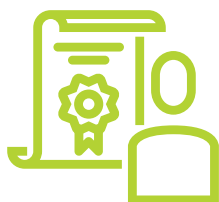




Early years: 0–16



Young adults: 16–24



Working age: 24–64



Later life: 65+

Reducing inequities in health across the life-course

Early years, childhood and adolescence

Reducing inequities in health across the life-course

Early years, childhood and adolescence

ABSTRACT

Socioeconomic inequities in child health are seen across the WHO European Region for almost all aspects of physical and mental health. They emerge from birth and persist across childhood, adolescence and into adulthood. This report lays out the key arguments for promoting equity in the early years, childhood and adolescence. It then goes on to outline evidence and policy options to address inequities in child health, along with limitations of this evidence and suggestions for future directions. Member State commitments, giving policy-makers the mandate to take action, and the key stakeholders and partners needed to reduce health inequities are presented. The report ends with a list of indicators to monitor progress in the factors most likely to bring about change.

Keywords

HEALTH INEQUITIES
CHILD HEALTH
SOCIAL PROTECTION
EARLY YEARS EDUCATION
LIFE COURSE

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1. Introduction

1.1 Key arguments for a policy focus on health equity in the early years

Social inequities in health are systematic differences in health status between different socioeconomic groups that are socially produced (and therefore modifiable) and unfair (1). Equity in health implies the converse: that ideally everyone could attain their full health potential and that no one should be disadvantaged from achieving this potential because of their social position or other socially determined circumstance (1). This paper concentrates on socioeconomic inequities, but the importance of other axes of inequity for children's health, notably gender, ethnicity, geography and disability, are acknowledged.

The paper focuses on child and adolescent health, which captures the early years – early childhood development in infancy and the preschool period, childhood and the years of schooling, through to adolescence. The preconception period and pregnancy are important periods that influence subsequent child health. WHO considers “maternal and newborn” as one of the four periods of focus for addressing health across the life-course, the next period being defined as “child and adolescent health” (2).

Arguing for health equity in childhood is critical. Inequities in childhood are unfair in themselves and lead to health inequities across the life-course. Socioeconomic inequities in child health are seen across the WHO European Region for almost all aspects of child physical and mental health. Differences are striking and emerge from birth, persisting (and sometimes widening) across childhood and into adolescence. Health inequities are particularly unfair in the case of children and adolescents, who have little control over their health and the factors that influence it (as reflected in the Universal Declaration of Human Rights). What happens to children in their earliest years is a fundamental measure of what a society values. It determines the development of inequities in later adult life, as early inequities in child health and development strongly influence health and other outcomes (such as education, employment and relationships) that are important for adult health.

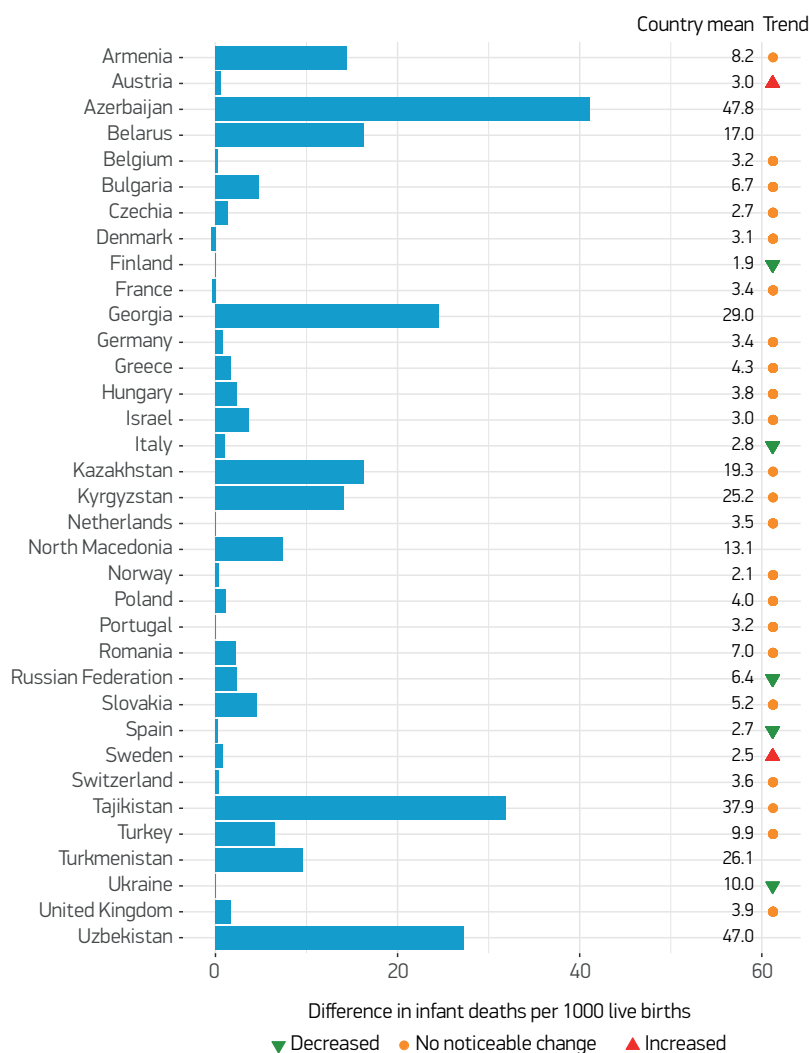
The term *socioeconomic circumstances* (SECs) is used throughout this paper when describing health differences between children from different socioeconomic backgrounds. Children do not have their own socioeconomic position but experience a multitude of SECs that come via their parents or caregivers (such as educational qualifications and occupational status), the household unit (housing tenure and income, for instance) and the neighbourhood in which they live (living in an area of deprivation) (3).

Early childhood is a period of dramatic change and development in terms of physical growth, cognitive development, and socioemotional and behavioural learning. Socioenvironmental exposures and the effects of parenting and nurture (4) are critically important in this period, which is sometimes termed the first 1000 days. Biological processes have been described through which early experiences mould the growing child and influence how genes are expressed (5). There is increasing evidence that childhood adversity can interrupt children's healthy development. More recently, the concept of adverse childhood experiences has gained attention. These experiences include toxic exposures such as childhood psychological, physical or sexual abuse, domestic abuse and violence against the child's mother, and living with household members who had substance misuse disorders, were mentally ill or suicidal, or had been imprisoned in the past (6,7).

Policies and interventions that aim to support and improve early years experiences are therefore critical for children's health and well-being. Policies are particularly important, as they are powerful determinants of inequities in adult ill health. For this reason, the Commission on Social Determinants of Health put a major emphasis on giving all children the best start in life to create conditions for a flourishing older life (8).

Inequities in child health outcomes within countries are stark. Fig. 1, for example, shows differences in the proportion of infants dying in the first year of life between the most and least disadvantaged regions within selected European countries.

Fig. 1. Inequities in infant mortality within countries



Note: the plot shows the inequities gap within countries as measured by the additional deaths in infants per 1000 live births in the most disadvantaged subnational regions compared to the most advantaged subnational regions. The trend over time from 2005 to 2016 is also shown. For example, in Turkey there were over six additional infant deaths per 1000 live births in the most disadvantaged regions compared to the most advantaged. Differences between the most disadvantaged subnational regions and the most advantaged are estimated as the slope index of inequity over subnational Human Development Index scores. In two countries in that year, the wealthiest regions had higher infant mortality than the poorest regions. This may partly be because there are very few regions in some countries, leading to more year-to-year variation, or because there are many people on low incomes in areas labelled as wealthy.

Source: WHO Regional Office for Europe (9).

These differences in life chances vary systematically across countries and over time, suggesting they are not natural or biologically predetermined, but largely result from exposure to adverse living conditions starting in early life (8). Children living in poverty, for example, suffer injury and death rates two-to-three times higher than their more affluent counterparts (10).

In general, addressing child health inequities requires: 1) a universal system of welfare support that prioritizes children, to reduce social disadvantage; and 2) local delivery of high-quality universal child health support, with intensive intervention for those who need it most. Policies to deliver high-quality services and interventions should be focused on the antenatal and early years period in particular.

Policy-makers take a number of key arguments into account when promoting health equity in the early years.

1.1.1 Child health equity: to protect the rights of children to health

Children are often not in a position to speak up for themselves so are offered special protection under the United Nations Convention on the Rights of the Child (CRC). All children have a right to the best possible health and the right to the conditions that allow them to flourish and develop into healthy adults. Adopted unanimously in 1959 by the United Nations General Assembly, it is legally binding and ratified by all European Member States. The CRC clearly states (11):

The child will enjoy special protection and will have at its disposal opportunities and services, dispensed under the law and through other means, allowing physical, mental, moral, spiritual, and social development in a healthy and normal way, with liberty and dignity.

There is a legal and moral responsibility to ensure that all children develop to their full potential (CRC Article 6).

1.1.2 Child health equity: the most effective means of improving population health and reducing inequities

The early years, childhood and adolescence are characterized by dramatic physical, cognitive, social and emotional developments and changes, including physical growth, cognitive development, socioemotional and behavioural development, the onset of puberty, and the establishment of health-related and risk-taking behaviours. Social disadvantage can disrupt these critical foundations, leading to poor child health and development and further undermining the potential for lifelong health.

The strategic objectives of WHO's Health 2020 European health policy framework, adopted by all 53 WHO European Region Member States, include the reduction of health inequities (12). Recognizing the growing body of evidence linking adversity in the early years to poorer health outcomes, Health 2020 cites action on the social and environmental determinants of child health and well-being as being key to producing better and more equitable health outcomes. The United Nations Sustainable Development Goals (SDGs) also reflect the central importance of the health and well-being of children and adolescents for achieving the SDG targets, in particular those focused on poverty, health security, education, preventing violence, abuse and neglect, and reducing inequities.

