SUSTAINING EARLY CHILDHOOD DEVELOPMENT IMPACTS

FRAMEWORK AND WORLD BANK PERSPECTIVES

Laura Rawlings, World Bank
Columbia University – CPC Webinar – March 2016
Overview

- Setting the Agenda for ECD
- Framework for ECD investments
- Principles for ECD investments

- Annex 1 – Packages from Stepping Up ECD
- Annex 2 – Principles from Stepping Up ECD
- Annex 3 – Examples of World Bank supported ECD projects and related impact evaluations
It is urgent to invest more and better in ECD

- **ECD is a holistic concept** that refers to the physical, cognitive, linguistic, and socio-emotional development of young children (pregnancy until primary school)

- **Stunting (height for age)** is largely irreversible if not prevented or addressed in the first 1,000 days

- Important **cognitive/linguistic delays can accumulate early on** in the lives of young children living in poverty and/or vulnerability; and these gaps do not narrow over time unless they are addressed during early childhood (through early stimulation and learning opportunities).

- The **socio-emotional (or “non-cognitive”) skills** acquired in early childhood through positive opportunities to interact with adults and peers are predictive of individuals’ success and productivity in adult life.

- Evidence suggests a **potential return rate of 7–16 percent annually** from high-quality ECD programs targeting vulnerable groups

As a result, **ECD is a durable, portable and inalienable investment**!
Yet, too many children fall through the cracks

- **¼ of all children under 5 worldwide are malnourished/physically stunted** (about 159 million children in 2014), with 56% of them living in Asia and 36% in Africa. Across all LICs and MICs, more than 1/3 of children under 5 are stunted.

- **Less than 50% of 3- to 6-year-old children** in developing countries are engaged in any form of pre-primary education.

- **Countries under-invest in ECD.** For example, many governments in LICs and MICs spend only between 0.1 and 0.2% of GNP on preschool education, which likely leaves them far below the 1% benchmark for overall ECD funding.

* Including in all types of relevant interventions such as maternal and child health, nutrition, early stimulation & learning opportunities, and social protection
A new momentum for ECD globally...

The new Sustainable Development Goals set the agenda for ECD:

- Target 2.2 on nutrition: reduce stunting by 40%
- Target 4.2 on overall child development: ensure that all girls and boys have access to quality early childhood development, care, and pre-primary education

- These new targets complement other SDG targets that are highly relevant to a comprehensive/multi-sectoral approach to ECD, including on child and maternal mortality, birth registration, violence prevention, and poverty reduction.

A range of partners (multilateral and bilateral organizations, foundations, CSOs, academics/researchers, and the private sector) are showing a renewed interest in nutrition and early stimulation and in comprehensive ECD approaches.
The World Bank invested $3.3 billion in ECD in 80 countries over the last 13 years, with a marked increase in the last 2 years.

- The World Bank supports countries through financing, policy advice, technical support and partnership activities at the country, regional, and global levels.
- ECD investments and approaches encompass education, social protection, health, and nutrition.
- The Independent Evaluation Group (IEG) just completed a comprehensive review of the World Bank’s ECD work, coupled with a systematic review of evidence on long-term outcomes.
- The World Bank and UNICEF are partnering on a call for a renewed commitment to ECD globally.
Framework and Principles

Stepping up Early Childhood Development
Investing in Young Children for High Returns

Amina D. Danboba, Rebecca K. Sayre, Quentin T. Wodon, Leslie K. Elder, Laura B. Rawlings, and Joan Lombard

October 2014
25 Key Interventions for Young Children and Families

**Nutrition**
- Counseling on adequate diet during pregnancy
- Iron-folic acid for pregnant mothers

**Health**
- Antenatal visits
- Attended delivery
- Exclusive Breastfeeding
- Counseling on adequate diet during pregnancy
- Therapeutic zinc supplementation for diarrhea
- Prevention and treatment for acute malnutrition (moderate and severe)
- Micronutrients: supplementation and fortification
- Immunizations
- Deworming
- Vaccinations
- Planning for family size and spacing
- Access to healthcare
- Prevention and treatment of parental depression

