Holistic Early Childhood Development Index
(HECDI) Framework

A technical guide

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A TECHNICAL
GUIDE

Acknowledgements

Abbreviations

AIDS	Acquired immunodeficiency syndrome
ARV	Antiretroviral
BCG	Bacillus Calmette–Guérin
CDC	Center for Disease Control
CEECD	Centre of Excellence for Early Childhood Development
CESCR	Covenant on Economic, Social and Cultural Rights
CRC	Convention on the Rights of the Child
DHS	Demographic and Health Surveys (USAID)
DTP	Diphtheria, tetanus and pertussis
ECCE	Early childhood care and education
ECD	Early childhood development
EDI	Early Development Index
EFA	Education for All
GHWA	Global Health Workforce Alliance
HECDI	Holistic Early Childhood Development Index
HELP	Human Early Learning Partnership
HIV	Human immunodeficiency virus
ICCPR	International Covenant on Civil and Political Rights
ICDS	Integrated Child Development Service (India)
IDB	Inter-American Development Bank
IFS	Institute for Fiscal Studies
IGME	Inter-agency Group for Mortality Estimation (UN)
ILO	International Labour Organization
IPV	Inactivated polio vaccine
ISCED	International Standard Classification of Education
IUGR	Intrauterine growth restriction
JMP	Joint Monitoring Programme (WHO/UNICEF)

LBW	Low birth weight
MDG	Millennium Development Goal
MERG	Monitoring and Evaluation Reference Group (UNAIDS)
MICS	Multiple Indicator Cluster Survey
MVCV	Measles virus-containing vaccine
NCHS	National Center for Health Statistics (US)
NEET	Not in education, employment or training
NGO	Non-governmental organization
OECD	Organisation for Economic Co-operation and Development
OHCHR	Office of the High Commissioner for Human Rights (UN)
OPV	Oral polio vaccine
ORT	Oral rehydration therapy
PPE	Pre-primary education
PRIDI	Regional Project on Child Development Indicators (IDB)
SABER	Systems Approach for Better Education Results (World Bank)
UIS	UNESCO Institute for Statistics
UK	United Kingdom
UN	United Nations
UNAIDS	Joint United Nations Programme on HIV and AIDS
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
US	United States of America
USAID	United States Agency for International Development
WCEFA	World Conference on Education for All
WHO	World Health Organization

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Summary

Early childhood is a period of tremendous growth. Extending from conception to the age of 8, early childhood experiences carve out pathways towards health and well-being that persist throughout life. Supporting early childhood development, especially for the most vulnerable children, requires coordinated action to ensure health care, adequate nutrition, quality education, support for parents and protection of children's rights. Science clearly demonstrates that such holistic approaches greatly increase the chances that children will complete school, experience good physical and mental health and contribute positively to their societies.

Several international conventions state that children have the right to environments that support their well-being comprehensively. At present, the status of young children is often measured using only a few indicators that address health, nutrition or access to pre-primary education (PPE). While these indicators are undeniably important, more comprehensive approaches to measurement are needed to ensure that children's rights to holistic services are upheld.

In pursuit of the overarching goal that all children reach their developmental potential, the Holistic Early Childhood Development Index (HECDI) Framework offers a set of targets, subtargets and indicators for the holistic monitoring of young children's well-being at both the country and international levels. This proposed framework is a first step towards a global index that can be used to comprehensively describe the status of young children around the world. The HECDI Framework is intended to help spur the creation and widespread collection of indicators necessary for holistic assessment of young children's well-being, by identifying targets consistent with the Convention on the Rights of the Child (CRC) and Education for All (EFA) and suggesting indicators to help track progress, inform policies and guide practices in early childhood care and education (ECCE).[1] The proposed framework reflects the views and perspectives of several organizations focused on supporting young children's development.

Overall, HECDI focuses on ensuring that each child achieves his or her developmental potential. In pursuit of that goal, the framework proposes four main targets for young children's development, spanning health, nutrition, education, social protection, poverty and parental support:

1. Children survive and demonstrate age-appropriate development and learning.

2. Children experience cognitively stimulating, emotionally supportive home environments with adequate resources.

3. Children and families have access to quality programmes and services addressing health care, good nutrition, education and social protection.

4. Children's rights are protected and upheld through the implementation of policies and programmes to support children and families.

Table 1 below briefly outlines the key subtargets and proposed indicators associated with each of the four targets. Detailed descriptions are presented in Section 5 of this document.

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1   The indicators included in the HECDI Framework address EFA Goal 1, 'expanding and improving comprehensive early childhood education and care, especially for the most vulnerable and disadvantaged children.' The HECDI Framework also reflects the priorities for young children articulated in the 1989 Convention on the Rights of the Child, and more specifically in General Comment No. 7 on 'implementing child rights in early childhood' adopted by the UN Committee on the Rights of the Child in 2005.

Table 1: HECDI Overview

Target	Subtarget	Proposed indicators*
Children survive and demonstrate age-appropriate development and learning	Children survive	**Under 5 mortality rates**
	Children have healthy weight	**Low birth weight**
		Children overweight under age 5
		Stunting in children under age 5
	Children without frequent illness or chronic conditions	**Diarrhoea, use of oral rehydration therapy (ORT) & salts**
		Care-seeking for pneumonia
		Malaria diagnostics
	Children display culturally and age-appropriate development	*Early Development Index (EDI)*
		Multiple Indicator Cluster Survey (MICS) EDI subscale
		Neurological development in the first 1,000 days
Children experience cognitively stimulating, emotionally supportive home environments with adequate resources	Access to improved drinking water and sanitation	**Access to improved drinking water**
		Access to sanitation
	Policies for paid leave for parents with newborns, in both formal and informal settings	**Paid parental leave**
	Parents have access to programmes for parent support and education	None
	Parents have formal education	**Literacy rates for adults 15 and older**
		Average years of education for men & women aged 15 & older
	Mothers experience well-being	*Maternal depression*
		Maternal subjective well-being
	Absence of children's exposure to domestic violence	Attitudes towards domestic violence
		Experience of violent discipline
	Children experience adequate daily care	**Children left alone or in care of another child under age 10 for more than 1 hour per week**
	Children living in households with adequate resources	**Children living in poverty**
		Presence of policies and programmes to lift families out of poverty
Children and families have access to quality programmes and services	Children have access to comprehensive preventive and medical care	**Immunization rates**
		Health-care providers per 10,000 population
		Access to essential early childhood development (ECD) health interventions
	Pregnancy & birth services	**Presence of skilled birth attendants during birth**
		At least 4 antenatal visits
	Access to quality early childhood care and education (ECCE)	**Children entering Grade 1 wtih ECCE experience**
		Gross pre-primary education (PPE) rates
		Teacher-child ratios
		Teachers qualified to teach in pre-primary
		Grade 1 repetition
	Country or community monitors and responds as necessary to children's growth and nutritional status	None

Target	Subtarget	Proposed indicators*
Children's rights are protected and upheld through the implementation of policies and programmes to support children and families	Country and/or state provides legal guarantee of children's rights regardless of religion, race, national origin, gender or disabilities	**Birth registration** **Child issued birth certificate** *Country compliance with Convention on the Rights of the Child (CRC) (General Comment 7 indicators)*

*Note: Indicators in bold are available now in many countries; indicators in italics are not yet collected on a wide scale.

Across all of the HECDI targets and subtargets, it is essential to examine the indicators by factors associated with inequity – for example, breaking down and reporting rates of child health and well-being by family income, racial or ethnic status, and gender. Few if any countries have all of the data needed for a comprehensive appraisal of young children's development today. Progress towards the global index will be gradual, reflecting the natural differences between countries in availability of data. In the immediate term, countries can use the HECDI Framework to:

■ Discuss the HECDI targets and subtargets, and identify which indicators are most relevant to young children's development in light of the country's contexts, strengths and challenges

■ Identify the targets and subtargets that require integrated approaches between sectors, and gain agreement on an inter-sectoral approach to ECCE

■ Plan for consistent collection of data for indicators that represent a holistic approach to supporting young children's development

Over time, HECDI data can be used on both the country and global levels to summarize the status of young children and track their development over time, monitor progress towards targets and subtargets using a consistent set of indicators, and guide policy decisions relevant to young children.

For each of the four targets, HECDI points to core indicators that capture what constitutes quality ECCE service, the delivery of which should be closely monitored. However, it does not provide or impel an exhaustive list of indicators that every country must collect, as country contexts, capabilities and priorities differ. When measuring and analysing the HECDI targets, countries are expected to prioritize the indicators deemed most critical to their own contexts and ECCE strategies. Moreover, HECDI should be seen as a 'work in progress' that can and should be modified over time as country needs are further identified and new indicators are developed.

To aid in the interpretation and application of the HECDI Framework, this technical guide includes the following sections:

■ Section 1: Rationale and process for HECDI

■ Section 2: Using HECDI now

■ Section 3: Building a holistic index

■ Section 4: Planning for a holistic early childhood development (ECD) system

■ Section 5: HECDI targets, subtargets and proposed indicators

The first section describes of the rationale behind the HECDI Framework and outlines the framework development process. The second section suggests the first steps countries should take in using the HECDI Framework to inform planning and policy-making. The third section details how countries can help build HECDI by contributing data for existing indicators and assisting in new indicator development. The fourth section makes the case for an inter-sectoral approach to providing holistic ECCE support, and discusses some of the realities of planning for and implementing holistic early childhood systems. The fifth section explains each of the HECDI targets and subtargets, and suggests data sources for the proposed indicators.

Section 1: Rationale and process for HECDI

Rationale for a holistic index

Extensive and reliable scientific evidence demonstrates the critical importance of the first years of life. From conception throughout early childhood, children's brains develop at a rapid rate and are uniquely sensitive to environmental inputs. Research emphasizes the profound influence of a child's environment on development and learning: far from being dictated at birth, human capacity is strongly shaped by environmental conditions. Stimulating environments unlock children's potential and encourage neurological development.

Beginning at conception, children move through a series of developmental steps in early childhood, each providing the groundwork for the steps that follow. For example, a focus on language development in infancy – through activities such as storytelling, reading and singing – paves the way for reading in early primary school by introducing children to new vocabulary and helping them understand letter sounds. Development is holistic; physical, cognitive, social–emotional and language development (known as 'domains' of development, e.g. Walker et al., 2007**b**) must all work together to enable progress through each step. In the case of language development, for instance, health and nutrition play important roles: early in life, children's vocabularies increase dramatically as they begin to move around, exploring and eliciting responses from others. Chronic sickness and malnutrition thus affect much more than physical health, as mobility and the desire to explore are essential for cognitive, linguistic and social–emotional development as well. Research demonstrates the cumulative effects of environmental deprivation, showing that the fewer adequately addressed domains, the greater the risk a child faces and the greater the likelihood that he or she will face difficulties in the future, ranging from school failure to poor health to criminality (e.g. Sameroff et al., 1987).

