Benchmarking ECD Investment: An Options Brief

Background
Fair and sustainable development requires countries to invest in young children and their families. Appropriate investments in the early years, made at the appropriate scale and of the appropriate quality, can improve numerous outcomes for children throughout their lives, for their families, for broader society and multi-generationally. For the benefits associated with Early Childhood Development (ECD) investments to be realised, interventions must be carefully selected, adequately financed, well implemented, monitored, evaluated, meet the demand, and adjusted as necessary.

The 2016 Lancet Special Series on ECD emphasised that to reach required scale and coverage political commitment, including by ensuring the necessary flow of resources to the sector, is essential. Under the leadership of Argentina, and with unanimous endorsement from member countries, the G20 has prioritised ECD. Such high-level political commitment provides unique opportunities to move forward the agenda for young children. Critical among these opportunities is the possibility of setting a country investment benchmark for ECD. For any sector requiring political commitment, an investment benchmark, endorsed at one of the highest levels is a definitive marker of significance. Such a benchmark would help governments and civil society to prioritise and assess investment levels, and by association, political commitment. The potential benefits of a benchmarking process are, however, contingent on the extent to which governments view the benchmark as legitimate. It is legitimacy conferred by the G20 which makes the potential impact of the organisation setting a benchmark for ECD so great.

This options brief outlines salient issues to consider when defining and setting such a benchmark. It includes a focus on how to ensure that a benchmark facilitates equity, within and between countries. The brief is based on a technical consultation with leading economists and experts in the ECD field, facilitated by the technical partners to the G20 ECD working group, i.e. UNICEF, IDB and the World Bank (a list of experts who participated in the consultation is presented in Annex 1).

Defining the benchmark
While the sustainable development agenda has created the global vision for progress and the world we want, setting an investment benchmark for ECD to achieve that vision, requires a decision on whether one or more benchmarks are required, considering that needs and affordability differ across countries. Further, the appropriate package of services on which the benchmark is based must be specified both with respect to inclusion of essential services and their effective coverage. Finally, the decision if the benchmark reflects the target for public or total expenditure must be made. It should be noted that the focus of the definition is on an investment benchmark, as opposed to other benchmarking such as structural benchmarks, which can be used to complement the proposed financial benchmark (as described in the next steps section of this brief).

Single or multiple benchmarks: A single benchmark could be set for all countries. Alternatively, benchmarks could be set for groups of countries, such as for income groupings of high, middle, and low. The former is simpler, but fails to consider differences in need and affordability. While the latter provides greater national level specificity, it loses the ability to track progress in a consistent manner across countries.

Defining the package of services: Early childhood development requires policies, information and services from a number of sectors. Under its broadest definition it includes services for children 0-8 years. For this initiative, the focus is on younger children, primarily from pregnancy through age 3. The Nurturing Care Framework (NCF), recently launched by WHO, UNICEF and the World Bank, provides
guidance on both the facilitating environment created by policies and the services that should be provided for children in this age range: nutrition; health; responsive caregiving; security and safety; and opportunities for early learning. The NCF describes essential policies and interventions for universal, targeted and indicated application, however, it does not detail the relative investment required for each level by various contexts. A benchmark will require specification of: 1) the packages of services, as a basic minimum or a comprehensive package, and 2) which services will most likely ensure that, including the most vulnerable, children can access and benefit from the package.

**Public or total expenditure:** The benchmark could be set only for public investment. This provides a direct link between the benchmark and a responsible party, i.e. the state. However, it ignores cross-country, and within country, variations in private investment in ECD, which shape the need for public services. A government may not need to invest at the level of the benchmark if, in some countries, families are investing more and vice versa. Similarly, investment within countries may need to be directed more towards certain income groups, who have low levels of private spending. To counter this challenge, the benchmark could be set as total (public plus private plus external) investment. This, however, breaks the direct link between benchmark and responsible party.

In the following section, options for setting the benchmark are outlined. Unless otherwise indicated, they are directed at producing a set of benchmarks, i.e. different benchmarks for different income groups, for public sector expenditure on a package of services which would adequately meet the needs of children in their first 2-3 years of life, as laid out in the Nurturing Care Framework.

**Setting the benchmark**

The most feasible approach to determining benchmarks is a budget-based approach: A package of services is agreed, the cost of delivering such a package in different contexts estimated, extent of coverage and demand for the services, extent to which existing resources could be leveraged, and expressed as a percentage of GDP of each country.

