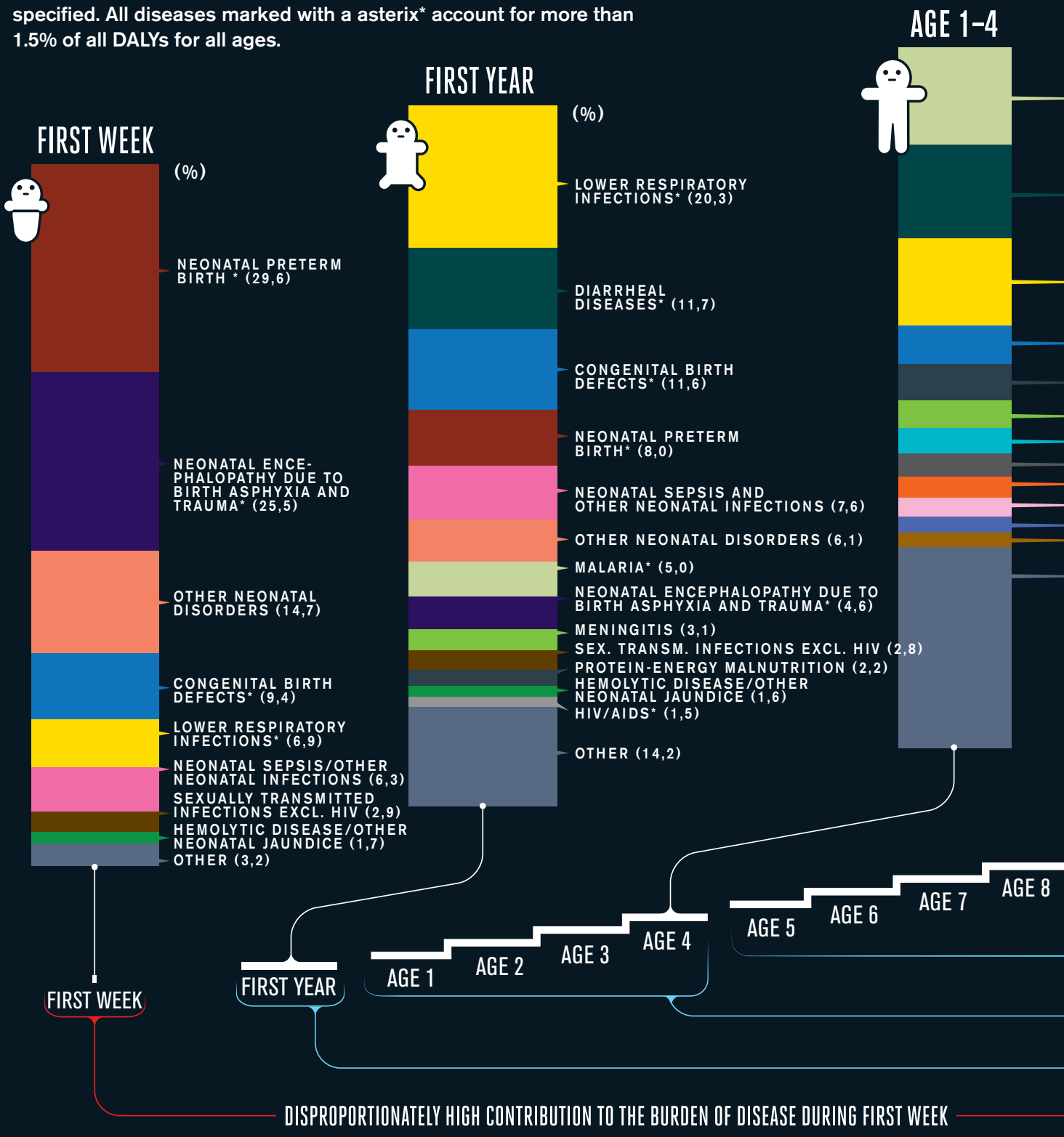


Figure 5: Transition of global DALY burden during childhood

SOURCES: GLOBAL BURDEN OF DISEASE COLLABORATIVE NETWORK. GLOBAL BURDEN OF DISEASE STUDY 2017 (GBD 2017) RESULTS. SEATTLE, UNITED STATES: INSTITUTE FOR HEALTH METRICS AND EVALUATION (IHME), 2018.
AVAILABLE FROM http://ghdx.healthdata.org/gbd-results-tool

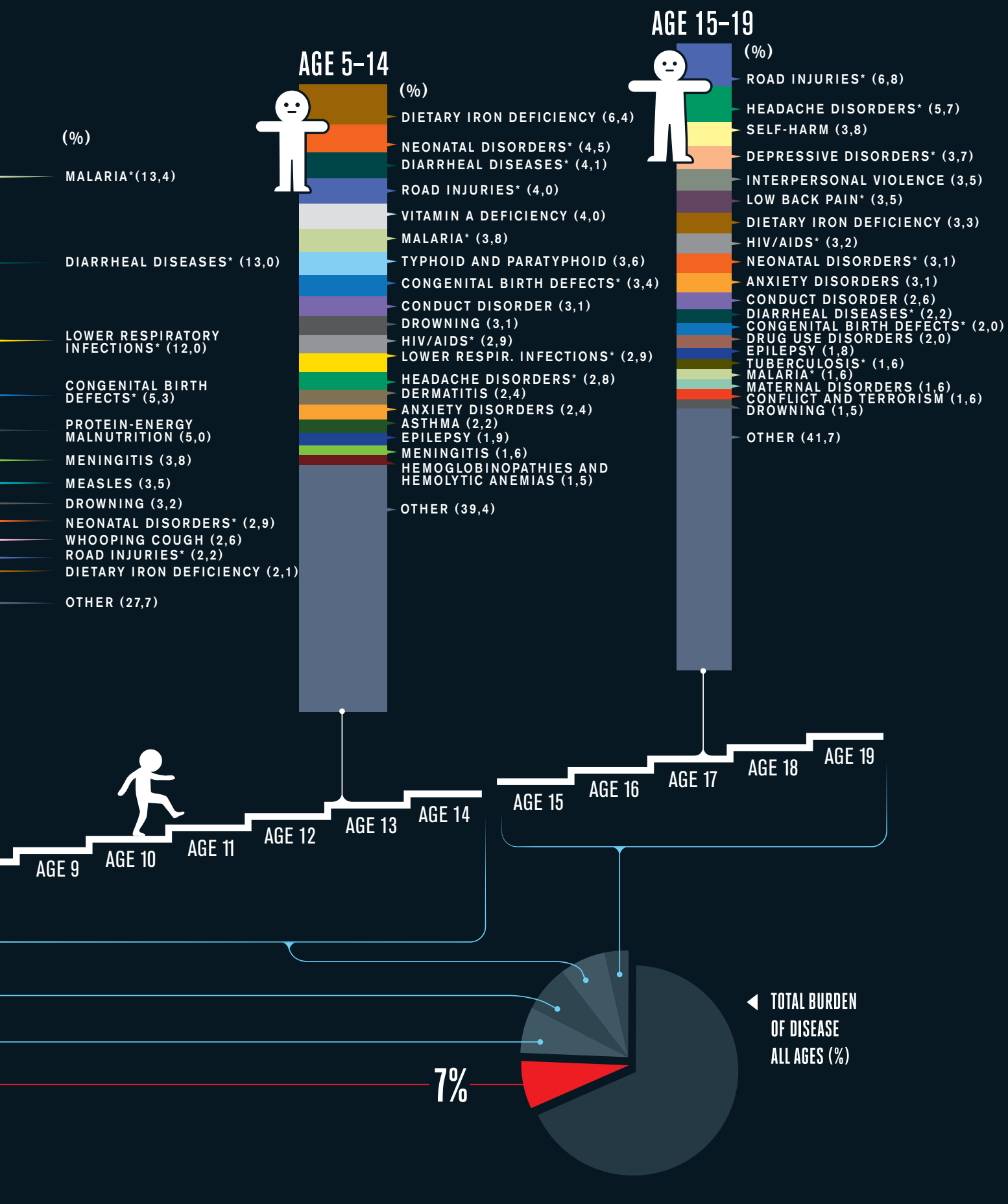


ILLUSTRATION: JOHAN JARNESTAD/WWW.INFOGRAPHICS.SE

The Swedish example: A rights-based approach to promoting child health and wellbeing

Sweden has among the lowest child mortality rates in the world with only 2.8 deaths per 1,000 live births. (13) The epidemiological burden reflects that of other high-income countries. Among children under five years of age, the two major contributors to mortality are congenital abnormalities and preterm birth complications, which also account for the two leading contributors to DALYs in children under five. For older children and adolescents aged 5–14 years, injuries and malignancies are the two most prominent causes of death, while mental ill-health and skin diseases contribute most significantly to DALYs. (12)

Children in Sweden report positive lifestyle habits compared to children in many other high-income countries. Moreover, these habits are largely improving. Fewer adolescents are abusing substances like alcohol and tobacco. After decades of increasing rates of childhood weight-gain and obesity, trends are now starting to decline. (25) However, Swedish children and adolescents face increasing health challenges due to other sequelae of physical inactivity and most notably mental ill-health. (26) The number of 13 and 15 year-olds who report psychosomatic symptoms (for instance sleeping difficulties or anxiety) has doubled since the 1980s, and currently almost a third of all 15 year-old boys – and over half of all girls – report such symptoms. (27)

However, like in many countries systematic disparities in health between different social groups persist and, in certain contexts, are even rising. Whilst most children and adolescents in Sweden report a good standard of health, those living in socially unfavourable conditions remain more likely to experience health problems. Equal opportunity for high quality education and mother and child services that reach all groups of society, as well as multisectoral and civil engagement, have been identified as key to combating health disparities among children in Sweden. (28) Additionally, taking into consideration findings of impact of early life income inequality on health and well-being of adolescents in high-income countries at large (29), it is worthwhile to consider and counter economic disparities directly, not the least from a gender perspective.

Swedish policy attempts to improve child health and wellbeing

The stability of Swedish society throughout the twentieth century (coupled with a largely publicly funded healthcare system, enabled child health services to focus on prevention, health promotion and universal coverage. (30) Interestingly, the decline in maternal and child mortality rates experienced from the 19th century halted during the 1920s and even increased in Sweden, similar to other western countries. (31) In response to this troubling outlook, the Swedish government decided to initiate free antenatal and infant care to everyone after a successful initial trial. This policy change coincided with a rapid decrease in child and maternal mortality from 1940 to 1960, and has recently been shown to have led to significant long term health and economic benefits, primarily within vulnerable groups in Sweden. This may represent one reason why Sweden has historically experienced relatively low health disparities. (32) Importantly, Swedish child health services often promote an integrated approach focusing on the health and well-being of the mother and child, whilst working collaboratively with other social services such as the education sector and various social support agencies.

Sweden offers 480 days of parental leave per child. Swedish policy is supporting parents who want to share parental leave and by this underlining father's (and other co-parents) significant role in the early life of children. In 2017 fathers claimed 27.9 percent of parental leave. (33)

27.9

In 2017 fathers in Sweden claimed **27.9 percent** of parental leave. (33)

CONTEXT: GLOBAL CHILD HEALTH TODAY

There is widespread evidence supporting the benefits of early childhood care and education. Studies demonstrate that equity of quality early childhood education and care promotes greater social equity more broadly, whilst particularly benefiting disadvantaged children. (34) Today, some 80 percent of one to five-year-olds attend preschool in Sweden. One contributing factor to this high number is Sweden's maximum-fee policy which makes childcare affordable.

Further, Sweden has a long tradition of safeguarding the rights of children. In 1979, as the first country in the world, Sweden made corporal punishment illegal. This move was preceded by a long debate on the perception of childhood and the rights of the child, making violence against children socially unacceptable. This was met by scorn and disbelief by the global community but today 43 countries have similar laws. In 1993 Sweden introduced an ombudsman to protect the rights of the child and give voice to children.

Moreover, sexuality education is compulsory in schools since 1955 and there is a strong support for it among the Swedish society. This training is aimed at supporting and preparing young people for living a responsible sexually healthy life, and includes teaching about sexual and reproductive anatomy, sexual functions, sexual orientations, sexual transmittable infections, HIV/AIDS, abortion and contraceptives. (35)

Reflecting this value placed on children has had demonstrable broader impacts on health service delivery. For instance, the current trend in neonatal health care in Sweden is to emphasize family-centred care and non-separation. Not primarily because it is most effective or has the highest level of medical evidence, but because it reflects understanding of the child as a person and acknowledges the relational aspects of child health and development. Further advances in neonatology are to a large extent derived from these basic values, including changes in pain relief management and health care organisation.