Providing holistic support for early childhood development requires coordinated and communal efforts by multiple stakeholders, from parents and communities to governments and international organizations. Since the articulation of the 'ecological model' of child development in the 1970s (e.g. Bronfenbrenner, 1979), the joint influence of families, communities, nations and the global environment has been well documented. Each group has a role to play in caring for young children and supporting families: communities, for example, provide direct care and assistance, while national authorities mandate and fund essential support services, and global agreements define children's rights and outline goals for action. Several major international normative instruments – such as the 1966 International Covenant on Economic, Social and Cultural Rights (CESCR); the 1989 Convention on the Rights of the Child; General Comments 11, 13 and 14 of the CESCR; General Comments 1, 4, 7 and 15 of the CRC; the UN Millennium Development Goals (MDGs); and EFA Goal 1 – assert the need and responsibility to provide holistic services for young children. In light of these international mandates and the consensus of the scientific community, UNESCO has undertaken the development of the HECDI Framework, to guide the provision of comprehensive early childhood care and education to children worldwide.

Framework development process

Work on HECDI began following the World Conference on Early Childhood Care and Education convened by UNESCO and held in Moscow in September 2010. The Moscow Framework of Action called upon UNESCO 'to explore the development of an instrument capable of tracking progress towards EFA Goal 1, with particular attention to quality and the holistic aspects of ECCE.' In response, in December 2010, UNESCO began constructing a framework to develop a composite early childhood development index through inter-agency collaboration. This technical guide summarizes

the work to date on the HECDI Framework and reflects the inputs and positions of several international organizations including the United Nations Children's Fund (UNICEF), Save the Children, the Organisation for Economic Co-operation and Development (OECD), the World Bank and the World Health Organization (WHO). Several notable experts in research and policies related to early childhood development, care and education also participated.

The HECDI working group used the following questions to guide the development of the framework:

■ What are the highest-priority indicators for tracking children's development, and what conceptual model can guide the selection of indicators?

■ Which of the desired indicators are available now, and which have yet to be developed or collected on a global scale?

■ Of the desired indicators, which are the highest priorities to develop and globally collect in the future?

These questions were addressed through a series of desk reviews on available indicators, several virtual meetings, and two in-person meetings (during 2011 and 2012) devoted to gaining consensus on the most critical indicators to include.

To further shape the development of HECDI, the HECDI Technical Committee and working groups identified a set of core principles. These were generated through the expertise of group members along with analyses of biological, psychological and educational evidence on young children's development. The core principles are as follows:

■ Children's development is holistic: cognitive, language, physical and social–emotional development all work together. Progress (or lack of progress) in one domain spurs or hinders development in other domains in a dynamic process.

■ Children develop within the context of families, communities, regions, nations and the global environment: each type of environment plays a critical role in affecting young children's well-being. Therefore, it is necessary to address the functioning of policies and laws, programmes and services, family environments, and child well-being.

■ Young children's well-being depends on support across the spheres of health, nutrition, education, parental support, child protection and poverty alleviation.

To identify the specific indicators for inclusion in HECDI, the working group began by developing a conceptual framework with six domains – health, nutrition, education, parental support, social protection and poverty alleviation – and three levels – policies and laws, programmes and services, and child and family outcomes. While these categories were seen as helpful for organizing the conceptual model, there was widespread acknowledgement among the group that the categories are deeply interconnected; for example, poverty affects all of the other domains. Figure 1 below represents the first conceptual model of the six domains across the three levels, developed to depict the idea of a holistic model of indicators. Child development outcomes are placed at the centre of this circle to show that all of the content areas work together to affect overall development in cognitive, social–emotional and physical domains.

Figure 1: HECDI conceptual model
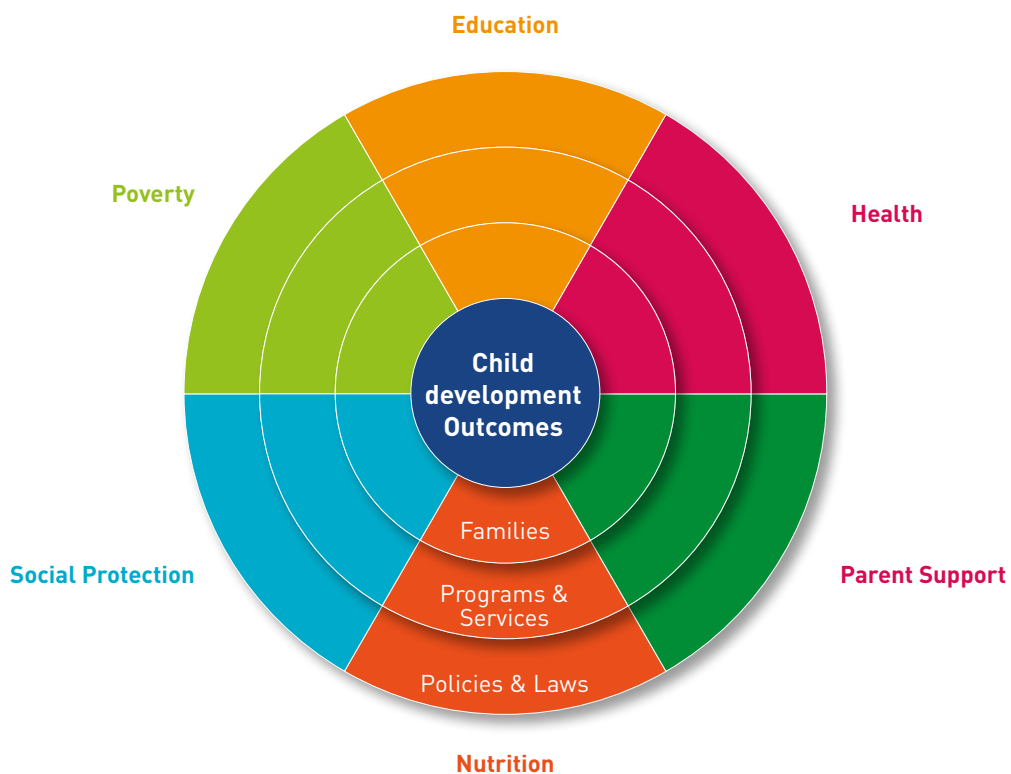
From this first conceptual model, a target for each ring of the circle (or ecological layer), emerged:

Table 2: Ecological layers and proposed targets

Ecological layer	Proposed target
Child development outcomes	Children survive and demonstrate age-appropriate development and learning
Families	Children experience cognitively stimulating, emotionally supportive home environments with adequate resources
Programmes and services	Children and families have access to quality programmes and services addressing health care, good nutrition, education and social protection
Policies and laws	Children's rights are protected and upheld through the implementation of policies and programmes to support children and families

These proposed targets became the four main targets of HECDI. Subtargets were later identified and the proposed indicators were categorized according to their relevant targets and subtargets.

Section 2: Using HECDI now

This section outlines a process for using the HECDI Framework to inform strategic planning and assessment of young children's well-being. It is recommended that, at minimum, countries select at least one indicator for each subtarget, with emphasis on ensuring diversity across the domains of health, nutrition, education, parental support, social protection and poverty alleviation. Even without data for all indicators or targets, governments can use the framework to improve the status of young children by taking the following steps:

1. Discuss the conceptual framework and key questions in an inter-sectoral group

While there is strong evidence to support the conceptual framework presented here, in many countries different ministries have different ideas of what is needed to support children's development. Education ministries, for example, may rely on their partners in health ministries to report on children's health status, or may not understand the importance of paying attention to data on children's health when monitoring their learning outcomes. UNESCO recommends that governments convene a range of ministry representatives to discuss and apply the HECDI Framework to their country's context. Because considerable expertise on children's well-being often sits within civil society organizations or universities, it may be useful to engage experts from a range of organizations in the discussion. The following questions could stimulate dialogue on inter-sectoral approaches:

- What risks to healthy development and successful learning exist for young children in this country?
- Before looking at any indicators, what is the group's sense of the country or region's areas of strength and opportunities for development?
- Of the targets, subtargets and indicators included in HECDI, which areas seem most and least critical? Is there agreement across ministries?
- Which children and families are most at risk of social exclusion within the particular context of a given region or country? What is known about these children and families? What is not known and should be understood more fully?
- Which indicators are now available? What potential indicators are 'missing' – reflecting important problems or strengths within the country or region but not included on the list?
- How do policy-makers and practitioners use indicators and what new indicators would be most useful to them?
- What research institutions are available to partner in the development of new indicators?
- What cultural or contextual factors are important to take into account when developing new indicators?
- How holistic are the current policies on children and families in this country? Is there a mechanism in place to ensure integrated or coordinated services for young children?

2. Identify sources of data available to measure progress towards HECDI targets and subtargets

In Section 5 of this document, each suggested indicator is explained in detail along with possible data sources. A portion of countries have participated in both UNICEF's Multiple Indicator Cluster Survey (MICS) and the World Bank's Systems Approach for Better Education Results (SABER), creating data that can be used for indicators of children's development,

family conditions, access to services, and laws and policies. Countries or regions that have recently participated in MICS or SABER are likely to find much data on children, their families and the larger policy context. Universities and independent research studies within each country are also important sources of data and can add considerably to HECDI analyses. One example is the Children's Chances database, which provides globally comparable data on the policies and laws that affect children around the world (WORLD Policy Analysis Center, 2014).

3. Use available data to fill in the conceptual model with country- or region-level indicators, for use in strategic planning and target-setting

For each of the indicators, countries should decide whether the data represent positive conditions for young children or opportunities for improvement, which can be measured by comparing data with other countries in the region or tracking trends within the country over time. Countries can use the data-review process to establish their own goals for young children's well-being, based on the inter-sectoral group's suggestions and taking into account local conditions and priorities.

Section 3: Building a holistic index

Several existing ECD indices are designed to globally track children's development across a number of domains, yet none include the range of variables thought to be necessary to provide a complete picture of children's well-being worldwide.[2] While HECDI represents the most comprehensive index to date, work is still needed to enable accurate data collection and render the index truly functional. Of the targets and subtargets outlined in the HECDI Framework, some can be measured with existing indicators much more comprehensively than others: some subtargets, for instance, have no current indicators that can be used to track progress, while others can be tracked using multiple indicators. The HECDI process revealed the need for a substantial investment in data collection and new indicator development in order to monitor the status of young children holistically.

To reach the goal of a holistic global index, the following conditions must be achieved:

■ *Clear, measurable definitions of each indicator, synchronized across governments and international organizations whose mandates include data collection.* Each of the proposed HECDI indicators must be defined, and data sources for those indicators must be identified. For example, 'quality' ECCE may not yet be defined in the same way in all places, thus precluding global measurement at this point in time, whereas agreement on the definition and measurement of under-5 mortality has been achieved, leading to globally comparable data.

■ *Consistent data collection from representative samples of children and families across a large number of countries,* with emphasis on ensuring adequate representation among children and families at risk of social exclusion due to poverty, cultural or ethnic status, gender, geographic mobility or other factors that may be associated with child development or access to services.

■ *Accurate and timely reports from governments* on the present status of policies and funding affecting children and families, and on enrolment in programmes relevant to ECCE, which then can be used to create indicators of policies and funding.

■ *Global compilation and analyses of a common set of indicators*, including data disaggregation by factors associated with social exclusion.