The budget approach needs to be differentiated because of differences across country income groups on several factors such as proportion of the population that are children, the needs of these children, existing services, and the availability of resources to address these needs. For example, the need for public support for nutrition programmes is far higher in low- than high-income countries. Moreover, it is likely that even after adjusting for differences in prices, a given package of services will represent a larger share of GDP in lower-income contexts. Analyses undertaken by the World Bank for the forthcoming 2019 World Development Report demonstrate the point.

The World Bank has estimated the cost of a minimum package of human capital enhancing services. These include services for ECD: prenatal healthcare, immunizations, micronutrients, parental outreach, birth registration, and one year of quality pre-school. The package also includes learning assessments in grade 3 and targeted reading and math assistance for students in grades 1-3. The World Bank estimates the cost of these services to be 2.7% of GDP for low-income countries, 1.2% for lower-middle-income countries and 0.8% for upper-middle-income countries. The greater level of need and the lower GDP denominator combine to make the low-income country costs higher as a percentage of GDP.

The estimated costs are sensitive to the package of services included. For example, the World Bank also estimates a more comprehensive set of services, including the above plus access to safe air and water, and adequate sanitation, and a pupil-teacher ratio at the primary level of 40:1 or lower. This increases costs as a percentage of GDP to 10.6%, 2.3% and 3.0% respectively for low-, lower-middle and upper-middle-income countries. This package does not include social protection, the cost of which
the World Bank estimates separately. Given that social protection is a critical facilitator of ECD, the above estimates are lower bounds of the total costs as percentages of GDP.

Once a package of services is agreed, the budget approach provides a useful and easy to understand method for setting benchmarks. However, a number of modifications are required to address directly questions of sustainability, in-country inequality and aspirational targets.

**Sustainability modification:** Low-income countries are unlikely to be able to reach or sustain the investments required to deliver an adequate package of services for young children. The benchmark, as a percentage of GDP, will be higher, and the competing demands more pressing. For simplicity, a domestic investment target for low-income countries could be set at the same as the (lower and more achievable) middle-income country target. This could be accompanied by an international assistance target, based on the shortfall between the domestic target and the investment required to deliver the agreed package of services.

**Equity modification:** A benchmark for total public investment does not directly address the question of within-country inequities. If attention is paid only to total investment, middle- and high-income households, who are better placed to access services, might ‘capture’ the bulk of the public ECD investments, with the marginalisation of poorer households. Supplementing the benchmark for total investment with a per child minimum investment benchmark would allow an express inclusion of equity targets. Country investments are then assessed in terms of both the total investment, and the proportion of children receiving the minimum investment (capture of public expenditure by higher-income household would decrease this proportion for a given investment level, indicating inequitable delivery). A further equity-enhancing modification would be to include a cost per child for children with disabilities, or other vulnerable children, such as those living in poverty, and monitor the proportion of such children who receive the appropriate minimum level of investment.

**Aspirational targets:** High-income countries are likely to already provide the basic package of services needed in a low-income context. A benchmark based on the cost of providing such a package would, therefore, be below current levels of investment. If anything, such a target would be a disincentive. It is thus necessary to indicate that such a target is the minimum for all children to ensure equity, and to set an aspirational target. This target could be set at the highest level of investment (as a percentage of GDP) currently made by a particular country.

**Potential simplifications**
Implementing the three modifications results in a somewhat complicated system. To recap: benchmarks are set as a percentage of GDP, by income level, for a given package of services, for a determined coverage. For low-income countries, the benchmark is divided between domestic and international aid. For high and middle-income countries, the minimum investment benchmark is supplemented by an aspirational target, based on the highest investing countries in those income groups. For all countries, a minimum investment level per child is benchmarked, to ensure the target is equity enhancing. This results in six GDP benchmarks (two per income level) and one per-child minimum investment benchmark for each income group.

It is possible to simplify the approach, but further analysis is required to determine if the proposed simplification would be defensible, given the associated loss of accuracy. The simplification is achieved by setting a common minimum and aspirational benchmark, and a minimum per child investment. The common minimum domestic investment benchmark would be based on the investment required to provide the agreed package in a middle-income country. This would provide a reasonable target for low-income countries, an adequate target for middle-income countries, and for high-income countries, a lower bound which many may have already met, but not necessarily for all children, such
as migrants. The aspirational target for all countries would provide the benchmark of interest for those countries which have already met the minimum. Finally, the minimum spent would be used to judge within country equity, and to determine required aid levels for low-income countries. The latter will be achieved by comparing what the total cost to provide the package of services is, with what would be covered should the domestic target be reached.