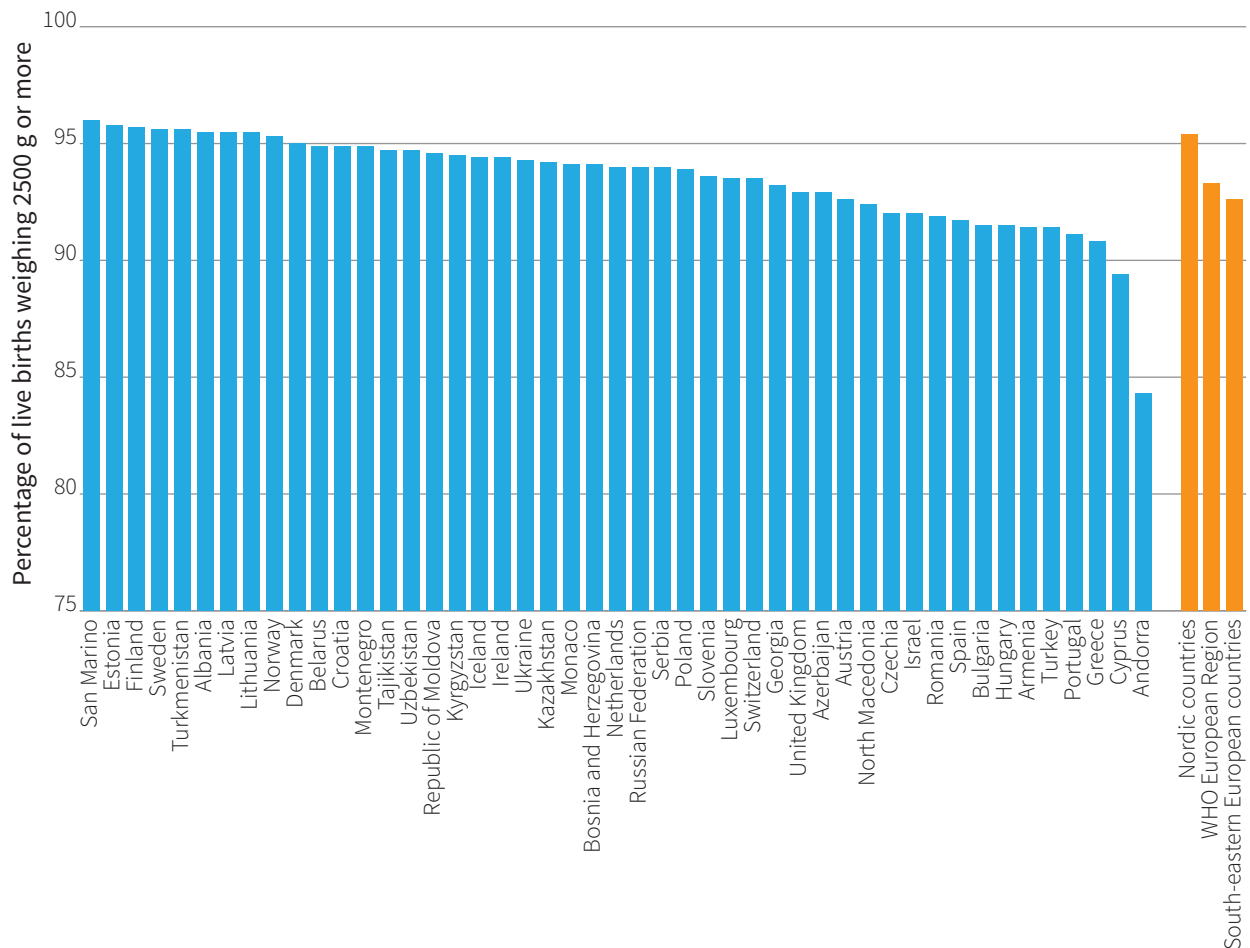
To facilitate progress towards achieving the SDG targets and the Health 2020 goals, the WHO Regional Office for Europe has committed to developing local health strategies aimed at enabling children and adolescents to realize their full potential for health, development and well-being, and reducing the burden of avoidable mortality and morbidity.

1.1.3 Child health equity: substantial benefits across the life-course

What children experience during the early years sets a critical foundation for their entire life prospects. Early child development (health, physical and socioemotional development and language/cognitive development) strongly influences basic learning, school success, economic participation, social citizenry and future health (13). Accordingly, critical time windows exist in childhood when the benefits of policies and interventions that support early childhood development interventions are particularly effective (14). Generally speaking, the most fundamental experiences in the early years of life come from appropriate nurturing care and protection delivered by parents, family and community. Children who start life behind their peers tend to stay behind, not only in terms of health and well-being, but also in academic achievement, employment opportunities and relationships. Policies and services that support parents' ability to provide optimum nurturing care so that all children can thrive in the early years are critical, and their effects on outcomes are well evidenced (14,15).

A life-course approach implies an awareness that health-protective and health-damaging influences may be more or less important at particular times in life, and these influences have effects that accumulate and interact over time. For example, being born small influences health over the life-course and there are substantial differences in the risk of being born small between countries (Fig. 2).

Fig. 2. Percentage of live births weighing 2500 g or more, 2015



Note: countries without data for 2015 are not shown.

Source: WHO Regional Office for Europe (16).

On average, children from more disadvantaged backgrounds are more likely to be exposed to drug use, smoking and anaemia in utero, be born small, be breastfed for shorter periods, have poorer diets, become overweight, be exposed to passive smoking and some infectious agents, experience abuse or neglect, and die in an accident (17). They have fewer learning opportunities and are more likely to become a young parent; as adults, they are more likely to be out of work, live in poor housing, receive inadequate wages, report poor health and ultimately die earlier (18–21). Improving socioeconomic conditions in childhood and reducing inequalities in preventable risk factors in the early years can have a profound effect on reducing inequalities across the life-course.

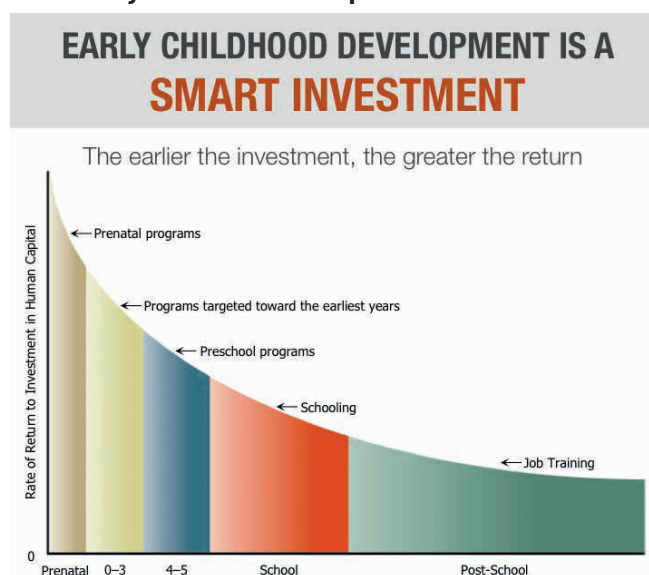
Accordingly, the WHO Health 2020 European policy framework prioritizes a life-course approach to health (12), as does the WHO European action plan for sexual and reproductive health (22) and the WHO European Region’s child and adolescent health strategy 2015–2020 (23), which states:

Targeted efforts to break or disrupt negative intergenerational cycles that are created by or contribute to health inequities, such as no exclusive breastfeeding, poor early childhood development, poor health of parents and inadequate parenting skills, will promote the development of young people who are healthy, confident, socially competent and secure in their relationships and who in turn create the conditions for similarly healthy future generations as parents, grandparents and caregivers.

1.1.4 Child health equity: investing in early child development makes economic sense

The Nobel Prize-winning economist James Heckman has set out a compelling economic case that shows the rate of economic return on early years investment is significantly higher than for any other stage of life. Equitable early life investment strategies can have an important impact on reducing inequalities across the life-course. For instance, Heckman states that investment in child development in the early years is “a rare public policy initiative that promotes fairness and social justice and at the same time promotes productivity in the economy and in society at large” (24). As is shown in Fig. 3, the earlier the investment is made, the greater the return on investment and future cost savings from prevention and early intervention. There is now good evidence to indicate a 6–10% annual rate of return on investment for spend on intervention in the early years (24).

Fig. 3. Return on investment in early childhood development



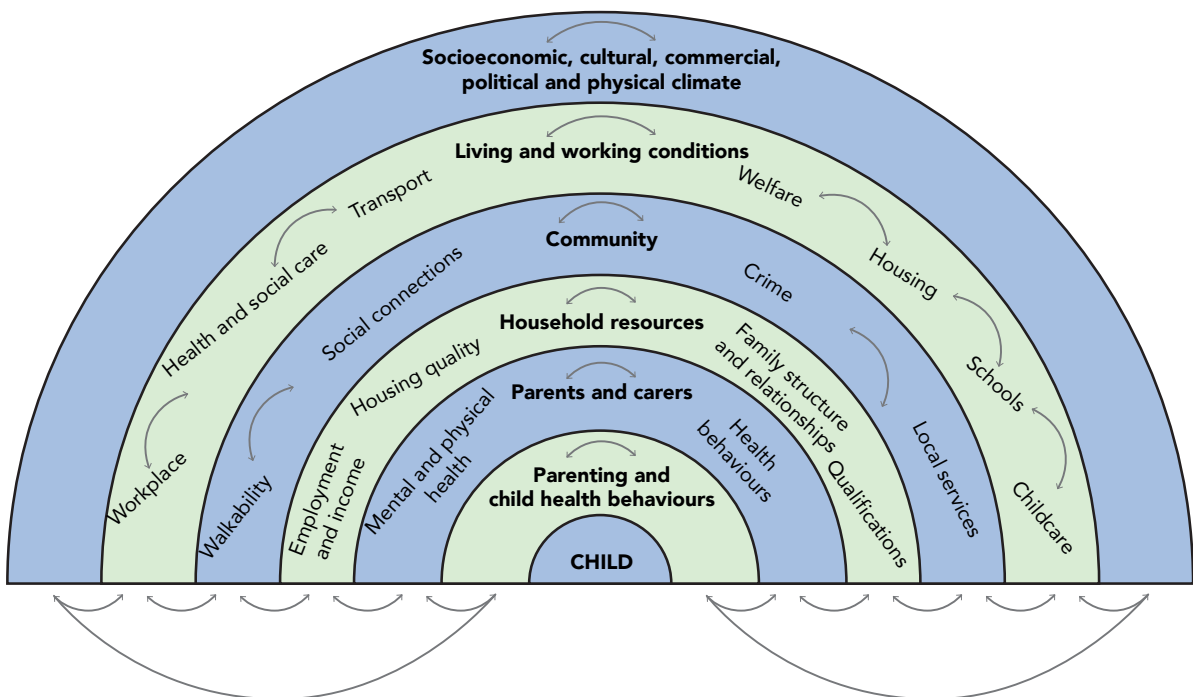
Source: reproduced from James Heckman, Nobel Laureate in Economics (<https://heckmanequation.org/resource/the-heckman-curve/>) under license CC BY-NC-ND 3.0

We see such high returns on investment in the early years because the first years of life are critical for brain development – it is a time when the brain’s ability to adapt and change is greatest. Getting it right early leads to better outcomes for individuals and is less costly to society than trying to fix it later. **We can pay now or we will pay more later for society’s failure to promote healthy development in the earliest years of life** (25).

1.2 Pathways to inequities in child health

The association between the SECs into which children are born and their health across the life-course is clear, but the pathways linking them are complex. To reduce inequities in child (and therefore adult) health, broad attention must be paid to inequities in the distribution of the social determinants of health – “the conditions in which we are born, grow up, work and live” (8,18). The social determinants of health for children are shown in in Fig. 4.

Fig. 4. Social determinants of child health



Source: Pearce et al. (3) and adapted from Bronfenbrenner (26), Dahlgren & Whitehead (26) and Dahlgren & Whitehead (working paper prepared for the King’s Fund International Seminar on Tackling Inequalities in Health, Ditchley Park, Oxfordshire, United Kingdom, September 1993, unpublished). Adapted by permission from BMJ Publishing Group Limited, *Archives of Disease in Childhood*, Pearce A, Dundas R, Whitehead M, Taylor-Robinson D, 104, 998–1003 © 2019.