The steps below outline how countries can help achieve these conditions and contribute to the ongoing development of HECDI:

1. Analyse existing data and participate in current global surveys

As part of the HECDI development process, UNESCO commissioned several landscape analyses to gauge the availability of existing data in a variety of areas, including child health, development, social and legal protection, and policy and planning.[3] The reports show that extensive data collection efforts are already underway around the world. Prominent international examples include UNICEF's MICS, the World Bank's early childhood development module of SABER (SABER-ECD), and the UNESCO Institute for Statistics' (UIS) regular data collection and reporting on pre-primary education and adult educational attainment (for data on parents and caregivers). Table 3 below outlines these and other notable examples of international efforts to collect data related to early childhood development.

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2   Existing indices of note include Save the Children's Child Development Index and UNESCO's EFA Global Monitoring Report ECCE Index, both of which include three indicators: stunting, under-5 mortality, and pre-primary enrolment (Cobham et al., 2012; UNESCO, 2012). The OECD and the Innocenti Research Centre have produced the 'Doing Better for Children' series, which also includes indices of child well-being, though they are not specific to early childhood development and only cover OECD countries (Chapple and Richardson, 2009). The African Union agreed to a common set of indicators for early childhood development in December 2011, and a set of indicators based on the Convention on the Rights of the Child were piloted in Tanzania and Chile.

3   See Tinajero and Loizillon, 2012; Vargas-Barón and Schipper, 2012; Mahon and Heymann, 2012; Arkadas-Thibert, 2012; and Molina, 2012.

Table 3: Examples of international efforts in data collection and indicator development

Indicator set or data collection tool	Organization	Scope of data	Number of countries	How data are collected
Multiple Indicator Cluster Survey (MICS)[1]	UNICEF	Over 30 modules that include data on children's health, access to education, nutrition, child protection, ECD, HIV/AIDS, reproductive health and family planning, etc. Child developmental status is included in the most recent round (MICS4, 2009–2011). Family characteristics and living conditions are also included.	Countries choose to participate; focus is on low- and middle-income countries. Over 100 countries have participated since the MICS began in 1995.	Household surveys, during which parents are asked questions about their children. Direct measurements and observation are also used.
Systems Approach for Better Education Results, early childhood development module (SABER-ECD)[2]	World Bank	Data on policies and regulations relevant to early childhood development; uses MICS data when available.	Over 40 participating countries to date	Consultants or government officials respond to questions.
UNESCO Institute for Statistics (UIS)[3]	UNESCO	Government-reported education statistics on enrolment, funding and teacher training; data on literacy and access to formal education among adults.	All countries surveyed	Governments report statistics to UIS.
International Labour Organization (ILO) NATLEX[4]	ILO	Documents and database on labour, social security and human rights legislation from 180 countries.	All countries surveyed	Countries report relevant information to NATLEX.
Demographic and Health Surveys (DHS)[5]	USAID	Data on demographic, nutrition and health status.	300 surveys in 90 countries, focusing on low- and middle-income countries	Household surveys
Children's Chances[6]	WORLD Policy Analysis Center	Data on country policies relevant to education, family, labour, poverty, social security systems, discrimination and equal rights, disabilities, and constitutional rights.	193	Quantitatively comparable measures drawn from original legislation, constitutions, and reports to the United Nations and other global and regional bodies.

1 See UNICEF, 2014.

2 See World Bank, 2014.

3 See UIS, 2014.

4 See ILO, 2014.

5 See ICF International, n.d.

6 See WORLD Policy Analysis Center, 2014.

These existing collection efforts have greatly improved the availability of data on young children and families; in particular, the high quality and broad scope of MICS have provided deeper and more accurate data on child well-being than were previously available. Likewise, SABER-ECD includes valuable policy-level information about several sectors with implications for young children, including health, education and nutrition. Countries can make substantial progress towards a holistic set of indicators by participating in these efforts. Even for fully defined indicators, expanding the collection of data to include more countries will help contribute to the global index. For example, it would be useful for all countries, including high-income ones, to participate in the MICS and/or use a common measure of child development based on similar items that are globally comparable.

2. Identify and prioritize which data are most needed

While all of the desired indicators work together to create a holistic assessment of children's well-being, some of the indicators are arguably of a higher priority to begin collecting on a global scale. The most urgent indicators are those that measure child well-being directly, and those that measure conditions shown to have a strong effect on child development over time. Other high-priority indicators include those that can inform government efforts to improve the quality of ECCE services and expand access to them, especially in light of the upcoming 2015 EFA assessments.

The HECDI working group views the following indicators as especially high priorities:

■ A measure of child developmental status from birth to age 8, and assessment of children's cognitive, language, social–emotional and physical development

■ Quality of ECCE services, especially pre-primary education

■ Child health, as measured by both infectious and chronic diseases

■ Children with disabilities: number, type of disability and access to services [4]

Governments should work to define and collect data for these indicators, as well as identify other high-priority indicators relevant to their particular country context.

3. Develop new indicators

Several of the subtargets proposed in the HECDI Framework have no or poorly defined indicators to help inform progress. Indicators that are not fully defined are those that have not yet been translated into measurable pieces of data – for example, quality ECCE can be defined in several ways, and there is not yet consensus among experts, advocates and policy-makers on the most useful indicators to measure it.[5]

As new indicators are developed and refined, they should ideally meet the following criteria (UNAIDS MERG, 2010):

■ The indicator is needed and useful

■ The indicator has technical merit

■ The indicator is fully defined

■ It is feasible to collect and analyse data for this indicator

■ The indicator has been field-tested or used in practice

■ The indicator set is coherent and balanced overall

Developing new indicators is a complex process, requiring expertise, adequate funding and time to ensure the indicators provide an accurate picture of the aspect of child well-being, family functioning, and programmes or services being measured. Development should be undertaken in partnerships that cut across content and statistical expertise and include input from those who will eventually use the indicator to guide their decision-making, such as policy-makers and advocates for children. Several useful documents have been prepared to guide the process of indicator development in other fields (see, for example, UNAIDS MERG, 2010).

There are different ways to begin the development of a new indicator. An international organization that provides the indicator definition and technical guidance could be consulted; this has been shown to be effective for MICS and other indicator development efforts. However, as there is little agreement on how an indicator should be defined, the development process can also begin with country-level investigation in a given area. For example, quality in ECCE is extremely important, but at present, no valid, reliable indicators exist. Rather than proposing one new indicator, countries can assess their progress towards supporting ECCE quality using locally relevant measures that will help identify which indicators may be most useful to collect. Over time, country-level measurements of quality can inform new indicator development on a global scale.

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4   A module is currently under development through MICS; see UNICEF, 2012a.
5   UNESCO plans to release a paper on addressing ECCE quality in pre-primary settings in 2014.

Several countries and regions have already laid the groundwork for the development of global indicators. Mexico's Un Kilo de Ayuda (2013) programme, for example, has initiated surveys that track child well-being over time, and South Africa's Human Sciences Research Council (2014) has delineated a set of indicators to measure child well-being across a number of areas. The Inter-American Development Bank's Regional Project on Child Development Indicators (PRIDI) is an example of a regional effort designed to gauge the well-being of young children and families (Verdisco, 2014). Similarly, the Asia and the Pacific region has developed a common set of indicators for use in monitoring progress towards EFA Goal 1 (UNESCO and UNICEF, 2012). Still more data on child well-being and contextual conditions come from independent studies carried out by universities and non-profit groups operating within and across countries, such as Oxford University's Young Lives study, which collects data on children and families in Ethiopia, India, Peru and Viet Nam (Young Lives, n.d.). These efforts all provide valuable indicators on children's development that can be used for strategic planning and assessment within individual countries and across regions.

4. Pilot new indicators

After developing new indicators, the next steps are to 1) validate their usefulness in describing children's well-being, and 2) determine their relevance to users, ECCE stakeholders, practitioners and policy-makers. First, the validation of indicators is essential and involves assessing the relationship between the indicator and an outcome of interest, such as child development. For example, an indicator of quality in pre-primary education, such as average group size or teacher training, should be validated by testing its association with children's developmental outcomes before assuming that it provides any useful information on the quality of classrooms. A key conclusion from the HECDI process is that investments must be made in local research capacity to ensure that indicator development includes local testing, validation and assessment of usefulness.

Second, feedback from policy-makers and practitioners should also be obtained to learn how useful they think the indicator is. An indicator is only valuable if it accurately describes factors affecting child well-being **and** is useful to ECCE policy-makers and practitioners in tracking progress towards goals for young children. Countries should prioritize indicators that show a strong, reliable relationship to child development and offer stakeholders the information they need to better meet the needs of young children and families.

5. Institutionalize indicators

Indicators are institutionalized when they are routinely collected, analysed and utilized for evidence-based decision-making about policies and practices. The creation of a global index is only possible if countries agree to and participate in widespread data collection and make country-level data available for compilation into regional and global data sets.

In sum, achieving the vision of a holistic index will require substantial investments in new indicator development and expanded collection of existing indicators. While the process may be costly and time-consuming, it is an important step in supporting the development of young children and ensuring their rights are respected. When indicators are collected routinely and reliably, they become trusted by policy-makers, resulting in better policies and legal protections for young children.

BOX 1: A NOTE ON MEASURING CHILD DEVELOPMENT AND LEARNING

Reliable information on cognitive and social–emotional development is essential for understanding the status of young children. Indicators measuring the extent to which children display age-appropriate skills and behaviours can be extremely helpful in gauging well-being, as long as the measures are culturally relevant, respectful of children's rights and used appropriately by policy-makers.

Why is it important to measure child development? Data on development and learning that represent the status of children across a population are important for many reasons, as emphasized recently by the large group of organizations participating in the Learning Metrics Task Force (LTMF, 2013). First, when taken together, such data can provide an indication of the level of learning taking place within pre-primary and other ECCE settings, assess the level of skills and competencies that a population of children is likely to have upon entering school, and provide insight into what services and supports are further needed. Second, by collecting and analysing population-based data, countries can identify the geographic areas or regions with strong supports for children and those where additional support is needed. Pockets of success can be especially illuminating, as some communities may have the right mix of programmes and services to support children even when many conditions pose challenges. Such models can serve as a valuable guide for future action.

What risks are there in collecting information on child development, and how can these risks be avoided? The value of data depends on what is collected and how it is used. Harm to children and families can result when data are used inappropriately to make decisions about the competencies of individual children or to assess the quality of ECCE programmes in the absence of other data on programme functioning. It is also important to ensure that the items on the assessments reflect the values and goals for young children held by families and communities. Furthermore, child development outcomes should be understood within the context of information on health, nutrition, education, parenting, poverty and social protection. For example, data may indicate that a large portion of children in a certain area do not show the developmental competencies required for kindergarten success, but data on school readiness will not reveal whether such gaps are due to poor health or nutrition; stressed parents; inadequate, low-quality pre-primary education; or a combination of these factors. Data on child development outcomes must be supplemented by indicators of the breadth and functionality of the overall ECCE system, which will help identify where improvements can be made through better policies, increased investments in early childhood services, an emphasis on improving access, etc.

What options exist for population-based measurement? The first step in identifying measures of child development is to determine goals for what information will be gained and how it will be used. There are several examples of population-based measures of child development, some of which have been tested globally. The HECDI group generated a list of possible approaches but does not endorse one route towards population-based measurement of child development. Other groups, such as the Learning Metrics Task Force, the World Health Organization, the World Bank and Saving Brains/Grand Challenges Canada, have prepared guides to measurement (see LTMF, 2013).

