he past 25 years have seen unprecedented global reduc-

tions in under 5 mortality.1 This progress reflects the commitment 
of governments, international 
agencies, and funders as part of efforts to 
achieve the millennium development goals, 
as well as global economic improvements. 
However, despite overall success, progress 
has been uneven. Increasingly, there have 
been calls to broaden the way in which 
child health investments are made—most 
notably the sustainable development goals 
and the Global Strategy for Women’s, Chil-
dren’s, and Adolescents’ Health.2 Both shift 
the focus explicitly to multisectoral, coordi-
nated, integrated action to support child 
and adolescent health. 

One of the pillars of the global strategy 
is that of “thrive,” defined in the strategy 
as “ensuring health and well-being.” 
Unlike “surviving,” thriving cannot be 
measured with a single indicator; it is an 
going process across the life course from 
conception and continues until the end of 
adolescence.3 Making the shift from a single 
indicator at one time point (eg, under 5 
mortality) to a conceptual understanding 
of the determinants of child and adolescent 
health across the life course is essential. 
In this paper we argue that an integrated 
ecological life course approach provides 
one way of linking risk and protective 
factors over time, capturing the social 
determinants of health. We describe what 
extending the concept of nurturing care— 
the conditions that enable communities 
and caregivers to ensure child health and 
nutrition, and protect them from threats— 
across the life course might look like, and 
discuss its implications for intervention, 
including programming, policy, and global 
health practice. 

Integrated ecological life course approach 

A key principle of the WHO Nurturing Care 
Framework4 is that of enabling environ-
ments. Enabling environments are created 
by services, policies, programmes, and 
communities across the life course. While 
the framework was originally produced 
to provide a roadmap for the period from 
pregnancy to age 3, creating an enabling 
environment to ensure children reach their 
developmental potential5 is of lifelong 
importance. 

An ecological framework of health 
and development is not new to the study 
of child development, but we suggest 
that such a framework has not been 
routinely employed in the child health 
field. Ecological models frame individual 
development as occurring within 
concentric circles of influence radiating 
out from the individual, including the child 
and the family and community, as well as 
institutional, policy, and environmental 
levels of influence. Some models denote 
the levels as micro, meso, and macro, 
or individual, community, and society. 
Figure 1 uses such an ecological graphic 
to show how demographic, economic, 
neighbourhood, environmental, social, and 
cultural factors exert influence on human 
health, through factors that are close to 
the individual (proximal—eg, housing 
density, housing insecurity) and those 
whose influence is more indirect (distal— 
eg, urbanisation, national policies).6 

There is a synergy between ecological 
and life course approaches to child 
health and development. Life course 
approaches complement ecological 
models in describing how individual life 
experiences are shaped by their immediate 
and extended environments, by adding the 
dimension of time, showing how current 
child and adolescent functioning depends 
in part on past exposures and experiences. 
An ecological life course model encourages 
us to think about development as a process 
that is cumulative and continuous, 
and cautions against approaches to 
programming that silo risks or age groups 
or that view children and adolescents 
in narrow “disease model” terms.7 
In ecological life course perspectives, 
what happens to a child at each developmental 
stage is shaped and influenced by what 
has happened in all earlier stages. Child 
and adolescent health and development 
are interdependent and consecutive, with 
progress in one period being shaped by 
influences and events in preceding periods. 
In addition, an integrated ecological life 
course approach implies that intervention 
efforts should be different for different 
populations, determined by the unique 
combinations of risk and protective factors 
to which they are currently, and have 
previously been, exposed. 

At the individual level, much is 
known about the relation between 
risk and protective factors and health 
and development outcomes. However, 
there is a social gradient for risk and 
protective factors, as well as outcomes. 
The concepts of biological embedding and

**KEY MESSAGES**

- Unlike “surviving,” thriving cannot be 
  measured with a single indicator but 
  is an ongoing process across the life course 

- An ecological life course perspective 
  highlights how what happens to a 
  child at each developmental stage 
  is shaped and influenced by what 
  has happened in earlier stages 

- Discrete interventions, targeting a 
  single issue and developmental period 
  are essential, but they must be 
  complemented by programmes targeting 
  other influences, such as physical 
  environment, policy, and institutions 

- Children and adolescents meeting 
  their developmental potential must 
  be realised through enabling environ-
  ments across the life course 

Fully realising the potential of children and adolescents will require an ecological life course 

approach, together with multisectoral, coordinated, integrated action for the provision of 
care and services for children and adolescents, argue Mark Tomlinson and colleagues
Developmental cascades (see definitions in box 1) describe the mechanisms by which social gradients in health and illness come to exist within an individual—how they get “under the skin.” One example is that low socioeconomic status is a risk factor for exposure to violence. Children exposed to violence early in life may embed (through neurological factors and endocrinology) a heightened sensitivity to danger cues in the environment. A child with anxiety may then enter school, develop further internalising symptoms, be distracted from work, and receive low grades. This hypothetical child is then more likely to remain in a low socioeconomic environment. Protective factors over time. By recognising the ecological nature of development, we are led invariably to prioritising multisectoral interventions. For example, if education targets are to be met, child nutrition must be adequate and child health services need to reach the most vulnerable and be of good quality. If gender equality is to be achieved, community violence must be prevented. And if community violence is to be prevented, early education, positive parenting in the early years, and targeted interventions for at-risk school age children must all be in place. All of this needs to happen in a context where policies create an enabling environment.