Another expression of a changing perception and a higher assigned value towards women and children is the current feminist-oriented foreign policy, more broadly promoting rights for the oft-neglected. Internationally, Sweden was one of the first countries in the world to adopt a coherent foreign policy framework for global development when the parliament passed the "Politik för Global Utveckling" in 2003. (36) This framework enabled a holistic and transparent view of the policies that could affect global development. In a global context, this unique experience and feminist standpoint is an important contribution to efforts to improve child health and survival specifically since it challenges the neglect of perinatal health by governments and health systems around the globe.

In conclusion, although challenges remain – particularly concerning health inequalities and mental ill-health – the Swedish approach to child health and wellbeing offers valuable lessons for countries at all income levels. A strong focus on integrated services, coupled with a strong historico-cultural emphasis on rights, together drive a commitment to equitable universal health coverage. When combined with a multisectoral approach built on recognition of the impact of social determinants, Sweden can and should strive towards placing the child at the centre of the SDGs both in its domestic efforts and through its overseas contributions.

"[We have a duty] to all the world's people, especially the most vulnerable, and in particular the children of the world, to whom the future belongs."

The United Nations Millennium Declaration

Realising SDG gains by the next and future generations

Child health is both central to and dependent upon successful attainment of the SDGs. There is little value in achieving any of these seventeen goals if the next and future generations are not empowered to fully realise their benefits.

Whereas scaling-up access to targeted interventions saw remarkable progress in reducing preventable childhood mortality under the MDGs (where health enjoyed a considerable focus), proportionally less explicit attention means the interlinkages between the SDGs become critically important to leverage and deliver upon. We thus need to consider the main dimensions of the SDGs as they apply to children, and how these may best be capitalised upon.

There is also a need to become more alert of the long recognized but rather newly described commercial determinants of health, which have been defined as "strategies and approaches used by the private sector to promote products and choices that are detrimental to health". (37) It is clear that there is not yet consensus on what the commercial determinants include – and do not include – however the effects on child health (for example related to NCDs and lifestyle choices) cannot be ignored. (37–40)

For this to be realized, a re-framing of global child health is required. (41) As already identified, defining child health in terms of wellbeing and not merely by the absence of disease is critical. Similarly, addressing the full gamut of physical, social, economic, environmental and other factors which contribute to a child's wellbeing throughout their first two decades of life must be a core priority. (42)

Delivering a healthy start for the next and future generations will enhance their likelihood to enter life equipped with the resources necessary to be economically productive, educationally empowered, and transformative within their communities.

The following section introduces a conceptual model for reorienting our interpretation of the Sustainable Development Agenda by placing children at the centre of the SDGs through five key priorities.

PLACING CHILDREN AT THE CENTRE OF THE SDGS

An evolving global burden of disease, combined with a more complex policy agenda which impacts advocacy and cooperation, calls for renewed efforts to highlight the importance of investing in the health of children as part of the 2030 Agenda. A compelling new narrative will assist to increase the relevance of the SDG framework, simplify its complexity, promote meaningful cross-sectoral engagement, and galvanise public support for the goals.

A new conceptual model

Figure 6 conceptualises placing the health and wellbeing of children at the centre of the SDGs. Supported by family, caregivers, and the local community, the child is encircled by broadening domains of the economy, society, and the biosphere. These domains link corresponding goals in a thematic approach and are all enveloped by the seventeenth SDG ("Partnerships for the Goals"). Such partnerships, between governments, the private sector, and civil society – essential for a successful global sustainable development agenda – are needed at regional, national and local levels.

The extent of interlinkages between SDG goals and targets are unparalleled among previous development frameworks. Harnessing this integrated nature of the SDGs is "of crucial importance in ensuring that the purpose of the new Agenda is realised". (2) Moreover, these interlinkages also illuminate the potential conflicts between different priorities within the 2030 Agenda. By grouping goals into encircling domains and relating these to the child at the centre of the framework, the conceptual model serves as a starting point from which to identify and address current and future barriers to accelerating child health locally, nationally, regionally, and globally.

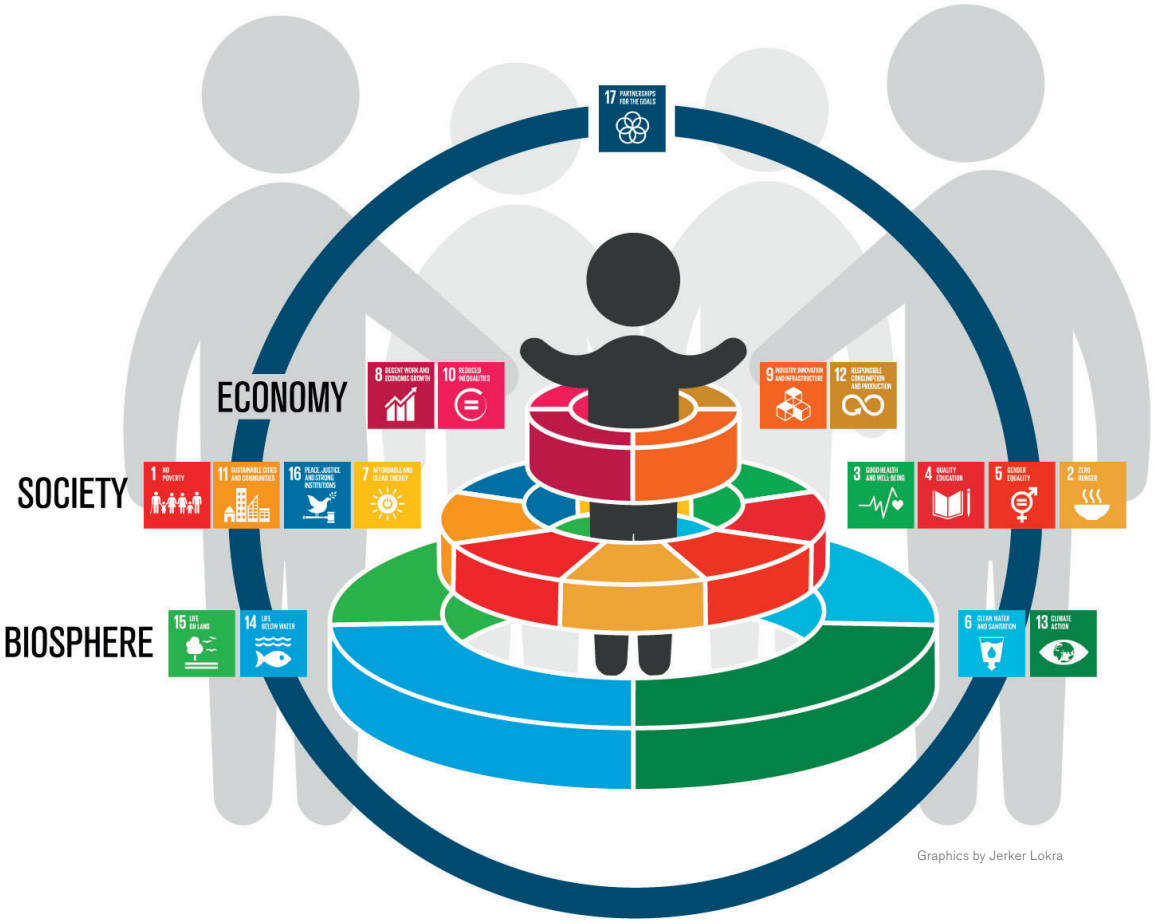


Figure 6: A new conceptual model placing children at the centre of the Sustainable Development Goals.

Integrating sustainability throughout the biosphere, society and the economy

Examining the domains of the biosphere, society and the economy further, there are common and clear interlinkages that emphasize the need to put the child at the centre of the SDGs.

The first domain, the biosphere, is the global ecological system integrating all living beings. For humans, and in particular children, health is largely dependent on the well-being and sustainability of the ecosystems on our planet – our planetary health. (43) Physical and psychological impacts of extreme weather events, heat stress, poor air quality, altered disease patterns of some climate-sensitive infections and food and water insecurity all can have a profound and lasting impact on the health and wellbeing of children. An astounding 88 percent of the existing burden of disease attributable to climate change occurs in children younger than 5 years. (44)

Through inaction in combating climate change (SDG 13) and biodiversity loss (SDG 14, 15), we will not be able to reduce poverty (SDG 1) or hunger (SDG 2), nor will we have clean water and sanitation (SDG 6). To reduce climate change we are dependent on affordable and clean energy (SDG 7) and require sustainable cities (SDG 11) and communities (SDG 10). In order to reduce energy consumption and preserve the earth's decreasing resources requires responsible consumption and production (SDG 12). (43, 45, 46) Interestingly, some evidence suggests that local factors such as geography and temperature might play a bigger part in explaining overall variability of under-five mortality than country level factors. (47) Similarly, watershed condition and forest cover can help to explain local variation in children´s diet and exposure to infectious diseases. (48–50) These are but a few examples of the importance of interlinkages in the context of climate change, biodiversity and child health.

The second domain of inter-relating SDGs concerns society. The social determinants of health relate to the "conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life". (51) Social determinants affect everyone's health and when determinants (both devastating and protective factors) are distributed unevenly between groups, health inequalities emerge. War and natural disaster are possibly the most unjust social determinants of health. During the last ten years armed conflict has claimed the lives of over 2 million children, whilst more than 300,000 children have been enrolled in militia groups and armies.There are 6 million children who have been left wounded or disabled for life and 1 million have been orphaned. During natural disasters too, children suffer worst as a result of lack of sanitation, infrastructure and security after a catastrophe. (52)

Another prominent social determinant is gender (SDG 5), with gender differences in health being neither biologically nor socially constructed. (53, 54) Gender still has a profound impact on child and adolescent health in many areas of the world. (55) Important gendered health issues include child marriage, denied contraception opportunities, double standard of sexual behaviour, practices of female genital cutting, and boys' higher risk of injuries and substance abuse. Children – especially girls – born to educated mothers are more likely to attend school themselves, resulting in a cycle of opportunity that extends across generations. Education is not only important for the child: a girl who receives an education will seek better health care during pregnancy, in childbirth and during her child's early years. The results are reflected in lower levels of under-five mortality, reduced fertility, improved health-care practices and later marriage and childbearing. (56) Considering that gender to a large extent dictates other social determinants, gender inequity must be fought for throughout the continuum of care. (57)

The third domain encircling the child is the economy. Health inequities (SDG 10) are pervasive both between countries and within countries. (58) These inequities are strongly linked to socioeconomic factors. For instance, restricted access to key health-related services is associated with low socioeconomic status in low-income countries, including antenatal care for adolescent mothers in west Africa. (59) As in the latter case, the consequences carry important negative health outcomes, including high mortality rates, with adolescents hardest hit in a context marked by poverty. (17) Yet access to health services follows a wealth gradient in affluent societies too, and when compounded by the social determinants of health, can result in marked discrepancy in life expectancy for citizens who reside only suburbs apart. (60)

Importantly, children are the starting point for work on countering socioeconomic inequities, as inequalities are cemented early in life, especially through differences in care and education. If society does not act on such inequalities, transgenerational poverty persists.

Each of these three domains emphasises the importance of placing the child at the centre of the Sustainable Development Agenda. Yet more explicit and contextualized exploration of the interlinkages between priorities – including possible synergies and conflicts – is needed in order to deliver sustainable progress in child health and well-being. This challenge is discussed and further explored under Priority 5: *Capitalising on interlinkages within the SDGs to galvanise multisectoral action*.

PRIORITY 1: **OPPORTUNITIES FOR ACTION**

- Promotion of a rights-based "child at the centre" policy and funding agenda, both domestically (Ministry for Health and Social Affairs) and internationally (Sida, MFA), with broad leadership and appropriate regulatory oversight.
- Critical and action-focused cross-sectoral engagement and collaboration based on interlinkages between child health and other SDGs.
- Increasing the awareness of the risks associated with climate change for the health and wellbeing of future generations and work for improved mitigation and adaptation.
- Promotion of sustainable and equitable economies which foster and incentivise youth employment
- Highlighting the importance of SDG 17 – *Strengthen the means of implementation and revitalize the global partnership for sustainable development* – including enhanced metrics for measuring progress.

ENSURING NO CHILD IS LEFT BEHIND

A central tenant of the SDGs agenda, reducing inequity must drive efforts to reach those populations most in need. Investment in interventions proven to reduce child morbidity and mortality must be supported by ongoing scientific and contextual evaluation of their impact to ensure no child is left behind. Further strengthening the programming for equity through improved country-level data collection (including age and sex-aggregated information) will inform policies and the delivery of tailored interventions to the most disadvantaged populations.