At the centre of the model lies the child and their largely fixed characteristics (such as age, sex and ethnicity). Surrounding the child are concentric layers of influence – the social determinants of health. The innermost layer includes the determinants that are most proximal to individual health, such as health behaviours. For children, this includes the nature of interactions between caregiver and child (parenting), which in turn are affected by the characteristics of the caregivers themselves (28), including their own health and behaviours.

All these are influenced by household resources, community and social networks and, most importantly, the structural influences of health – the living and working conditions that influence children’s health directly (such as childcare, schools, health services and social protection) and indirectly via their parents (including the workplace). Finally, the outer layer houses the macro-level political, cultural and economic conditions. These crucially include gender equality and the social conditions that support parents’ ability to care properly for children, such as paid parental leave, flexible work schedules, living wages and secure and promising educational futures for young women (29,30). The arrows in Fig. 4 show that the social determinants of health are interrelated, both within and between the layers.

The unequal distribution of the social determinants of health between groups occupying unequal positions in society leads to health inequities (31). To address health inequities, it therefore is necessary to address the underlying social processes that drive this unequal distribution (32). It is important to note, however, that simply improving the social determinants of health will not always reduce health inequity – for this to happen, the health benefits of these improvements should be felt across socioeconomic groups, and more so among those with greatest need.

2. Evidence and policies

2.1 Policies to address inequities in child health

For the purposes of this paper, the social determinants of health described above have broadly been collapsed in line with the remaining three life stages covered by the WHO European Health Equity Status Report (HESR) on Life-course Policy Guidance papers into five sets of conditions considered essential for supporting health and reducing health inequities: personal and community capabilities, living conditions, employment and working conditions, income and social protection, and health services. The remainder of this paper will examine how each of these conditions contributes to child health and development and health inequities, and how action might be taken upon them.

A range of evidence sources is tapped to provide a balanced view of example policy options that have the potential to improve child health and reduce health inequities. Health inequalities research suffers from the so-called inverse evidence law, whereby the least evidence is available for actions with the greatest potential to improve things (33). This has in part arisen due to what is known as lifestyle drift, in which policy attention initially is directed towards the upstream determinants of health, but then drifts downstream to focus on individual lifestyle factors (34). The evidence cited below therefore spans from ecological studies describing inequities in the social determinants of health, to evaluations of trials conducted in disadvantaged groups and public health policy experiments that have considered impacts in different socioeconomic groups.

2.1.1 Condition 1. Personal and community capabilities

2.1.1.1 Evidence

Here the focus is on personal and community capabilities that are particularly important for parents (as distinct from the general adult population) and for children and young people. Intervening to address inequities in personal and community capabilities in the early years and during adolescence is especially important and should be carried out in conjunction with action on the other environmental conditions that follow. The personal and community capabilities outlined in the paper for young adults and those of working age (such as civic engagement and social capital) are also relevant to children and young people, as they affect current and future parents.

During pregnancy and early childhood (infancy, toddlerhood, preschool and the first few years of school life), children have little or no control over their health and their outcomes are heavily influenced by their parents and other caregivers. Addressing inequities in the physical and mental health and well-being of parents and caregivers therefore is extremely important. Children are more likely to experience adverse experiences if their parents were also subject to abuse and trauma when they were children (35). Parents' health-related behaviours, including risky behaviours (such as smoking, alcohol and other substance abuse in pregnancy) and those supportive of health (responsive and sensitive infant feeding, immunizations and child-caregiver interactions to support child development) are also crucial. These are socially distributed and have direct consequences for child health (36).

The early years, which include the first 1000 days (from a child's conception to the age of 2 years), is a critical period in child development; it is a time when foundations for physical, cognitive, social, emotional and behavioural development are laid. As the introductory section points out, the huge

return from investing at this stage of the life-course is demonstrated in the renowned Heckman Curve. Good physical health and nutrition, security and safety, early learning and responsive/sensitive care are crucial to supporting early development and health across the life-course (14). A secure bonding relationship between a baby and its primary caregiver (known as attachment) is one of the first and most important building blocks for healthy development. Secure bonding is supported by close contact with the primary caregiver during the postnatal period and parenting that is responsive to the infant through touch and speech. Inequities in secure attachment may arise due to inequities in parental mental well-being and inadequate levels of social support (37), which are heavily influenced by the social determinants of health. Bonds with other key caregivers, especially fathers, are also important.

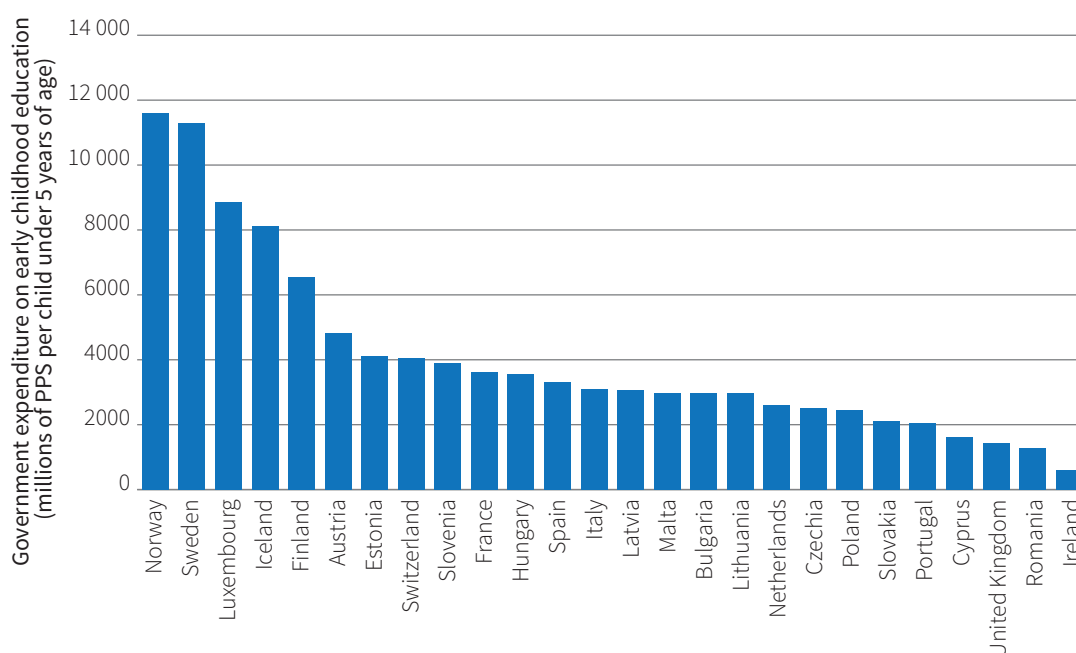
It is crucial that caregivers are supported by services (including health visiting, children's centres and parenting support programmes) during these early years to help them understand how to provide for their child's changing developmental needs, with additional help for families experiencing stressors such as poverty, mental illness and substance misuse.

Informal social support systems provided by friends, family and communities can help parents to navigate and overcome barriers that are related to social adversity. These barriers can be particularly problematic when raising a family, especially so among single-parent families.

The health environments experienced by families are affected by inequities in the social determinants of health. For example, parents who experience financial strain may find it harder to quit smoking (38) and are more likely to experience poor mental health (39), which in turn can influence child health (40). Accessibility to, and quality of, services (such as health visiting, parenting support programmes, playgrounds, toddler groups and schools) can vary locally, with deprived communities often faring worst. These issues can be exacerbated among disadvantaged groups, who may be more reliant on public transport systems that can be variable in terms of regularity, reliability and cost, especially in rural areas (41).

Food preferences are formed early in life and are influenced strongly by commercial determinants such as advertising and packaging of unhealthy foodstuffs (42), including formula milk (43). Evidence suggests that potentially health-harming retail outlets (alcohol, fast-food, tobacco and gambling outlets) co-locate in deprived areas (44).

The early years period and provision of early childhood education and care (ECEC) are key to supporting a successful transition into school. A child's capacity to engage in and benefit from the schooling system (and thereby develop essential lifelong skills) is supported by cognitive and socioemotional skills that develop throughout the early years and which include abilities to communicate, exchange information and self-regulate. Children from less advantaged backgrounds are less likely to start school prepared for the opportunities and challenges that school life offers, and this is thought to be one of the most important contributors to inequities in later life (18). ECEC therefore is considered one of the most effective ways to support social mobility through ensuring that children start school ready to learn. Fig. 5 shows how government investment in early childhood education varies across the WHO European Region. ECEC systems can reduce inequities if they are of high quality, affordable and accessible to all children regardless of socioeconomic background. In many countries, however, high-quality childcare providers will be more easily accessible to more advantaged groups who are able to afford higher fees and live in areas where choice is greater.

Fig. 5. Government expenditure on early childhood education in purchasing power standards (PPS) per child under 5 years of age, 2015

PPS: purchasing power standards, an artificial currency unit, derived by dividing any economic aggregate of a country in national currency by its respective purchasing power parities. PPS is the technical term used by Eurostat for the common currency in which national accounts aggregates are expressed when adjusted for price-level differences using purchasing power parities.

Note: general government expenditure on early childhood education (or the sum of early childhood educational development and pre-primary education) in millions of PPS, divided by the total population of children aged less than 5 years.

Source: Eurostat (45,46).

ECEC settings are also having a growing influence on children's physical health through the physical and nutritional environments they provide. Some types of childcare may be associated with higher rates of overweight and obesity and unintentional injuries, with some indication that these relationships may differ by socioeconomic factors in varying ways (47–49). Opportunities to spend time outside during childcare hours might increase physical activity (50). ECEC is also an important setting for influencing diet and dietary preferences; providers in Europe are often required to follow minimum nutritional standards (51), but these are highly variable between and within countries (52,53).

Provision of universal, free and high-quality schooling can be one of the most effective ways of improving social mobility and reducing inequities in health across the life-course by bolstering employment opportunities and life skills. While education participation rates are high across Europe, they vary, and there are also differences in school leaving ages (54). Importantly, large socioeconomic inequities in academic performance are found at all stages of the school system (55): these perpetuate health inequities across the life-course. It is thought that the provision of high-quality ECEC, family allowances (such as free school meals) and public services (including extracurricular activities) are key to reducing inequities in academic performance (55). As is discussed below, the characteristics of schools also influence health.