With these simplifications, the benchmarking can be summarised succinctly: the minimum investment in ECD required for adequate services is X% of GDP, however, investments up to at least Y% are likely to yield positive returns. For investments to promote equity, governments - and in low-income contexts, government and donors - should ensure that no less than $Z is spent per child.

Further analysis is required before adopting such a simplification. There is a risk that a common benchmark based on the cost of delivering the agreed package in a middle-income context may be too high for some high-income countries – i.e. they need not spend this high a percentage of GDP to provide this package. If this is the case, a separate minimum for the latter would need to be retained. Similarly, it is possible that a middle-income country may have the highest investment in ECD as a percentage of GDP, but that this may not be an appropriate aspiration for high-income countries.

**Alternative approaches**

Ideally, a separate economic evaluation is needed to determine the appropriate level of investment in early childhood development for each country. This would allow the determination, given the country context, of the level of investment needed to drive the costs of inaction to zero i.e. the level of investment that would be required to implement all interventions for which the benefits exceed the costs. This requires a careful estimation of the cost of implementing interventions in each country and of the value of benefits which would flow as a result. This would result in target investment levels for each country, rather than a single benchmark. Although theoretically ideal, such an approach is lengthy and resource-intensive.

A simple alternative would be to determine what could be considered a fair percentage of sector (health, education, welfare etc.) budgets. This would avoid any question of how the investment total should be distributed between sectors. However, given that allocations to these sectors differ by country, a set percentage may be difficult to justify. Moreover, such an approach provides no information on the services in which investments should be made.

**Risks associated with an investment benchmark for ECD**

Ensuring that an appropriate level of investment is directed towards ECD services is critical to provide fair and sustainable access to appropriate services in the early years. However, effective ECD services require more than financial investment, and promoting ECD requires more than ECD-specific services. A benchmark, which indicates the target level of investment, should not distract from the need to secure sustainable financing for that investment, monitor and promote quality service delivery, ensure services reach the most vulnerable children and monitor child outcomes. Similarly, it should not divert attention from the importance of the broader socio-economic environment in determining children’s outcomes in the early years, described in the NCF as the facilitating environment. To these ends, complementary processes to benchmarking are required to monitor conditions in which children live and child outcomes.

The promotion of development in the early years requires coordinated action across a number of sectors, notably health, education, nutrition, child and social protection. A benchmark, on its own, does not address how funds should be divided across sectors. A complementary exercise is required at the country level to consider the appropriate division, to avoid disputes and to promote
coordination. Moreover, a benchmark based on a package of services does not provide an indication of the necessary investments in system strengthening.

The benchmarks discussed here are for target levels of investment and not necessary increases in investment. The latter require a consideration of what is already spent, and is currently being achieved as a result. Country level analysis of this type will be required to assist countries determine how much more they need to invest.

Benchmarks are set to reflect what is needed. It is, however, important to consider how a government’s response to that benchmark will be influenced by their current level of investment. If they are already spending more than the benchmark, it may act as a disincentive. If they are spending far less, it may be perceived as too great a change to consider, and again act as a disincentive.

The risks associated with benchmarking can be mitigated and the potential benefits amplified by complementary interventions, and by selecting the right approaches to setting them. Complementary interventions have been mentioned, and possible approaches are discussed below. However, before considering options for setting the benchmark, it is necessary to consider the related topic of how to define the benchmark.

**Placeholder estimates**

The analysis by the World Bank, and other readily available data, allow us to provide preliminary estimates for the benchmark. The Bank cost estimates include their selected package of ECD services, and services in primary school. We use only the costs for the package of ECD services, although this makes little difference as the primary school components are low cost. The percentage of GDP required to cover the cost of the package of services considered by the Bank varies by country, given differences in prices, demographic profile and the GDP denominator. We assume the scenarios for low-, lower-middle, and upper-middle-income countries (i.e. Mali, Indonesia and Colombia) are representative of their income group. The World Bank analysis did not consider high-income countries.

Based on the above, the benchmark as a percentage of GDP for total expenditure (including aid in low-income countries) is 2.6% for low-income countries, 1.2% for lower-middle-income countries and 0.8% for upper-middle-income countries. This package requires a minimum average annual expenditure per child under 6 years of age of US$71, US$293 and US$390 for low-, lower-middle and upper-middle-income countries respectively. Differences in per child costs reflect the difference in price of providing the given package.

