evidence presented in this Series makes it clear that this situation must change.

This Series adds new insights about the importance of early childhood development at every stage of a child's life from before conception throughout the life course. When early childhood development stalls, there are critical mitigation interventions across health, nutrition, education, child protection, and social protection sectors that should be accessible to all families and young children. And yet we continue to see an overemphasis on policies and programmes for school readiness at the expense of holistic interventions through the life course, particularly in the first 1000 days of a child's life. If we are to make progress in turning science into practice, policies and programmes need to take a life-course approach and resource allocation must follow suit.

The delivery of early childhood development services cannot be fragmented across different sectors, but should be provided as integrated, multisectoral evidence-based interventions. This Series highlights the importance of a life-course approach and greater integration of the health sector with other sectors, such as nutrition, education, child protection, social protection, and water and sanitation, bringing together multistakeholder partners and combining innovative financing and accountability mechanisms to help achieve the SDGs.

Political will is essential to advance early childhood development in this way. Investing in early childhood development, integrated with basic family and child health and nutrition, and doing so early, will see individuals and nations overcome poverty and exclusion and progress towards their development goals. All stakeholders must reflect on how seriously they take the cost of inaction. Through the Global Strategy and its accountability framework, all partners are urged to improve early childhood development and be accountable in their national plans. It is up to all stakeholders to make sure we reach the goals of the Global Strategy and the SDGs. This entails careful planning, execution, and monitoring so that no one is left behind, and it requires unprecedented human and financial resources for implementation. We can mobilise these resources by adopting a partnership model that is country led and co-opts the expertise and resources of stakeholders from across multiple sectors.

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Expanding the evidence base to drive more productive early childhood investment

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See Series pages 77, 91, and 103

For the third time in a decade, after Series in 2007 and 2011, *The Lancet* has published a Series on the global status of early childhood development.[1–3] Building on the explicit attention to the early years of life included in the Sustainable Development Goals, the time is ripe to take stock of how much has been accomplished in the past 10 years and identify priorities for accelerated progress in the decades to come.

This new *Lancet* Series, Advancing Early Childhood Development Series: from Science to Scale,[1–3] reflects the power and future possibilities of a growing knowledge base. The science of early childhood development and its underlying neurobiology are increasingly invoked in the global discourse on education, health, social and child protection, and human capital formation.[4] This science provides a powerful framework for understanding how development happens, how it can be derailed, and how to get it back on track when it is disrupted.

Advances in the biology of adversity have also helped make a strong case for directing more resources towards

the early years. But opportunities for using science to catalyse new strategies or produce larger population effects remain largely untapped.[5]

Meeting this challenge begins by bringing together the many sources of knowledge and expertise that are needed to push forward. These include not only statistics from controlled intervention trials, but also causal understanding from developmental biology, the technical craft of implementation science, practical lessons from experiences with service delivery systems across sectors, and on-the-ground insights from community leaders and families. All that said, the early childhood development agenda would benefit greatly from an expanded definition of evidence that includes but goes beyond cataloguing data from rigorous programme evaluations.

Gains in reducing child mortality provide a vivid example of what can be achieved when research is targeted towards clearly defined outcomes, specific applications, community-level engagement, and effective implementation at scale. Although the basic biology of many infectious diseases is clear, the ability to translate this knowledge into improved health outcomes and reduced mortality in different parts of the world has been variable. In some circumstances, the challenge lies in differential susceptibility to the causal agent or varied response to treatment. In others, the barriers lie in the service delivery system as a result of resource constraints or limited capacity to partner effectively with marginalised populations.

The complexity of the early childhood development agenda means that substantial progress from surviving to thriving will require an equally disciplined process driven by strong science, sound implementation, sustained community engagement, rigorous evaluation, and an uncompromising commitment to breakthrough impacts.[6,7] Scaling up an early childhood intervention that produced significant effects in one place with the expectation that it will achieve comparable impacts for a diversity of children in a wide variety of environments is a far more complex challenge than moving from a randomised controlled trial (RCT) of an effective vaccine to a successful, population-level immunisation programme. In a field where intervention variability is high, the number of intended outcomes is large, the timeline for ultimate impacts limits rapid-cycle iterative learning, and the list of potential moderating variables is long and context specific, well executed RCTs are a vital part of the knowledge base but they alone are insufficient to produce effective strategies for population effects.