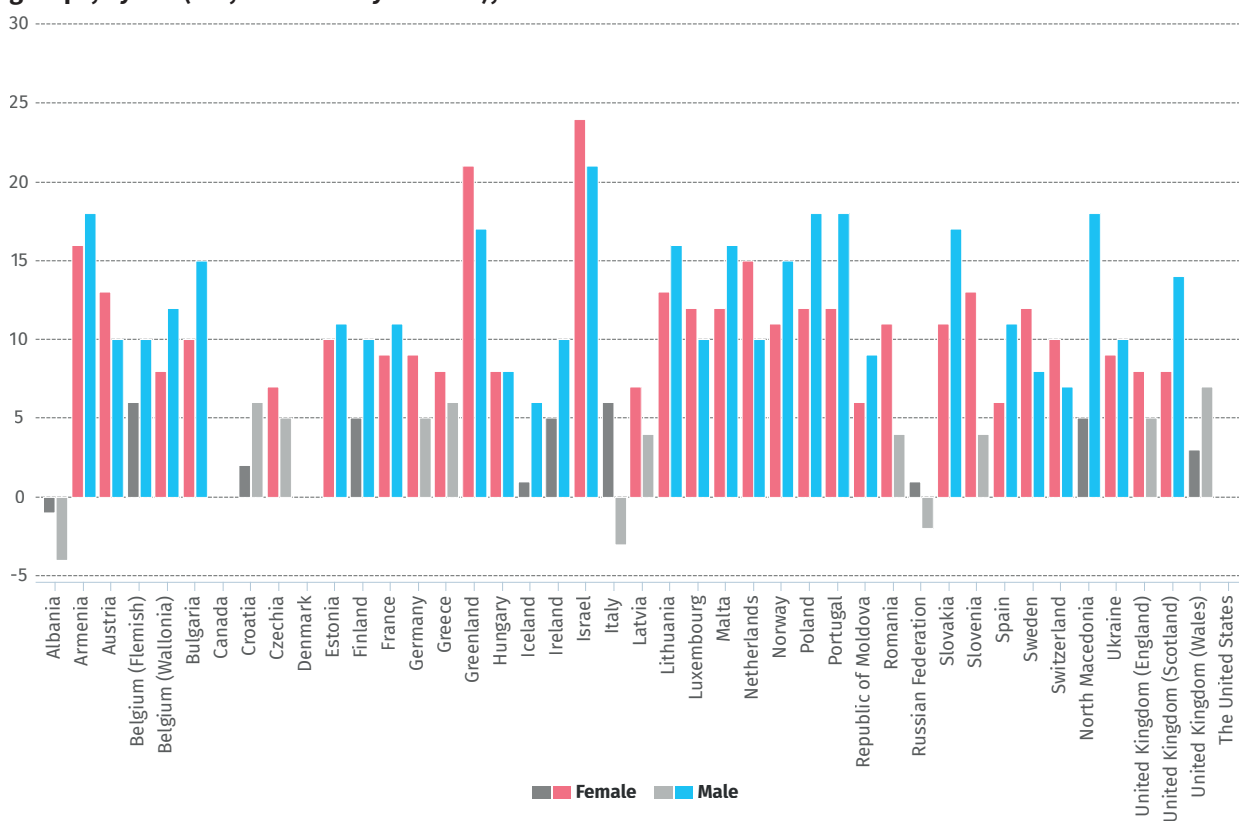
Illegal (or informal) child labour, which often takes the form of agricultural labour, mining and street-selling, but also begging and prostitution (56), presents a barrier to schooling in some parts of the Region. This type of labour can increase during times of economic downturn, particularly among the most disadvantaged families. In addition to reducing opportunities for schooling, child labour also acts

as a barrier to social participation and exposes children to hazards that can cause injuries, poisoning, respiratory disorders, cancer, musculoskeletal problems and impaired mental health (57).

Crucial psychological and biological developments, second only to early childhood in terms of the breadth and rate of change, occur during the transition to adolescence (58). This period in the life-course is marked by the onset of puberty and is characterized by the development of new capabilities, relationships and behaviours, including those related to risk-taking behaviours, diet and exercise, health management and sexual relationships.

Inequities in exposure to familial factors, such as parents' health behaviours, parenting style and family relationships, continue to have a powerful influence on young people's health during adolescence, while the influence of peers, schools and neighbourhoods grows. Adolescence is a time when strong peer relationships start to develop, and these can be both supportive of, and detrimental to, health. For example, young people with friends who engage in risky health behaviours are more likely to adopt those behaviours themselves, while positive peer modelling and awareness of peer norms can be protective against violent or risky behaviours (58). Fig. 6 shows that adolescents from more affluent families typically report greater peer support than those with less affluence.

Fig. 6. Percentage-point difference in prevalence of peer support between low and high family-affluence groups, by sex (11-, 13- and 15-year-olds), 2014



Note: peer support was measured using the Multidimensional Scale of Perceived Social Support (MSPSS). Young people were asked if they perceive that their friends really try to help them, that they can count on them when things go wrong, if they have friends with whom they can share their sorrows and joys, and if they can talk to them about their problems. Response options ranged from very strongly disagree to very strongly agree. Findings show associations between lowest and highest within-country/region quintile of family affluence and reporting high social support (an average score of 5.5 or more) on the MSPSS. Statistically significant differences between low and high family-affluence groups are shown in colour, non-significant differences in grey. Positive values indicate higher prevalence of peer support in high family-affluence groups.

Source: WHO Regional Office for Europe (59).

The rise in social media use is opening new avenues for peer factors to influence health (in both negative and positive ways). The implications of social media for health inequities are still being discovered, but it seems feasible that young people from less advantaged backgrounds may be more likely to experience negative interactions on social media and potentially are less well equipped to overcome them.

Many children and young people across the Region care for family members with health problems or disabilities. Many young carers are hidden, meaning the true prevalence is not known, but prevalence studies in Switzerland (60) and the United Kingdom (England) (61) indicate that numbers are likely to fall into the hundreds of thousands across the Region. Young carers are more likely to live in disadvantaged families. Being a young carer can impede social participation and school performance, widening inequity further. It is imperative that young carers are identified as early as possible through, for example, increased awareness and screening tools for professionals. Young carer support projects can help children and young people to feel recognized, supported and valued. Schools are also seen as a potentially valuable avenue for support, although the evidence is as yet underdeveloped (62). A whole-family approach will be required to address the complex needs of young carers, requiring joint working between and across sectors, including adult and children's services (63).

Adolescent pregnancy and childbearing is more common among less advantaged groups across Europe. The drivers of these inequities potentially include sexual health knowledge, attitudes and reproductive strategies based on childhood experiences, perceptions of educational and employment prospects and, above all, structural inequity in society. These include gender roles and expectations, the availability and quality of sexuality education, and access to age-appropriate sexual and reproductive health services (64,65).

Young people who have stronger connections with their school and who attend schools with greater levels of leadership, safety and social connectedness have better health, and there are inequities in these factors (58). Neighbourhood environments that are supportive of health in terms of, for example, access to resources and services, social norms and collective efficacy, are likely to lead to health inequities because they tend to be more prevalent in more advantaged areas. Legislation influences health behaviours (such as smoking and drinking) and sexual initiation; these upstream approaches may be most effective in reducing inequities. Young people's well-being and sense of optimism about the future may also be affected by prevailing economic and political forces, with those from less advantaged backgrounds most likely to be affected.

2.1.1.2 Policies and country examples

The trend across the WHO European Region has been towards a more integrated approach to support for families, although progress has stalled or been reversed in some countries due to austerity measures. Community health and social services delivered widely through children's centres include core activities such as structured parenting programmes, individual one-to-one support (such as counselling), training on job-search strategies, preparation for interviews, and information on childcare options and childcare-related benefits. Children's centres ideally are universally accessible and delivered according to need (proportionate universalism), with tailored services offered to particular parent groups.

The role that high-quality and accessible ECEC services play in supporting healthy child development and reducing inequities across the life-course is undeniable (18,24). Consequently, a dramatic expansion in early years services has been seen across the European Region. For example, Kazakhstan's early years education sector, which suffered after its split from the Soviet Union, recently has exceeded the Organisation for Economic Co-operation and Development (OECD) average in terms of participation in

ECEC among 3–6-year-olds (reaching 73% in 2013) (66). This has been achieved, in the face of growing birth rates, through concerted government efforts to prioritize early years education, schooling and lifelong learning, including the introduction of new legislative frameworks and the development of curricula. Priorities for the future are focused on improving accessibility, affordability and quality, and valuable lessons might be drawn by countries with more advanced ECEC systems.

There is some evidence to suggest that peer support and specialist counselling increase breastfeeding initiation and duration among mothers from less advantaged backgrounds (67).

2.1.2 Condition 2. Living conditions

2.1.2.1 Evidence

A child's living conditions consist of the immediate home environment where most time is spent, particularly during early childhood, and the broader environment in which a child lives and plays. Some specific considerations regarding the role of the school environment in supporting and promoting health are also covered here.

There are clear socioeconomic inequities in children's living environments. WHO's children's environment and health action plan for Europe (68) sets out four interrelated regional priority goals that aim to: improve access to safe and affordable water and adequate sanitation for all children; promote safe, secure and supportive settlements for all children; reduce indoor and outdoor air pollution; and reduce exposure to hazardous chemicals.

Good-quality housing is less available to those with lower incomes, and poor-quality housing conditions (such as damp and indoor air pollutants) exacerbate health conditions to which children are particularly vulnerable, such as respiratory conditions (69). The vast majority of unintentional injuries in early childhood occur at home and children from less advantaged backgrounds are exposed to more hazardous home environments due to overcrowding or unsafe structures over which parents often have limited control (as tenants or families with limited resources). Low housing quality further increases inequities in health through diminished access to healthy nutrition because of lack of availability of appropriate cooking facilities (70), and lead exposure from paint and water pipes leads to physical and neurodevelopmental difficulties.

Indoor temperature is a contributor to excess winter deaths, and families with low incomes may have less money to cover fuel costs (71). Interventions focusing on warmth and energy efficiency show positive effects on reducing health inequities, particularly when targeted at those with existing health conditions (72,73). There is considerable variation in the proportion of children who live in dwellings with no direct sanitation connection between and within some Member States (74).

Inequities in other features of the surrounding environment also have important impacts on child health, particularly as they get older and spend more time outside the family home. For example, access to green and child-friendly spaces within the local area, particularly for children living in houses with no individual outside space, alongside safe transport to and from places that children need to access (including friends, schools and health services) will allow children to increase their physical activity and reduce road-traffic accidents and exposure to harmful pollutants, so are important in maintaining good mental health.

Children's developing lungs are particularly susceptible to air pollution, and those growing up in disadvantaged SECs are more likely to be exposed to pollution, both indoor and outdoor. Improvements to the urban environment, including a reduction in diesel emissions, are important priorities in many Member States and will preferentially benefit more disadvantaged groups in more urban areas.

Physical activity is affected by the availability of outside space, sports equipment and after-school activities, and facilities and schemes to support travel to and from school (75–77). The quality and safety of the outdoor built environment is also important for reducing unintentional injuries, one of the leading causes of childhood mortality, which is again socially patterned and shows differences by gender. While child mortality rates due to unintentional injuries have declined on average across the entire WHO European Region, relative inequities between low-middle-income and high-income countries in the Region have widened, with the suggestion that stricter regulations and higher safety practices are required (78).

Children are likely to spend a great deal of time in school. Schools offer an important intervention entry point to tackle children's and young people's health issues, providing access to almost all children and therefore offering great potential for reducing inequities. Healthier pupils are more able to benefit from education, so health improvement can help to reduce inequities further. School environments have long been considered a key setting in which to deliver health education via the curriculum, communicate the health benefits of nutritional diets and physical activity and the health risks associated with substance abuse, and provide sexuality education. These are most likely to be successful when combined with alterations to the physical and social environments of schools.