**Water and Sanitation**
- Access to safe water
- Adequate sanitation
- Hygiene/Handwashing
- Education about early stimulation, growth, and development

**Education**
- Maternal education
- Early childhood and preprimary programs
- Continuity to quality primary education
- Parental leave and adequate childcare
- Child protection services
- Social assistance transfer programs
- Access to healthcare
- Access to safe water
- Adequate sanitation
- Hygiene/Handwashing

**Social Protection**
- Birth Registration
- Parental leave and adequate childcare
- Child protection services
- Social assistance transfer programs
Over time: 5 integrated packages

<table>
<thead>
<tr>
<th>Time</th>
<th>Packages</th>
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</thead>
<tbody>
<tr>
<td>Pregnancy</td>
<td>1. Family Support Package: Parental Support for Vulnerable Families: Planning for family size and spacing; Maternal education; Education about early stimulation, growth, and development; Parental leave and adequate childcare; Prevention and treatment of parental depression; Social assistance transfer programs; Child protection regulatory frameworks.</td>
</tr>
<tr>
<td>12 Months</td>
<td>2. Pregnancy Package: Antenatal care; Iron and folic acid; Counseling on adequate diets</td>
</tr>
<tr>
<td>24 Months</td>
<td>3. Birth Package: Attended delivery; Exclusive breast feeding; Birth registration</td>
</tr>
<tr>
<td>36 Months</td>
<td>4. Child Health and Development Package: Immunizations; Deworming; Prevention and treatment of acute malnutrition; Complimentary feeding and adequate, nutritious, and safe diet; Therapeutic zinc supplementation for diarrhea</td>
</tr>
<tr>
<td>54 Months</td>
<td>5. Preschool Package: Preschool education early childhood and preliminary programs; Pre-primary education; Continuity to quality primary schools</td>
</tr>
</tbody>
</table>

Source: Denboba et al. 2014
Across actors and actions: 4 principles

- Principle 1: Conduct an ECD Diagnostic & Establish a Comprehensive Strategy
- Principle 2: Coordinate & Implement Widely
- Principle 3: Integrate Services to Achieve Synergies & Cost Savings
- Principle 4: Monitor, Evaluate, & Scale Up
Toward an ECD action: 4 pillars

• Advocacy through Knowledge Generation and Sharing
• Financial and Technical Assistance (with a focus on multi-sectoral investments)
• Evidence of what works
• Measurement of ECD outcomes in the short, medium, and long-terms
THANK YOU!
## Family Support Package

- **Birth to Six Years**
- Major gains: improved physical and socio-emotional development, improved cognitive development

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Illustrative Cost</th>
<th>Potential Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternal education</td>
<td>Varies greatly by country</td>
<td>Maternal education is a significant predictor of children’s enrollment in ECCE programs with the highest enrollment found among those children whose mothers were more highly educated (Greenberg, 2011).</td>
</tr>
<tr>
<td>Planning for families</td>
<td>Varies greatly by country</td>
<td>Family planning services decrease likelihood of death due to maternal causes: control over fertility decisions, indicated by desire for pregnancy, can lead to reduced risk of maternal mortality (Seyfried, 2011).</td>
</tr>
<tr>
<td>Parenting &amp; social support networks &amp; community education</td>
<td>$13 (Mauritania)-$1,393 (Qatar) per child/year for home-visiting program (Van Ravens &amp; Aggio, 2008) $4 (Bangladesh)-$10 (India) per child/year for national community-based programs (Mason et al, 1999)</td>
<td>Increased parenting knowledge lead to more home stimulation and learning activities for children (effect sizes from 0.32-0.86), and in turn higher child development outcomes, including higher cognitive and language development (effect sizes from 0.32-0.97) (Engle et al, 2011).</td>
</tr>
<tr>
<td>Social assistance transfer programs</td>
<td>Varies greatly by country</td>
<td>Targeted income support through CCTs reduce poverty; increase household food consumption and dietary diversity (Ruel &amp; Alderman, 2013); yield higher rates of school attendance, birth registration, access to health services, and parental concern about the health and education of their children; they also reduce child labor and domestic violence (Barrientos et al, 2013)</td>
</tr>
<tr>
<td>Prevention &amp; treatment of maternal depression</td>
<td>Varies greatly by country</td>
<td>Community-based interventions with paraprofessionals can reduce depressive symptoms (effect size 0.21 to 0.62), improve maternal sensitivity and infant attachment, infant health, and time spent playing with infants (Walker et al, 2011).</td>
</tr>
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### Family Support Package...continued