The extent to which this benchmark is considered appropriate should be determined by the extent to which the package costed is considered appropriate (making the reasonable assumption that the Bank used the best available unit cost data). To demonstrate the sensitivity of the estimates to the composition of the package, we repeat the above including two, as opposed to one, year of preschool.

The benchmark as a percentage of GDP for total expenditure (including aid in low-income countries) becomes, 3.1% for low-income countries, 2.2% for lower-middle-income countries and 1.2% in upper-middle-income countries. This package requires a minimum average annual expenditure per child under 6 years of age of US$86, US$524 and US$545 for low-, lower-middle and upper-middle-income countries respectively.

The analysis from the World Bank was focused on establishing the cost of a basic set of ECD-specific services. If the goal of the benchmark is for it to be for a more comprehensive set of ECD-specific services, then agreement will first have to be reached on what this would include. Taking the World
Bank’s costed package as a starting point, three components of this package are likely to be central to such a discussion. Child protection includes only birth registration, a more comprehensive response would obviously require greater investment. The nutritional interventions include only micronutrient supplementation, including macro nutrients obviously would be more expensive. Parental support is provided for children 0-3 and one year of preschool for 6 year olds. In this package, children 4 and 5 do not receive services. Including the costs of an additional year of preschool and/or daycare, would significantly alter the benchmark. In addition to these three components, the cost of adequately investing in system’s strengthening requires consideration.

As a placeholder for the aspirational target, we also include high-income countries, by drawing on data, such as the OECD estimates of expenditure on preschool. While this excludes the earlier life investments required, preschool is the most expensive component of ECD-specific services, and provides a useful starting point. The highest investing country according to this measure is Iceland, which invests 1.7% of GDP.

Given the above, it may be possible to settle on a simplified approach of single minimum and aspirational goals, for all income groups. As mentioned, these will be less than required for low-income countries to provide the package, with the expectation that international assistance will make up the difference. The minimum investment goal may be higher than needed for a high-income country to provide the basic package. The per child cost in high-income countries will be greater, given higher prices and wages, but the GDP denominator larger and the proportion of the population who are children, smaller. If the target is higher than needed, it may not be unreasonable to expect that the minimum in such contexts should include additional services. There would, however, be a trade-off, this would reduce in-country inequality, but increase between-country inequality.

Using the basic package outlined by the World Bank a 1% of GDP benchmark for domestic expenditure on ECD could be proposed, noting that this will likely be increased following a final decision on what package of services the benchmark will be based on. A more appropriate goal of 2%, reflecting what countries should spend above the minimum, could similarly be proposed. Given the differences in costs, these would have to be supplemented by per child minimum expenditure estimates by country income group.

Next steps
This options brief has outlined a number of issues that need to be considered when defining and setting benchmarks for ECD investment. To provide a placeholder, benchmark estimates have been provided. However, the final determination of the benchmark can only be made once decisions have been made on the questions raised.

If the costed package of services approach is adopted, the next step would be to agree on the composition of that package of services. It would be appropriate to link this decision to the recommendations of the Nurturing Care Framework. Secondly, the cost of providing this package of services, in different contexts, would need to be estimated. Fortunately, two recent initiatives have already completed much of this work. The World Bank analysis described earlier costs a package of services closely linked to the Framework, and the Brookings Institute have produced a comprehensive review of the costs of ECD services in the developing world. Once the package is agreed upon, the results of these two initiatives can be drawn on to establish minimum investment benchmark(s) and the cost per child. Similarly, once the definition of the package is agreed upon, available data on ECD spending can be used to identify the countries with the highest investment levels, and set the aspirational goal(s) and monitor and track progress. Further, countries can complement the investment benchmark by instituting structural benchmarks, aimed at establishing reform measure milestones (e.g. development of ECD financing plan identifying investment gaps and cost-
effectiveness alternatives). Once the benchmarks are established, methods for collecting comparable data on the extent to which countries are reaching the appropriate levels of investment must be developed. The processes to do so could be included as milestones in the complementary structural benchmarking.

REFERENCES


Theirworld. Millions of children left behind at every developmental milestone. October 2016.


Annex 1: List of Experts (To be finalized)

This document was developed through a collaboration effort with the world’s leading ECD experts and economists and members of ECDAN. Contributors are listed below.