In sum, investing in population-based data on child development can be tremendously useful but requires careful consideration of how such data will be used, which measures are most appropriate, and how to ensure alignment and coordination with national goals and cultural expectations.

Section 4:
Planning for a holistic ECD system

Programmes and services that work together across health, nutrition, education and poverty alleviation promote children's development across a range of competencies (Yoshikawa, 1994; Burger, 2010; Nores and Barnett, 2010; Watanabe, 2005). The importance of ensuring comprehensive support is even greater for children at risk of exclusion: their full growth and development is most strongly supported when ECCE services are designed through the lens of a holistic framework (Grantham-McGregor, 1998). Yet government funding and policies for ECCE are commonly divided into separate sectors such as education, health and nutrition, with decision-making that affects young children and families often spread across several government ministries with unique mandates. This can create challenges for inter-sectoral collaboration. Even when the importance of an inter-sectoral approach is acknowledged in theory, efforts to work across sectors may prove difficult. By providing a conceptual framework for supporting ECCE on a holistic level, UNESCO aims to encourage countries to adopt a comprehensive, inter-sectoral perspective on children's development.

Experiences from several countries demonstrate that inter-sectoral approaches at scale are both feasible and effective (e.g. Moreno, 2011). In the United States, Head Start offers an example of a pre-primary programme that integrates education with health, nutrition and parent support. Evidence from Peru shows that strong links between ECCE services and primary schools ensure support for children and their families and increase the likelihood that primary schools adopt best practices for teaching young children (Young Lives, 2012). One of the earliest and most notable integrated efforts is India's Integrated Child Development Services (ICDS) programme, which is outlined below:

Integrated Child Development Services in India	
Policy	ECCE provision is available through the Integrated Child Development Services (ICDS) programme, which began in 1974 and consists of an integrated package of services addressing education, health, nutrition and family assistance for young children through support for mothers. The programme meets the multiple needs of children via the *anganwadi* system (integrated children's centres), which operate throughout India and serve the country's the most disadvantaged groups.
Successes	• Evaluation studies have found that, despite unevenness in the quality of services, the ICDS programme has had a positive impact on the survival, growth and development of young children. • A national study conducted in 1992 by the National Institute of Public Cooperation and Child Development confirmed the positive impact of the ICDS. Areas where the programme was operating had lower percentages of low-birth-weight babies, lower infant mortality rates, higher immunization coverage, higher utilization rates for health services and better child nutrition. The percentage of severely malnourished children declined, the positive effects of pre-school were evident, and a larger percentage of mothers had their children medically examined.
Challenges	• Harmonizing the activities of service providers (public, private and non-governmental) in accordance with programme mandates, standards and legislation. • Lack of reliable data about the exact number of children accessing ECCE services and breakdowns per service type. Of the 158.7 million children under the age of 6 (Ministry of Home Affairs, 2011), about 75.7 million children (48 per cent) are reported to be covered by the ICDS (Ministry of Women and Child Development, 2012). Broad estimations indicate that a significant number of children are also covered by the private sector. The NGO sector provides some limited coverage as well but there are no data to confirm the numbers. • Uneven quality of non-formal pre-school/ECCE imparted through these channels. • Inadequate institutional capacity and absence of standards and regulatory norms and mechanisms (Ministry of Women and Child Development, 2012).

Sources: Ministry of Women and Child Development, Government of India (2012); UNICEF (2012*b*); The Consultative Group Secretariat (1993).

It is important to note that it is not necessary for one ECCE programme to address all children's needs. In fact, attempting to reach such a broad range of goals may challenge a programme's effectiveness, especially in the early stages when programmes are striving to reach full implementation. Instead, the critical factor for success of any ECCE system is to

ensure that children's needs are addressed by building a strong and coordinated early childhood system. For example, depending on available resources, pre-primary programmes may not be able to shoulder the burden of addressing health and nutrition as well as education, so other governmental, community or civil society organizations must step in. Children's development can be supported and their rights protected through an integrated early childhood system that emphasizes common goals across health, education, social protection, equity and parenting sectors.

While several countries have taken promising steps forward, in many cases achieving the vision of holistic services will require a substantial reworking of collaborations and connections between government ministries and civil society organizations. Some of the barriers to implementing quality, holistic ECCE programmes have been identified and include the following:

■ Lack of infrastructure in place to support coordination across sectors, such as the presence of an inter-agency commission or group to facilitate connections between health, nutrition, education and social protection agencies

■ Difficulty aligning various health, nutrition and education programmes and policies with relevance to ECD around common goals

■ Difficulty finding adequate funding for ECCE services

■ Inadequate training for ECCE professionals

■ Unclear roles and responsibilities for creating ECCE strategic and implementation plans within government ministries and civil service organizations

These barriers to implementing ECCE services have been noted in many countries, both developed and developing (Moreno, 2011). Despite the challenges, however, several countries have made notable progress in recent years. Some inter-sectoral approaches, such as the establishment of a coordinating agency that can delineate clear roles and responsibilities across sectors, can help pave the way for the delivery of integrated services across an entire country or region. To assist countries in building the infrastructure for strong ECCE services, the HECDI working group has developed a 'checklist' that can be used to track the extent to which adequate structures are in place to support holistic ECD. The items on this list have been drawn from a number of sources including the World Bank's SABER-ECD:

■ An ECD policy and strategic plan that includes health, nutrition, social protection, education, parenting support and poverty alleviation has been created and officially adopted.

■ The government has adopted definitions of quality and learning, and development standards for children from birth to age 8, defined using a collaborative process.

■ A lead agency for ECD planning and implementation has been officially designated and operates with input from a national ECD coordinating council composed of representatives from each sector. The agency oversees and ensures the presence of:

   – Formal inter-agency agreements across relevant ministries to ensure integration of services

   – Plans and proof of implementation for accessible programmes in each of the sectors

   – Affordable and accessible training and professional development for ECD professionals

   – Action plan for addressing legal frameworks, standards, guidelines and regulations

■ A monitoring and evaluation plan is in place which includes:

   – Agreed-upon set of indicators to be tracked over time and disaggregated by gender, income and other factors associated with inequity

   – Monitoring of access to services, and evaluation of service quality and impact

   – Annual reporting schedule

   – Regular public sharing of information about ECCE service availability and children's status within the country

■ At least 10 per cent of health and education budgets are devoted to ECCE.

Section 5: HECDI targets, subtargets and proposed indicators

This section describes the HECDI targets and subtargets and outlines the proposed indicators and current or potential data sources for each (see Table 4 for an overview).

Table 4: HECDI targets, subtargets and areas of focus

Target		Subtarget		Area of focus
1.	Children survive and demonstrate age-appropriate development and learning	1.1	Children survive past age 5	Health
		1.2	Children are born without low birth weight (LBW)	Health
		1.3	Children do not suffer from frequent illness or chronic conditions	Health
		1.4	Children demonstrate age-appropriate development and learning	Education
		1.5	Children have healthy weight (obesity)	Nutrition
		1.6	Children have healthy weight (malnutrition)	Nutrition
2.	Children experience cognitively stimulating, emotionally supportive home environments with adequate resources	2.1	Children have access to improved drinking water and sanitation	Health
		2.2	Policies ensure paid leave for parents of newborns in both formal and informal settings	Parent support
		2.3	Parents have access to programmes for parent support and education	Parent support
		2.4	Mothers have experienced formal education	Parent support
		2.5	Mothers experience well-being and the absence of maternal depression	Parent support
		2.6	Children experience emotionally supportive home environments as defined by the absence of exposure to domestic violence and violent discipline	Parent support
		2.7	Children experience frequent cognitive stimulation to support learning and school readiness	Parent support
		2.8	Children experience adequate daily care	Parent support
		2.9	Children are not living in poverty	Poverty
3.	Children and families have access to quality programmes and services addressing health care, good nutrition, education and social protection	3.1	Country or community monitors and responds as necessary to children's growth and nutritional status	Nutrition
		3.2	Children have access to comprehensive preventive and medical care including well-baby checks, immunizations and responses to emergency needs	Health
		3.3	Mothers have access to pregnancy and birth services	Health
		3.4	Children have access to quality ECCE that is appropriate and affordable, from birth to school entry	Education
4.	Children's rights are protected and upheld through the implementation of policies and programmes to support children and families	4.1	Country and/or state provides legal guarantee of children's rights regardless of religion, race, national origin, gender or disabilities	Equity and social protection

Data sources are listed when available, with emphasis on data that are representative across populations, globally comparable and collected repeatedly. This is by no means an exhaustive list and data may also be found through other sources.

For Targets 1, 2 and 3, the majority of relevant data comes from household surveys that collect information on the experiences and well-being of individual children and families. Two ongoing global household surveys have generated much of the data for these targets:

- Demographic and Health Surveys (DHS), conducted by the United States Agency for International Development (USAID)
- Multiple Indicator Cluster Surveys (MICS), conducted by UNICEF[6]

Administrative data on education are collected by the UNESCO Institute for Statistics through government surveys. The World Health Organization also provides a platform for aggregated data collected through a variety of sources.

For Target 4, analyses of country-level policies and laws are required. The data sources relevant to Target 4 include the Children's Chances database, which contains information from 193 countries; the International Labour Organization's NATLEX; and the World Bank's SABER-ECD, which includes information on the strength and functioning of countries' educational systems

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6   It is important to note that the specific survey items may change over time, and countries can specify which modules or questions they would like to include in surveys. Therefore, information attributed to MICS in this document may not be available for all countries who have participated in MICS, especially if participation was limited to one or two rounds.

Target 1: Survival, development and learning

1.1 TARGET: CHILDREN SURVIVE AND DEMONSTRATE AGE-APPROPRIATE DEVELOPMENT AND LEARNING.

Subtarget: Children survive past age 5.

Area of focus: Health

Definition: The under-5 mortality rate expresses the probability that a newborn baby will die before reaching age 5, per 1,000 live births.

Why it matters: The under-5 mortality rate is a leading indicator of overall health conditions for children. Child mortality rates are influenced by nutrition, early care, immunization, breastfeeding and gender issues, as well as the accumulated impact of the quality of birthing experience, neonatal care and, from a wider perspective, the demographic conditions of a country (Mahy, 2003; UNESCO and UNICEF, 2012).

Existing indicators: Under-5 mortality rates

Data sources: According to the UN Inter-agency Group for Mortality Estimation (IGME) (2007; 2012), generating accurate estimates of child mortality is a considerable challenge due to the limited availability of high-quality data for many developing countries. Country-level vital registration systems are the preferred source of data on child mortality because they collect information as events occur and cover the entire population. However, some developing countries lack fully functioning and accurate vital registration systems to record births and deaths. Therefore household surveys, such as MICS and DHS, are the primary sources of data on child mortality in developing countries.[7]

Comments and limitations: Potential data collection problems include misreporting dates of birth, misreporting age at death and underreporting of events. It is possible to test the birth history data collected by checking the internal consistency and determining if the data conform to expected patterns.

1.2 TARGET: CHILDREN SURVIVE AND DEMONSTRATE AGE-APPROPRIATE DEVELOPMENT AND LEARNING.

Subtarget: Children are born without low birth weight (LBW).