In spite of recent reductions in global infant and child mortality, progress has not been evenly distributed. Four out of every five childhood deaths occur in sub-Saharan Africa or Southern Asia (Figure 7, page 28), where a child is 20 times more likely to die before the age of five than a child of similar age living in Sweden. (13)

Rates of morbidity also unfavourably dominate in low-income countries. Despite the proportion of DALYs for under-15 year-olds declining globally from 41 percent in 2000 to 28 percent in 2015, driven largely by mortality reductions, the proportion of children suffering preventable morbidity remains relatively static. (15) Malnutrition accounts for a large proportion of morbidity and is a major contributor to preventable mortality. Rates of non-fatal pneumonia, malaria, and diarrhoeal disease continue to burden countries with poor access to sanitation, clean drinking water, health care and immunisation coverage. Yet, in many instances traditional mortality-focused reporting measures fail to capture this burden of disease accurately. Similarly, the impact of ill-health on school attendance and education attainment, for example, is largely unknown in many low-income settings. If all children in low-income countries completed upper secondary school by 2030, per capita income would increase by 75 percent by 2050 and we could advance the fight to eliminate poverty by a full decade. (8)

Furthermore, national averages can hide significant intra-country disparities: illness and mortality rates are consistently higher among rural and poorer communities, often where access to essential health interventions is impeded by significant socio-economic and geographical barriers. (61) As illustrated in Figure 8, absolute disparities in under-five mortality rate between the poorest and richest have narrowed since 1990, although the relative differences have remained stable. (62) It is clear that a focus on the poorest populations are paramount.

However, the news is not all bad. In most countries, and indeed overall, inequalities have been gradually decreasing. (62) Whilst inadequate health system coverage particularly among poor populations continues to limit improvement in health outcomes for select nations, coverage inequalities have been steadily reducing during the past two decades. (60)

Gender equity remains one of the most influential social determinants that affect health outcomes for women and girls across the globe. Moving from talk to action through the prohibition of child marriage, advancing girls' secondary education, promoting gender-responsive adolescent health, and addressing gender-based violence have been key steps to ensuring that girls are not left behind. (63)

Yet challenges remain to continue expanding gender-equal health coverage in the face of growing population pressures and historically high rates of forced migration (see Appendix), as well as the difficulty of re-organizing the health system to improve access to and quality of NCD-targeting health interventions (64). If anything, further acceleration is required at political and systems-levels to scale-up local capacity and address broader determinants of child health. Overall, health system interventions must be designed and programmed with the explicit goal of reducing health inequity.

7%

The leading risk factors for incident DALYs among persons aged between 10–24 years are alcohol abuse (7%), unsafe sex (4%), iron deficiency (3%), lack of contraception (2%), and illicit drug misuse (2%). (78)

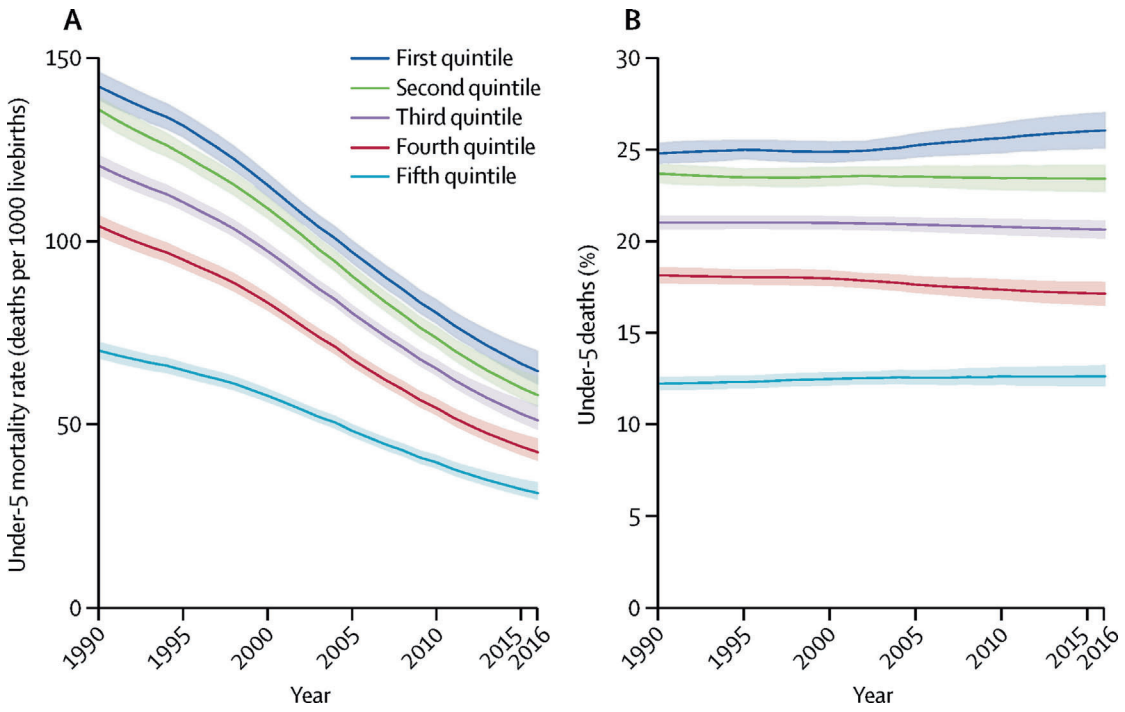


Figure 8: Quintile-specific under-5 mortality rate from 1990 to 2016, for all low-income and middle-income countries (excluding China) combined. (A) Under-5 mortality rate and (B) percentage of under-5 deaths by year. Curves are point estimates. The first quintile is the 20% poorest quintile and the fifth quintile is the 20% richest, shaded areas are 90% uncertainty intervals. Adapted from Chao et al. (62)

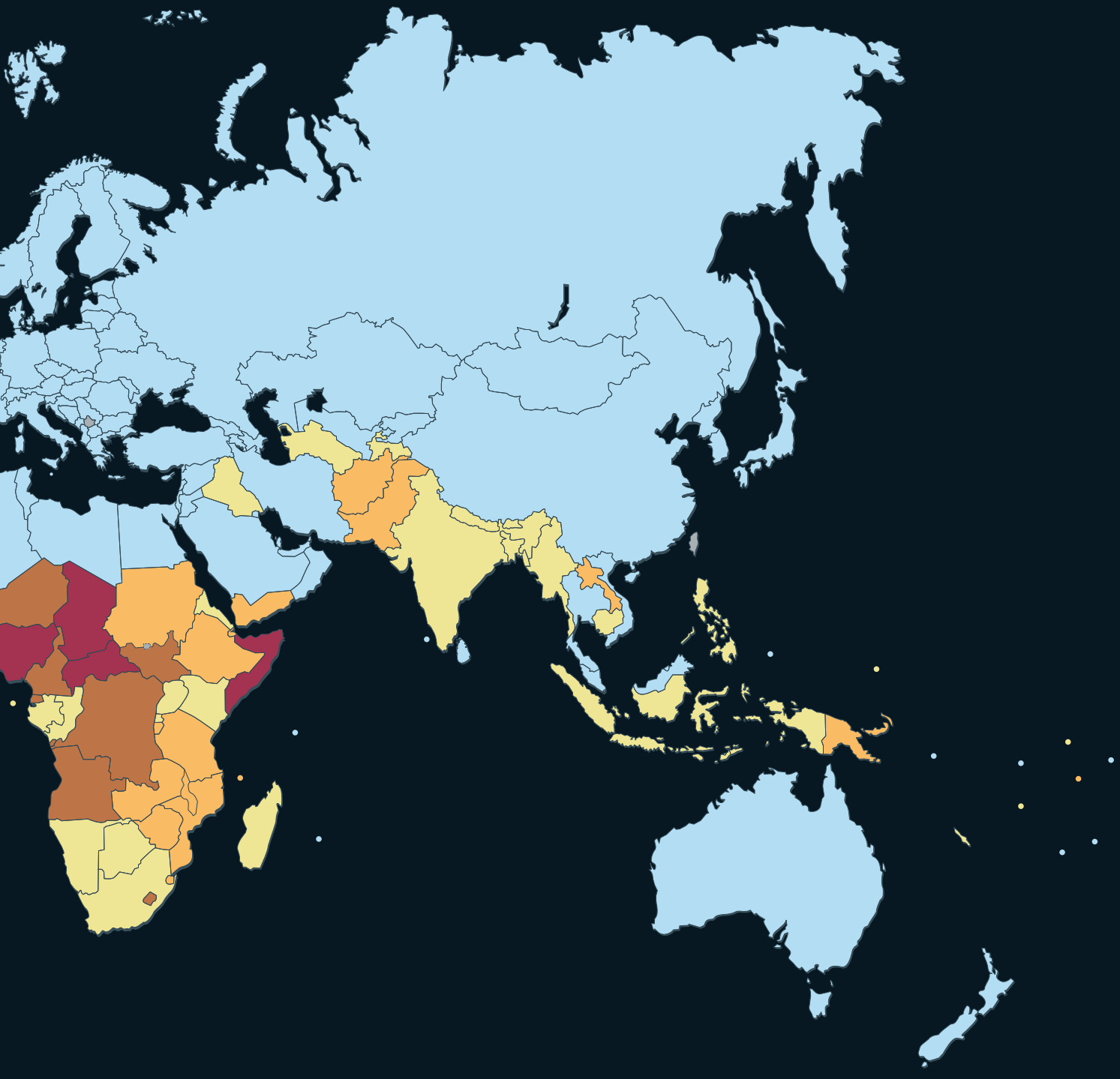
PRIORITY 2: **OPPORTUNITIES FOR ACTION**

- Continuing to advocate for a rights-based approach to child health, ensuring that children's rights are protected and upheld specifically those in most need.
- Provision of technical and financial support to development partners to aid the strengthening of country-level data collection systems, including the acquisition, analysis, interpretation and use of age- and sex-disaggregated data.
- Applying an explicit equity perspective when designing health interventions and policies.
- Advocating for and promoting the mainstreaming of gender equity in child health programmes.

UNDER-FIVE MORTALITY RATES BY COUNTRY IN 2017

Figure 7: under-five mortality rate in 2017, by country (13) [8]

SOURCES: GLOBAL BURDEN OF DISEASE COLLABORATIVE NE TWORK. GLOBAL BURDEN OF DISEASE STUDY 2017 (GBD 2017) RESULTS. SEAT TLE, UNITED STATES: INSTITUTE FOR HEALTH METRICS AND EVALUATION (IHME), 2018. AVAILABLE FROM http://ghdx.healthdata.org/gbd-results-tool



[8] United Nations Inter-Agency Group for Child Mortality Estimation. Levels and trends in child mortality 2018 (2017 data)

ILLUSTRATION: JOHAN JARNESTAD/WWW.INFOGRAPHICS.SE

PRIORITY 3:

ENABLING A CHILD'S RIGHT TO THRIVE THROUGHOUT THE LIFE COURSE

Transforming the perception of the child, from a medical to a holistic and relational perspective, acknowledges the unique rights children have from birth. Continued advocacy for a rights-based approach to child health will grant children everywhere the best opportunity to not just survive but thrive. Similarly, embracing a life-course approach and expanding a focus beyond 0–5 years to include the prenatal, older child, and adolescent periods will ensure the health and wellbeing needs of children are met at each of their life stages. Such an approach is also highly compatible with a multisectoral view of health and aligned with the SDG framework. (66, 67) Figure 9 shows how a strategic and integrated set of evidence-based interventions, delivered at critical points with the engagement of individuals, families and communities, can increase human capital throughout life (68).

In practical terms, improving the quality of care delivered throughout the continuum of pregnancy, delivery, and the newborn period will help decrease preventable neonatal mortality (including stillborn deaths). Promoting the vital importance of basic civil registration to count every newborn, recognising the specific health and wellbeing needs of adolescents, and promoting multisectoral action to address the social determinants of health, particularly as they apply to children, are of critical importance. (69)

A 'right' to thrive

The social position and value societies assign to women and children has the potential to also decide their survival chances. Scrutinizing underlying values and perceptions require holistic theoretical models rather than medical models alone. Psychological, anthropological and social theories are vital to further understanding. To improve child health the questions "Who and what is a child?", "When does childhood begin?" and "What is the importance and value of children?" must be addressed.

Affecting children adversely and leading to a variety of physical and mental illness, corporal punishment is perhaps the most evident example of how the perceptions and societal value of children must change. A staggering 300 million children globally (3 out of 4 children) aged 2–4 years is estimated to be experiencing violent discipline by their caregivers regularly. Alarmly, 1 in 4 caregivers say that physical punishment is necessary to properly raise or educate children. (70) This must stop.

For the global community to be able to achieve the target child mortality rate of less than 25 per 1,000 births in all countries we need to move from counting numbers to human beings. Putting the rights of the newborn at the centre of efforts is an important step to make the necessary priorities to improve quality of perinatal care, ensure optimal early childhood development, and promote the full potential of all children, girls and boys, to help build sustainable societies. Sweden has a role to play in this necessary shift, as a pioneer in protecting the rights of the child, a model for how social perceptions can change, and as a country leading the promotion of awareness around equity.