2.1.2.2 Policies and country examples

The availability and affordability of good-quality social housing in environments conducive to health is key to reducing many inequities and improving social mobility (72). Intersectoral working involving local government, the housing sector, the health sector and communities is key to ensuring that housing improvements and/or relocation have positive health benefits, while also ensuring communities retain their identity. In some parts of the United Kingdom, housing improvements are being "prescribed" by clinicians in the health sector, leading to a reduction in health-care visits (79).

Providing training and introducing state-led surveillance of drinking-water risk assessment for providers and authorities in Tajikistan has led to increased levels of safe drinking-water in remote regions (80).

Redesign of the urban environment and transport infrastructure, and provision of safe spaces for children to live and play are key to reducing health inequities. Many areas in European cities have adopted the School Streets approach, where whole streets are closed to traffic at school drop-off and pick-up times to encourage walking and cycling and reduce children's exposure to outdoor pollutants from cars (81). The WHO *Urban green space and health interventions* report provides recommendations on how to include health and equity in the planning of urban green spaces (82). The limited evidence base suggests that urban regeneration schemes and walking-friendly environmental modifications increase physical activity levels equally across socioeconomic groups; these initiatives should therefore be focused in disadvantaged areas to reduce inequalities (67). Improvements to the external environment include reducing children's exposure to second-hand smoke and other outdoor air pollutants, reducing exposure to hazardous chemicals, raising awareness of the dangers of too much ultraviolet radiation and reducing exposure to other physical pollutants (such as noise).

Laws around driving speed limits, bicycle-helmet and seat-belt use (including child restraints) and drink-driving have all proved effective in reducing inequities in road-traffic injuries in children and young people (83).

Inequities in the quality and availability of school meals and access to unhealthy snacks via vending machines and snack shops have a direct influence on diet (84). Regulatory and fiscal approaches protect children, young people and families from negative commercial influences through, for example, regulating advertising and the pricing and packaging of unhealthy foods. Since a statutory ban on television advertisements for products high in fats, sugars or salt that were specifically targeting children was imposed in the United Kingdom, exposure to advertisements has declined, although this has been thwarted by loopholes (such as advertising targeting family entertainment shows) and the growth of alternative online avenues. Since unhealthy diets are more common for children growing up in disadvantaged SECs, such approaches may disproportionately improve the health of disadvantaged children, reducing inequities. The limited evidence base, however, suggests that while universal marketing interventions can benefit the whole of the population, they make little difference to inequities (67).

Schools can support the development of social and emotional life skills that promote good mental health and prevent bullying, substance misuse and problem behaviours (85). Smoke-free policies for pupils and staff can reduce smoking while at school, and there is no evidence to suggest they are any less effective among less advantaged groups (86). Peer-led programmes to reduce smoking among young people have also been shown to be effective (87,88). Bans on smoking in public places are now in place across several European countries, and legislation has been successful in protecting children from second-hand smoke (89).

A systematic review of interventions to increase physical activity in European schools (including classroom learning and exercise sessions) indicated potential to improve metabolic outcomes and physical fitness (90), but very few evaluation studies have examined the impacts of these types of interventions in different socioeconomic contexts.

2.1.3 Condition 3. Employment and working conditions

2.1.3.1 Evidence

Inequities in employment and working conditions have a profound impact on inequities in the health and well-being of children and adolescents who are workers, and also young and working-age adults, many of whom are parents. Negative impacts include poor physical work environments, physically demanding jobs, insecure or long hours, and poor psychosocial conditions that can arise in jobs with time pressures, low personal control or monotonous tasks. The nature and quality of parental employment can influence children's outcomes in a number of ways, including parents' work-life balance, mental well-being and parenting capacity (affecting diets, family activities and relationships) and their health behaviours (including those that directly affect the child, such as infant feeding and immunization). The focus here is on employment and working conditions that are especially important for young people and parents and their children.

Millions of children and adolescents engage in legal employment across the European Region (57). The legal working age varies from country to country, but most children can work legally from the age of 13, normally with conditions governing the nature and duration of the work. Work can be more risky for

young people than adults, as young people tend to have less experience, can be at greater risk of fatigue and may be using equipment or tools that are designed for adults. The long-term effects of hazardous working environments are greater for young people because they are still developing physically and cognitively (56,57). Those from disadvantaged backgrounds are most likely to be exposed to hazardous environments, leading to inequities in current and future health, and are more likely to engage in casual work and receive pay that is below legal limits. This can affect their future employment opportunities and widen inequities further. These issues also apply to young adults, as discussed in greater depth in the *Transition to independent living – young adults* paper (91).

Despite rises in female employment rates, women are still far less likely than men to work full time or be employed in higher-paid sectors and occupations, meaning they earn less and are less likely to reach management and executive levels (92). Women with lower levels of education, skills and income tend to fare worse than their peers, with the period after childbirth characterized by income vulnerability (particularly among lone parents). Women with children are especially likely to work part time and take on disproportionate responsibility for unpaid childcare. This allows them to remain connected to the labour market, but can impact on earnings and career prospects. The challenges of balancing a career and childrearing are experienced by all families, but are particularly great for those who earn less, lone parents and those who have a child who is ill (92).

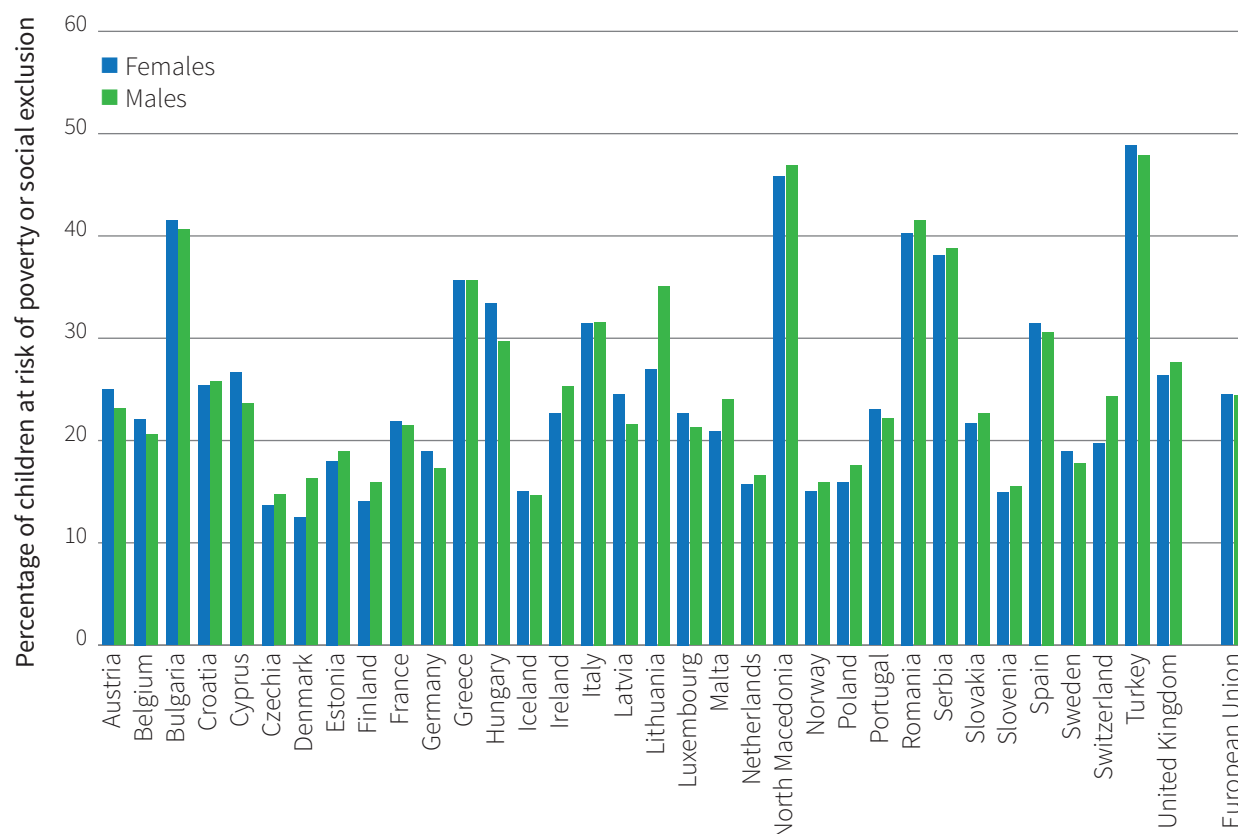
Employment can be positive for parents' mental well-being (93) and some health behaviours, such as immunization (94), and while evidence points to the importance of generous parental leave in the first year of a child's life, having a mother in paid employment after the first year is associated with benefits for child cognition and achievement (95), along with positive outcomes later in life (96). Evidence suggest, however, that long working hours for women with children is associated with higher risks of childhood overweight (94,97), most likely due to the barriers to being active and eating healthily that families can experience while juggling work and family life; these are exacerbated by obesogenic environments and the mismatch between core work and school/childcare hours.

It is important to note that the effects of socioeconomic circumstances, childcare and parenting are probably greater than those of having a mother who works (98). Positive outcomes are more likely for families and children when employment conditions are secure and flexible, with higher levels of control and leave (99).

Inequities in access to parental leave are important for supporting child health. Statutory parental leave provides families with an income and job protection while caring for their children immediately after birth and, in many countries, for an extended period throughout the early years. It can vary in length, flexibility, balance across mothers and fathers, and generosity of payment. Adequately paid paternity leave (a minimum 66% of earnings) that is non-transferable to the mother maximizes the benefits of parental-leave policies, enabling women to return to work earlier and requiring fathers to participate in child-caring tasks (100). Maternity leave and family-friendly policies in the workplace, which include provision of breastfeeding/pumping rooms, can support mothers to breastfeed for longer durations. Although it is hard to disentangle the effects of different types of parental leave, it is likely that policies which prioritize leave among fathers as well as mothers produce better outcomes for the whole family and benefit women's connection to the labour market and career progression (92).

2.1.3.2 Policies and country examples

Most WHO European Region Member States have some form of paid maternity leave, although far fewer countries provide paternity leave (Fig. 7) and the amount of parental leave provided varies considerably.

Fig. 7. Child population at risk of poverty or social exclusion, by sex, 2017

Notes: data are for 2017, except Iceland, for which the most recent available data were from 2016. Data were unavailable for some WHO European Region Member States.

Source: Eurostat (101).