Area of focus: Health

Definition: The percentage of children at birth who weigh less than 2,500 grams out of the total of live births during the same time period

Why it matters: Low birth weight is an indicator of short- and long-term health and cognitive outcomes in both high- and low-income countries, including increased prevalence of child mortality and morbidity (Moster et al., 2008). Malnutrition in the period before and during pregnancy, according to some scholars, is connected to intrauterine growth restriction (IUGR), which leads to LBW in developing countries in particular (Baker-Henningham et al., 2011; Kramer, 2003). Moreover, maternal health and depression are associated with limited maternal care and nurturing and have also correlated with LBW prevalence (UNESCO, 2011; Black et al., 2009). The consequences of LBW prevalence in early childhood include diminished human capital, such as poorer cognitive development, behavioural problems and lower schooling attainment (Martorell et al., 2010; Victora et al., 2008; Daniels and Adair, 2004).

Existing indicators: Percentage of children born with low birth weight

Data sources: DHS, MICS, facility reporting system, national household surveys, data from routine surveys

Comments and limitations: A large proportion of infants in developing countries are not weighed at birth. Estimates based on mothers' subjective assessments constitute a significant impediment to the accurate monitoring of LBW.

7   For examples of MICS questionnaires on this topic, see UNICEF, 2013a.

1.3 TARGET: CHILDREN SURVIVE AND DEMONSTRATE AGE-APPROPRIATE DEVELOPMENT AND LEARNING.

Subtarget: Children do not suffer from frequent illness or chronic conditions.

Area of focus: Health

Definition: This target presents a new indicator or composite of indicators. As defined by the HECDI working group, chronic health conditions are those whose duration exceeds 12 months and which impede everyday activities.

Why it matters: This target assesses the disease burden among children. Chronic conditions and infections like diarrhoea, pneumonia, malaria and HIV account for more than 50 per cent of child deaths yet are treatable and preventable (Jukes, 2007). Frequent illness and chronic health conditions may significantly impact children's neurodevelopmental status (Potterton, 2006). Chronic conditions during early childhood influence development in many ways, impeding daily life activities and causing pain or discomfort, abnormal growth and development, and frequent hospitalizations, outpatient visits and medical treatments (Newacheck and Taylor, 1992; Consolini, 2013). Poor health also has psychological consequences and can lead to other problems; for instance, school-aged children might be negatively impacted by school absence and disruptions in relationships with peers (Pinquart and Shen, 2011).

Particular attention should be paid to diarrhoea, pneumonia, malaria and HIV, which are among the primary killers of children in developing countries (UNICEF, n.d.):

▶ Diarrhoea leads to malnutrition, dehydration, stunting and wasting, and can be an important contributor to child mortality. Worldwide diarrhoea has been considered the third leading cause of death for children under 5 years old (WHO and UNICEF, 2005). Long episodes of diarrhoea weaken children's immune systems and make them more vulnerable to other diseases and conditions, including stunting (Fuentes et al., 2006b). Long-term impacts on cognitive development have also been observed; diarrhoea has been associated with impaired school performance, decreased levels of school readiness (Lorntz et al., 2006, Checkley et al., 2008) and poor physical fitness in the pre-school years (Jukes, 2007).

▶ Although it is one of the main causes of death for children, pneumonia has been characterized as 'the forgotten killer of children' because most caregivers do not recognize the signs and thus children are at risk of not receiving appropriate medical care (UN IGME, 2007). Despite the availability of effective interventions to tackle pneumonia, many children are not reached.

▶ Malaria is associated with neurological sequelae including seizures and language and cognitive deficits when it occurs in cerebral or severe forms. Malaria during pregnancy can cause anaemia and interrupt in utero nutritional transmission, which affects the cognitive, physical and neurosensory development of the child (Duffy and Desowitz, 2001). Malaria exposure during childhood impacts educational attainment, leading to school absence and low literacy (Bleakley, 2007; Lucas, 2010). Further, childhood malaria exposure has long-term impacts such as depressed labour productivity and income in adulthood (Bleakley, 2007).

▶ Although mortality rates of children due to HIV have declined over the past decade, HIV prevalence and treatment demand have increased (WHO, 2011a). HIV-infected children who have not received antiretroviral (ARV) therapy tend to achieve lower mental and motor scores, suffer cognitive impairment and risk delaying or missing neurodevelopmental milestones (Lindsey et al., 2007; Smith et al., 2008; McArthur et al., 2005). All of the above indicators pertaining to diarrhoea, malaria and pneumonia should be examined specifically for HIV-infected children as these diseases may yield more serious consequences for children infected with HIV (WHO, 2011a).

Existing indicators: At present, data on some chronic conditions are available, such as the prevalence and incidence of diarrhoea, pneumonia, malaria and HIV. Ideally, future indicators will include other chronic childhood illnesses, such as asthma, as deemed relevant by countries based on their specific conditions and risk factors.

Data sources: WHO, MICS, DHS, AIDS Indicator Survey, routine health information systems

Comments and limitations: To fully define this indicator, additional work is needed in several areas. First, the specific conditions that are likely to affect young children will vary based on country context; to create a useful composite, countries must clarify which conditions should be included. Second, accurate prevalence and incidence data on each condition are required to make a useful composite, and accuracy depends on reliable reporting from parents and/or health-care providers.

1.4 TARGET: CHILDREN SURVIVE AND DEMONSTRATE AGE-APPROPRIATE DEVELOPMENT AND LEARNING.

Subtarget: Children demonstrate age-appropriate development and learning.

Area of focus: Education

Definition: The percentage of children meeting development and learning goals

Why it matters: Child developmental status is at the heart of an early childhood development index, and therefore it is a high priority for all countries to develop and collect data for these indicators over the course of early childhood development.

Existing indicators: At present, many countries and regions have developed approaches to measuring child development:

▶ Early Development Index (EDI). The EDI was developed in Canada as a tool for a population-based, epidemiological approach to child development. The survey contains over 100 questions on children's skills and behaviours, physical health and well-being, social competence, emotional maturity, language and cognitive development, communication skills, and general knowledge. Children's kindergarten teachers fill out the EDI about 4 months into the kindergarten year. The EDI has been used in many countries, both high-income and middle-income. Australia and Canada offer examples of how population-based data on child development can be used to inform community-level and policy action on behalf of young children.

▶ MICS Early Childhood Development Index (ECDI). In MICS4, an ECD index was added, including a set of 10 parent-reported items to assess literacy and numeracy, social–emotional and physical skills, and approaches to learning for children aged 36 to 59 months. For example, parents are asked to report on whether children are able to count, name letters and write their names. The ECDI has now been used in over 60 countries, providing useful information on children's development through a short, efficient household survey.

▶ Neurological development in the first 1,000 days, measured through neurodevelopmental screening. Neurodevelopmental screening refers to examinations of children's language skills, fine and gross motor skills, and social and cognitive abilities, typically used to identify children who may have developmental delays.

Data sources: Teachers, parents, assessment specialists and health-care providers can all be sources of data on children's development and learning. Of the measures described here, teachers are the data source for the EDI questionnaires. The MICS relies on parent reports, and neurodevelopmental screening typically relies on a combination of trained assessors and parent reports.

Comments and limitations: Please see Box 1 in Section 3 for more information on measuring early child development. Also note that to use screening tests most effectively, a system should be in place to provide parents and children with support and treatment if a delay is identified. In the absence of such a system, countries should carefully consider how best to obtain reliable information about children's development and which type of screening tests may be most useful.

1.5 TARGET: CHILDREN SURVIVE AND DEMONSTRATE AGE-APPROPRIATE DEVELOPMENT AND LEARNING.

Subtarget: Children have healthy weight (obesity).

Area of focus: Nutrition

Definition: Obesity is defined by WHO as abnormal or excessive fat accumulation that presents a risk to health.

Why it matters: Obesity in children has been associated with a range of poor health and educational outcomes including effects on mental, developmental and physical health (Halfon et al., 2014). Obesity among young children is a health problem with global significance: 43 million children are defined as 'obese or overweight', with 35 million of them living in the developing world, and an additional 92 million are at risk of being overweight (De Onis et al., 2010). Obesity disproportionately affects disadvantaged children and is increasingly associated with living in poverty even

in developing countries (James et al., 2001). Treatment of malnutrition requires a balance with obesity-prevention, as malnutrition and obesity have been shown to be increasingly co-occurring (Popkin et al., 2012).

Existing indicators:

▶ Percentage of children overweight under age 5 (MICS)

Data sources: MICS, national or subnational household surveys that take anthropometric measurements of children under age 5 (height and weight), nutritional surveys and national nutrition surveillance systems

Comments and limitations: Anthropometric values are compared across individuals or populations in relation to a set of reference values. The choice of the reference population has a significant impact on the proportion of children identified as being undernourished and/or overnourished. Further, well-trained data collectors and specialized equipment for height measurement are needed. Since the late 1970s, WHO has recommended using the NCHS/WHO international reference population for the comparison of child growth data (WHO, 2014b).

1.6 TARGET: CHILDREN SURVIVE AND DEMONSTRATE AGE-APPROPRIATE DEVELOPMENT AND LEARNING.

Subtarget: Children have healthy weight (malnutrition).

Area of focus: Nutrition

Definition: Children under age 5 suffering from stunting who have a height-for-age measurement below the fifth percentile on the WHO reference growth curve (WHO, 2014a). Stunting is a measurement that indicates whether a child has reached his or her potential for height growth.

Why it matters: Stunting arises from the interaction of poor health, inadequate nutrition and parenting issues (such as maternal depression: Black et al., 2009; Surkan et al., 2011), and may be evident before birth as well as throughout childhood. At an aggregate level, stunting indicates environmental causes, as well as malnutrition and poor access to quality food, low access to health services, and low-quality care. Stunting has profound negative effects on future development: poor school performance and poor psychological functioning are both known to arise (Checkley et al., 2008; Walker et al., 2007a).

Existing indicators: Data on stunting are available globally. Both MICS and DHS measure stunting prevalence, defined as the number of children who fall below two standard deviations from the median height-for-age using the WHO growth standard.

Data sources: DHS, MICS, national or subnational household surveys that take anthropometric measurements of children under age 5 (height and weight), nutritional surveys and national nutrition surveillance systems

Comments and limitations: Anthropometric values are compared across individuals or populations in relation to a set of reference values. The choice of the reference population has a significant impact on the proportion of children identified as being undernourished and/or overnourished. Further, well-trained data collectors and specialized equipment for height measurement are needed. Since the late 1970s, WHO has recommended using the NCHS/WHO international reference population for the comparison of child growth data (WHO, 2014b).

Target 2: Home environment

2.1 TARGET: CHILDREN EXPERIENCE COGNITIVELY STIMULATING, EMOTIONALLY SUPPORTIVE HOME ENVIRONMENTS WITH ADEQUATE RESOURCES.

Subtarget: Children have access to improved drinking water and sanitation.

Area of focus: Health

Definition: Availability and use of improved drinking water sources and improved sanitation services by households, using definitions provided by the UNICEF/WHO Joint Monitoring Programme (JMP) for Water Supply and Sanitation, the official mechanism of the UN mandated to monitor progress towards the MDG related to drinking water and sanitation (WHO and UNICEF, 2013).