Mortality estimates alone fail to capture the full picture of the reality faced by children in many corners of the world. Health remains a vital prerequisite, however the capacity to thrive during childhood is multi-determinant. Adequate nutrition (SDG 2), access to good quality education (SDG 4), a secure livelihood free from violence and

[9] Every Woman Every Child. The Global Strategy for Women's, Children's and Adolescents' Health (2016–2030). Survive, thrive, transform. New York: Every Woman Every Child; 20158

"By helping adolescents to realise their rights to health, wellbeing, education and full and equal participation in society, we are equipping them to attain their full potential as adults." (9)

fear (SDG 16), and equality of opportunity (SDG 5 and 10) are but some of the other factors which can significantly influence wellbeing.

Many opportunities to positively intervene throughout the life course are associated with determinants well beyond the health sector. Evidence shows that high-quality early-years investments can compensate for the effects of social disadvantage on early child development and promote the full developmental potential of all children.

Indeed, recently more attention has been given to early childhood development as the next major challenge for child health. When considering the interactions and long term effects of intrauterine factors on the health of an individual later in life (Determinants of Health and Disease hypothesis) and appreciating the influence of intrapartum conditions on later development and morbidity, neonatal health should be given more consideration than simply a life-stage to survive. Understanding the role of early child development requires an adjusted perception and value of childhood. The idea of attachment and bonding being essential to child's development is based in a relational view of health, and investment in early childhood development is not likely unless children's rights are respected.

A health systems approach is a useful starting point but overall remains insufficient to understand and explain a historical neglect of reproductive, maternal, neonatal, child and adolescent health. Rather, a fundamental question is what value society assigns to women and children, thus making reproductive, maternal, neonatal, child and adolescent health a core issue when discussing equity in health.

Broadening the focus to regard wellbeing as an equal to good health, as well as an oft-neglected imperative, necessitates a greater understanding of both barriers and enablers to its achievement. As part of the 2030 Agenda countries have called for a marked increase in both the quantity and quality of data for child health in order to ensure that progress can be benchmarked and monitored. (7)

Around the world children are among the most neglected groups within society, dependent upon caregiver, community and government supports in order to survive and grow. Childhood itself is a combination of unique stages, each with its own inherent risks and opportunities.

Historically, an emphasis on under-five survival has led other key childhood periods such as neonatal and adolescence to be relatively neglected. In transitioning to a new paradigm that enables children to not only survive but to thrive throughout their childhood, the Partnership for Maternal, Newborn and Child Health at WHO has been integral to the evolution of a continuum of care approach. (71)

Highlighted below are two vital windows – arguably, historically neglected – that together have the power to define a young person's life-course. Since the turn of the new millennium, the global community is beginning to catch up and invest strategically in these areas.

Getting off to the best start: doubling down on the neonatal period

Over the past twentyfive years the world has seen nothing short of a child survival revolution. However, neonatal mortality has lagged behind during this period, with significantly slower progress worldwide for newborns compared to older children.

Interventions to reduce neonatal mortality have been proposed by the research community, and there have been efforts by governments to revise and improve neonatal care guidelines. Attention to neonatal resuscitation and essential newborn care through the Helping Babies Breathe/Helping Babies Survive initiative and, more recently the Every Newborn Action Plan, has pushed the agenda forward. (72) And efforts are paying off: neonatal survival is improving globally, albeit gradually.

There is thus still much to do: quality of care must improve (not least maternal), inequity in survival must be addressed, the most vulnerable targeted and, importantly, the discourse on neonatal health must change. Whilst high quality, disaggregated data help inform policies and programs, we need to go beyond number-counting and publicly discuss the values and perceptions guiding our efforts. Medical explanatory models alone fail to account for lingering neonatal mortality: rather, an increased understanding of why priorities are not made to address health and survival during the first days of life is required. (73)

We know how to save the 2.5 million children dying in the first month of life; the medical interventions are well tested and the physiological mechanisms known. Different models for delivery of these interventions are to an increasing extent also tested by the growing field of implementation science. The evidence generated will provide policy-makers with tools to make informed priorities to improve quality of care for mothers and their children. (74)

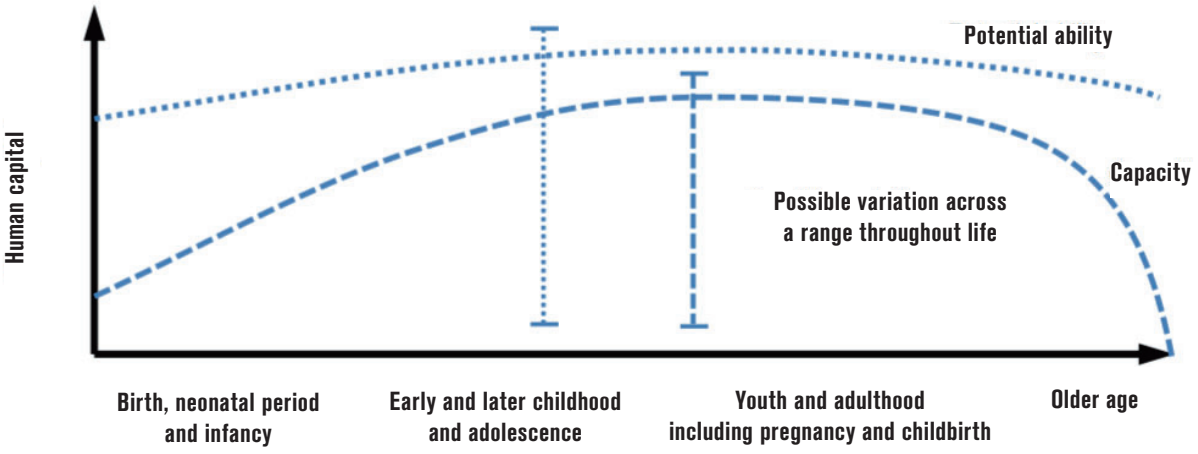
But arguably what is urgently needed to secure acceptable survival chances for all newborns is to examine perceptions and values connected to childhood and humanity. Questions on why the perinatal period remains a neglected area worldwide and why maternal and neonatal health is not given the priority needed must be raised in the political discourse as well as within the research community. Only once these questions are addressed may we begin to see real progress on saving and improving the lives of society's youngest members.

Adolescence: the neglected years?

The present-day generation of young people aged 10–24 is the largest in history, accounting for almost a quarter of

"To reduce morbidity and mortality and improve health during key stages of life including pregnancy, childhood and adolescence and improve sexual and reproductive health and promote active and healthy ageing for all individuals."

WHO Strategic Objective



HEALTH SYSTEMS - PRIORITIZED, INTEGRATED SET OF AGE-APPROPRIATE INTERVENTIONS AT CRITICAL PHASES
Immunization; nutrition; physical activity; mental health; assistive technologies; contraception
(interventions for country-specific leading disease burden for females)

INDIVDUALS, FAMILIES, COMMUNITIES – PRIORITIZED, INTEGRATED SET OF INTERVENTIONS AT CRITICAL PHASES
Health literacy, health and community engagement

Figure 9: Conceptual framework for a life-course approach to health, adapted from WHO's 13th General Program of Work which all countries, including Sweden, have agreed to adopt. (68)

"A staggering 300 million children globally (3 out of 4 children) aged 2–4 years is estimated to be experiencing violent discipline by their caregivers regularly." (70)

the world's population. (75) The number of adolescents aged 10–19 within this group totals some 1.2 billion. (76) Moreover, sub- Saharan Africa is facing the challenges and opportunities of the largest cohort of young people in history, with the population aged under 25 years predicted to almost double from 230 million to 450 million by 2050. (77)

In terms of health research and interventions, younger children have traditionally been a much greater focus for investment. (78) As a result, the health of adolescents has improved less than that of children under the age of 10. Reasons for this include assumptions that adolescents are healthier, as only 15 percent of the worldwide DALY burden is attributed to young people aged between 10–24 years. (79) In fact this burden of disease depicts a more complex epidemiological picture (as seen in Figure 5 on pages 16–17). Additionally, having completed basic education the global net attendance for secondary school is roughly one third lower than that for primary school, representing less of an arena to target the group in terms of services and protection. (76, 78)

Still, adolescence is a time where future patterns of health are established and opportunities to improve health are countless. A series on adolescent health in the medical journal The Lancet describes health in adolescence as "the result of interactions between prenatal and early childhood development and the specific biological and social-role changes that accompany puberty, shaped by social determinants and risk and protective factors that affect the uptake of health-related behaviours". (79)

Moreover, life of an adolescent now is different from the life of adolescents only 20 years ago. The age of onset of puberty is falling whilst the age at which society considers a person mature enough for the adult social role is increasing. (79) Social media has also reshaped society, particularly for adolescents. An increasingly strong voice in society, many changes occur in part by adolescents not accepting the current state of affairs. Attaining the SDGs can only happen with adolescents on board.

The mortality rates among 10–24 are almost four times higher in low and middle-income countries when compared with high income countries. (79) Causes of death however differ by age, sex, and region. Suicide accounts for 8.5 percent of all deaths among 15—29 year-olds globally and is ranked as the second leading cause of death after traffic accidents. (80) Deaths resulting from injury is followed by maternal causes and communicable, nutritional, and perinatal diseases. (79) Worldwide, one third of all new HIV cases involve young people aged 15–24. (76)

Most adolescent deaths are preventable, but unfortunately suicide all too often fails to be prioritized as a major public health problem. (79,80) The leading risk factors for incident DALYs among persons aged between 10–24 years are alcohol abuse (7%), unsafe sex (4%), iron deficiency (3%), lack of contraception (2%), and illicit drug misuse (2%). (78)

Health-related behaviours including tobacco and alcohol use, obesity, and physical inactivity, often manifest in adolescence and over time contribute to the growing epidemic of non-communicable diseases. Similarly, many opportunities for improving sexual and reproductive health begin during the adolescent window prior to first pregnancy. (78) Addressing an unmet need for contraception, preventing unwanted pregnancy, reducing the incidence of unsafe abortion, and improving the sexual and reproductive rights of young women in particular, all play a role in reducing the global burden of maternal morbidity and mortality. (81)

PRIORITY 3: **OPPORTUNITIES FOR ACTION**

- Making corporal punishment illegal in all settings (caregivers, schools etc).
- Encouraging investment in low-cost, evidence-based interventions to decrease preventable neonatal mortality, including stillborn deaths.
- Improving the quality of care delivered throughout the continuum of pregnancy, delivery (including skilled birth attendance), and the newborn period.
- Recognition of and promoting the vital importance of basic civil registration: many countries still lack systems to count every newborn.
- Recognising the specific health and well-being needs of adolescents and tailoring multidisciplinary policy appropriately.
- Mainstreaming sexual and reproductive health and rights into the adolescent health agenda.
- Promoting action to address the social determinants of health, particularly as they apply to children.
- Engaging young people in a meningful way throughout the health policy and intervention planning process.

"The best measure of success for universal health coverage is that every mother should not only be able to access health care easily, but that it should be quality, affordable care that will ensure a healthy and productive life for her children and family."

Tim Evans, Senior Director of Health, Nutrition and Population, World Bank Group

FACILITATING EVIDENCE INFORMED POLICY-MAKING AND IMPLEMENTATION

In spite of rapid growth in knowledge and technological innovation, evidence-based preventive measures and life-saving interventions still fail to reach those who need them most. However, projects such as the World Bank-led Disease Control Priorities (DCP3) (82) initiative or the WHO Evidence-Informed Policy Network (EVIPNet) (83) make cost-effective strategies and tools for policy dialogue available to assist governments and policy-makers to prioritise and implement key evidence-based interventions. Expanding translational research programs that engage and build capacity within local communities can also play a vital role in combating emerging global health challenges and improving the quality of care both available and delivered throughout the pregnancy, childbirth, newborn and childhood continuum.

Despite substantial progress to improve the health of children worldwide, it remains unacceptable that thousands continue to die unnecessarily each day even though the knowledge and technologies for life-saving interventions are available. Implementation science is assisting to address this "know-do gap" by expediting the dissemination of knowledge and uptake of key medicines and technologies where they are most needed.

In the present era of global development researchers are able to obtain an unprecedented volume of data. And increasingly, these data are more robust, disaggregated, and timely – providing valuable opportunities for analysis to influence policy-making and programming on the ground.

Here we will first discuss the role for evidence-based health action within the health system, after which multisectoral and non-health sector interventions and policies are considered. Examples of specific interventions in Annex 5, by no means comprehensive, illustrate the diversity of evidence-based, low-cost, activities which when expanded, can have significant benefits to the health outcomes of children throughout the life continuum from conception through to adolescence. Most are far from new: rather the tragedy is their absence from the routine delivery of care in many corners of the world.

