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Costing Early Childhood Development Services: The Need to Do Better

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In the developing world, more than 200 million children under the age of five years are at risk of not reaching their full development potential because they suffer from the negative consequences of poverty, nutritional deficiencies and inadequate learning opportunities.[1] Overall, 165 million children (one in four) are stunted, and 90 percent of these children live in Africa and Asia.[2] And though some progress has been made globally, child malnutrition remains a serious public health problem with enormous human and economic costs. Worldwide, only about 50 percent of children are enrolled in preprimary education, and in low-income countries a mere 17 percent.[3] And though more and more children are going to school, millions have little to show for it. By some accounts, 250 million children of primary school age cannot read even part of a sentence. Some of these children have never been to school (58 million); but more often, they perform poorly despite having spent several years in school, which reflects not only the poor quality of many schools but also the multiple disadvantages that characterize their early life.

Ensuring that all children—regardless of their place of birth and parental income or education level—have access to opportunities that will allow them to reach their full potential requires investing early in their development. To develop their cognitive, linguistic, socioemotional and physical skills and abilities, children need good nutrition and health, opportunities for play, nurture and learning with caregivers, early stimulation and protection from violence and neglect.

The Case for Early Interventions

The arguments for investing in children early are simple and convincing. **Early investment makes sense scientifically.** The brain is almost fully developed by age three, providing a prime opportunity to achieve high gains. We know that the rapid rate of development of the brain's neural pathways is responsible for an individual's cognitive, social and emotional development, and there is solid evidence that nutrition and stimulation during the first 1,000 days of life are linked to brain development.[4]

Early investment makes sense in terms of equity. The playing field has the highest chances of being leveled early on, and we know that programs have a higher impact for young children from poorer families. In the United States, for example, increasing preschool enrollment to 100 percent for low-income children would reduce disparities in school readiness by 24 percent between black and white children and by 35 percent between Hispanic and white children. We also know that equalizing initial endowments through early childhood development (ECD) programs is far more cost-effective than compensating for differences in outcomes later in life.

Early investment makes sense economically. Investing early prevents higher costs down the road, and interventions yield a high return on investment. There is evidence of the benefits for the individual and for society more broadly. For instance, at the level of the individual, in Jamaica children participating in an early childhood stimulation program were found to have 25 percent higher earnings 20 years later compared with children who did not participate.[5] At the economy-wide level, eliminating malnutrition is estimated to increase gross domestic product by 1 to 2 percentage points annually,[6] while countries with school systems that have a 10-percentage-point advantage in the proportion of students who have attended preprimary school scored an average of 12 points higher in the PISA reading assessment.[7]

So let us assume that we have made the case successfully and thus have convinced both policymakers and donor agencies to prioritize investments in ECD. Here are the questions that they are then likely to ask: (1) What exactly do I need to do? (2) How much will it cost me? It turns out that we have a reasonably good idea of the range of services that should form part of an essential package for all children, even if there are many questions about how they should be delivered, by whom and with what frequency. But we have far less information about what it costs to deliver these services.

What Does the Package of Interventions Look Like?

In the forthcoming report *Stepping Up Early Childhood Development: Investing in Young Children for High Returns*, the World Bank identifies five early childhood stages, which each has a basic package of essential services that must be delivered.[8] These five packages of interventions—family support, pregnancy, birth, child health and development, and preschool—include a total of 25 essential interventions (outlined in table 1), such as prenatal visits, birth registration, deworming and preprimary education. These packages span the education, health, nutrition and social protection sectors. Britto, Yoshikawa and Boller have a similar list and classification that also explains how some services target children, some target caregivers and some target both.[9] The actual composition of the package would need to be tailored to the specific context, but these 25 interventions provide a good starting point.

Why Do We Need Information on ECD Financing?

We need information on ECD financing for at least three reasons: (1) to inform national debates about priorities for government spending; (2) to assess what resources are needed to expand coverage of the package of essential services, and ideally to upgrade their quality; and (3) to develop funding formulas that can guide the allocation of resources to lower levels of government and service providers, with particular attention to reaching the most disadvantaged families.

Addressing these objectives requires knowing how much is being spent on what services and for whom. For example, how much do countries spend on children versus the elderly? Quite often, budget data are not presented in a way that allows the citizenry to make such comparisons, and as a result there is little informed debate—in particular about priorities for public spending. One study on expenditure patterns in Turkey found that only 6 percent of the central government's social spending accrues to the population between birth and 6 years of age and that, on a per capita basis, the over-45 age group benefits from 2.5 times as much spending as the under-6 age group.[10]

Beyond information on how much countries are now spending, we would also like to know how much more is needed to provide all children with acceptable-quality, essential ECD interventions. This requires combining unit cost information with data on coverage and quality. More funding does not provide a guarantee of improved access and quality but is likely a necessary ingredient, especially given the generally very low current spending levels. Public funding to provide some or all the ECD services can be channeled in multiple ways but requires information about unit costs and how these might differ across a country and for different population groups.