▶ *Access to safe water:* According to the UNICEF/WHO JMP, 'an improved drinking-water source is defined as one that, by nature of its construction or through active intervention, is protected from outside contamination, in particular from contamination with faecal matter' (WHO and UNICEF, 2013). As definitions of access can vary widely within and among countries and regions, the JMP has created a set of categories for 'improved' and 'unimproved' facilities to analyse the national data on which its trends and estimates are based.

▶ *Access to sanitation:* Sanitation is the lowest-cost technology ensuring hygienic excreta and sullage disposal and a clean and healthful living environment both at home and in the neighbourhood of users. For MDG monitoring, an improved sanitation facility is defined as one that hygienically separates human excreta from human contact (WHO and UNICEF, 2013). Access to basic sanitation includes safety and privacy in the use of these services. Coverage refers to the proportion of people using improved sanitation facilities, including public sewer connections, septic system connections, pour-flush latrines, simple pit latrines and ventilated improved pit latrines.

Why it matters: Lack of access to improved drinking water and sanitation increases the risk of infection by waterborne diseases, such as parasitic worms (Niehaus et al., 2002; Walker et al., 2007b; Lorntz et al., 2006). Parasitic worms have been shown to adversely affect children's school achievement, in addition to increasing school absence. Water can also serve as a vector for environmental contaminants that adversely affect neurological development; for example, there is a positive correlation between waterborne arsenic and lead exposure and children's intellectual development (Wasserman, 2004). Access to clean water and sanitation is one of the most cost-effective ways to prevent or decrease child mortality (UNICEF, 2012c).

Existing indicators:

▶ Access to safe water (DHS)

▶ Access to sanitation (DHS)

Data sources: Estimates on access to drinking water and sanitation originate from data collected by national statistics offices and international survey programmes through nationally representative household surveys and national censuses (see JMP data sources in WHO and UNICEF, 2013).

Comments and limitations: None

2.2 TARGET: CHILDREN EXPERIENCE COGNITIVELY STIMULATING, EMOTIONALLY SUPPORTIVE HOME ENVIRONMENTS WITH ADEQUATE RESOURCES.

Subtarget: Policies for paid leave for parents of newborns in both formal and informal settings

Area of focus: Parent support

Definition: Proportion of coverage provided by policies in terms of both time off from work and financial support provided to mothers and fathers. Two dimensions are important: first, whether the coverage includes job protection for

one parent for a designated period of time (weeks, months or years) at a child's birth or adoption; and second, whether there is provision of direct financial support for one or both parents during all or part of the leave period.

Why it matters: Parental leave is closely related to the well-being of both children and parents. Entitlement to paid leave is negatively correlated with infant mortality rates (Winegarden and Bracy, 1995). In comparison to perinatal or neonatal mortality, post-neonatal mortality and deaths between the first and fifth birthday are more likely to be decreased due to paid leave (Ruhm, 2000). Parental leave also has favourable and possibly cost-effective impacts on paediatric health (Ruhm, 2000). Further, leave supports parents in reconciling family and work demands, with no adverse macroeconomic effects (Earle and Heymann, 2006).

Presently, most countries have established policies regarding parental leave. From a legal point of view, parental leave is not included in any International Labour Organization (ILO) Convention, although parental leave has been covered in ILO recommendations. Two relevant recommendations state that a period of parental leave should be available to either parent after maternity leave, without relinquishing employment or the rights resulting from employment. The duration of this leave period, as well as pay, conditions and distribution of leave between the parents, are not set by the recommendations and thus should be determined at the national level. Recommendations are non-legally binding instruments, although they set out guidelines that can orient national policy and action.

Existing indicators: Presence of paid parental leave

Data sources: Children's Chances and NATLEX

Comments and limitations: None

2.3 TARGET: CHILDREN EXPERIENCE COGNITIVELY STIMULATING, EMOTIONALLY SUPPORTIVE HOME ENVIRONMENTS WITH ADEQUATE RESOURCES.

Subtarget: Parents have access to programmes for parent support and education.

Area of focus: Parent support

Definition: Whether parents have access to programmes designed to support their abilities as parents, by providing emotional support and education on child development

Why it matters: Parents act as children's primary teachers; family environments are among the most reliable predictors of children's development over time (Britto et al., 2013). Programmes including home visiting, parent education and child abuse prevention efforts have been shown to be effective in supporting parents to provide responsive, stimulating care for their children; home visiting in particular has been proven effective across a wide range of contexts.[8] Despite the importance of parenting and the efficacy of support programmes, there are few data available indicating whether access is available, especially among those at risk of social exclusion due to poverty, low levels of education or minority status. Reaching mothers in particular can be an important lever for improving parenting and supporting women.

Existing indicators: There are few indicators available to measure progress towards this subtarget. Information on access to parenting programmes is not consistently collected within countries or globally. SABER-ECD includes a question on the availability of programmes targeting all groups of beneficiaries, which presumably includes parents. Beyond this, there is no information to date on the provision, accessibility or intensity of parenting programmes.

Data sources: There are several potential sources of information on access to parenting programmes: 1) parents themselves can report whether they have participated in these programmes, and if so, for how long; 2) governments can report on whether parenting programmes exist, and if so, in which areas and for which parents; 3) non-governmental organizations (NGOs) that provide services to parents can estimate the number reached; and 4) researchers or evaluators may be able to generate estimates based on the results of studies or evaluation projects.

Comments and limitations: None

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8   E.g. Pakistan's Lady Health Worker Programme (WHO and GHWA, 2008)

2.4 TARGET: CHILDREN EXPERIENCE COGNITIVELY STIMULATING, EMOTIONALLY SUPPORTIVE HOME ENVIRONMENTS WITH ADEQUATE RESOURCES.

Subtarget: Mothers have experienced formal education.

Area of focus: Parent support

Definition: The average number of years that mothers have attended school prior to giving birth for the first time

Why it matters: Maternal education is a robust predictor of parenting quality. Research has shown that there is a negative relationship between child mortality and maternal education, which can act as a protective factor for child health (Streatfield et al., 1990; Ware, 1984). Moreover, some researchers have pointed out that low maternal education is an important determinant of delayed child development both in developed countries, such as Canada (Guttmann et al., 2004), and in developing countries such as Brazil (Barros et al., 2005). Further, studies of the relationship between stimulation and maternal schooling indicates that stimulation has a stronger effect in children of less-educated mothers (Barros et al., 2010).

Existing indicators:

▶ Maternal education levels (MICS)

▶ Average years of education for men and women aged 15 and older (UIS)

Data sources: Mothers' reports through household surveys (MICS) and population estimates, which are not specific to adults who are parents (UIS)

Comments and limitations: None

2.5 TARGET: CHILDREN EXPERIENCE COGNITIVELY STIMULATING, EMOTIONALLY SUPPORTIVE HOME ENVIRONMENTS WITH ADEQUATE RESOURCES.

Subtarget: Mothers experience well-being and the absence of maternal depression.

Area of focus: Parent support

Definition: WHO defines maternal well-being as a 'state of well-being in which a mother can cope effectively with the daily challenges that accompany parenting young children' (Engle et al., 2007).

Why it matters: Maternal mental health is a strong and reliable predictor of child outcomes across countries of all income levels, with proven associations with child growth rates and stunting (Surkan et al., 2011; Parsons et al., 2012) and child social–emotional development, including behaviour problems (Goodman et al., 2011). Maternal mental health affects children's development through both child-rearing attitudes and patterns of interaction between mothers and children (Walker et al., 2007b). Maternal mental health has been identified as critical for achieving desired goals on child mortality, stunting and education, yet mental health is often overlooked or inadequately addressed by health-care systems (e.g. Prince et al., 2007).

Existing indicators: MICS includes two indicators relevant to maternal subjective well-being. Although they are not specific to women who are mothers, data still may be useful in indexing the overall state of well-being among young women.

▶ *Life satisfaction*: Number of women aged 15 to 24 who are very or somewhat satisfied with their family life, friendships, school, current job, health, where they live, how they are treated by others and how they look

▶ *Happiness*: Number of women aged 15 to 24 who are very happy or somewhat happy

Data sources: Mothers' reports through household surveys. Depression can be diagnosed through standardized diagnostic interviews; depressive symptoms can be assessed directly using a questionnaire such as the Edinburgh Postnatal Depression Scale or the WHO Self-Reporting Questionnaire (Surkan et al., 2011).

Comments and limitations: None

2.6 TARGET: CHILDREN EXPERIENCE COGNITIVELY STIMULATING, EMOTIONALLY SUPPORTIVE HOME ENVIRONMENTS WITH ADEQUATE RESOURCES.

Subtarget: Children experience emotionally supportive home environments as defined by the absence of exposure to domestic violence and violent discipline.

Area of focus: Parent support

Definition: Domestic violence refers to physical, emotional or sexual abuse of women by their intimate partners or ex-partners (Heise et al., 1999). Violent discipline refers to children's experience of harsh, excessively punitive punishment, including emotional or physical abuse.

Why it matters: Despite its commonality in many cultures, violent discipline and specifically corporal punishment has been associated with poor mental health outcomes and a decreased tendency for children to internalize moral messages (Gershoff, 2002*a*–*b*). Likewise, exposure to domestic violence is a strong and reliable predictor of child outcomes. Children exposed to domestic violence are more likely to develop behaviour problems than others (e.g. Sternberg et al., 2006), and for pregnant women, domestic violence is associated with preterm births and lower birth weights (Shah and Shah, 2010). Many children exposed to domestic violence are also exposed to physical abuse themselves. Research demonstrates that the prevalence of domestic violence is as high as 71 per cent of women in some parts of the world. Low-level educational attainment is closely related to the risk of exposure to domestic violence (Lansford and Deater-Deckard, 2012).

Existing indicators:

▶ *Attitudes towards domestic violence (MICS)*: Number of women who state that a husband or partner is justified in hitting or beating his wife in at least one of the following circumstances: 1) she goes out without telling him; 2) she neglects the children; 3) she argues with him; 4) she refuses sex with him; 5) she burns the food.

▶ *Violent discipline (MICS)*: Number of children aged 2 to 14 who experience psychological aggression or physical punishment. Psychological aggression refers to the actions of shouting, yelling or screaming at a child, as well as calling a child offensive names such as 'dumb' and 'lazy'. Physical (or corporal) punishment is an action intended to cause physical pain or discomfort (but not injuries). Physical punishment is defined as shaking the child, hitting or slapping him/her on the hand/arm/leg, hitting him/her on the bottom or elsewhere on the body with a hard object, spanking or hitting him/her on the bottom with a bare hand, hitting or slapping him/her on the face, head or ears, or otherwise beating the child.

Data sources: MICS household surveys. WHO has not repeated its 2005 large-scale study of domestic violence. While these data sources provide estimations of exposure to violence within the home, all should be considered proxies, as there are no direct measures available, and responses to survey questions may vary given the sensitivity and possible stigma associated with these topics.

Comments and limitations: None

2.7 TARGET: CHILDREN EXPERIENCE COGNITIVELY STIMULATING, EMOTIONALLY SUPPORTIVE HOME ENVIRONMENTS WITH ADEQUATE RESOURCES.

Subtarget: Children experience frequent cognitive stimulation to support learning and school readiness.

