Food and nutrition security for the preschool child: Enhancing early childhood development

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Early childhood development and nutrition are intrinsically connected. In this chapter, we explore the factors that either support or hinder health, growth and neurodevelopment during the preschool years. We show how the health and development of many young children are compromised by poverty and malnutrition and how without intervention this is likely to continue into adulthood. Early childhood development (ECD) programmes provide an opportunity for intervention to improve the nutrition of young children, in addition to social protection and healthcare services. These support systems for families with young children need to be strengthened to level the playing fields and ensure that all South Africa's children can reach their full potential.

In this chapter, we examine the following questions:

- Why invest in young children's nutrition, health and development?
- What is the nutritional status of young children in South Africa?
- How do children's living conditions impact their nutritional status?
- What are the key interventions to promote optimal nutrition in young children?
- How can programmes that support optimal nutrition be strengthened?

Why invest in young children's nutrition, health and development?

The first 1,000 days of life (from conception to the child's second birthday) lay the foundation for optimum health, growth and neurodevelopment. This time of rapid brain growth and development is the period of life with the "greatest developmental plasticity where the infant's developing body and brain are particularly sensitive to their environment."[1] If this developmental period is neglected, a significant window of opportunity may be lost for setting in place the building blocks for human development.

Emerging evidence on the developmental origins of health and disease indicates how exposure to strong, frequent or prolonged adversity in the early years such as poverty, malnutrition, violence or neglect can – in the absence of responsive care and support – generate "toxic stress". This over-activation of the body's stress response weakens the immune system and architecture of the developing brain and can lead to lifelong problems in learning, behaviour and physical and mental health. Children living in poor households are more likely to experience multiple forms of adversity.

Poor nutrition is particularly detrimental for long-term physical growth and development, as stunted growth during this period is associated with later cognitive deficits and academic underachievement. Globally, millions of children under the age of five are not reaching their full potential due to, amongst other things, poor nutrition[2] and a lack of learning opportunities[3]. Similarly, in South Africa, children's ability to thrive is threatened by poverty, violence, malnutrition and unhealthy living conditions that compromise caregivers' physical and mental health, and their capacity to care for young children.

To address these challenges, children and their caregivers need a range of inputs and support during this critical stage of development, including good health care and adequate nutrition, a stimulating and safe environment, and emotional support and care. These elements together are known as nurturing care. During the first 1,000 days, the caregiving relationship is of utmost importance, as caregivers are the primary providers of nurturing care and help protect children from adversity.

Early childhood (2 – 5 years) is a critical time for further development, building on the basic architecture established during the first thousand days. Yet poverty, violence, household food insecurity and malnutrition continue to compromise health and development during the preschool years. Thus, continuity of care and support beyond the first 1,000 days is critical. This includes positive social support for caregivers, adequate nutrition, a healthy environment and access to childcare, early learning and healthcare services.

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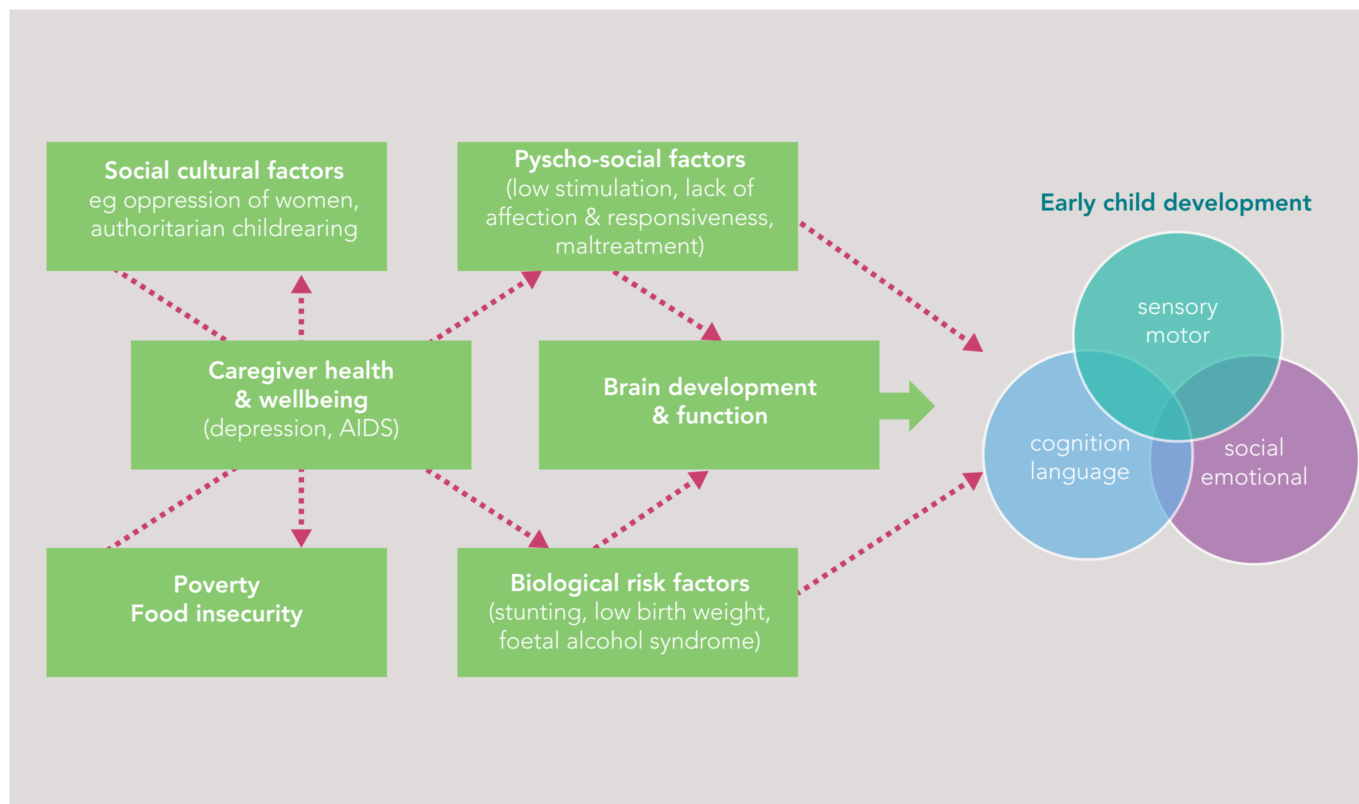
Figure 18: Risk factors affecting early childhood development