More detailed information on national parental leave from the OECD Family Database indicates that government spending on parental leave is generally highest in eastern Europe and the Nordic countries (102). For the former, this is due to long periods of maternity leave: in Bulgaria and Estonia, for example, women are entitled to 66 weeks and 85 weeks of paid maternal and homecare leave respectively, and leave for fathers is two weeks. Spending is high in northern Europe due to generous payments and the more equitable spread of leave between mothers and fathers (who typically are the higher earners). The Nordic countries tend to portion out entitlements for both parents on a so-called use-it-or-lose-it basis. Germany introduced a slightly different approach in 2015 to encourage higher uptake of paternal leave: the ElterngeldPlus [Parental Allowance Plus] and Partnerschaftsbonus [Partnership Bonus] schemes offer financial incentives for both parents to work part time and share caregiving when children are very young (92).

Reconciliation of family and professional life in Greece aims to fill gaps in preschool childcare by increasing the capacity of childcare centres and services, though the ultimate aim is to increase opportunities for female employment (103). Provision of childcare outside school hours is well catered for in Nordic countries – for example, it is free to low-income families in Denmark and capped at a maximum of 2% of gross household income in Sweden. Childcare costs are disproportionately high for those from less advantaged backgrounds and especially single parents. Some countries (Norway and the United Kingdom) have looked to reduce the overall cost of childcare for less advantaged families through the introduction or expansion of free childcare hours in lower-income groups (51).

2.1.4 Condition 4. Income and social protection

2.1.4.1 Evidence

Poverty is the greatest and most pervasive determinant of child (and parent) health and health inequities (104), with the negative consequences of living in poverty accumulating over time (105). Child poverty is measured relative to national thresholds. In contrast, material deprivation is an absolute measure, capturing enforced inability to afford a range of goods and services that are considered desirable or even necessary to lead a healthy and happy life. There is significant variation in the WHO European Region between countries in terms of children at risk of poverty and social exclusion (Fig. 7) and material deprivation.

Poverty rates are especially high among families with young children, particularly lone-parent families (and especially women), young parents, and those with lower academic qualifications or living in particular European and local regions (as noted above) (106–109).

A recent hotline for children in poverty in the Netherlands showed the enormity of the barriers faced by children and families living in poverty – reliance upon foodbanks, being cut off from electricity or hot water, and experiencing barriers to engaging socially due to prohibitive costs of cultural or sporting activities or feeling embarrassed to bring friends home. Children calling the hotline reported experiencing headaches, stomach aches or fatigue due to worry over finances, including concerns about how their education would be paid for in the future, and that their parents argued about lack of money or debts (110). These stories can be found across the Region: reports from the United Kingdom, for example, show schools sending food home with children who would otherwise go hungry (111).

Socioeconomic adversity has adverse consequences for adult biological risk profiles, including allostatic load, inflammation, cardiovascular function and lipid metabolism, that are only partly mediated by adult socioeconomic status (academic attainment) (112). Financial strain in adulthood also has psychological and biological consequences that are likely to translate into impacts on their children, including affecting parents' mental health (39) and health behaviours such as smoking (38).

Social protection is essential for protecting children and families from the consequences of unemployment, employment instability, low income and high costs of living. At minimum, these policies should provide levels of protection (social protection floors) required to enable people to lead dignified lives and to ensure progressively higher levels of protection so that individuals can achieve their full potential. Social protection is also an investment in society and population health more widely through its effect of promoting educational attainment, economic growth and political stability.

The importance of enhancing national-level social-protection systems is now recognized globally (103,113,114), featuring in the Health 2020 European policy for health and well-being (12) and the SDGs. Social spending varies greatly between countries (106,115). The past decade has seen variation in the extent to which spending on social protection has been reduced in response to the economic downturn (116). The largest population health gains are to be made in countries with less developed social-protection systems (114).

Generally, income and social protection includes cash benefits, the provision of goods and services (such as housing) and tax breaks to high-risk groups, including those on low incomes, and people who are elderly, disabled, sick and/or unemployed. Many of these can benefit child health profoundly: municipal housing, for example, can provide children with safe and secure housing, and income and unemployment benefits can protect them from the negative consequences of living in a low-income

or workless household. Policies specifically designed to support children, young people and their families include one-off payments or in-kind goods and services at important times in childhood (such as maternity grants, food vouchers, the supply of other basic provisions and free school meals), child benefits (regular payments made to families with dependent children under a certain age – these are normally universal benefits, given to families regardless of income or wealth) and income support to lone-parent families (in acknowledgement of the barriers to employment in this group).

Social protection also includes income-support payments during parental leave, tax allowances and credits (to reduce the costs of childcare, for example) and broader public spending on public services (such as the provision of free childcare places and children's centres) (see above). On average, countries with higher levels of public spending on families have lower child poverty rates (115). Countries will bear high societal costs if they do not invest in early childhood, including slower rates of economic growth, higher unemployment rates, the perpetuation of inequities across generations and worse population health (113).

2.1.4.2 Policies and country examples

Children living in countries with the lowest income inequities and the most comprehensive social-protection systems have the best health outcomes. Social-protection systems tackle health inequities at the root of the problem – by reducing social inequity.

In 2013, Belarus increased the value of its child allowance from levels stipulated by the minimum subsistence budget to those corresponding to national average salaries (106), with families receiving 35% of the national average salary for their first child, 40% for the second and 45% for a child with disabilities (117). As part of efforts to alleviate child poverty in Hungary, free or discounted meals in crèches, kindergartens and primary schools are provided to children from families with low levels of income or with three or more children. Free meals have also been provided during the summer holidays, a time when low-income families struggle to make ends meet (118).

It takes more than one-off payments or voucher schemes to eliminate social inequities, although these schemes can provide valuable support to children and families at important points in the life-course. Austria recently has introduced school-start packages for children living in low-income households, comprising basic education materials such as stationery, schools bags and painting materials (103). Recipients are able to choose from 19 packages containing items from mainstream shops to avoid stigmatization. In 2015, 70% of the 47 000 eligible children had collected their school-start package, with families reporting extremely high levels of satisfaction in terms of use, content and organization (119).

Municipalities in the Netherlands are recommended to provide children's packages to families on low incomes. The packages should contain basic necessities (such as vouchers for winter and summer clothing) and other provisions to enable children to engage in society (a library card or swimming lessons, for instance) (110).

Welfare-to-work policies make the receipt of benefits conditional on meeting certain criteria, including proof of regular job-seeking. Such restrictions, referred to as lone-parent obligations, are being applied to lone parents in the United Kingdom with increasingly young children. These have had a negative impact on maternal mental health (120), mirroring international systematic review evidence that welfare-to-work policies increase conflict and reduce control among lone parents through the need to balance job-seeking, employment and childcare activities (121). This sentiment was echoed recently in a child poverty report from the United States of America (122).

2.1.5 Condition 5. Health services

2.1.5.1 Evidence

The links between a child's life chances and that of their parents are weaker in Nordic countries than in other developed countries. One reason for this is the provision of universal and high-quality early years services and support for children, which can have a powerful equalizing effect. As Heckman's research has shown, investment in these services is among the most cost-effective a society can make (24).

Many of the components of the early childhood system have been referred to in the sections above, and there is much agreement on the components of effective services at local level (27,123,124):

- support for *all* parents through prenatal programmes and postnatal support through universal programmes, such as contact with a nurse/health worker;
- routine support to *all* families through parenting programmes, children's centres and key workers, delivered to meet social needs; children's centres with multifaceted, integrated health and care services and outreach into communities have been a key feature of early childhood development policies in some countries; and
- provision of good-quality early years education and childcare for all, proportionately across the social gradient; providing any education is not enough, since it is the *quality* of preschool learning that appears to be critical for longer-term beneficial effects.

The focus here specifically is on health services. Universal access to health-care services forms target 3.8 of the SDGs and is vital to reducing inequities throughout childhood and adolescence (125). It is especially important across the early years, when children are developing rapidly, illnesses can take hold swiftly and children cannot advocate for themselves. It is vital that these services are sustained over the long term. It is an even greater priority that resources are invested early in children's lives and in interventions for which there is good evidence of effectiveness.

Children's access to essential health services varies greatly across the 53 countries of the WHO European Region, and there are still many inequities in current provision. In systems that rely heavily on out-of-pocket payments from patients, paying for treatment may push families into poverty, while those too poor to pay may go without any treatment at all (126, 127). To help meet SDG target 3.8, national systems should be aiming to ensure, as a top priority, that all children are eligible for, and enrolled in, the state health-care system, and that services are provided according to need rather than ability to pay. This requires a move towards a fairer financing strategy for the health system that involves progressive financial contributions based on income, which are used to provide care according to need regardless of ability to pay (127). The fundamental right to health care also needs to extend to undocumented children in the Region, with disparities in access clear across Member States (128).

Much of children's access to health services (as to all services) is provided through their family or primary caregivers where the child lives, particularly earlier in this life stage. As such, access is tied up with both family and social structure (some of which is covered in section 2.1.1 on personal and community capabilities). Children with parents/caregivers who are less empowered to seek health services will therefore potentially find themselves continuing a cycle of poorer health through the generations. Even in countries with the most comprehensive children's health services, access tends to be lower in more disadvantaged groups.

The significant impacts of in-utero exposures and maternal health on the health of newborns warrant consideration of pregnancy as a stage in which health care can strongly influence child health.

During pregnancy and around delivery, universal health care for the mother provides the best opportunity for healthy pregnancy, a successful delivery and best health for her new baby; this is a critical time during which inequities in high-quality service provision can lead to inequities in child health. Most Member States recognize pregnancy as a period during which increased state provision of health care is necessary and therefore provide protection against charges for health care in pregnancy. Good antenatal care should include progressive universal support for breastfeeding, information and advice regarding behaviours to avoid (such as smoking and drinking alcohol) and to adopt (periconceptional folic acid), management of common symptoms, and assessment of mother and baby for health and growth (129).

During early childhood, services generally are configured to support parent(s) and child together, aligning with WHO's advice that supporting the health and well-being of caregivers is crucial to the health and well-being of the child (130). The inverse care law, which states that the availability of good medical care tends to vary inversely with the need for it in the population served (131), nevertheless is pervasive, meaning coverage is lower in the most deprived groups; the discrepancy increases progressively for reviews at older ages (132). Recent outbreaks of diseases such as measles and cases of diphtheria, mumps and pertussis across Europe highlight the need to ensure universal vaccination programmes are meeting the needs of all groups of the population, including children from ethnic minority communities, those with low socioeconomic status, and migrant and refugee children, in whom vaccination uptake is low (133). The most effective programmes in delivering comprehensive vaccine coverage in deprived and diverse communities are those that are multicomponent and community-led (134).

During school age, school nursing services might identify children with health problems such as poor eyesight or dental problems, while primary care and paediatric specialist services can provide support for ongoing health needs and acute events. Inequities in provision of primary and secondary care services exist across and within European countries. The prioritization of different services will of course differ depending on the relative weight of chronic and acute conditions affecting specific countries. Much of the burden of emergency admissions for chronic childhood conditions could be avoided through optimum community prevention and management services (135,136). The importance of school as a setting for health education, health promotion and prevention is discussed in section 2.1.2 on living conditions.