Strengthening health systems

Effective health systems are complex entities requiring robust foundations in service delivery, sustainable financing, a trained health workforce, reliable supply of medical products and technologies, access to current information and research, and effective leadership and governance. (84) They are also essential for reaching universal health coverage by 2030, as the SDG 3.8 target stipulates.

Despite the best efforts of governments and delivery partners, in many countries of the world health care continues to be delivered piecemeal and accessible only to a precious few. Vaccinations against common causative agents of childhood pneumonia and diarrhoea remain out of reach for many children around the world. Medications to treat common childhood illnesses are unavailable or unaffordable for caregivers. In many settings, high-quality disaggregated epidemiological data remain unavailable to adequately inform programs or guide policy interventions.

Today more than ever before, health systems need to be strengthened in order to respond to emerging challenges. Threats posed by novel epidemics (for example the 2014 West African Ebola outbreak), rising antimicrobial resistance, the direct and indirect impacts of climate change, violence and conflict, and a double burden posed by increasing rates of non-communicable diseases require integrated approaches to prevention and treatment, beginning with effective policy setting.

PRIORITY 4:

Strengthening the fundamental building blocks of a health system, such as investing in human resources for health, applying financial mechanisms that lead to sustainable funds for health and enabling innovation in how health services are provided are key policy instruments to reach universal health coverage. Strengthening health systems to deliver quality, integrated care throughout the continuum of pregnancy, delivery and the early years of a child's life is vital to reducing preventable neonatal and childhood mortality. (85)

In settings where financial and human resources for health remain scarce, prompt symptomatic recognition and presumptive treatment of common childhood illnesses by first-level health workers through the Integrated Management of Childhood Illness (IMCI) strategy has saved money, improved quality of care and health outcomes in many low-income countries. (86)

Similarly, extending case management of childhood illness beyond health facilities expands equitable access to life-saving treatments. The Integrated Community Case Management (iCCM) package can be tailored to particular contexts, but most commonly includes the management of diarrhoea, pneumonia, malaria, and detection of malnutrition. Newborn health is also commonly included as part of iCCM. (87)

However, investments in health systems alone will be insufficient to address the root causes of ill-health and reduce inequity. There must be mechanisms for health intervention design that include sectors outside of health if we are to avoid the trappings of the silo-approach.

Non-health sector and intersectoral involvement

Many risk factors for poor health lie beyond the scope of the health sector. (60) In fact, health-sector investments accounted for only half the mortality reduction in children under-five years between 1990 and 2010. The remaining gains resulted from reduced levels of poverty and fertility, as well as health-enhancing investments in other sectors, for example from improved levels of education, women's political and socioeconomic participation and environmental management. (10)

An inter-sector approach to effectively capitalise on interlinkages between the SDGs is therefore critical in order to reduce child morbidity and mortality. The staggering estimates by the Lancet Global Health Commission on high-quality health systems in the SDG era – that 60 percent of all mortality can be attributed to sub-optimal quality of care while the rest results from a lack of access – further emphasises the need to partner with other sectors to raise the quality of care and avoid health sector programming in isolation. (88)

Comprehensive policy approaches that address key social determinants impacting on the lives of children and adolescents will be required if the "causes of the causes" are to be truly addressed. Good quality food, early child development, access to comprehensive education, gender equality, and a healthy environment in which to grow and thrive are beyond the scope of health planning but essential ingredients. So too the threats to the biosphere driven by climate change and environmental degradation, societal pressures from conflict leading to forced migration and social disconnectedness, and sustainable economic development to support employment opportunities will all require multisectoral solutions.

Examples of other specific interventions in the wider development context that have focussed on improving child health outcomes include:

- **Legislative,** financial and technical support for reducing particulate pollution levels via improving inefficient household stoves, resulting in positive effect on reducing burden of childhood respiratory disease; (89)
- **Positive education** and awareness campaigns to increase acceptance of routine childhood immunisation, resulting in reduced burdens of vaccine-preventable diseases; (90)
- **Government support** for early childhood education schemes to promote child development and social interactions whilst supporting both parents to return to work and contribute to the economy. (91)

Prioritising efforts

During the course of the past two-and-a-half decades increasing consideration has been given to building an evidence base for cost-effective interventions to improve child health outcomes particularly in low- and middle-income countries.

The World Bank's Disease Control Priorities (DCP) initiative, recently in its third incarnation, developed a total of 21 essential packages each containing a mixture of intersectoral policies and health-sector interventions (Figure 10). (92) Targeted at primary prevention through to diagnosis and delivery of acute interventions at district level health facilities, the authors emphasise the first 1 000 days after conception as being highly important for child development, however the subsequent 7 000 days are similarly important but often neglected. (93)

"The health of children and adolescents is important for every society. Even in affluent societies, improvements in this area will require a shift towards a whole-of-government approach and comprehensive policies, often involving significant systemic changes, to ensure equitable distribution of health and well-being for children and adolescents."

Investing in children: the European child and adolescent health strategy 2015–2020

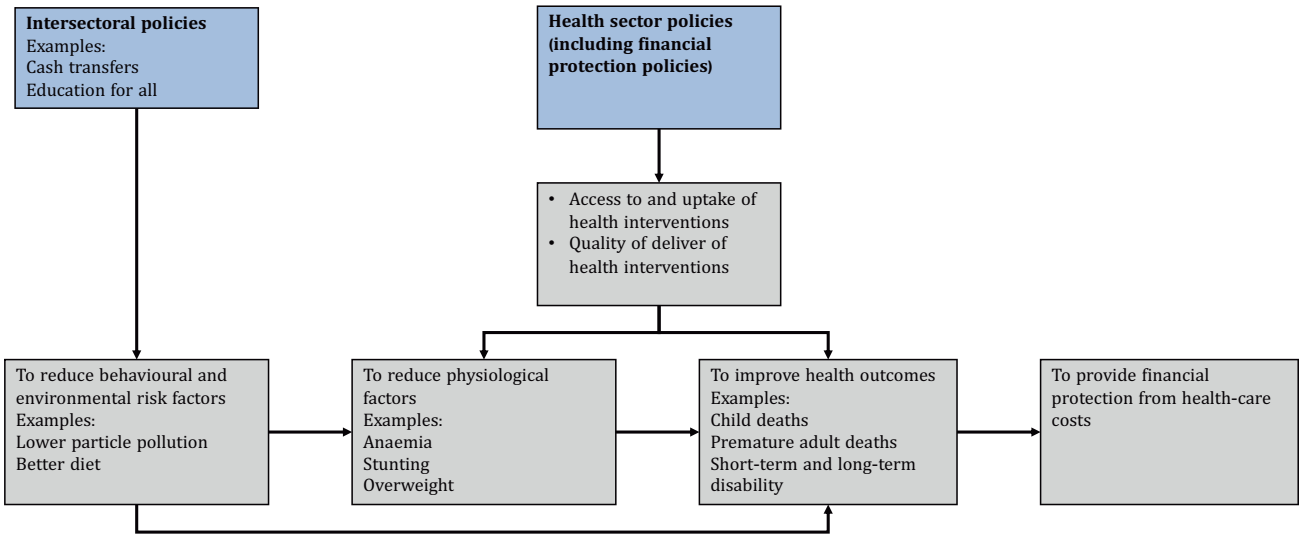


Figure 10: Policy mechanisms for child health, adapted from Jamison et al. (93)

PRIORITY 4: **OPPORTUNITIES FOR ACTION**

- Prioritising the funding of translational research via country-level partnerships that also engages and builds capacity within local communities.
- Agitating for multi-sector approaches to combat emerging global health challenges, for example the pressing risk associated with growing antimicrobial resistance
- Utilisation of existing evidence-based. tools such as DCP3, EVIPNet and WHO CHOICE database when designing health programmes.
- Investing in health systems-strengthening activities with the provision of universal health coverage (UHC) throughout the lifespan as a key indicator and driver.

PRIORITY 5:

CAPITALISING ON INTER-LINKAGES BETWEEN THE SDGS TO GALVANISE MULTISECTORAL ACTION

Identifying and capitalising on interconnections within the SDGs and their convergence on the health and wellbeing of children can promote effective multisectoral partnerships to strengthen the sustainability and resilience of health and social systems. Years in the making and described as "the result of the most consultative process in history" (94), the SDGs are the global community's concerted effort to eradicate extreme poverty and create a secure planet for all by 2030. Intentionally more numerous and diverse in scope than the Millennium Development Goals (MDGs) which preceded them, the SDGs canvass a broad agenda for development. The seventeen goals, supported by 169 quantifiable and time-measured targets, together make for a complex conceptual framework.

When considering a holistic life-course approach to child health, the direct interlinkages between various health-related SDG targets become clearly evident. For example, reducing newborn mortality in every country (SDG 3.2) is closely linked to maternal survival (SDG 3.1). In turn, maternal survival will be enhanced through achieving universal access to sexual and reproductive health and reproductive rights (SDG 3.7 & 5.6), and by eliminating harmful practices such as child, early and forced marriage and female genital mutilation (SDG 5.3).

However, many indirect interlinkages also exist which, on first glance, may not be explicitly apparent but also converge on the health and wellbeing of children. To cope with this complexity there has traditionally been a focus on viewing interactions as being either beneficial or harmful to a certain policy goal within the 2030 Agenda. Moving beyond this binary view, researchers have tried to assess with greater nuance the interactions between SDGs, partly through deeper exploration of a limited number of individual goals or policy areas and how these interrelate (95–97).

As a first attempt to take a more systematic approach Le Blanc et al analysed the interactions based on wording of the SDGs and their targets as well as on different UN documents through network theory. (98, 99) Subsequent efforts sought to conduct quantitative assessments of interlinkages between different SDG themes, however these primarily concerned environmental policy areas. (100, 101)

Creating a methodological middle-way to explore interlinkages through a semi-quantitative approach, Nilsson et al, together with the International Council for Science (ICSU) developed an SDG interactions framework. (102, 103) This framework is based on identifying and selecting SDG goals, targets or areas relevant to the policy area in question, then assessing the strength (see Box 2) through the use of a seven point scale against certain chosen dimensions (for example time, geography, governance, technology and directionality) based on scientific evidence and expertise.

As described in the preface, SIGHT gathered a group of experts from the field of medicine, development economics, law and environmental science to apply the SDG interactions framework to assess the interlinkages between child health and other SDG targets. The generic analysis suggest that besides the SDG targets mentioned above, for sustainable progress to be achieved closer collaboration with sectors implementing SDG 1 (No poverty), SDG 2 (Zero hunger), SDG 4 (Quality education), SDG 5 (Gender equality), SDG 8 (Decent work and economic growth) and SDG 17 (Partnerships for the goals) is essential because of their indivisible reciprocal link with child health. (1) Further, ensuring health and wellbeing for all also relies upon reducing inequality between and within countries (SDG 10) and promoting peace (SDG 16). (104) Table 1 (page 41) describes some of these interlinkages in more detail.

Strength of interaction according to the SDG interactions framework:

+3 Indivisible	The target is inextricably linked to the achievement of another target
+2 Reinforcing	The target aids the achievement of another target
+1 Enabling	The target creates conditions that further another target
0 Consistent	No significant positive or negative interactions
-1 Constraining	The target limits options on another target
-2 Counteracting	The target makes it more difficult to reach another target
-3 Cancelling	The target makes it impossible to reach another target

Box 2: Scoring scale for assessing interactions as proposed by ICSU (103) and Nilsson et al (102)

Dimension/target of goal	Score and description of key interaction	Type of interaction
Eradicate extreme poverty (1.1)	+3, Getting out of extreme poverty is inseparable from better child health, as health problems drive people into poverty and poverty leads to—for example, reduced access to health services and increased malnutrition	Reciprocal
Ensure access to safe, nutritious and sufficient food by all, including infants (2.1)	+3, Sufficient, nutritious food is integral to improved child health	Reciprocal
Ensure quality primary and secondary education for all girls and boys (4.1)	+3, Education, particularly of girls and women would be transformational in all aspects of health, productivity, and development	Reciprocal
Ensure access to modern energy for all (7.1)	Can be positive or negative. For example: +1, modern energy replacing traditional solid biomass cook stoves improves children's respiratory health through reducing indoor air pollution and outdoor pollution; -2, for many countries, abundant energy means fossil, nuclear, etc. energy, and might thus be harmful for child health	Health is outcome
Environmentally sound management of chemicals and all wastes, reduction of their release to air, water, and soil (12.4)	+1, These measures are needed to minimise the adverse effects of chemical and waste on human health and environment. Links to climate	Health is outcome

Table 1: Example interactions between child health and targets under other SDGs from Blomstedt et al. (1)

60%

The staggering estimates by the Lancet Global Health Commission on high-quality health systems in the SDG era – that 60 percent of all mortality can be attributed to sub-optimal quality of care while the rest results from a lack of access. (88)

Notably there are very few negative interlinkages with regards to impacts upon health, in contrast to other policy areas such as climate change where positive polices for the climate might have negative effects on the economy (for example), at least in the short term. (105) This holds true for the analysis done by Blomstedt et al described above and suggests limited policy trade-offs between health and other priorities and the vital role of health as a catalyst for sustainable development.