Adapted from: Walker SP, Wachs TD, Meeks Gardner J, Lozoff B, Wasserman GA & Pollitt A (2007) Child development: Risk factors for adverse outcomes in developing countries. The Lancet, 369: 145-157. In: Dawes A, Biersteker L & Hendricks L (2012) Towards Integrated Early Childhood Development: An Evaluation of the Sobambisana Initiative. Cape Town: Ilifa Labantwana.

Improving nutrition during early childhood in developing country contexts is a long-term economic investment in human capital. The positive relationships between nutritional interventions and cognitive development in the early years, and economic productivity in adulthood, is well documented.[4, 5] Good nutrition is necessary for optimal cognitive functioning, as well-nourished young children are better able to actively and attentively engage with their surroundings, a process that contributes to learning and development.

This growing evidence base informed the World Health Organization (WHO) and partners' development of the Nurturing Care Framework for Early Childhood Development,[6] which emphasises the importance of the first 1,000 days of life as a sensitive period of development, and the central role of parents and caregivers in providing nurturing care. The framework promotes an integrated, whole-of-government and whole-of-society approach to creating an enabling environment to support families in providing nurturing care to young children.

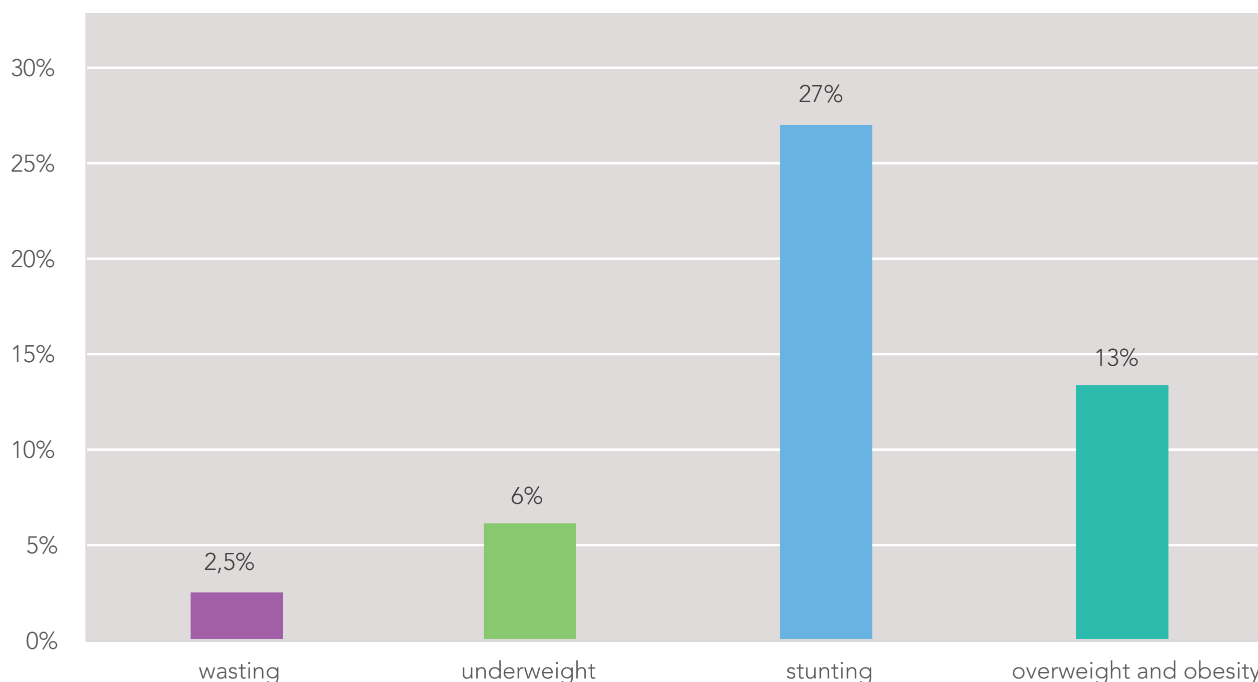
The WHO Guidelines for Improving Early Childhood Development, issued in 2020, provide global, evidence-informed recommendations for improving young children's developmental outcomes.[7] This includes an emphasis on responsive caregiving, the promotion of early learning, support for maternal mental health and the integration of caregiving and nutrition interventions. The Guideline Development Group evaluated evidence from 18 studies in lower- and middle-income countries and found that nutrition interventions on their own do not appear to have an impact on early childhood development. Yet, interventions that combine nutrition and responsive caregiving were found to benefit children's cognitive, language and motor development, and the impacts were greater when targeting malnourished children.