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Chris Desmond is the Director of the Centre for Liberation Studies, a Lead Investigator and Senior Economist at the DST-NRF Centre of Excellence on Human Development at Wits University, South Africa, and a Research Associate of the Brigham and Women’s Hospital. He works primarily on issues related to children in adverse environments, especially HIV-affected families, and on economic evaluation. His areas of research interest include the implications of HIV and AIDS for children, economic evaluation of policy options and early childhood development. Dr. Desmond has authored and co-authored more than 50 journal articles, book chapters and books, including *The Cost of Inaction* which develops and applies a new approach to the economic evaluation of interventions. He holds a PhD from the LSE and a Masters from UKZN.

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Jere Behrman is a Professor of Economics and Sociology at the University of Pennsylvania. He is a leading international researcher in empirical microeconomics, with emphasis on developing economies. He is also a Research Associate at Penn’s Population Studies Center. His research interests include empirical microeconomics, labor economics, human resources (early childhood development, education, health, nutrition), project evaluation, economic demography, incentive systems and household behaviors. He has published over 435 professional articles and 35 books. He has been a researcher with the World Bank, Asian Development Bank, Inter-American Development Bank, United Nations Development Program, UNICEF, other international organizations and various governments. He has been a principal investigator on over 160 research projects funded by the U.S. National Institutes of Health, U.S. National Science Foundation, and a number of other governmental and foundation sources. He has received numerous prestigious honors.

**Pia Britto**
Pia Rebello Britto is the Global Chief and Senior Advisor for Early Childhood Development at UNICEF, New York Headquarters. She was formerly Assistant Professor, Yale University. She has worked on developing, implementing and evaluating early childhood programmes and policies around the world. In particular, she has strengthened the application of evidence for programming, promoted the role of governance and finance of national systems in achieving equity, access and quality, developed and evaluated models for implementation of quality early childhood services and supported the role of parents and caregivers, including women’s economic empowerment. Most recently, Dr. Britto is involved in work examining the relationship between early childhood and peace building. Dr. Britto has conducted research in the United States to understand the experience early literacy development, early intervention program evaluations, and identity development of Muslim and Arab children. Dr. Britto is the recipient of several national and international grants and awards in recognition for her work and has published extensively.

**Florencia Lopez Boo**
Florencia Lopez Boo is a senior social protection economist with the Social Protection and Health Division of the Inter-American Development Bank (IDB). Her previous positions include working at the IDB Research Department, the World Bank, the OPHI Institute in Oxford’s Department of International Development, as well as teaching at University of Oxford and the University of Louvain-la-Neuve. Her work focuses on early childhood development and evaluation of the impact
of social protection programs. Most of her current work includes projects and evaluations to inform scalable approaches to parenting interventions. Other research includes work on the measurement of quality in child care settings for very young children at scale. She received a Ph.D. in economics from the University of Oxford and a Masters from University of Namur (Belgium). Her work has been published in peer reviewed journals such as the Journal of Human Resources, Pediatrics, Economic Letters, the New York Academy of Sciences and the Journal of Development Studies. She is also the author and co-author of books on education and early childhood development in Latin America and the Caribbean.

Bernadette Daelmans
Bernadette Daelmans is a team coordinator in the Department of Maternal, Newborn, Child and Adolescent Health in the World Health Organization in Geneva, Switzerland. Since she joined WHO in 1992, she has been engaged with a range of issues related to maternal and child health including infant and young child feeding, integrated management of childhood illness, newborn health and early childhood development. Bernadette is affiliated with the Countdown to 2030: Maternal, newborn and child survival; she is the member of the global Every Newborn coordination group; and she provided the secretariat for the Steering Team that prepared the Lancet series Advancing Early Childhood Development: from Science to Scale (2016). Recently, she has coordinated the working groups that developed the Nurturing Care Framework. Bernadette is also member of the Lancet Global Health Commission on High Quality Health Systems in the SDG Era that will publish its report in September 2018. She holds a medical degree from the University of Utrecht and a masters’ degree in health systems management from London University.