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Impact</th>
</tr>
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<tbody>
<tr>
<td><strong>Parental Leave &amp; Child care</strong></td>
<td>Varies greatly by country</td>
<td>Parental leave for 10 weeks is associated with a reduction in rates of neonatal mortality, infant mortality and under-five mortality (Heyman, Raub, Earle, 2011); Government-supported childcare provision is associated with higher rates of women’s labor force participation and lower gender inequality (ILO, 2010) For impact of quality childcare, see preschool package.</td>
</tr>
<tr>
<td><strong>Child protection regulatory frameworks</strong></td>
<td>Varies greatly by country</td>
<td>Violence-prevention interventions can reduce stress reactions in young children (effect size 0.56 to 0.91); Improving institutional environment of non-parental group residential care can lead to significant benefits in child cognitive and social-emotional competence (Walker et al, 2011).</td>
</tr>
<tr>
<td><strong>Access to healthcare</strong></td>
<td>Varies substantially by country</td>
<td>Access to healthcare and health insurance that covers basic services affects the health and nutritional status of children (Alderman et al, 2013).</td>
</tr>
<tr>
<td><strong>Micronutrients: Supplementation and Fortification</strong></td>
<td>$0.20 per person/year for flour fortification w/ iron, folic acid, zinc (Fiedler et al, 2008); $1.20 per child/year for Vitamin A sup (Neidecker-Gonzales et al, 2007); $0.05 per person per year for salt iodization (Horton et al, 2008)</td>
<td>Micronutrient supplementation for pregnant women can reduce risk of low birthweight babies by 88% and preterm births by 97%; Children whose mothers consumed iodized salt may have 10-20% higher developmental scores and higher birth weight (3.82-6.3); Iodine supp. for pregnant mothers can reduce risk of cretinism (severely stunted physical/mental growth) at 4 years by 27%. (Bhutta et al, 2013); Vitamin A supplementation can reduce risk of child mortality (6-59 months) by 24% (Horton, et al, 2008);</td>
</tr>
<tr>
<td><strong>Access to safe water</strong></td>
<td>$2 per household per month for rural water intervention (Rijsberman &amp; Zwane, 2012)</td>
<td>Improved water quality may reduce the risk of diarrhea by 52% (Cairncross et al, 2010)</td>
</tr>
<tr>
<td><strong>Adequate sanitation</strong></td>
<td>$3-5 per person for delivery of Community Sanitation Program (Rijsberman &amp; Zwane, 2012)</td>
<td>Adequate sanitation may reduce open defecation by 20% and is associated with a 0.1 standard deviation increase in child height (Spears, 2013).</td>
</tr>
<tr>
<td><strong>Hygiene and hand washing</strong></td>
<td>No additional cost if included in community nutrition programs</td>
<td>Hygiene and hand washing may reduce incidence of diarrhea by 30% (Horton, Shekar, McDonald, 2010; Mason et al, 1999)</td>
</tr>
</tbody>
</table>
Pregnancy Package

- Conception to Birth
  - Major gains: prevention of maternal and neonatal mortality, reduced risk of anemia and low birth weight

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Illustrative Cost</th>
<th>Illustrative Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron and folic acid supplementation for pregnant mothers</td>
<td>$3.00 (Indonesia, Kenya, and Mexico) per pregnancy (Horton, 1992)</td>
<td>Iron and folic acid for pregnant mothers can yield a gain of 58 g in birthweight and reduce the risk of anemia at term by 21% (Bhutta et al, 2013).</td>
</tr>
<tr>
<td>Counseling on adequate diet for pregnant mothers</td>
<td>No cost if part of antenatal visits</td>
<td>Counseling on adequate diet for pregnant mothers reduce the risk of low birthweight and stillbirths (Bhutta et al, 2013).</td>
</tr>
</tbody>
</table>
# Birth Package