During adolescence, access to services increasingly needs to be led by the child, with ultimate transition to adult settings. Poor management of this transition may lead to subsequent adverse impacts on health, education and employment (137). Adolescence is a period during which the combination of the emergence of intrinsic psychosocial stressors and the child's autonomy to choose (to an extent) their own health-seeking and risk-taking behaviours has particular impacts on young people's mental health. Organizational issues of health care which similarly affect people across the life-course are at play in children and young people's services; the variation in quality treatment related to lack of specialists in specific medical disciplines is apparent across Europe with respect to child and adolescent mental health services (138). Indications from the Health Behaviour in School-aged Children survey for 2013/2014 suggest that several inequities in health-seeking and risk-taking behaviours aligned with societal norms exist, but they can be ameliorated through strong social support and adequate health education (139,140).

Reproductive health choices come to the fore at this age. Adolescents are at particular risk of unplanned pregnancy and sexually transmitted infections, and responsibility for sexual health traditionally has lain with women and girls. Access to modern contraceptive choices, comprehensive sexuality education and the availability of confidential services are key to reducing sexual health inequities, particularly those relevant to the perpetuation of gender inequities (141). A lack of data for some key indicators for reproductive and sexual health, such as sexually transmitted infections, hinders progress in monitoring inequities.

2.1.5.2 Policies and country examples

Policies such as periconceptional folic acid supplementation show national variation across Europe (142). Specific examples of policies that encourage health promoting behaviours such as breastfeeding (which in many countries is less common in more disadvantaged groups) and establish positive relationships between mother and child include the Baby-friendly Hospital initiative and its extension into the Baby-friendly Community initiative for support for breastfeeding (143). The construction of additional perinatal centres, modernization and provision of better equipment and use of mobile teams has led to a 30% reduction in infant deaths in the Russian Federation (144). Georgia created a comprehensive, coordinated and geographically structured system of designating where infants should be delivered to ensure that risk-appropriate perinatal care is available for all mothers and infants (145).

Most Member States are committed to enabling people to make informed decisions about their sexual and reproductive health and eliminating inequities in access to reproductive and sexual health services (22). Well designed health promotion programmes promoting positive models of manhood, including fatherhood, lead to positive changes in male health-seeking behaviours and promote a greater share of responsibility for sexual and reproductive health (146). North Macedonia has instigated a model of integrated sexual and reproductive health services embedded within primary care, specifically designed for young people (147).

Comprehensive immunization services that address the varying needs of parents (who can experience barriers to timely immunization (148–150)) can protect children from potentially life-threatening infectious diseases like measles. Importantly, herd immunity (which is achieved when high proportions of a population are vaccinated) can protect children exposed to multiple disadvantages who are unable to be vaccinated due to complex health conditions. Multicomponent interventions designed to suit the needs of local populations have proven to be most effective in increasing immunization rates among children and adolescents living in urban, ethnically diverse and deprived neighbourhoods (134).

Ensuring that all children have access to care at an appropriate stage and using data to monitor the uptake of services, particularly for children who are vulnerable and disadvantaged, is necessary to ensure health equity (139,151).

3. Limitations and future directions

The discussion of policy options has noted the evidence of effectiveness for health and health inequities wherever known. At this time, there is comparatively less research evaluating the impacts of upstream interventions, particularly on health inequities, yet it is these types of interventions that perhaps hold greatest potential for the reduction of health inequities (152,153). Few interventions (whether they be upstream or behavioural in focus) examine differential effectiveness, making it difficult to make statements about their impacts on inequity (67,154).

Many early years trials have focused on disadvantaged groups. This may mean that the interventions can improve outcomes among those with highest need, but what would happen if these programmes were rolled out universally remains unknown. There might be higher uptake or even greater effectiveness among advantaged groups (67,154), which could widen inequities further.

While the economic case for reducing health inequities (18) and investing in the early years is undeniable (24), comprehensive information on cost-effectiveness for individual interventions and policies is lacking (154,155). This information is crucial for policy-makers to help them make informed decisions about where to direct resources.

Finally, what works in one setting may not work in another, and settings across the WHO European Region vary hugely. Future research should look to fill these gaps. In the meantime, however, inaction is not an option (see Chapter 7).

4. Member State commitments

Member State commitments and related statements of European priorities that give policy-makers the mandate to take action to address health equity in the early years, childhood and adolescence are as follows:

- the United Nations Convention on the Rights of the Child (11);
- the SDGs, particularly those focused on poverty, health security, education, preventing violence, abuse and neglect, and the reduction of inequities;
- the WHO European Region's child and adolescent health strategy 2015–2020 (23);
- the European Pillar of Social Rights (156);
- WHO's children's environment and health action plan for Europe (68);
- the WHO Parma Declaration on Environment and Health (157);
- the WHO Ostrava Declaration on Environment and Health (158);
- the Copenhagen Consensus of Mayors: healthier and happier cities for all (159);
- the global strategy for women's, children's and adolescents' health 2016–2030 (160);
- WHO Global Accelerated Action for the Health of Adolescents (AA-HA!) (161);
- the WHO Framework Convention on Tobacco Control (162);
- the European Social Charter (163);
- the global vaccine action plan 2011–2020 (164);
- the European vaccine action plan 2015–2020 (165);
- the European mental health action plan 2013–2020 (166);
- the action plan for implementation of the European strategy for the prevention and control of noncommunicable diseases 2012–2016 (167);
- the Vienna Declaration on Nutrition and Noncommunicable Diseases in the Context of Health 2020 (168);
- the Paris Declaration on Partnerships for the Health and Well-being of our Young and Future Generations (169);
- resolution WHA69.11 on health in the 2030 Agenda for Sustainable Development (170);
- resolution WHA62.14 on reducing health inequities through action on the social determinants of health (171);
- the Youth Declaration for Road Safety (172);
- the Rome Declaration on Nutrition (173);
- the Addis Ababa Action Agenda (174);
- United Nations General Assembly Sixty-seventh session – global health and foreign policy (175);
- European Council conclusions on closing health gaps within the EU through concerted action to promote healthy lifestyle behaviours (176);

- the Adelaide Statement on Health in All Policies (177);
- solidarity in health: reducing health inequities in the EU (Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions) (178);
- the strategy on women's health and well-being in the WHO European Region (30); and
- the strategy on men's health and well-being in the WHO European Region (179).

5. Stakeholders and partners to reduce health inequities among children and adolescents

The following stakeholders and partners are identified:

- children, young adults and their families/caregivers;
- national health services;
- local health services;
- public health services;
- local authorities;
- ECEC;
- schools;
- youth justice;
- voluntary and community sector organizations;
- **personal and community capabilities:** government departments (local government, early years services, education, health, fiscal, social care, housing, planning, transport), third sector, industry;
- **living conditions:** government departments (local government, social care, housing, recreation, planning, early years services, education), third sector;
- **working conditions:** government departments (local government, early years services, education, fiscal, social care, planning), employers, third sector, trade unions;
- **income and social protection:** government departments (labour, finance, education); and
- **health services:** government departments (health, social care, early years services, education, transport), local public health, third sector, religious bodies, academic and research institutions.

6. Policy options

Table 1 lays out some of the policy options most likely to influence key determinants of health inequities during the early years, childhood and adolescence (and beyond), broken down into the five sets of conditions considered essential for supporting health and reducing health inequities.

Table 1. Policy options

Conditions	Policy recommendations
Personal and community capabilities	<p>Free, high-quality ECEC for preschool children aged 3 years upwards</p> <p>Free, high-quality and compulsory schooling for all children up to 16 years of age</p> <p>Social support systems for parents, including practical and emotional support</p> <p>Healthy neighbourhood environments that are supportive of health in terms of access to resources and services, social norms and collective efficacy</p> <p>Universal parenting support programmes, with additional support for high-risk families</p> <p>Children's centres delivering integrated health/social services, such as structured parenting programmes, care referrals and general information</p> <p>Regulation of advertising and the pricing and packaging of harmful products, including cigarettes, alcohol and unhealthy foods</p> <p>Regulations for online marketing of unhealthy products to parents, children and young people, including cigarettes, alcohol, formula milk, unhealthy foods and gambling</p>
Living conditions	<p>Good-quality social housing and access to clean water</p> <p>Access to safe, green and child-friendly spaces within the local area</p> <p>Improvements to the external environment, including reducing children's exposure to second-hand smoke and air pollution and other outdoor air pollutants</p> <p>Legislation to protect children from unintentional injuries, including: driving speed limits, bicycle-helmet and seat-belt use (including child restraints), blood-alcohol driving limits and safety regulations for potentially hazardous products (such as containers for drugs and cleaning fluids, window catches, blind cords and flammable materials)</p> <p>Alterations to the physical and social environments of schools, such as quality and availability of school meals, access to unhealthy snacks via vending machines and snack shops, and smoke-free policies for students and staff</p> <p>Availability of outside space and sports equipment and after-school activities, and facilities and schemes to support travel to and from school (such as so-called walking buses, provision of bicycle sheds, traffic-calming and school patrol/road-crossing guards)</p> <p>Measures to discourage unhealthy shops and food outlets in the vicinity of schools and in poorer neighbourhoods</p>

Table 1 contd

Conditions	Policy recommendations
Employment and working conditions	<p>Secure and flexible employment conditions for women with children, with higher levels of control and leave</p> <p>Statutory parental leave, providing both parents with an income and job protection while caring for their children immediately after the birth</p> <p>Paternal leave that is non-transferable to the mother</p> <p>Family-friendly policies in the workplace, which include provision of breastfeeding/pumping rooms</p> <p>Increased capacity of childcare centres and services and provision of childcare outside school hours</p> <p>Reduction of childcare costs for less advantaged families through the introduction or expansion of free childcare hours in lower-income groups</p>
Income and social protection	<p>Cash benefits, the provision of goods and services (such as housing) and tax breaks to high-risk groups, including families on low incomes, or members of the household who are disabled, sick and unemployed</p> <p>Social protection for parents, including income-support payments during parental leave, tax allowances and credits (for example, to reduce the costs of childcare) and broader public spending on public services</p> <p>Child allowances</p> <p>Free or discounted meals in crèches, kindergartens and schools provided to all children (or at least those from families with low levels of income) all year round – these should continue during long school holidays, a time when low-income families struggle to make ends meet</p> <p>One-off schemes providing financial support and essential items to children and families on low incomes at important points in the life-course, such as during pregnancy or when starting school</p>
Health services	<p>Access to modern contraceptive choices, comprehensive sexuality education and confidential services</p> <p>High-quality free antenatal services offered to all pregnant women covering: education/support for breastfeeding, alcohol and smoking, supplements, management of common symptoms (such as nausea), clinical assessment (such as blood pressure and HIV), ultrasound to monitor fetal growth and well-being, and screening for relevant conditions/anomalies</p> <p>Antenatal care models should be adapted for higher-risk pregnancies</p> <p>Universal child health programmes starting with home visiting (provision of support and advice to support and identify issues among mother and child) and school checks when the child becomes older</p> <p>Comprehensive immunization services, including multicomponent interventions designed to suit the needs of local populations</p> <p>Primary care and paediatric specialist services to provide support, at no cost, for ongoing health needs and acute events – to include mental as well as physical health</p> <p>Facilitation of strong social support and adequate health and sexuality education for adolescents</p> <p>Using data to monitor the uptake of services, particularly among vulnerable and disadvantaged families and children</p>

7. Indicators

Table 2 lays out indicators that might be used to monitor progress in those factors most likely to reduce inequities during early years, childhood and adolescence (and beyond), including whether data can be broken down by SECs. It is split into two parts:

- Part 1 contains data available from the Atlas Indicator list
- Part 2 presents a wish list of indicators that countries can aspire to collect.