Amanda Devercelli
Amanda E. Devercelli is the Global Lead for Early Childhood Development at the World Bank. In 2012, she launched the Bank’s Early Learning Partnership, a $30 million multi-donor fund which promotes increased investments in children’s early years through actionable research and improved policies and programs. To date, ELP has generated more than $300 million in new funding to support ECD globally. Amanda co-led the development of the Bank’s Systems Approach for Better Education Results-Early Childhood Development (SABER-ECD) and has authored numerous publications. She also leads operational and analytical work across the Bank’s portfolio. Current research areas include engaging the non-state sector in early learning and the linkages between early learning and later skills. Amanda has a Master’s from the Harvard Graduate School of Education and was awarded the Reynolds Fellowship in Social Enterprise by the Harvard Kennedy School.

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Dr. Wafaie Fawzi is the Richard Saltonstall Professor of Population Sciences, Progress of Nutrition, Epidemiology, and Global Health and Chair, Department of Global Health and Population. The primary focus of his research is on the discovery and translation of interventions to enhance maternal and child health and development. This research, over the past 20 years, has been conducted over Asia and Africa and lead to over 250 publications. Dr. Fawzi received his MBBS at the University of Khartoum and his DrPH at the Harvard School of Public Health.

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Günther Fink is Associate Professor of Epidemiology and Household Economics at the University of Basel as well as head of the Household Economics and Health Systems Research Unit at the Swiss TPH. He holds a Ph.D. in economics from Bocconi University in Milan, Italy, as well as a Master’s in applied economics from the University of Michigan. Dr. Fink’s work focuses on developing and evaluating new and innovative approaches to improving health systems globally, with a particular focus on child health and child development in developing countries. He has
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Dr. Gertler is the Li Ka Shing Professor of Economics at University of California, Berkley, where he holds appointments in the Haas School of Business and the School of Public Health. He is also the scientific director of the Center for Effective Global Action. He received his Ph.D. in Economics from University of Wisconsin and prior to UC Berkeley has held academic appointments at Harvard, RAND, and SUNY Stony Brook. Dr. Gertler is an internationally recognized expert in impact evaluations. Dr. Gertler was the Chief Economist of the Human Development Network of the World Bank from 2004-2007 and the Founding Chair of the Board of Directors of the International Initiative for Impact Evaluation (3ie) from 2009-2012. At the World Bank he led an effort to institutionalize scale up impact evaluation for learning what works in human development. He has been a Principal Investigator on a large number of at-scale multi-site impact evaluations including Mexico’s CCT program, Progresa/Oportunidades.

John Hoddinott
John Hoddinott is the H.E. Babcock Professor of Food and Nutrition Economics and Policy, Cornell University. Before coming to Cornell in 2015, he was a Deputy Division Director at the International Food Policy Research Institute, Washington DC. His research focuses on the causes and consequences of poverty, hunger and undernutrition in developing countries. John is interested in the causes of poverty, food insecurity and undernutrition, and the design and evaluation of interventions that would reduce these. He has also undertaken work on poverty dynamics, intra-household resource allocation, schooling, labour markets aid allocation and on improving survey methods. John’s current research interests focus on the links between economics (especially social protection, agriculture and gender), food security and early life nutrition. He has been heavily involved in primary data collection through living in a mud hut in western Kenya and a small town near Timbuktu Mali in addition to his work in Bangladesh, Cote d’Ivoire, Ethiopia, Guatemala, Kenya, Mali, Namibia, Niger and Zimbabwe.

Joan Lombardi
Joan Lombardi is Senior Advisor to the Bernard van Leer Foundation on global child development strategies and to the Buffett Early Childhood Fund on national initiatives. She also directs Early Opportunities LLC, focusing on innovation, policy and philanthropy. Dr. Lombardi has served in the U.S. Department of Health and Human Services as the first Deputy Assistant Secretary for Early Childhood Development (2009-2011) in the Obama Administration, and as the Deputy Assistant Secretary for Policy and External Affairs in Administration for Children and Families and the first Commissioner of the Child Care Bureau among other positions (1993-1998) during the Clinton Administration. Outside of public service, she served as the founding chair of the Birth to Five Policy Alliance (now the Alliance for Early Success) and as the founder of Global Leaders for Young Children. Joan is the author of numerous publications. She serves as the President of the Board of 1000 Days, a member of the Board of Trustees of Save the Children and as a member of Investing in Young Children Globally, a project of the Institute of Medicine and the National Research Council.
Chunling Lu
Dr. Lu is the director of the Program in Global Health Economics and Social Change at Harvard Medical School. Her research is focused on measuring and analyzing global health finance and its effectiveness on population health outcomes at multiple levels. Dr. Lu currently serves as PI or Co-Investigator and leads the following projects: (1) assessing the level and prevalence of young children exposed to risk factors of early development; (2) economic evaluation of delivering mental health care through community health workers in rural India; (3) measuring investment in mental health in developing countries; and (4) developing survey instruments and statistical tools to address measurement errors in estimating important policy indicators such as financial risk protection. Dr. Lu has conducted research across the world, including projects in Rwanda, China, India, and Mongolia. Dr. Lu has been involved in a number of scientific committees, and lead consultation team, organized by the World Health Organization, on sustainable financing public health programs in Mongolia. Currently, Dr. Lu is a member of the High-Level Panel on Financing Community Health Workers, which is organized by the United Nation’s Secretary General’s Special Envoy for Health in Agenda 2030 and for Malaria. She services in the Editorial Board of Social Science & Medicine – Population Health.