- **Birth to 6 Months**
  - *Major gains: prevention of infant morbidity and mortality, and maternal mortality*

<table>
<thead>
<tr>
<th>Interventions</th>
<th>Illustrative Costs</th>
<th>Illustrative Impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attended delivery</td>
<td>$10 for clean birthing kits for 6 women (UNFPA, 2008)</td>
<td>Clean delivery practices can prevent infections (which account for approximately 35 percent of newborn deaths). Institutional/skilled attended delivery can prevent asphyxia (which causes 23 percent of newborn deaths) (UNICEF, 2009).</td>
</tr>
<tr>
<td>Birth registration</td>
<td>$0.23 (Tanzania)-$0.83 (India) per event of civil registration (Abou Zahar, et al, 2007)</td>
<td>Birth registration protects children’s right to identity and access to services including access to immunizations and healthcare, education, and social assistance; It protects children against early marriage and child labor.</td>
</tr>
<tr>
<td>Exclusive breastfeeding through 6 months</td>
<td>$0 to breastfeed; $0.30-0.40 per birth to promote breastfeeding (Horton, et al, 2008)</td>
<td>Infants who are breastfed are six times more likely to survive, six times less likely to die from diarrhea and 2.4 times less likely to die from acute respiratory infections in the first six months (Jones et al, 2003); breastfeeding is also associated with higher intelligence scores (mean difference: 4.0 points) (Horta &amp; Victora, 2013).</td>
</tr>
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## Child Health & Development Package

#### Birth to 5-6 Years

- **Major gains:** prevention of child mortality, reduced risk of stunting and anemia

### Illustrative Cost Per Beneficiary

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Cost Details</th>
<th>Potential Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immunizations</td>
<td>$30 (Low income countries) per live birth (WHO, 2009)</td>
<td>Immunization reduces child morbidity and mortality (Barnighausen et al, 2009).</td>
</tr>
<tr>
<td>Growth monitoring and promotion</td>
<td>No additional cost if included in community nutrition programs</td>
<td>GMP can lead to a 1.5% reduction in deaths before 36 months (at 99% coverage); a 0.25 increase in height-for-age Z score; and a 15% reduction in prevalence of stunting at 36 months of age (Bhutta et al, 2008).</td>
</tr>
<tr>
<td>Therapeutic zinc supplementation for diarrhea</td>
<td>$1 (India) per child per year (Robberstad et al, 2004)</td>
<td>Therapeutic zinc supplementation can lead to 14% fewer episodes of diarrhea and 15% fewer episodes of severe diarrhea or dysentery; 25% fewer episodes of persistent diarrhea; 9% reduced risk of mortality (Horton et al, 2008).</td>
</tr>
<tr>
<td>Optimal feeding practices</td>
<td>$40-80 per child per year (Horton et al, 2010)</td>
<td>Optimal feeding practices can reduce stunting (height-for-age Z score) by 0.25 (without food supplements/cash transfers) to 0.41 (with food supplements/cash transfers) (Lassi, et al, 2013)</td>
</tr>
<tr>
<td>Deworming</td>
<td>$0.25 (developing countries globally) per child/year (Hall, Horton, de Silva, 2009)</td>
<td>Deworming is associated with a 5-10% reduction in anemia in populations with high rates of intestinal worms; one-dose of deworming drugs may increase weight by 0.58 kg (Bhutta et al, 2013).</td>
</tr>
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</table>
# Preschool Package