Understanding how interlinkages influence the health and wellbeing of children will help to define and foster important multisectoral partnerships to mitigate against perpetuating a silo approach to development and accelerate progress towards achieving *all* of the SDGs.

PRIORITY 5: **OPPORTUNITIES FOR ACTION**

- Encouraging investments in, delivery of and research in key horizontal and diagonal approaches that facilitate the strengthening and sustainability of health and social systems.
- Integrating themes of sustainability and resilience to inform policy strengthening our urban and natural environments.
- Incentivising intersectoral collaboration to more deeply explore the interactions between SDGs, highlight "win-wins", and translate these into evidence-informed policy.

THE NEED FOR A REVITALIZATION OF CHILD HEALTH AND WELL-BEING

Global efforts under the Millennium Development Goals (MDGs) saw rates of child mortality almost halve from 1990 levels to 2015. Indeed, much has been achieved through the scaling-up of targeted and evidence-based interventions – both within the healthcare sector, and outside. However, such progress proved insufficient to meet the target under MDG 4 of reducing child mortality by two-thirds, and already the global community is off track to meet the new SDG targets on neonatal and child mortality.

At a time when political instability and competing investment demands place many global health priorities in jeopardy (106, 107), it is more important than ever to articulate the interlinked nature of child health, and of the risks of inaction. Acknowledging that improving the quality of health care (whilst improving equitability to its access) remains a critical challenge, the breadth and extent of the development agenda under the SDGs necessitates that we do things differently. As the need for care continues to exceed available resources in many contexts, prevention of morbidity and mortality through intersectoral health promotion is of utmost importance.

This paper marks but a starting point for this discussion, in canvassing the what, why, and how of adopting a child-centred narrative to drive progress towards the Sustainable Development Goals (SDGs) and the 2030 Agenda. In this process five key priorities to revitalize the child health and well-being agenda within the SDGs have been identified:

1. Redefining global child health in the post-2015 era: placing children at the centre of the SDGs through a life-course perspective.
2. Striving for equity: ensuring no child is left behind.
3. Enabling a child's right to thrive throughout the life course.
4. Bridging the "know-do gap": facilitating evidence informed policy-making and implementation.
5. Capitalising on interlinkages within the SDGs to galvanise multisectoral action.

Delivering on these five priority areas has the potential to shape a truly transformative agenda for child health, both within Sweden and globally. Each priority seeks to move beyond targeted vertical interventions to promote and empower inter-sectoral engagement. Such collaboration – at all levels of society – is essential to placing the health and wellbeing of children at the centre of the SDGs.

In catering for a broad target audience, this road map makes a number of recommendations for policy action. These are summarized in boxes after each priority area and can be found on page 25, 27, 34, 39 and 42. These actions can take place at all levels from local authorities to national governments and also NGOs or academic sectors more broadly.

Implications and opportunities

Much remains to be done if we are to recognize and empower today's children as the future beneficiaries of our progress. As a starting point for the discussion moving forward, outlined below are some of the major implications and opportunities to encourage others to take action and become involved in the journey, both in Sweden and globally.

Further work

Like the interdisciplinary nature of planetary health itself, the interlinkages between child health and many of the SDGs necessitate a fundamentally cross-sectoral approach. Education, sanitation, nutrition, rights, prevention, environmental sustainability – expertise in these and many other domains is required to holistically improve the lives and livelihoods of today's children and future generations.

A better understanding of the interconnections between SDGs can form a basis for bridging science and decision making, enabling transformative action at a national, regional and global levels. The conceptual model for placing the child at the centre of the SDGs presented here highlights the importance of capitalising on interlinkages and how the SDG interaction framework is one potentially very promising way to operationalize these. However as portrayed in this paper and throughout the literature, theoretical concepts alone are insufficient to provide an evidence base upon which to inform policy makers. Complex cross-sectoral assessments of child health interlinkages must be contextualized in low- and middle-income countries in order to ensure evidence-informed policies benefit those most in need.

Novel and long-established north-south and south-south collaborations, particularly among universities and other research institutes, will be important to foster reciprocal transferral of knowledge and maximising interdisciplinary engagement for this to succeed. Such collaborations would also act as a catalyst for complex SDG assessments and multisectoral interventions and cooperation in other areas as well. For many years, Sweden has put an emphasis on capacity development in its international development. For instance, PhD opportunities so-called *sandwich programmes* by Swedish and partner countries' universities have entailed a unique level of trust.

There is vast potential to accelerate progress in all the SDG targets that require sustainable gains – both directly and indirectly implicating child health – if we are to appreciate and capitalize on the synergies between the goals.

Sweden's contribution to the world of 2030

Sweden is a middle-power on the international scene, having a disproportionately large impact relatively to its size and resources. This has proven most successful when targeting politically sensitive but important parts of the development agenda and maintaining a loud and firm voice. The promotion of sexual and reproductive health and rights and the issue of safe abortion are good examples for the role Sweden may play.

The Stockholm Declaration for Global Health promoted intersectoral and multidisciplinary action, whilst widening the ownership of global health both conceptually and geographically. (108) Five years later, the Swedish Government has highlighted Sweden's work and commitments on global health, and reiterated that this is an integral part of the overall implementation of the 2030 Agenda. (109)

Research is an important building block for the realisation of these ambitions. Developing further evidence for targeted interventions, combined with cross-cutting research

for practical policy and system-level development solutions should remain a key priority to help discover new ways to mobilise the interlinkages present within the 2030 Agenda.

This needs to be better taken into consideration when allocating resources for research. Examples include establishing grants for research with cross-sectoral and implementation research elements, with universities striving for more collaboration between disciplines, departments, and other institutions.

Relatively to its weight, Sweden contributes major resources for child health implementation through a wide variety of modalities and channels. This includes from the Swedish perspective the much-revered UN system, but also MDG-era institutions such as Gavi and the Global Fund, whilst maintaining important support through civil society organisations such as Save the Children.

Considering the needs of the 2030 Agenda, a reconsideration of the overall Swedish engagement would be timely. What new actors, apt for the SDG era, hold the promise for a more holistic and comprehensive perspective of the child? Not necessarily to replace, but rather to catalyse various Swedish investments, through improved interconnections between these investments and the interplay with other likeminded actors, where the decisions are taken and where the action is. Improved linkages between different levels of governance of global child health could also be an important outcome of such an overview.

The Swedish voice for child health needs to be emphasised and supported at the highest political level. Swedish civil society already has some of the staunchest advocates for human rights, and many times well-developed networks of sister-organisations in low- and middle-income countries. Not least the latter enable Swedish research, decisions and implementation to be inclusive in its approach. The Swedish private sector provides both expertise and innovations in global health, but Swedish child health actors need to better connect Sweden's international development cooperation and the Swedish private sector's commitment to the 2030 Agenda.

Saving and improving the lives of the world's children is not just a moral imperative but also a sensible investment in future generations. Continuing to cooperate with low income countries will enable Sweden's efforts to reach some of the children most in need of assistance. Based on historical success, but with humility and without complacency, Sweden is well positioned to advocate for the rights of children and work constructively towards the realization that every child enjoys "the highest attainable standard of health". (109) Let us seize that opportunity now.