Stephen Lye
Professor Stephen Lye is the Executive Director of the Fraser Mustard Institute for Human Development and Vice-Chair, Research of the Department of Obstetrics and Gynaecology at the University of Toronto. He is also Associate Director of the Samuel Lunenfeld Research Institute of Mount Sinai Hospital and Professor within the Departments of Physiology, of Medicine and of Applied Psychology and Human Development at the University of Toronto. Dr. Lye is an expert in women’s and infants’ health and pioneered investigations into the mechanisms underlying preterm birth. Dr. Lye has led numerous large-scale, peer-review funded, research programs at the local, national and international level. His research has integrated discovery, clinical and translational studies including the commercialization of discoveries in partnership with industry. He has published over 220 research papers on pregnancy and maternal-child health and holds a Canada Research Chair in Improved Health and Function. He has received numerous awards and honours, including the President’s Scientific Achievement Award from the Society for Gynecologic Investigation, Fellowship of the Canadian Academy of Health Sciences and Fellowship (Ad Eundem) of the Royal College of Obstetrics and Gynaecology.

Milagros Nores
Milagros Nores is Co-Director for Research at NIEER. She oversees research operations at NIEER, while pursuing her own research as well. Her expertise and interests are in early childhood development, data-driven policy development, evaluation design, economics, cultural diversity, and English language learning. Dr. Nores currently runs an early childhood study in Colombia, a study on parental-child educational practices for minority children in the U.S. and evaluations of West Virginia’s and Seattle’s preschool programs. Her background is in early childhood attainment, the economics of education, poverty, and international and comparative education. She has a Ph.D. in Education and Economics from Columbia University and an Ed.M. in Educational Administration and Social Policy from Harvard University. Dr. Nores previously worked as a Postdoctoral Research Associate at the Taubman Center in Public Policy, Brown University, where she taught Education Policy in a Comparative Perspective, and Economics of Public Policy. Dr. Nores also consults for various organizations in education projects in Latin America and Asia.

Linda Richter
Linda Richter is a Developmental Psychologist, a Distinguished Professor and Director of the Wits Centre of Excellence in Human Development. She is the chair of the Lancet Early Childhood Development Steering Committee, and advisor to the World Health Organization on early childhood
development. Dr. Richter had honorary appointments at the University of Melbourne (2003-2006) and Harvard University (2007-2010). From 2010-2012, she was an advisor on Vulnerable Children at the Global Fund to Fight AIDS, Tuberculosis and Malaria in Geneva.

Aisha Yousafzai
Dr. Yousafzai is an Associate Professor of Global Health at Harvard University. Her work focuses on: (i) Developing new interventions and approaches to promote early child development with a particular interest in how to strengthen child and caregiving related outcomes through existing health, nutrition and education systems. (ii) Understanding the implementation structures and processes for early childhood interventions to achieve sustainable impact at-scale. (iii) Promoting capacity development in local communities, services and systems for the effective delivery of interventions to promote early child development. She has extensive experience in evaluating early childhood interventions in south Asia, east Africa, and in central and east Europe. One of Dr. Yousafzai’s most significant studies is the Pakistan Early Child Development Scale-Up (PEDS) trial, a cluster randomized controlled trial evaluating responsive stimulation and nutrition interventions to strengthen early child development and growth outcomes. She is also the PI of a randomized controlled trial in Pakistan investigating the impacts of community youth leaders delivering early childhood care and learning interventions on a host of early childhood and community outcomes. Dr. Yousafzai has written extensively about early childhood interventions in low- and middle-income countries including recent articles in *Annals of the New York Academy of Science, Annual Review of Psychology, Lancet, Lancet Global Health, and Pediatrics.*