- **Three to Six Years**
- *Major gain: school readiness*

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Illustrative Cost per Beneficiary</th>
<th>Potential Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality early childhood education programs</td>
<td>$58 (Mauritania) to $3482 (Qatar) per child /year (Van Ravens &amp; Aggio, 2008) for ECCE for 3-5 year-olds</td>
<td>Quality early childhood education programs increase child development scores on one or more measures of child development (literacy, vocabulary, math, quantitative reasoning) with an effect size range from 0.13 to 1.68; Preschool is associated with improved school performance in second and third grades and effects can be even larger in adolescence (Engle et al, 2011)</td>
</tr>
<tr>
<td>Transition to primary</td>
<td>Varies by country</td>
<td>Quality improvement in early primary grades (integrating ECCE/Early primary experience, teacher training on classroom strategies for young children, smaller class size, etc.) can improve learning outcomes, school attendance, pass rates, and promotions and reduce dropout and repetition rates (Arnold et al, 2008).</td>
</tr>
</tbody>
</table>
ANNEX 2 – Principles from Stepping Up ECD
Principle 1: Conduct an ECD Diagnostic & Establish a Comprehensive Strategy

- Diagnostic: Collect data, analyze, and benchmark with comparable international data national. Focus and sub-national ECD systems (both on ECD policies and ECD programs).

- Based on ECD diagnostic and taking into account costs and funding, countries should prioritize interventions with three considerations in mind:
  
  - **Start early**
  
  - **Address risk factors**
    
    *Esp.* (1) malnutrition and stunting; (2) inadequate cognitive stimulation; (3) iodine deficiency; and (4) iron-deficiency anemia.
  
  - **Target the most vulnerable**
Principle 2: Coordinate & Implement Widely

What is usually seen in policies for young children and families

Chaos

- Health
- Social services
- Parks & recreation
- Early intervention
- Municipalities
- Family support
- Community services
- Education
- Local school authorities
- Preschools
- Parenting centres
- Child care
- Children’s mental health centres

Source: Adapted from F. Mustard, Canadian Institute for Advanced Research
Principle 2: Coordinate & Implement Widely

Importance of Taking an Integrated Approach to ECD Policies

Coherence

Source: Adapted from F. Mustard, Canadian Institute for Advanced Research
Principle 2: Coordinate & Implement Widely

- Diversity of entry points for policies and programs related to nutrition, healthcare and hygiene, education, child protection, social protection and, poverty alleviation.

- ECD interventions can take place in a variety of settings including a child’s home, a preschool or childcare center, a health post, clinic, or hospital, or a community center.

- Coordination is critical both horizontally between sectors and vertically between the central government and local authorities.
Evidence suggests high annual rates of return to many of ECD interventions, but integrated interventions that address multiple needs of young children are likely to yield the greatest results.

In a context of tight budgets, integrated services help reduce unit costs of providing services, e.g. by reducing the time and travel costs needed to reach beneficiaries.
Principle 4: Monitor, Evaluate, & Scale Up

- Comprehensive monitoring systems help track ECD investments and promote effective policymaking.
- Systems that track vulnerable children are especially useful to promote effective targeting, referrals, and follow-up.
- **Chile Crece Contigo (Chile Grows with You or CCC)**: an example of effective and comprehensive monitoring system.
- Monitoring systems should include data from multiple sources (household and child surveys; national administrative data).
- Impact evaluations are critical to help identify what works and what does not, and areas for improvement in programs.
Annex 2 - Projects

- Examples of World Bank supported multi-sectoral ECD projects
Examples of initiatives combining ECD approaches

NICARAGUA: Programa Amor para los más Chiquitos: Coordinated ECD policy under an ECD Commission to coordinate activities among the Social Security Institute, the president’s office, and the Ministries of Education, Health, and Family. Volunteer brigades to provide information about the program; deliver messages to the family so that parents stimulate, care, and protect their children; and develop a registry of pregnant women and young children. A donor table for early childhood development.

NEPAL: Community Action for Nutrition Project: water and sanitation with nutrition, targeted to pregnant and lactating mothers and children under two in earthquake affected areas.

PERU: Sector Wide Approach program supports the demand, supply, and governance of government nutrition services, organized under the Articulated Nutrition Program (PAN). Links with Juntos Conditional Cash Transfer (CCT) program and preventive health services.