Table 1: 25 Essential Interventions in Early Childhood	
Stage and Package	**Interventions**
1. Family Support (birth to 6 years)	Maternal education
	Planning for family size and spacing
	Parenting, social support networks and community education about growth and development
	Social assistance transfer programs
	Prevention and treatment of maternal depression
	Parental leave and adequate childcare
	Child protection services
	Access to health care
	Micronutrient supplementation and fortification
	Access to safe water
	Adequate sanitation
	Hand washing
2. Pregnancy (conception to birth)	Prenatal care
	Iron and folic acid supplementation for pregnant mothers
	Counseling on adequate diet for pregnant mothers
3. Birth (birth to 6 months)	Skilled attendance at delivery
	Birth registration
	Exclusive breastfeeding
4. Child Health and Development (birth to 5–6 years)	Immunizations
	Adequate, nutritious, and safe diet
	Therapeutic zinc supplementation for diarrhea
	Prevention and treatment of acute malnutrition
	Deworming
5. Preschool (3–6 years)	Preprimary education
	Continuity to primary

Source: D. A. Debissa, R. Sayre, and Q. Wodon, Stepping Up Early Childhood Development: Investing in Young Children for High Returns (Washington, D.C.: World Bank, forthcoming).

The Information Base for ECD Funding—and Therefore Policymaking—Is Very Poor

Information on program level spending and costs is patchy, even in the developed world. There is no systematic collection of data across countries on spending related to a basic ECD package in the health, nutrition, education and social protection sectors. This is because there is no standard practice across countries for collecting and reporting data; this reflects conceptual and institutional complexities, different modalities in service deliv-

ery and limited interest in the information. Spending occurs at different levels of government, across multiple government agencies, by the private sector and by households. There is no consolidation of these different flows to present a full picture of how much countries are investing in their children. In addition, heterogeneity across program content and contexts complicates the task of developing unit cost benchmarks that would be helpful for developing funding formulas and coming up with budget envelopes for scaling up services. In this section, therefore, we examine the challenges of data aggregation and comparability, along with the difficulty of using expenditure data to inform policymaking across varying social contexts.

Aggregating Different Sources of Funding Is Problematic

ECD programs may be funded by families, the government and/or the nonstate sector. Ideally, we would want a comprehensive picture of all spending on ECD—that is, a national child account. But we know very little about the household spending that plays a big role in many countries, through out-of-pocket expenses for health services, in-kind contributions to child care and education (e.g., the opportunity cost of caregiver's time), and fees for various types of child care services (at homes, community facilities and child care centers). A robust information base for household ECD spending would require detailed survey data on each of the essential services for children in the age range from birth to eight years, not just aggregate spending—data that are currently not available. There is also little or no information on ECD spending by the private sector, community-based organizations, donors and philanthropists. In the absence of reporting systems for such data, any attempt to collect them will necessarily be a one-time, costly effort.

When it comes to government spending, we know a lot more, but it is still not possible to say how much countries are spending to deliver the critical ECD services. We cannot even put together child accounts for public expenditures, let alone national child accounts. How can we then have informed discussions about public spending priorities?

There are some **conceptual and technical challenges** in collecting data on public expenditures:

a. Program-level spending data are not collected systematically. While child health subaccounts (in national health accounts) are designed to present aggregate information on child health services, data are available only sporadically for a limited number of countries.

b. Consolidation across levels of government is difficult even for broad categories of spending (e.g., health, education and social protection), let alone at the program level. This is more challenging in decentralized contexts where the bulk of spending is local and where central government funds come in the form of block grants, for which local governments do not maintain accurate accounts.

c. Donor funding presents similar challenges; recording of funding flows is not always a given, and attribution of funding to different services is harder still.

d. Many countries provide cash transfers to families, which are 1 of the 25 essential interventions listed in table 1 (some transfers are targeted to poor families, and some are targeted universally, e.g., child allowances). These are at least partly intended to defray the costs of child rearing (sometimes explicitly in the forms of conditions, e.g., to encourage regular prenatal and child care visits to clinics). Developed countries also make considerable use of tax expenditures for similar reasons. Both cash transfers and tax expenditures represent additional resources for families, of which part are being spent on ECD services. Therefore, they should be considered as belonging in the overall envelope of public funding for ECD services; but this requires making various assumptions about the share of the transfers received or the income tax avoided that is spent on the essential package of ECD interventions.

In estimating costs, several important **methodological issues** also arise, which hamper efforts to compare unit costs across programs and countries. These include decisions about the treatment of capital, overhead and program development costs; the remuneration of workers; and differences in program quality, coverage and the composition of beneficiary populations.[11]

Costs Vary by Program Characteristics, Location and Quality

We can identify many reasons why costs may differ systematically, based on such factors as location, level of income, cost of living, scale, program duration and intensity, program quality and input standards. But data on unit costs are too sparsely and sporadically available to determine whether all variations in unit costs for similar programs can be explained by observable differences in services. There is clearly a need for more research to build the body of evidence, because any cost-modeling exercise to project future funding requirements needs to rely on logical assumptions about program features vis-à-vis costs. In this section, we discuss the key determinant of costs.