Area of focus: Parent support

Definition: The proportion of children living in households in which an adult has engaged in activities to promote learning and school readiness

Why it matters: Stimulating home environments and adult support are robust predictors of children's social–emotional and cognitive development, school readiness, and learning outcomes (Hamadani et al., 2010; Santos et al., 2008; Evans and English, 2002). The quality of parenting, parent-child interaction and the overall degree of cognitive stimulation in the home environment have a profound influence on young children's development (Walker et al., 2007*b*; Bornstein, 2006; Jukes, 2007). The availability of reading materials, toys, and drawing and art supplies indicates the quality of the home environment as well as parents' interest and sensitivity with respect to children's development (UNESCO, 2007;

Iltus, 2006). In seven causal studies in developing countries on the effects of cognitive stimulation at home, evidence indicated that young children who were raised in stimulating environments – where mothers were taught techniques for educational play and the stimulation of verbal, cognitive and motor skills – had higher cognitive functioning in comparison to those who were not raised in such environments (Walker et al., 2007*b*).

Existing indicators:

▶ *Support for learning (MICS)*: Four or more activities to promote learning and school readiness in the last three days

▶ *Availability of children's books (MICS)*: Number of children under age 5 who have three or more children's books

▶ *Availability of playthings at home (MICS)*: Number of children under age 5 with two or more playthings

Data sources: Household surveys, MICS

Comments and limitations: None

2.8 TARGET: CHILDREN EXPERIENCE COGNITIVELY STIMULATING, EMOTIONALLY SUPPORTIVE HOME ENVIRONMENTS WITH ADEQUATE RESOURCES.

Subtarget: Children experience adequate daily care.

Area of focus: Parent support

Definition: The percentage of children with inadequate daily care, defined as being left either alone or with a sibling younger than 10 years old

Why it matters: This indicator provides information on access to appropriate care for young children. Inadequate care may result when parents lack appropriate parenting skills or face untenable choices between child care and economic survival, due to single-parent status or financial constraints (Heymann, 2006; Ruiz-Casares and Heymann, 2009; Casper and Smith, 2002; Kerrebrock and Lewit, 1999; Lopoo, 2005; Vandell and Shumow, 1999; Vandivere et al., 2003; De Vaus and Millward, 1998). Lack of adequate care, especially when young children are left to look after themselves, may lead to higher exposure to accidents and injuries, increased risky and antisocial behaviour, poorer school performance and negative developmental outcomes (Aizer 2004; Colwell et al., 2001; Galambos and Maggs, 1991; Goyette-Ewing, 2000; Griffin et al., 2000; Kerrebrock and Lewit, 1999; Mott et al., 1999; Mulhall et al., 1996; Posner and Vandell, 1994).

Existing indicators:

▶ *Inadequate care (MICS)*: The percentage of children left alone or in the care of another child under age 10 for more than one hour in the last week

Data sources: MICS

Comments and limitations: None

2.9 TARGET: CHILDREN EXPERIENCE COGNITIVELY STIMULATING, EMOTIONALLY SUPPORTIVE HOME ENVIRONMENTS WITH ADEQUATE RESOURCES.

Subtarget: Children are not living in poverty.

Area of focus: Poverty

Definition: The share of all children living in households with an equivalised disposable income of less than 50 per cent of the median for the total population (OECD, 2011). Children (under 18) are considered as sharing the income earned by other household members. Household income includes earnings, transfers and income from capital, and is measured net of direct taxes and social security contributions.

Efforts to lift families out of poverty refer to government programmes and policies that are income-tested and explicitly intended to support families with children. These programmes often include social benefits such as housing, food or

cash supplements. Conditional cash transfer programmes, which provide benefits in exchange for demonstration of specific behaviours, may also be included in this category.

Why it matters: Poverty is perhaps the most consistent predictor of children's long-term developmental outcomes across a range of areas in high- and low-income countries (e.g., Walker et al., 2007*b*). Children who grow up in poverty face adverse health, educational and social–emotional outcomes over the course of their lives. Policies to lift people out of poverty act as a 'safety net' that supports families and alleviates the negative effects of poverty on young children's development.

Existing indicators:

▶ Family benefits and earnings (US Social Security Administration)

▶ Policies on family income, support and leave (Children's Chances, NATLEX)

▶ Percentage of children living in poverty

Data sources: Children's Chances, OECD Family Database, Institute for Fiscal Studies (IFS), European Union Statistics on Income and Living Conditions, ILO NATLEX database, international data on family poverty and income available through the US Social Security Administration (SSA, n.d.).

Comments and limitations: None

Target 3: Access to quality services

3.1 TARGET: CHILDREN AND FAMILIES HAVE ACCESS TO QUALITY PROGRAMMES AND SERVICES ADDRESSING HEALTH CARE, GOOD NUTRITION, EDUCATION AND SOCIAL PROTECTION.

Subtarget: Country or community monitors and responds as necessary to children's growth and nutritional status.

Area of focus: Nutrition

Definition: Monitoring and responding to growth and nutritional status refers to the extent to which children are regularly monitored and offered appropriate services when needed.

Why it matters: Children's nutritional status is critical for learning and healthy development. The presence of growth monitoring refers to practices in place to identify and treat children who may be at risk of malnourishment or obesity (Rudolph et al., 2012). According to Garner et al. (2000), 'growth monitoring consists of routine measurements to detect abnormal growth, combined with some action when this is detected. It aims to improve nutrition, reduce the risk of death or inadequate nutrition, help educate carers, and lead to early referral for conditions manifest by growth disorders.' Growth monitoring is a commonly used strategy to ensure that children at risk of nutritional disorders are identified and treated.

Existing indicators: None. At present, there are no data available on whether children have access to routine growth monitoring and follow-up treatment. Further work is needed to define and collect the necessary information.

Data sources: None

Comments and limitations: Indicators of growth monitoring are included in HECDI to encourage countries to track and treat children at risk of nutritional deficits. However, some experts have noted that there are drawbacks associated with country-level growth monitoring, specifically in relation to the large-scale implementation of growth monitoring programmes. Attention must be paid when implementing growth monitoring on a large scale to ensure that professionals are appropriately trained (Ashworth et al., 2008).

3.2 TARGET: CHILDREN AND FAMILIES HAVE ACCESS TO QUALITY PROGRAMMES AND SERVICES ADDRESSING HEALTH CARE, GOOD NUTRITION, EDUCATION AND SOCIAL PROTECTION.

Subtarget: Children have access to comprehensive preventive and medical care including well-baby checks, immunizations and responses to emergency needs.

Area of focus: Health

Definition: This target refers to the percentage of children who have access (defined as affordable and available within the context of the child's family and community) to preventive health care and immediate treatment for emergency needs. Not all of the required indicators are available now; relevant indicators that could be used to create a composite are described in greater detail below.

Why it matters: Health care, especially preventive care, is essential for ensuring children's well-being. Access to comprehensive preventive medical care is important for monitoring physical, social and mental health status; preventing disease and disability; and detecting and treating health conditions. Access to preventive care protects children from life-threatening diseases or conditions that may impede their ability to participate in school and learn to their full potential (UNICEF and UNESCO, 2012).

Indicators of health-care coverage may be useful in gauging access to preventive care. A shortage of health-care providers is linked to higher mortality rates, especially of newborns, young children and pregnant women (UN IGME, 2013). The availability of health workers is a strong indicator of the health system resources in a country. Access to basic early childhood health interventions is crucial for children's health, development and social inclusion. Child mortality rates decline with high levels of access to preventive health care (WHO and UNICEF, 2012).

Existing indicators: To gauge access to preventive care, additional information on children's access to routine health-care providers is needed. The three indicators below may be useful in quantifying this target at present:

▶ *Immunization rates*: The proportion of children who receive the recommended doses of vaccines according to WHO standards.[9]

▶ *Health-care providers per 10,000 population*: WHO has established a threshold of 23 doctors, nurses and midwives per 10,000 population in order to deliver necessary maternal and child services. According to WHO, 'health-care providers' are defined as doctors, nurses, midwives, pharmacists and community health workers, as well as health management and support workers.

▶ *Level of access to essential ECD health interventions*: SABER-ECD defines 'access to essential ECD health interventions' using the following key MICS indicators: the rate of births attended by skilled attendants, the percentage of pregnant women who benefit from at least four antenatal visits, and the percentage of HIV-positive pregnant women and HIV-exposed infants who receive ARV drugs for the prevention of mother-to-child transmission of HIV (World Bank, 2013).

Data sources: Immunization history is determined by looking at immunization records, asking the child's caretaker or both. The three main household survey sources are WHO's Expanded Programme on Immunization (EPI) cluster survey (WHO, 2011*b*), MICS (UNICEF, 2013*a*), and DHS (ICF International, n.d.). Administrative data based on reports from service providers (e.g. health centre staff, vaccination teams and private physicians) and surveys with items on children's vaccination history can also be used to estimate immunization coverage. The number of health-care providers per 10,000 population is estimated by WHO.

Comments and limitations: None

3.3 TARGET: CHILDREN AND FAMILIES HAVE ACCESS TO QUALITY PROGRAMMES AND SERVICES ADDRESSING HEALTH CARE, GOOD NUTRITION, EDUCATION AND SOCIAL PROTECTION.

Subtarget: Mothers have access to pregnancy and birth services.

Area of focus: Health

Definition: This target addresses the extent to which mothers receive adequate prenatal and perinatal services. At present, 'adequate' has been defined as at least four prenatal visits and access to skilled birth attendants. This definition may shift in response to emerging research on the prenatal and perinatal experiences that are critical for maternal and child health.

Why it matters: Receiving at least four visits of prenatal care and having access to skilled birth attendants are extremely important for preventing maternal mortality, preterm births and low birth weight. Prenatal care increases the odds of identifying and treating conditions with implications for maternal health and foetal development, such as malnutrition, malaria, sexually transmitted infections and HIV/AIDS (UNICEF, 2008). Most maternal deaths occur during childbirth and the immediate postnatal period, as do most stillbirths and newborn deaths (WHO and UNICEF, 2010; World Bank, 2013). Child development is severely impacted in the short and long terms by maternal death. Universal provision of free and high-quality maternal and child health services ensures access, as the cost or location of services can impede accessibility by families and pregnant women (World Bank, 2013).

Existing indicators:

▶ *Percentage of children born with skilled birth attendants*: Skilled birth attendants have been shown to reduce the risk of maternal mortality and morbidity occurring from complications either during delivery or in the immediate post-partum period, such as haemorrhage, infections, complications of abortion, eclampsia or related hypertensive disorders, and obstructed labour (UNICEF, 2008).

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9   WHO recommends that all children receive one dose of bacillus Calmette–Guérin vaccine (BCG), three doses of diphtheria–tetanus–pertussis vaccine (DTP), three doses of either oral polio vaccine (OPV) or inactivated polio vaccine (IPV), three doses of hepatitis B vaccine, and one dose of a measles virus-containing vaccine (MVCV), either anti-measles alone or in combination with other antigens. WHO also recommends three doses of vaccine against infection with Haemophilus influenzae type b (Hib) (Burton et al., 2009).

▶ *Percentage of mothers with at least four antenatal visits*: Prenatal care coverage is an indicator of access and use of health care during pregnancy.