DOMINICAN REPUBLIC, MADAGASCAR, RWANDA, MAURITANIA: cash transfers for low income families with young children, coupled with parenting education for child stimulation, psycho-social support, non-violent conflict resolution.
Examples: Multisectoral projects and related impact evaluations

- Each project combines two or more early childhood development interventions
- Each project has a robust impact evaluation, with treatment and control groups using experimental (randomized control trials) or quasi-experimental methods
- Examples drawn from World Bank Strategic Impact Evaluation Fund (SIEF) – supported work www.worldbank.org/sief
India

**Intervention:** nutrition and parenting education program for pregnant women and mothers of children under 3

- Existing government community centers --Anganwadi Centers-- provide nutrition services.
- Program tests the addition of a dedicated staff member to act as early childhood mentors, providing home visits, nutritional counseling and lessons on early childhood stimulation.

**Evaluation:** Cluster randomized trial in two districts in predominantly rural and tribal areas of Madhya Pradesh.

- 100 treatment communities; 100 control randomly selected
- Baseline survey 2015 (children 12-24 months old); follow-up #1 after 12 to 15 months into the program; follow-up #2 after 30 months.
- Indicators: socio-economic; maternal knowledge and practices, and depression; child tests for motor skills, communication, social interaction, problem solving and cognitive development
**Jamaica**

**Intervention:** Nutritional support and home-based psychosocial interventions for low birth weight children 9-24 months old

- Program delivered by community health workers over two years:
  - Weekly nutritional supplementation (milk based formula)
  - Weekly play sessions with mother and child
  - Combination of both

**Evaluation:** Randomized control trial, with longitudinal study

- 4 arm trial: 129 children/families assigned to control or one of the treatments above in 1986-87; also non-stunted comparison group
- Longitudinal surveys when child cohort was 11-12 years old, 17-18 years old and 22 years old
- Cost data; rate of return analysis
- Key result: 25% rise in treatment group earnings: enough to catch up to non-stunted comparison group
Djibouti

**Intervention:** Parenting education and public works program for pregnant women and children up to two years of age
- Public works provides income support.
- Mobile creches available on job sites
- Monthly parenting training, child growth monitoring, referral services

**Evaluation:** Quasi-experimental matched difference-in-difference
- three arms: nutrition program alone; nutrition plus public works; and control.
- Baseline survey 2013, endline 2015 (five months after program ends)
Intervention: existing nutrition education and growth monitoring program, combined with:

- **Intensive counseling**: Community worker home visits using a “diagnostic tree” to plan diet and change behaviors
- **Lipid-based supplements for children** six to 18-months old
- **Lipid-based supplements for pregnant and new mothers**
- **Early childhood stimulation (6-18 months)**: Community worker home visits for stimulation, responsive caregiving
Evaluation: Cluster randomized control trial of communities

- 5 arms: national program alone (control); treatments add intensive counseling alone and in combination with each additional intervention above (supplement for children, supplements for women, child stimulation)
- Baseline 2014; follow-up in 18 months, to random sample of families of 30 children and 10 pregnant women in each community.

Measures:

- Baseline: demographics, water and sanitation, education, household expenditures, food security, shocks, measurements of child and mother health and development, and prenatal care.
- Follow-up: also includes perceived benefits from the program, child birth details, breastfeeding; anemia and child micronutrient assessment

Cost data
Intervention: Familias en Acción cash transfer program, combined with psychosocial stimulation and micronutrient supplements for children age 12-24 months

- 18-month long program, targeted to low income families in the government’s Familias en Acción conditional cash transfer program.

- Weekly home visits were carried out by elected Mother Leaders, teaching beneficiary mothers cognitive stimulation techniques for 12-24 month old children. Mother Leaders received mentoring from professionals and telephone support.
Colombia (Cont.)

**Evaluation**: Cluster level randomized trial across 32 municipalities:

- 4 arms: control existing cash transfer; cash transfer plus weekly home visits; plus biweekly distributions of micronutrient supplements for children <6; plus both

- Baseline 2010; first follow-up 2011; second follow-up 2013 to assess medium-term impact on children two years after families stopped receiving the visits by measuring the children’s development skills (children four and a half and five and a half years old, and about to enter primary school)

- Indicators: children’s cognitive, language, and socio-emotional development; mothers’ knowledge of child stimulation; spillover effects on younger siblings