Staff remuneration drives program costs. Because staffing often constitutes the largest component of program costs, the levels and modalities of staff remuneration matter greatly for unit costs. In a recent study, the Inter-American Development Bank found that 27.6 percent of the region's child care programs were staffed either by volunteers or by those who worked for only a stipend. And for parenting programs, only 16.7 percent of staff had an employment relationship with the programs.[12] This may explain some of the large variation the study found in unit costs across similar programs—from $26 to $3,264 per child for child care services, and from $13 to $599 per child for parenting programs.[13]

Variation in cost estimates may reflect the quality or intensity of program inputs. Child/staff ratios in preprimary programs, teacher qualifications and infrastructure requirements all have an impact on costs, as captured by the Inter-American Development Bank's study mentioned above.[14] Similarly, in terms of health services, prenatal care is more expensive in Ghana, for example, if a trained doctor administers services as opposed to another type of health care worker.[15] In the parenting initiatives known as Roving Caregivers Programs in the Caribbean Islands, staff wages were found to increase as the programs became more integrated within governments, given higher standards for wages for government officials in comparison with workers for nongovernmental organizations (NGOs). Program duration is another important contributor to variations in unit

costs. Whether parenting programs provide monthly or weekly home visits matters for costs, as does whether a preprimary program session lasts for a half day or a full day. Hence, for example, programs of equal quality in terms of training, teacher pay and class size may differ by a factor of 4 for unit costs depending on the program's duration.[16]

Geography matters for costs, as do scale and case complexity. Bhutta and colleagues found that unit costs for a selected number of child and maternal nutrition interventions were higher in Africa compared with other regions due to higher labor costs and the extra travel time required for the delivery of services.[17] Extra time for delivery using outreach was required due to lower population density in many areas and the lower coverage of primary care facilities. Conversely, it is possible that some aspects of programs are less costly in rural areas due to the lower staff wages. Small-scale ECD programs may have higher unit costs.[18] A cost-benefit analysis of the Roving Caregivers Programs found that the cost per child was $900 per child in Dominica, where 187 children were enrolled, but was $58 in Jamaica, where 1,410 children were enrolled. One obvious factor here was that overhead costs could be spread across a larger number of children.[19] It also stands to reason that the characteristics of beneficiary children and families would influence costs—for example, children with multiple and more complex needs require special and more costly services.

Using Expenditure Data to Inform Policymaking Requires a Normative Approach

The challenges of collecting and interpreting public expenditure data are not just technical. **Norms that reflect prevailing social contracts vary** when it comes to the roles and responsibilities of different actors for children's development, and this is reflected in the composition of spending by country. For example, preprimary coverage for 3- to 5-year-olds in India was about 40 percent in 2006, with public funding accounting for almost three-quarters of all spending. Conversely, in Indonesia, public spending for preprimary services for 5- to 6-year-olds has similar coverage (44 percent), with a contribution of only 5 percent from the public sector. Some countries operate on the principle of providing public funding for all services for all children, but the practices of others reflect the notion of sharing responsibility between families and the government and thus provide public funding in a targeted manner to families based on their need. As a result, it is difficult to make comparisons across countries about societal preferences for investing in children on the basis of public spending information alone.

Is the Way Forward a Data Evolution?

Many of the challenges related to spending and costing information are not unique to ECD services. But the knowledge base for the costs of these services seems particularly poor, in part reflecting the wide range of services provided, the multiplicity of government agencies involved, and the heterogeneity in the modalities and quality of service delivery. In comparison with many other social services, the ECD field is relatively well endowed with knowledge about the impact of its programs. Yet it lags on spending and cost data, and therefore on cost-effectiveness information, which is crucial for policymakers and whose absence may go some way towards

explaining the low coverage of ECD services in many countries. Improving the information base to underpin decisions for scaling up promising interventions is urgent if the goal of providing all children with the basic package of essential services is to be fulfilled.

Making progress on this agenda will require a coordinated approach across governments, donor agencies, NGOs and researchers, with a view to adding incrementally to the database on ECD service costs and spending. Here are the steps that we envisage:

1. Adopt a clear definition of what is meant by "an ECD program." A good starting point is the World Bank's list of 25 essential interventions (see table 1).

2. Based on existing initiatives, such as UNICEF'S West Africa Regional Prototype study and costing studies in South Africa, Colombia and other countries to be identified, develop an ECD costing model.

3. Pilot-test the costing methodology developed in selected countries and produce case studies based on the findings.

4. Develop protocols to encourage both national and local governments to provide age-group breakdowns—with a special focus on the very young—for health, education, nutrition and other relevant program budgets.

5. Over time, develop guidelines and benchmarks for how much countries need to invest in the age group birth to six years. This necessary spending is likely to vary by a country's level of income, while the division of public and private spending will also be very country specific.

6. Hold regular meetings among all the major stakeholders, to learn from the outcomes of the ongoing initiatives and to gradually develop a comprehensive framework and methodology for ECD costing that can produce the data necessary to construct budgets for scaling up ECD programs.

7. Develop innovative ways to combine the public and private resources necessary to make scaled-up ECD programs a reality.

Endnotes

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