Leveraging the evidence presented in this new *Lancet* Series to achieve breakthrough outcomes for millions of young children will require a transformation of the early childhood development field. This change needs to be grounded in two concepts: an expanded definition of evidence beyond RCT data alone and enhanced capacity to generate and use that broader knowledge base effectively.

Research in neuroscience, for example, is generating insights about plasticity and sensitive periods in brain development that could inform more effective timing of specific interventions.[8] Advances in epigenetics are producing a deeper understanding of differences in vulnerability and resilience in the face of stress, as well as variability in response to interventions that could inform more efficient resource allocation.[9] Equally important is the role of practical, community-level knowledge embedded in cultural beliefs and child-rearing practices that influence nurturing care,[10] and the insights it provides about what works for whom and why in different contexts.[11]

Over the past decade the early childhood community has been building a welcome consensus around the need to invest in rigorous evaluations and standards-based repositories for sharing findings. To carry such findings across highly diverse settings and achieve broader impact at scale, however, a capacity for active, cross-disciplinary, and adaptive learning is equally essential. This requires a dynamic learning community that is able to integrate intervention statistics with developmental biology, technical and practical expertise in programme implementation, and context-specific knowledge and priorities.[12]

Breakthrough outcomes will not be achieved by universally applicable solutions identified in single studies. They will require an iterative process of discovery fuelled by vigorous on-the-ground adaptation, continuous dialogue at the community, national, and global levels, and broadly accessible platforms for shared learning across diverse domains of thinking and doing.

The strategic integration of multiple sources of knowledge, an innovation mindset, and the adaptive capacity within existing programmes and systems to use all available evidence productively are essential

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For the *Lancet* **Series** on **Child Development in Developing Countries (2011)** see http://thelancet.com/series/child-development-in-developing-countries-2

for transforming the lives of millions of children who face the burdens of poverty, violence, maltreatment, exploitation, and oppression—and for securing a brighter future for their societies. The costs of inaction are monumental. The price for too narrow a definition of evidence will be prohibitive.

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The invisible child: childhood heart disease in global health

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Congenital heart disease is the most common of all birth defects, occurring in about nine per 1000 livebirths globally.[1] The cause of most cases of congenital heart disease is unknown and the rate of disease is fairly stable across countries and populations, making the burden heaviest on low-income countries with high fertility rates. Although overall child mortality has decreased by half globally, death and disability due to congenital heart disease has consistently increased in low-income and middle-income countries over the past two decades.[2] Access to care for children with heart disease has not kept pace. Of the 1·35 million children born each year with congenital heart disease,[1] 90% live in places that do not have adequate access to diagnostics or care.[3] Furthermore, individuals with congenital heart defects need lifelong care and follow-up from primary care specialists, special attention to dental care, and, in many cases, more surgical interventions from trained health professionals.[4] An estimated 58% of congenital heart disease burden could be averted if surgical practices of high-income countries were brought to scale in low-income and middle-income countries (LMICs).[5]

Data on childhood heart disease in LMICs are not systematically collected in child health or cause of death surveillance programmes, therefore the true burden is probably underestimated. Many of the signs and symptoms of paediatric heart disease (eg, lethargy, poor growth, shortness of breath) can be misdiagnosed; the presenting complaint may be treated, but the underlying condition remains to threaten life and livelihood. Reliable data on the burden of congenital heart disease would better allow countries and the global health community to allocate resources to the child health needs in their communities. As countries develop economically, the burden of poverty-related diseases, especially infectious diseases and nutritional deficiencies, in children younger than 5 years diminishes.[6] In their place are the chronic and often complex care needs of conditions such as paediatric heart disease and health systems must be ready to respond accordingly. Today, congenital