Data sources: Mothers' reports through household surveys, such as DHS, MICS, and the Center for Disease Control's (CDC) Reproductive Health Surveys. The respondent is asked about each live birth (for a period up to 5 years prior the interview) and who helped them during delivery (UN IGME, 2012).

Comments and limitations: Mothers may not always be able to report accurately, especially if asked to report on births that took place several years earlier. The respondent may not always know the qualifications of the attendant at delivery or the available equipment and working environment. Respondents who deliver outside health facilities may not be captured by health facility data provided by countries (UN IGME, 2012).

3.4 TARGET: CHILDREN AND FAMILIES HAVE ACCESS TO QUALITY PROGRAMMES AND SERVICES ADDRESSING HEALTH CARE, GOOD NUTRITION, EDUCATION AND SOCIAL PROTECTION.

Subtarget: Children have access to quality ECCE that is appropriate and affordable, from birth to school entry.

Area of focus: Education

Definition: ECCE programmes offer a structured and purposeful set of learning activities that are developmentally appropriate and designed to encourage young children's social– emotional, cognitive and physical development, either in a formal institution – pre-primary or International Standard Classification of Education (ISCED) level 0 – or as part of a non-formal child development setting. These settings can either supplement time with mothers or be used as child care when parents are not available. Examples of ECCE programmes and services include childcare centres, family day care, pre-schools, kindergartens, parenting education, community-based child development services and home visits. For ECCE to support children and families, it must meet their needs by being accessible and affordable, appropriate and in line with families' expectations, and culturally acceptable.

Why it matters: Research has indicated that quality ECCE programmes have a considerable positive impact on learning, social–emotional development and cognitive skills (Engle et al., 2007, 2011; UNESCO, 2011). ECCE can be delivered in a variety of settings such as schools, nursery schools, childcare centres and private homes. Quality ECCE across all types of settings is essential for promoting development and ensuring children's needs are met (Britto et al., 2011). Through participation in ECCE programmes children can develop not only school readiness but also self-regulation and learning-related skills, such as the ability to express thoughts, adapt behaviours to situational demands, control impulsivity, show curiosity and maintain concentration among others (Rao et al., 2012; Melhuish, 2012). Moreover, evidence has shown that children with prior ECCE experience are more likely to complete primary education, avoid repeating a grade and, in the long term, graduate from secondary school (UNESCO and UNICEF, 2012; UNESCO, 2007). ECCE experience is crucial for children from vulnerable groups as it may reduce the impact of negative early experiences. ECCE also decreases the educational gap between children from disadvantaged and advantaged families, and monitoring ECCE can highlight unequal access among different regions and populations (Melhuish, 2012). Finally, ECCE services and programmes not only contribute to the social and educational development of the child but also support working parents and mothers in particular.

The gross enrolment rate in pre-primary education programmes is one of the two ECD indicators for the Convention on the Rights of the Child and the international agreements made at the World Conference on Education For All (WCEFA Inter-agency Commission, 1990).

Existing indicators:

Access:

▶ Children entering the first grade with ECCE experience (UIS): The number of new entrants to the first grade of primary school who have attended at least 200 hours of organized ECCE or the equivalent, expressed as a percentage of the total number of new entrants to the first grade.

▶ Gross pre-primary enrolment rates (UIS): Government reports of enrolment in PPE; also available disaggregated by gender.

▶ Children with access to an ECCE programme (MICS): Parent reports of whether a child between the ages of 3 and 5 has attended a pre-primary programme.

▶ Children attending first grade of primary school who attended PPE during the last school year (MICS): Parent reports of whether a child experienced PPE.

For countries participating in SABER, information on whether available ECCE programmes target all groups of beneficiaries and the extent to which existing ECD programmes adequately meet the needs of the population are also available. Finally, the number of children who are cared for by children under the age of 10 is another indicator of whether ECCE is available.

Quality:

▶ Percentage of trained teachers in pre-primary education (UIS)

▶ Teacher–child ratio in pre-primary education (UIS): For children attending pre-school, certified teacher-to-child ratios are calculated by dividing the number of full-time equivalent children enrolled in pre-school programmes by the number of full-time equivalent teachers at that level.

▶ Grade 1 repetition

Proposed indicators for country-level tracking of quality: Indicators assessing quality are a high priority to develop in the future. The proposed indicators focus on assessing the extent to which countries have begun the process of building a system to ensure quality through regular monitoring and evaluation, rather than attempting to generate one definition of quality. The indicators listed below are not presently collected and therefore should be tested and refined for usefulness and applicability. While many quality measures exist, countries should plan to adapt existing measures and/ or ensure that existing measures adequately reflect their goals for child development.

▶ A definition of ECCE quality has been developed and reflects the viewpoints of multiple stakeholders

▶ A measure of quality has been developed and validated, ideally addressing: the nature and tone of interactions between ECCE service providers, parents and children; child safety; space and provision of materials; and reliance on curricula

▶ Regular observational monitoring of ECCE services takes place, with results shared for improvement purposes

▶ ECCE programmes receive support to improve quality

▶ Services encourage equity by supporting mother-tongue language development, addressing children's holistic development, and actively engaging community members and parents

▶ Percentage of ECCE programmes monitored annually for quality

▶ Percentage of ECCE programmes judged 'high quality' according to the country's quality definition and monitoring results

UNESCO plans to release a paper on addressing quality in pre-primary ECCE settings, which will serve as a guide for indicator development.

Data sources: MICS, government reports to UIS, annual pre-school censuses

Comments and limitations: Data regarding ECCE access are not available in several countries. In countries where they are available, existing indicators typically focus on formal pre-primary programmes and therefore may underestimate access to community-based or informal ECCE. Also, there are limited data on public or private programmes for children from birth to age 3. Finally, as noted above, there are currently few if any reliable indicators of quality, especially for programmes outside of formal pre-primary education.

Target 4: Children's rights

Subtarget: Country and/or state provides legal guarantee of children's rights regardless of religion, race, national origin, gender or disabilities.

Area of focus: Equity and social protection

Definition: This indicator provides information on a country's legal provisions for the protection of children's rights in constitutions and laws. These legal provisions concern the respect, protection, fulfilment and promotion of children's rights, irrespective of race; gender; language; religion; political beliefs or other opinions; national, ethnic or social origin; property ownership; disability; birth status; or any other attribute related to the child, parents or legal guardians.

Why it matters: Indicators derived from international law provisions serve as tools in evaluating a country's constitutional and legislative framework to measure the extent to which child rights are respected, protected, fulfilled and promoted. These indicators are particularly helpful in developing the capacity for monitoring economic, social and cultural rights and evaluating the performance of countries in implementing these rights (Chapman, 2007). Protection of child rights is especially important for children at risk of social exclusion.

At present the HECDI working group recommends focusing on birth registration and the receipt of birth certificates as indicators of the protection of children's rights. Birth registration is the official recording of a child's birth by authorities, which establishes the existence of the child under law and provides the foundation for safeguarding the child's civil, political, economic, social and cultural rights (Arkadas-Thibert, 2012). Birth registration is the first step towards social protection, as it enables a child to claim the rights afforded to him or her under the country's legal framework. An individual without birth registration is vulnerable to denial of citizenship rights, health care and education. Lack of birth registration may impede the ability to exercise political rights in adulthood, such as voting, getting married, acquiring a passport or opening a bank account (Arkadas-Thibert, 2012). The UN Convention on the Rights of the Child recognizes birth registration as a fundamental human right and the foundation for the fulfilment of other rights of the child. It plays a key role in the determination of refugee status, family reunification and ensuring humanitarian assistance (UNICEF, 2010). Article 7 of the CRC establishes that each child 'shall be registered immediately after birth and shall have the right from birth to a name, [and] the right to acquire a nationality'. The International Covenant on Civil and Political Rights (ICCPR) also establishes that 'every child shall be registered immediately after birth and shall have a name' and that each child 'has the right to acquire a nationality'. Although birth registration can be achieved in a variety of ways, typically it is facilitated by the hospital where the child is born or by the community health-care worker present at the birth. If neither of these cases apply, the parents are expected to take their child to the local government office for registration as soon as possible after the birth (Todres, 2003). Registration also helps provide accurate counts of children at birth, which are an important component of ensuring high-quality statistical data on population, children and families. Obtaining accurate population statistics is essential for any government in policy planning and development, as well as in delivering social services and ensuring that adequate resources and budgets are made available to address the needs of the population (Todres, 2003).

Existing indicators:

▶ Percentage of children registered at birth, as an indication of the recognition of the child's rights to be cared for by his/her parents, benefit from public services and experience protection through a country's legal provisions

▶ Percentage of children with a birth certificate

For a more comprehensive approach that goes beyond birth registration, indicators for determining the extent to which countries have fully developed and implemented plans for upholding the CRC are available. The Human Early Learning Partnership (HELP) has developed a set of early childhood rights indicators to globally monitor the implementation of the CRC and General Comments 7 and 13 in particular (HELP, 2014).

Data sources: The main sources of data for each proposed indicator are official government documents such as a country's constitution, laws and policies. Other data sources are the Universal Periodic Review of the UN Office of the

High Commissioner for Human Rights (2012*b*); documentation from the Committee on the Rights of the Child Sessions and the Committee on Economic, Social and Cultural Rights Sessions, including National Reports and Concluding Observations (UN OHCHR, 2012*a*); and UNESCO's Right to Education Database (UNESCO, 2013).

Comments and limitations: Official government documents require caution when using them as a research source, as there can be significant gaps between legal frameworks and their implementation. Another limitation is a government's discretionary power to actually adopt international legally binding provisions or recommendations. Moreover, obstacles have been observed in countries where it is not always possible to protect human rights violations (especially economic, social and cultural rights), even when such rights are formally acknowledged and translated into domestic law (Viljoen, 2012). The 'vagueness' of the core content and justiciability of human rights is still a limitation (Langford, 2009).

There are also several issues that may impede the accuracy of birth registration information. In many countries the estimates of the percentage of births registered are approximate because civil registries may not always be available, especially in rural areas. Children born at home are also at risk of failing to be registered. In some countries, a possible reason for non-registration is a general lack of awareness among parents and guardians of the importance of birth registration and certificates for their child's future (UNICEF, 2013*b*).

Conclusion

Developing and using indicators relevant to early childhood development is a dynamic process that requires input from policy-makers, researchers, practitioners and others involved in planning, provisioning and monitoring early childhood care and education around the world. Though still a work in progress, the HECDI Framework can be used immediately by governments to begin collecting or compiling data, assessing gaps in information, developing and prioritizing indicators based on country contexts, and planning for the implementation of a holistic early childhood development system through inter-sectoral cooperation. With the 2015 target date for the Millennium Development Goals and the Education for All goals fast approaching, HECDI can help countries take stock of their progress towards eradicating extreme poverty and hunger; reducing child mortality; improving maternal health; combating HIV/AIDS, malaria and other diseases; expanding early childhood education; and other goals crucial to supporting young children's development.

To successfully build HECDI, governments will need to commit to collecting data regularly and reliably and contributing to new indicator development. While the initial costs of this process may be daunting for some countries, the potential benefits are immense. Investment in early childhood development is an investment in equity. The HECDI Framework encourages collaborative, integrated and immediate action by policy-makers, practitioners and international development partners to support young children's development. It is only through such action that a child's right to healthy development can be ensured.

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