Table 2. Indicators

Policy intervention area	Part 1. AVAILABLE indicators to measure change	Data available by SECs? (Source)
Capabilities	Infant mortality rate for children aged less than 1 year per 1 000 live births	✓ (World Bank, Eurostat, OECD)
Capabilities	Percentage of children aged 12–59 months who have received at least one dose of measles-containing vaccine (available for < 50% of countries) ^a	✓ (WHO)
Capabilities	Percentage of children aged 36–59 months who are developmentally on track (available in < 50% of countries) ^a	✓ (MICS)
Capabilities	Percentage of children aged 11–15 years reporting poor or fair health	✓ (HBSC)
Capabilities	Percentage of children aged 11–15 years reporting poor life satisfaction	✓ (HBSC, PISA)
Capabilities	Percentage of children aged 11–15 years reporting high peer support	✓ (HBSC)
Capabilities	Percentage of children aged 15 years who are physically active	✓ (PISA)
Capabilities	Percentage of young people who are not in employment, education or training	✓ (ILO, Eurostat)
Capabilities	Percentage of children aged 15 years achieving minimum proficiency in mathematics and reading	✓ (PISA)
Capabilities	Government expenditure on early childhood education in purchasing power standards (PPS) per child under 5 years of age	× (Eurostat)
Capabilities	Percentage of children aged 36–59 months (UNICEF) and 48 months to school age (Eurostat) participating in early childhood education	✓ (UNICEF, Eurostat) for < 50% of countries ^a
Capabilities	Percentage of children aged 15 years achieving minimum proficiency in mathematics and reading	✓ (PISA)
Capabilities	<i>Percentage of people who cannot afford to eat a protein-rich meal every other day (not child/parent specific)</i>	✓ (EU-SILC, EQLS, WVS)
Capabilities	<i>Percentage of people aged 16+ years who meet with family/friends less than once a week (not child/parent specific)</i>	✓ (EU-SILC, ESS)
Living conditions	<i>Percentage of people living in overcrowded housing (not child/parent specific)</i>	✓ (EU-SILC)

Table 2 contd

Policy intervention area	Part 1. AVAILABLE indicators to measure change	Data available by SECs? (Source)
Living conditions	Average rating of satisfaction with living environment from 1–100 (not child/parent specific)	✓ (EU-SILC)
Living conditions	DALYs attributable to unsafe sanitation (age-standardized rate per 100 000) (not child/parent specific)	✗ (Global Burden of Disease Collaborative Network)
Living conditions	DALYs attributable to air pollution (age-standardized rate per 100 000) (not child/parent specific)	✗ (Global Burden of Disease Collaborative Network)
Living conditions	Percentage of people reporting pollution, grime or other environmental problems in their area (not child/parent specific)	✓ (EU-SILC)
Living conditions	Diesel-powered passenger cars as a percentage of all registered passenger cars (not child/parent specific)	✗ (Eurostat)
Living conditions	Estimated road-traffic deaths per 100 000 population (not child/parent specific)	✗ (World Bank)
Living conditions	Percentage of people living in an overcrowded dwelling that also lacks a bath and indoor toilet, or is damp or too dark	✓ (EU-SILC)
Living conditions	Percentage of people who cannot afford to keep their home adequately warm (not child/parent specific)	✓ (EU-SILC)
Living conditions	Percentage of people living in a household where housing costs are more than 40% of disposable household income (net of housing allowances) (not child/parent specific)	✓ (EU-SILC)
Living conditions	Percentage of people without at least basic drinking-water services (an improved source within a 30-minute round trip to collect water) (not child/parent specific)	✗ (WHO, UNICEF)
Living conditions	Percentage of people without at least basic sanitation services (improved sanitation facilities that are not shared with other households) (not child/parent specific)	✗ (WHO, UNICEF)
Living conditions	Percentage of adults aged 18+ years reporting difficulty accessing recreational or green areas (not child/parent specific)	✓ (EQLS)
Living conditions	Percentage of adults aged 18+ years reporting difficulty accessing public transport facilities (not child/parent specific)	✓ (EQLS)
Living conditions	Percentage of adults feeling unsafe when walking alone in their area after dark (not child/parent specific)	✓ (ESS)
Living conditions	Percentage of adults aged 18+ years feeling unsafe from crime in their own home (not child/parent specific)	✓ (EQLS, WVS)
Living conditions	General government expenditure on housing and community amenities as a percentage of GDP	✗ (Eurostat, OECD)

Table 2 contd

Policy intervention area	Part 1. AVAILABLE indicators to measure change	Data available by SECs? (Source)
Employment and work	Length of paid maternity, parental and home-care leave available to mothers in weeks	✓ (OECD)
Employment and work	Length of paid paternity, parental and home-care leave reserved for fathers in weeks	✓ (OECD)
Employment and work	Percentage of workers experiencing job strain according to the OECD Job Strain Index (available in < 50% of countries) ^a	✓ (OECD)
Income and social protection	<i>Percentage of households receiving housing allowance (not child/parent specific)</i>	✓ (OECD)
Income and social protection	<i>Percentage of GDP allocated to labour compensation, comprising wages and social protection transfers (not child/parent specific)</i>	✗ (ILO)
Income and social protection	<i>Percentage of the poorest quintile in the population covered by unemployment benefits and active labour-market programmes (not child/parent specific)</i>	NA (World Bank)
Income and social protection	<i>Percentage of employed persons aged 18+ years with income below 60% of median equivalized disposable income (after social transfers) (not child/parent specific)</i>	✓ (EU-SILC via Eurostat)
Income and social protection	<i>Percentage of the population with income below 60% of median equivalized disposable income (EU-SILC or OECD) or national poverty lines (World Bank) (not child/parent specific)</i>	✗ (EU-SILC, OECD, World Bank)
Income and social protection	<i>Gini index of income inequity from 0–100 (not child/parent specific)</i>	NA (World Bank)
Income and social protection	<i>Public social protection expenditure (excluding health care) as a percentage of GDP (not child/parent specific)</i>	✗ (ILO)
Income and social protection	<i>Percentage of poor persons covered by social-protection system (not child/parent specific)</i>	✗ (ILO)
Income and social protection	<i>Percentage of the population participating in social-assistance programmes (not child/parent specific)</i>	✓ (World Bank)
Income and social protection	<i>Social-assistance programme beneficiaries in each income quintile as a percentage of total number of social-assistance programme beneficiaries (not child/parent specific)</i>	✓ (World Bank)
Income and social protection	<i>Social-assistance transfers received by beneficiaries as a percentage of their total income or consumption (not child/parent specific)</i>	✓ (World Bank)
Income and social protection	Percentage of mothers giving birth receiving maternity cash benefits	✗ (ILO)
Income and social protection	<i>Percentage of people who cannot afford to eat a protein-rich meal every other day (not child/parent specific)</i>	✓ (EU-SILC, EQLS, WVS)
Health services	Infant mortality rate for children aged less than 1 year per 1 000 live births	✓ (World Bank, Eurostat, OECD)

Table 2 contd

Policy intervention area	Part 1. AVAILABLE indicators to measure change	Data available by SECs? (Source)
Health services	Percentage of children aged 12–59 months who have received at least one dose of measles-containing vaccine	✓ (WHO)
Health services	Public health expenditure on health as percentage of GDP	✗ (WHO)
Health services	Public health expenditure on public health as percentage of GDP	✗ (Eurostat)
Policy intervention area	Part 2. WISHLIST of indicators to measure change	Data available by SECs? (Source)
Capabilities	Percentage of mothers smoking during pregnancy	NA
Capabilities	Percentage of mothers with mental illness	NA
Capabilities	Percentage of babies born with low birth weight	NA
Capabilities	Percentage of mothers breastfeeding at delivery	NA
Capabilities	Percentage of mothers breastfeeding at 6 months	NA
Capabilities	Percentage of babies fully immunized with primary immunizations (age 12 months)	NA
Capabilities	Percentage of children aged 36–59 months who are developmentally on track (available in < 50% of countries) ^a	✓ (MICS)
Capabilities	Percentage of children having a long-standing illness or health problem	NA
Capabilities	Percentage of children smoking at age 15	NA
Capabilities	Percentage of children drinking alcohol at age 15	NA
Capabilities	Provision of youth mental health services	NA
Capabilities	Density of fast-food outlets	NA
Capabilities	Density of alcohol outlets	NA
Living conditions	Hospital admissions due to unintentional injuries among children	NA
Living conditions	Percentage of children living in socially provided housing	NA
Living conditions	Percentage of children in socially provided housing that is overcrowded	NA
Living conditions	Home visits by child health professionals	NA
Employment and work	Main reasons for part-time employment in young people	NA
Employment and work	Uptake of statutory parental leave among mothers and fathers	NA
Income and social protection	Percentage of children below poverty threshold	NA
Health services	Percentage of mothers smoking during pregnancy	NA
Health services	Percentage of babies born with low birth weight	NA
Health services	Percentage of mothers breastfeeding at delivery	NA
Health services	Percentage of mothers breastfeeding at 6 months	NA

Table 2 contd

Policy intervention area	Part 2. WISHLIST of indicators to measure change	Data available by SECs? (Source)
Health services	Percentage of babies fully immunized with primary immunizations (age 12 months)	NA
Health services	Percentage of children who are thin, overweight or obese	NA
Health services	Percentage of women aged 15–49 either married or in a union who have an unmet need for family planning	NA
Health services	Maternal deaths per 1 000 maternities	NA
Health services	Childhood deaths per 100 000 population	NA
Health services	Percentage of children with tooth decay	NA
Health services	Percentage of children surviving five years following diagnosis of cancer	NA
Health services	Percentage of children aged 36–59 months who are developmentally on track (available in < 50% of countries) ^a	✓ (MICS)
Health services	Percentage of children and young people with poor mental health	NA

Note: entries in italics denote that indicators that are especially influential for children (such as housing quality) or parents (social support, for instance) are reported even if these are not available for children or parents specifically.

EQLS: European Quality of Life Surveys.

ESS: European Social Survey.

EU-SILC: European Union Statistics on Income and Living Conditions.

GDP: gross domestic product.

HBSC: Health Behaviour in School-aged Children (study).

ILO: International Labour Organization.

NA: not available.

OECD: Organisation for Economic Co-operation and Development.

PISA: (OECD) Programme for International Student Assessment.

MICS: (UNICEF) Multiple Indicator Cluster Surveys.

UNICEF: United Nations Children's Fund.

WVS: World Values Survey.

^a Indicates where the number of countries collecting these data is low.

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