REFERENCES

1. Blomstedt Y, Bhutta ZA, Dahlstrand J, Friberg P, Gostin LO, Nilsson M, et al. Partnerships for child health: capitalising on links between the sustainable development goals. BMJ. 2018 Jan 23;360:k125.
2. United Nations. Transforming our world: the 2030 Agenda for Sustainable Development. Resolution adopted by the General Assembly on 25 September 2015. A/RES/70/1. New York; 2015.
3. UNICEF. Investing in children: a brief review of the social and economic returns to investing in children. New York; 2012.
4. United Nations. United Nations Millennium Declaration. New York; 2000.
5. World Bank Group, International Monetary Fund. Global Monitoring Report 2014/2015 : Ending Poverty and Sharing Prosperity. Washington , DC; 2015.
6. Liu L, Oza S, Hogan D, Perin J, Rudan I, Lawn JE, et al. Global, regional, and national causes of child mortality in 2000–2013, with projections to inform post-2015 priorities: an updated systematic analysis. Lancet. 2015;385:430–40.
7. United Nations. The Sustainable Development Goals Report 2016. New York; 2016.
8. United Nations. The Sustainable Development Goals Report 2017. New York; 2017.
9. Marmot M. Achieving health equity: from root causes to fair outcomes. Lancet. 2007;370(9593):1153–63.
10. Kuruvilla S, Schweitzer J, Bishai D, Chowdhury S, Caramani D, Frost L, et al. Policy and Practice: Success factors for reducing maternal and child mortality. Bull World Heal Organ. 2014;92:533–44.
11. Every Woman Every Child. The global strategy for women´s children´s and adolescents` health (2016–2030). New York; 2015.
12. Global Burden of Disease Collaborative Network. Global Burden of Disease Study 2017 (GBD 2017) Results. Seattle; 2018.
13. UN Inter-agency Group for Child Mortality Estimation Child Mortality Estimation. Levels & Trend in Child Mortality: Report 2018. New York; 2018.
14. GBD 2016 Causes of Death Collaborators. Global, regional, and national age-sex specific mortality for 264 causes of death, 1980–2016: a systematic analysis for the Global Burden of Disease Study 2016. Lancet. 2017;390(10100):1151–210.
15. WHO. Global Health Observatory Data: Disability-adjusted life years [Internet]. [cited 2019 May 9]. Available from: https://www.who.int/gho/mortality_burden_disease/daly_rates/text/en/
16. Lawn JE, Blencowe H, Waiswa P, Amouzou A, Mathers C, Hogan D, et al. Stillbirths: rates, risk factors, and acceleration towards 2030. Lancet. 2016;387:587–603.
17. Reiner RC, Olsen HE, Ikeda CT, Echko MM, Ballestreros KE, Manguerra H, et al. Diseases, Injuries, and Risk Factors in Child and Adolescent Health, 1990 to 2017. JAMA Pediatr. 2019 Apr 29;e190337.
18. Olshansky SJ, Passaro DJ, Hershow RC, Layden J, Carnes BA, Brody J, et al. A Potential Decline in Life Expectancy in the United States in the 21st Century. N Engl J Med. 2005 Mar 17;352(11):1138–45.
19. Persson L, Rahman A, Peña R, Perez W, Musafili A, Hoa D. Child survival revolutions revisited – lessons learned from Bangladesh, Nicaragua, Rwanda and Vietnam. Acta Paediatr. 2017;106(6):871–7.
20. Watts N, Adger W, Agnolucci P, Blackstock J, Byass P, Cai W. Health and climate change: policy responses to protect public health. Lancet. 2015;386(10006):1861–914.
21. Dimitry L. A systematic review on the mental health of children and adolescents in areas of armed conflict in the Middle East. Child Care, Heal Dev. 2012 Mar;38(2):153–61.
22. Wagner Z, Heft-Neal S, Bhutta Z, Black R, Burke M, Bendavid E. Armed conflict and child mortality in Africa: a geospatial analysis. Lancet. 2018;392(10150):857–65.
23. Bhutta Z, Keenan W, Bennett S. Children of war: urgent action is needed to save a generation. Lancet. 2014;388(10051):1275–6.
24. UNICEF. Twentyfive years of the Convention on the Rights of the Child: is the world a better place for children? New York; 2014.
25. Bygdell M, Ohlsson C, Célind J, Saternus J, Sondén A, Kindblom JM. The rise and the recent decline of childhood obesity in Swedish boys: the BEST cohort. Int J Obes. 2017 Jan 25;41:807.
26. Folkhälsomyndigheten. Skolbarns hälsovanor i Sverige 2013/14. Stockholm; 2014.
27. Folkhälsomyndigheten. Varför har den psykiska ohälsan ökat bland barn och unga i Sverige? Stockholm; 2018.
28. SOU 2017:47 För en god och jämlik hälsa – En utveckling av det folkhälsopolitiska ramverket. Stockholm; 2017.
29. Elgar FJ, Gariépy G, Torsheim T, Currie C. Early-life income inequality and adolescent health and well-being. Soc Sci Med. 2017;174:197–208.
30. Wettergren B, Blennow M, Hjern A, Söder O, Ludvigsson JF. Child Health Systems in Sweden. J Pediatr. 2016 Oct;177:S187–202.
31. Loudon I. Maternal Mortality in the Past and Its Relevance to Developing Countries Today. Am J Clin Nutr. 2000;72:241–246.
32. Karlsson M, Nilsson T. SNS Analys nr 49. Den allmänna och fria spädbarnsvårdens betydelse för hälsa, utbildning och inkomster. Stockholm; 2018.
33. SCB. Statistics Sweden [Internet]. [cited 2019 May 9]. Available from: www.scb.se
34. Marope P, Kaga Y. Investing against Evidence – The Global State of Early Childhood Care and Education. Paris; 2015.
35. Riksförbundet för sexuell upplysning (RFSU). About Swedish sex education [Internet]. [cited 2019 May 9]. Available from: https://www.rfsu.se/om-rfsu/om-oss/in-english/national-work/sexuality-education/about-swedish-sexuality-education/
36. Proposition 2002/03:122. Gemensamt ansvar: Sveriges politik för global utveckling. Stockholm; 2013.
37. Kickbush I, Allen L, Franz C. The commercial determinants of health. Lancet Glob Heal. 2016;4(12):e895-896.
38. Millar J. The corporate determinants of health: how big business affects our health, and the need for government action! Can J Public Heal. 2013;104(4):e327-329.
39. Mckee M, Stuckler D. Revisiting the Corporate and Commercial Determinants of Health. Am J Public Health. 108(9):167–1170.
40. Cairns G, Angus K, Hastings G, Caraher M. Systematic reviews of the evidence on the nature, extent and effects of food marketing to children: a retrospective summary. Appetite. 2013;62:209–15.
41. Every Woman Every Child. The global strategy for women's, children's and adolescents' health (2016–2030): survive, thrive, transform. New York; 2015.
42. Patton GC, Sawyer SM, Santelli JS, Ross DA, Afifi R, Allen NB, et al. Our future: a Lancet commission on adolescent health and wellbeing. Lancet. 2016 Jun 11;387(10036):2423–78.
43. Whitmee S, Haines A, Beyrer C, Boltz F, Capon AG, Ferreira B, et al. Safeguarding human health in the Anthropocene epoch: report of The Rockefeller Foundation-Lancet Commission on planetary health. Lancet. 2015;386:1973–2028.
44. Ahdoot S, Pacheco SE. Global Climate Change and Children's Health. Pediatrics. 2015;136(5).
45. Balmford A, Bond W. Trends in the state of nature and their implications for human well-being. Ecol Lett. 2005 Nov 1;8(11):1218–34.
46. Cardinale BJ, Duffy JE, Gonzalez A, Hooper DU, Perrings C, Venail P, et al. Biodiversity loss and its impact on humanity. Nature. 2012 Jun 7;486(7401):59–67.
47. Burke M, Heft-Neal S, Bendavid E. Sources of variation in under-5 mortality across sub-Saharan Africa: a spatial analysis. Lancet Glob Heal. 2016;4(12):e936-e945.
48. Ricketts TH, Hererra D, Ellis A, Fisher B. Watersheds, forests, and childhood health: global relationships and policy opportunities. Lancet. 2017 Apr 1;389:S17.
49. Rasolofoson RA, Hanauer MM, Pappinen A, Fisher B, Ricketts TH. Impacts of forests on children's diet in rural areas across 27 developing countries. Sci Adv. 2018 Aug 15;4(8):eaat2853.
50. Naidoo R, Gerkey D, Hole D, Pfaff A, Ellis AM, Golden CD, et al. Evaluating the impacts of protected areas on human well-being across the developing world. Sci Adv. 2019 Apr 3;5(4):eaav3006.
51. WHO. Social determinants of health [Internet]. [cited 2019 May 9]. Available from: http://www.who.int/social_determinants/sdh_definition/en/
52. UNESCO. Children Victims of War and Natural Disasters [Internet]. 2017 [cited 2019 May 9]. Available from: http://www.unesco.org/new/en/social-and-human-sciences/themes/fight-against-discrimination/education-of-children-in-need/children-victims-of-war-and-natural-disasters/
53. Backhans M, Burström B, Marklund S. Gender policy developments and policy regimes in 22 OECD countries, 1979–2008. Int J Heal Serv. 2011;41(4):595–623.
54. Bird CE, Rieker PP. Gender matters: an integrated model for understanding men's and women's health. Soc Sci Med. 1999 Mar 1;48(6):745–55.
55. Sen G, Östlin P. Gender equity in health : the shifting frontiers of evidence and actio. New York: Routledge; 2011. 318 p.
56. UNFPA. The State of World Population 2016. New York; 2016.
57. Langer A, Meleis A, Knaul FM, Atun R, Aran M, Arreola-Ornelas H, et al. Women and Health: the key for sustainable development. Lancet (London, England). 2015 Sep 19;386(9999):1165–210.
58. Marmot M, Friel S, Bell R, Houweling TAJ, Taylor S. Closing the gap in a generation: health equity through action on the social determinants of health. Lancet. 2008;372(8):1661–9.
59. Owolabi OO, Wong KLM, Dennis ML, Radovich E, Cavallaro FL, Lynch CA, et al. Comparing the use and content of antenatal care in adolescent and older first-time mothers in 13 countries of west Africa: a cross-sectional analysis of Demographic and Health Surveys. Lancet Child Adolesc Heal. 2017 Nov 1;1(3):203–12.
60. CSDH. Closing the gap in a generation: Health equity through action on the social determinants of health. Final Report of the Commission on Social Determinants of Health. Geneva; 2008.

61. Victora CG, Barros AJD, França GVA, da Silva ICM, Carvajal-Velez L, Amouzou A. The contribution of poor and rural populations to national trends in reproductive, maternal, newborn, and child health coverage: analyses of cross-sectional surveys from 64 countries. Lancet Glob Heal. 2017 Apr;5(4):e402-407.
62. Chao F, You D, Pedersen J, Hug L, Alkema L. National and regional under-5 mortality rate by economic status for low-income and middle-income countries: a systematic assessment. Lancet Glob Heal. 2018 May;6(5):e535-547.
63. Gwatkin DR. Trends in health inequalities in developing countries. Lancet Glob Heal. 2017 Apr;5(4):e371–2.
64. UNICEF. Annual Results Report 2016: Gender Equality. New York; 2016.
65. GBD 2016 Healthcare Access and Quality Collaborators, Nancy, Yearwood J, Abay SM, Abbafati C, Abd-Allah F, et al. Measuring performance on the Healthcare Access and Quality Index for 195 countries and territories and selected subnational locations: a systematic analysis from the Global Burden of Disease Study 2016. Lancet (London, England). 2018 Jun 2;391(10136):2236–71.
66. Lim SS, Updike RL, Kaldjian AS, Barber RM, Cowling K, York H, et al. Measuring human capital: a systematic analysis of 195 countries and territories, 1990–2016. Lancet. 2018 Oct;392(10154):1217–34.
67. Kuruvilla S, Sadana R, Montesinos EV, Beard J, Vasdeki JF, Araujo De Carvalho I, et al. A life-course approach to health: synergy with sustainable development goals. Bull World Heal Organ World Heal. 2018;96:42–50.
68. WHO. Thirteenth general programme of work, 2019–2023. Geneva; 2018.
69. Kerber KJ, de Graft-Johnson JE, Bhutta ZA, Okong P, Starrs A, Lawn JE. Continuum of care for maternal, newborn, and child health: from slogan to service delivery. Lancet. 2007 Oct 13;370(9595):1358–69.
70. UNICEF. A Familiar Face: Violence in the lives of children and adolescents. New York; 2017.
71. WHO. The Partnership for Maternal, Newborn and Child Health: Conceptual and Institutional Framework. Geneva; 2007.
72. Kinney M V., Cocoman O, Dickson KE, Daelmans B, Zaka N, Rhoda NR, et al. Implementation of the Every Newborn Action Plan: Progress and lessons learned. Semin Perinatol. 2015 Aug;39(5):326–37.
73. Lawn JE, Blencowe H, Oza S, You D, Lee AC, Waiswa P, et al. Every Newborn: progress, priorities, and potential beyond survival. Lancet. 2014;384:189–205.
74. Mason E, McDougall L, Lawn JE, Gupta A, Claeson M, Pillay Y, et al. From evidence to action to deliver a healthy start for the next generation. Lancet. 2014;384:455–67.
75. UNFPA. The 1.8 billion adolescents, youth and and the transformation of the future. New York; 2014.
76. UNICEF. Adolescence, an age of opportunity. New York; 2011.
77. Agyepong IA, Sewankambo N, Binagwaho A, Coll-Seck AM, Corrah T, Ezeh A, et al. The path to longer and healthier lives for all Africans by 2030: the Lancet Commission on the future of health in sub-Saharan Africa. Lancet. 2017 Dec 23;390(10114):2803–59.
78. Patton G, Temmerman M. Evidence and Evidence Gaps in Adolescent Health. J Adolesc Heal. 2016 Oct;59(4S):S1–3.
79. Sawyer SM, Afifi RA, Bearinger LH, Blakemore S-J, Dick B, Ezeh AC, et al. Adolescence: a foundation for future health. Lancet. 2012 Apr 28;379(9826):1630–40.
80. WHO. World Suicide Report. Preventing suicide: A global imperative. Geneva; 2014.
81. WHO. Unsafe abortion: global and regional estimates of incidence of unsafe abortion and associated mortality in 2008. Geneva; 2011.
82. University of Washington. Disease Control Priorities 3 (DCP3) [Internet]. [cited 2019 May 9]. Available from: http://dcp-3.org
83. WHO. Evidence-Informed Policy Network (EVIPNet) [Internet]. [cited 2019 May 9]. Available from: https://www.who.int/evidence/en/
84. WHO. Everybody's business: Strengthening health systems to improve health outcomes. WHO's framework for action. Geneva; 2007.
85. WHO. The World Health report: make every mother and child count. Geneva; 2005.
86. WHO. Towards a grand convergence for child survival and health: a strategic review of options for the future building on lessons learnt from IMNCI. Geneva; 2016.
87. UNICEF, WHO. Integrated Community Case Management (iCCM): an equity-focused strategy to improve access to essential treatment services for children.' Joint statement. New York; 2012.
88. Kruk ME, Gage AD, Arsenault C, Jordan K, Leslie HH, Roder-DeWan S, et al. High-quality health systems in the Sustainable Development Goals era: time for a revolution. Lancet Glob Heal. 2018 Nov;6(11):e1196–252.
89. Lamichhane P, Sharma A, Mahal A. Impact of cleaner fuel use and improved stoves on acute respiratory infections: evidence from India. Int Health. 2017 Nov 1;9(6):349–66.
90. Oyo-Ita A, Wiysonge CS, Oringanje C, Nwachukwu CE, Oduwole O, Meremikwu MM. Interventions for improving coverage of childhood immunisation in low- and middle-income countries. Cochrane Database Syst Rev. 2016 Jul 10;7:CD008145.
91. Black MM, Walker SP, Fernald LCH, Andersen CT, DiGirolamo AM, Lu C, et al. Early childhood development coming of age: science through the life course. Lancet. 2017 Jan 7;389(10064):77–90.
92. Jamison DT, Gelband H, Horton S, Jha P, Laxminarayan R, Mock CN, et al., editors. Disease Control Priorities: Improving Health and Reducing Poverty. Volume 9,. Washington , DC: World Bank; 2018.
93. Jamison DT, Alwan A, Mock CN, Nugent R, Watkins D, Adeyi O, et al. Universal health coverage and intersectoral action for health: key messages from Disease Control Priorities , 3rd edition. Lancet. 2018 Mar 17;391(10125):1108–20.
94. UNDP. Statement by Ellen Johnson Sirleaf at the UN Summit for the adoption of the post-2015 Development Agenda United Nations General Assembly. September 25 2015. Available from: http://www.lr.undp.org/content/liberia/en/home/presscenter/speeches/2015/09/25/statement-by-ellen-johnson-sirleaf-at-the-un-summit-for-the-adoption-of-the-post-2015-development-agenda-united-nations-general-assembly.html (accessed 9th of May 2019).
95. Collin J, Casswell S. Alcohol and the Sustainable Development Goals. Lancet. 2016;387:2582–3.
96. Langlois E V., Campbell K, Prieur-Richard A-H, Karesh WB, Daszak P. Towards a Better Integration of Global Health and Biodiversity in the New Sustainable Development Goals Beyond Rio+20. Ecohealth. 2012 Dec 22;9(4):381–5.
97. Yumkella KK, Yillia PT. Framing the water-energy nexus for the post-2015 development agenda. Aquat Procedia. 2015;5:8–12.
98. Le Blanc D. Towards Integration at Last? The Sustainable Development Goals as a Network of Targets. Sustain Dev. 2015 May 1;23(3):176–87.
99. Vladimirova K, Le Blanc D. Exploring Links Between Education and Sustainable Development Goals Through the Lens of UN Flagship Reports. Sustain Dev. 2016 Jul 1;24(4):254–71.
100. Jones FC. Cumulative effects assessment: theoretical underpinnings and big problems. Environ Rev. 2016;24:187–204.
101. Fleskens L, Nainggolan D, Stringer LC. An Exploration of Scenarios to Support Sustainable Land Management Using Integrated Environmental Socio-economic Models. Environ Manage. 2014 Nov 22;54(5):1005–21.
102. Nilsson M, Griggs D, Visbeck M. Policy: Map the interactions between Sustainable Development Goals. Nature. 2016 Jun 15;534(7607):320–2.
103. International Council for Science. A guide to SDG interactions: from science to implementation. 2017.
104. Waage J, Yap C, Bell S, Levy C, Mace G, Pegram T, et al. Governing the UN Sustainable Development Goals: interactions, infrastructures, and institutions. Lancet Glob Heal. 2015 May 1;3(5):e251–2.
105. Nilsson M. Important interactions among the Sustainable Development Goals under review at the High-Level Political Forum 2017. Stockholm Environment Institute. 2017.
106. Jamison DT, Summers LH, Alleyne G, Arrow KJ, Berkley S, Binagwaho A, et al. Global health 2035: a world converging within a generation. Lancet. 2013 Dec 7;382(9908):1898–955.
107. Starrs AM, Ezeh AC, Barker G, Basu A, Bertrand JT, Blum R, et al. Accelerate progress—sexual and reproductive health and rights for all: report of the Guttmacher– Lancet Commission. Lancet. 2018 Jun;391(10140):2642–92.
108. Friberg P, Wall S, Blomstedt Y, Beaglehole R, Bonita R, Stordalen G, et al. Public and global engagement with global health. Lancet. 2013 Jun 15;381(9883):2066.
109. Government Offices of Sweden. Sweden´s work on global health - implementing the 2030 Agenda. Stockholm; 2018.
110. United Nations. Convention on the rights of the child. Article 1. New York; 1989.