Much of the focus of global health interventions to date has concentrated on single diseases or issues (that is, a siloed approach) and often at a single point in a child’s life. It is clear that these interventions are essential and vital for child survival, and that relatively discrete interventions remain key to tackling time bound influences on child health, such as immunisations and treatment for sick children. However, a siloed approach is an inadequate response to the complexity of child and adolescent health and development. While relatively discrete interventions, targeting a single issue and developmental period at a single level of the child’s ecology, are essential (box 2), interventions that target
the concentric rings of influence in the child’s ecological environment are also necessary (fig 1). Integrated nutrition and responsive caregiving interventions as well as family centred approaches to HIV prevention, treatment, care, and support programmes are good examples of more holistic ecological approaches.

We need an approach that commits to a consideration of enabling environments and that reaches beyond the sphere of the individual child to tackle core determinants of health and wellbeing, and—by extension—inequities. Important questions that such an approach must consider include the possibility of offsetting negative events in one developmental phase (for instance, malnutrition in infancy) with targeted interventions in a later developmental phase (such as integrated nutrition and responsive caregiving interventions in early childhood or prevention and promotion of adolescent mental health problems) further on in the life course.

Implicit in the case we are making is the understanding that while interventions in the early years are key and are regarded as the most cost effective, bolstering these with additional interventions later in development to reinforce early gains is essential. There is substantial literature showing that early gains are not necessarily maintained and that some waning of beneficial effects is common. In contexts of high adversity, despite excellent protection, prevention, and treatment efforts, many children will need early gains to be reinforced, bolstered, and “topped up” if early benefits are to be maintained and to accrue. Just as ensuring that children survive does not guarantee that they will thrive, providing optimal nurturing care in the first 1000 days is not an inoculation against later adversity. This is a concern for the millions of children who live in humanitarian settings and who commonly face insecurity, lack of access to services, and suboptimal living conditions. Currently, one in five babies globally is born into a setting characterised by conflict. Protecting their developmental trajectories throughout their childhood by provision of enabling environments that deal with the physical and mental health and wellbeing of both caregivers and children is essential to restore stability, security, and safety and mitigate the harmful effects that displacement and violence have on communities, families, and ultimately children’s lives.

Child and adolescent potential must be realised through enabling environments across the life course. While few data are available on the long term impact of interventions delivered in the perinatal period, for example, it is possible to ensure that early gains from the provision of infant and young child survival and early child development interventions are bolstered and reinforced by subsequent interventions through childhood and adolescence. This may take a variety of forms such as quality early education centres and schools; programmes that create opportunities for children and adolescents who are not in school; and making communities safe for children, adolescents, and their families. It should also include policies that equip communities, families, and caregivers with

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**Box 1: Definitions**

- **Ecological framework**—Framework that considers the systems in which humans are embedded rather than in isolation from context
- **Enabling environments**—The systems, forces, and factors that create the conditions in which optimal child and adolescent development is possible
- **Life course perspective**—Acknowledgment that each stage of development builds on the last, focusing on the full continuum of development from preconception through adolescence and beyond
- **Biological embedding**—Early developmental contexts cause stable epigenetic modifications in the individual and these modifications endure, shaping how the individual responds to subsequent exposures over the life course
- **Developmental cascade**—Early functioning in one domain of behaviour or emotional functioning spills over to influence other domains

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**Box 2: Examples of life course interventions and policies**

- Biological and psychosocial interventions
  - Antenatal, childbirth, and postnatal care
  - HIV prevention and care
  - Nutrition
  - Responsive care
  - Immunisation
  - Management of childhood illness
  - Physical activity
  - Adolescent friendly sexual and reproductive health services
  - Adolescent and caregiver mental health
  - Care for developmental delays, disorders, and disabilities
  - Injury prevention
- Supportive policies
  - Minimum wage
  - Universal healthcare
  - Maternity protection
  - Food safety and labelling
  - Affordable child care
  - Universal access to education
  - Sexual and reproductive rights
  - Road safety regulations
  - Tobacco and alcohol taxation
  - Family friendly workplace policies
  - Social protection schemes
- Supportive physical environment
  - Clean water
  - Adequate sanitation
  - Clean air
  - Clean energy
  - Environments free of toxins
  - Secure places for recreation
  - Safe roads
  - Smoke-free public spaces
  - Child friendly urban design
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time and resources to provide responsive childcare, and that ensure safe, clean, and secure environments for children to grow and develop.

Achieving the sustainable development goals will require an ecological life course approach to the provision of care and services for children and adolescents. The targets call for multisectoral engagement and sustained, supportive programmes and interventions. The focus on disease and tendency towards siloed models in the millennium development goals was understandable given the magnitude of the disease burden and the large numbers of children dying before the age of 5. However, the new sustainable development goals era necessitates an approach where prevention, intervention, and treatment approaches work synergistically, ensuring that gains made in early childhood are reinforced at later ages. As all these are interlinked and interdependent, it requires that all sectors and groups working with particular age groups not only cooperate but also actively build on areas of common influence to create the conditions for children and adolescents to flourish across the life course.  

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