APPENDICES

Apendix 1

Frequently used acronyms

DALYs	Disability-Adjusted Life Years
DCP3	Disease Control Priorities (Third edition)
HIV	Human Immunodeficiency Virus
ICCM	Integrated Community Case Management
ICSU	International Council for Science
IMCI	Integrated Management of Childhood Illness
MDGs	Millennium Development Goals
NCDs	Non-Communicable Diseases
NGO	Non-Governmental Organisation
SDGs	Sustainable Development Goals
SIGHT	Swedish Institute for Global Health Transformation
UN	United Nations
UNICEF	The United Nations Children's Fund
WHO	World Health Organization

Apendix 2

List of attendees at the roundtable discussions on global health, organised by SIGHT and the Swedish Society of Medicine

Tobias Alfvén, Karolinska Institutet and Swedish Society of Medicine committee for global health
Martina Björkman, Stockholm School of Economics, Stockholm
Johan Dahlstrand, Swedish Institute for Global Health Transformation
Peter Friberg, Swedish Institute for Global Health Transformation
Victor Galaz, Global Economic Dynamics and the Biosphere, Royal Swedish Academy of Sciences
Anneli Ivarsson, Umeå University
Anton Lager, Karolinska Institutet
Sofia Lindegren, Swedish Medical Association
Ann Lindstrand, Public Health Agency of Sweden
Mats Målqvist, Uppsala University
Andreas Mårtensson, Uppsala University
Maria Mossberg, The Swedish Pediatric Society
Sahar Nejat, Doctors Without Boarders
Måns Nilsson, Stockholm Environment Institute
Anders Nordström, Swedish Ministry of Foreign Affairs
Stefan Peterson, UNICEF, New York
Ann Mari Svennerholm, Royal Swedish Academy of Sciences
Peter Sørgaard Jørgensen, Global Economic Dynamics and the Biosphere, Royal Swedish Academy of Sciences
Sarah Thomsen, Sida
Göran Tomson, Swedish Institute for Global Health Transformation

The preliminary findings and priorities of this road map were also presented and discussed during the Swedish Global Health Research Conference session on placing the child at the center of the SDGs, engaging over 50 participants who all provided crucial input to the final version presented here. Read more about the Swedish Global Health Research Conference here: www.sls.se/om-oss/aktuellt/publicerat/2019/konferensrapport-swedish-global-health-research-conference-2018/

Appendix 3

About the authors

Tobias Alfvén, MD, PhD, associate professor global child health, Karolinska Institutet, senior consultant in paediatrics, Sachs' children and youth hospital
Johan Dahlstrand, MSc, Operations Manager, Swedish Institute for Global Health Transformation (SIGHT)
Sofia Hammarstrand, MD, Sahlgrenska University hospital, Advisory Board for climate and health, SMA
Daniel Helldén, Medical Student, Karolinska Institute, Business and Economics Student, Stockholm School of Economics, Student Coordinator, Swedish Institute for Global Health Transformation
Anna-Clara Hollander, PhD & clinical psychologist, in the research group Epidemiology of Psychiatric Conditions, Substance use and Social environment (EPICSS), Department of Public Health Sciences, Karolinska Institutet
David Humphreys, MBBS, BMedSci, MGH, Emergency Department, The Townsville Hospital & James Cook University, Australia
Anton Lager, PhD, MPH, Head of Unit for Health Situtation and Care Needs Analysis, Centre for Epidemiology and Community Medicine, Region Stockholm
Mats Målqvist: Professor of Global Health, International Maternal and Child Health (IMCH), Department of Women's and Children's Health, Uppsala University
Sahar Nejat, MD, MScPH, Paediatric Public Health and Immunization Advisor, Stockholm Region
Peter Søgaard Jørgensen, PhD, MSc, Deputy Direct of Academy Program on Global Economic Dynamics and the Biosphere, The Royal Swedish Academy of Sciences, researcher and theme co-lead Stockholm Resilience Centre, Stockholm University

Appendix 4

Historical perspective: milestones in child health and the policy agenda

1946 UNICEF created, becoming a permanent organ of the UN in 1953.

1968 Early evidence on the use of oral rehydration therapy to treat cholera published.

1974 WHO founds the Expanded Programme on Immunization to deliver basic vaccines to low-income countries and boost global immunization rates.

1981 International Code of Marketing of Breast Milk Substitutes adopted by the World Health Assembly to encourage breastfeeding.

1982 Launch of the Child Survival and Development Revolution, based on four simple, low-cost techniques: growth monitoring, oral rehydration therapy, breastfeeding and immunization.

1988 Global Polio Eradication Initiative launched in a bid to free the world from polio.

1989 Adoption of the Convention on the Rights of the Child by the UN General Assembly, entering into force in 1990 to become the most widely- and rapidly-accepted Human Rights treaty in history.

1990 World Summit for Children held in New York, attended by various Heads of State.

1996 WHO/UNICEF Integrated Management of Childhood Illness (IMCI) strategy is introduced and begins to be adopted by countries around the world.

2000 Child Health receives special attention in the Millennium Declaration, becoming the fourth Millennium Development Goal;
The Global Alliance for Vaccines and Immunization (GAVI) launched.

2002 The Global Fund for AIDS, Tuberculosis and Malaria is created.

2005 The Partnership for Maternal, Newborn and Child Health is launched; also annual World Health Report entitled *'Make every mother and child count'* emphasises the need for investment in the health of mothers and children.

2007 WHA resolution urges Member States to cease use of oral artemisinine-based monotherapy for treatment of malaria in the face of increasing resistance, and adopt the use of combination therapies (ACTs).

2010 WHO Global Malaria Programme recommends that all suspected cases of malaria receive a diagnostic test (including RDT) prior to initiation of treatment;
Every Woman Every Child launched by UN Secretary General to put into action the Global Strategy for Women's and Children's Health.

2012 Integrated Community Case Management (iCCM) for treatment of malaria, pneumonia and diarrhoea is officially endorsed by WHO and UNICEF.

2015 Adoption of the 2030 Agenda for Sustainable Development and SDGs.

Apendix 5

Examples of evidence-based, low-cost, preventative activities, novel diagnostic and therapeutic tools throughout the continuum

Period	Interventions	Reference
Antenatal	Nutritional interventions	• WHO. Guideline: Daily iron and folic acid supplementation in pregnant women. Geneva: World Health Organization; 2012.
	Screening for risk behaviours	• Prompt diagnosis and effective treatment of malaria
Delivery	Prompt diagnosis and effective treatment of malaria	• Bastiaens GJH, Bousema T & Leslie T, 2014. 'Scale-up of malaria rapid diagnostic tests and artemisinin-based combination therapy: challenges and perspectives in sub-Saharan Africa.' PLoS Med, vol. 11, no. 1, e1001590 • WHO. Guidelines for the treatment of malaria. Third edition. Geneva: World Health Organization; 2015.
	Reducing maternal mortality and stillbirth	• Lassi ZS & Bhutta ZA. Community-based intervention packages for reducing maternal and neonatal morbidity and mortality and improving neonatal outcomes. Cochrane Database of Systematic Reviews. 2015 Mar 23; (3): CD007754.
	Prevention of mother-to-child transmission of HIV (PMTCT)	• WHO. Antiretroviral drugs for treating pregnant women and preventing HIV infection in infants: recommendations for a public health approach. Geneva: World Health Organization; 2010.
Neonatal	Immediate thermal care	• PMNCH. A global review of the key interventions related to reproductive, maternal, newborn and child health (RMNCH). Geneva: The Partnership for Maternal, Newborn & Child Health; 2011.
	Early initiation and exclusive breast feeding for the first six months of life	• Kramer MS & Kakuma R. 'Optimal duration of exclusive breastfeeding.' Cochrane Database of Systematic Reviews. 2012: Issue 8, Art. No. CD003517. • WHO. Exclusive breastfeeding for six months best for babies everywhere. Statement. Geneva: World Health Organization; 2011.
Childhood	Immunization	• CDC/GAVI/UNICEF/WHO. Substantial decline in measles deaths, but disease still kills 90,000 per year. Joint news release. Geneva/New York/Atlanta 2017. Available: http://www.who.int/en/news-room/detail/26-10-2017-substantial-decline-in-global-measles-deaths-but-disease-still-kills-90-000-per-year
	Paediatric drug formulations	• Ivanovska V, Rademaker C, van Dijk L, Mantel-Teeuwisse K. 'Pediatric drug formulations: a review of challenges and progress'. Pediatrics. 2014: 134 (2); pp. 361-72.
	Oral rehydration solution (ORS) and zinc for treatment of diarrhoea	• Munos MK, Walker CL & Black RE. The effect of oral rehydration solution and recommended home fluids on diarrhoea mortality. International Journal of Epidemiology. 2010: 39 (Supp. 1), pp. i75-i87. • Fischer Walker CL & Black RE. Zinc for the treatment of diarrhoea: effect on diarrhoea morbidity, mortality, and incidence of future episodes. International Journal of Epidemiology 2010: 39 (supp. 1), pp. i63-i69.
Adolescence	HIV prevention activities	• PEPFAR. Preventing HIV in adolescent girls and young women. Guidance for PEPFAR country teams. Washington DC: United States President's Emergency Plan for AIDS Relief (PEPFAR); 2015.
	Sexual and Reproductive Health and Rights (SHRH)	• Hindin MJ, Kalamar AM, Thompson TA, Updhyay UD. Interventions to prevent unintended and repeat pregnancy among young people in low- and middle-income countries: a systematic review of the published and gray literature. Journal of Adolescent Health. 2016; 59 (3 Supple): S8-15.
	Non-communicable disease including mental health and injuries	• Patton GC, Sawyer SM, Santelli JS et al. Our future: a Lancet commission on adolescent health and wellbeing. The Lancet. 2016; 387 (10036): 2423-78.


THE GLOBAL GOALS
For Sustainable Development
1 NO POVERTY
2 ZERO HUNGER
3 GOOD HEALTH AND WELL-BEING
4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
14 LIFE BELOW WATER
15 LIFE ON LAND
16 PEACE, JUSTICE AND STRONG INSTITUTIONS
17 PARTNERSHIPS FOR THE GOALS

Svenska Läkaresällskapet

Swedish Society of Medicine's Committee for Global Health

sls.se

SIGHT.
SWEDISH INSTITUTE FOR GLOBAL HEALTH TRANSFORMATION

SIGHT's vision is to contribute to health and wellbeing globally for all with a particular focus on vulnerable groups, including women and children.

sight.kva.se

Lilla Frescativägen 4A, 114 18 Stockholm, Sweden

SIGHT IS AN INSTITUTE UNDER THE AUSPICES OF:

KUNGL. VETENSKAPS-AKADEMIEN
THE ROYAL SWEDISH ACADEMY OF SCIENCES

kva.se

Producerad av InPress Art 2019