Responsive feeding and play are also critical elements in rehabilitating malnourished children. Adequate nutrition depends on responsive feeding as mothers and caregivers need to be actively engaged and in tune with their infants to recognise and respond to signs of hunger.

What is the growth and nutritional status of young children in South Africa?

Previous chapters in this issue of the *Child Gauge* have highlighted the importance of maternal nutrition and infant and young child feeding in building a strong foundation and

Figure 19: Anthropometric status of children under five, 2016



Source: National Department of Health, Statistics South Africa, South African Medical Research Council, ICF. South Africa Demographic and Health Survey 2016. Pretoria, South Africa and Rockville, Maryland, USA: NDoH, Stats SA, SAMRC and ICF; 2016.

setting the trajectory for children's optimal health, growth and development. For example:

- The high prevalence of low birth weight (15%)[8] is of concern as it increases the risk of undernutrition and childhood illnesses such as diarrhoea and pneumonia. But even children with a normal birthweight may become undernourished if they experience frequent infection or do not have access to an adequate dietary intake. Therefore, it is of concern that exclusive breastfeeding rates are low (32%) during the first six months of life, and only 23% of children aged 6 – 23 months have a minimum acceptable diet.[8]
- South Africa has made some progress with reductions in child hunger (down from 30% in 2002 to 11% in 2018)[9] and wasting – a sign of severe acute malnutrition and a key driver of under-five mortality – which affected 2.5% of children under-five in 2016[8].
- Stunting is a sign of chronic malnutrition and rates have remained unacceptably high for the past 20 years, affecting one in four young children (27%)[8]. Stunting not only affects children's physical growth, but it also impairs their cognitive development and ability to learn, with long-term consequences. Stunting rates rise from 8 months old and peak at 40% amongst children 18 – 27 months old,[8] suggesting that complementary feeding diets are inadequate.
- Young children also experience 'hidden hunger' with deficiencies in essential micronutrients impairing their immunity and cognitive development: 44% of children under five are deficient in vitamin A (44%),[10] and deficiencies of zinc (45%), iodine (15%) and iron (10%)[11] are high amongst children 1 – 9 years old.
- At the same time, overweight and obesity are increasing in young children and affected 13.3% of children under five in 2016.[8] This is more than double the global prevalence of 5.9%,[12] and overweight and obesity rates increase dramatically across the life course.

A double burden of under- and overnutrition is already apparent in early childhood as illustrated in Figure 19 and it predisposes children to obesity and non-communicable diseases in adolescence and adulthood. Therefore it is vital to intervene early to address these deficits and establish a solid foundation for health and development.

How do children's living conditions impact their nutritional status?

In 2018, there were just over seven million children under six years living in South Africa.[13] Young children's nutritional status continues to be circumscribed by poverty and inequality, with children in the poorest 20% of households three times more likely to be stunted than those in the richest 20%.[8]

Case 15: Strengthening the delivery platforms for children with acute malnutrition

Mariame Sylla and Gilbert Tshitaudzi[i]

Wasting or severe acute malnutrition (SAM) remains a significant underlying cause of child mortality in South Africa, being associated with one-quarter of all child in-hospital deaths.[60] While prevalence is low at 2.5%, mortality rates in children with SAM are nine times higher than those in well-nourished children.[61] For much of the past few years, provincial efforts to address acute malnutrition have primarily focused on providing treatment for severely malnourished children in healthcare facilities. The District Health Information System routine data indicates that the national severe acute malnutrition (SAM) case fatality rate (CFR) has declined steadily from 19.3% in 2009/10 to 7.7% in 2019/20. This varies amongst districts and facilities, with some of these still experiencing a CFR of more than 20%. Yet, in 2019, just over 11,000 children were admitted for treatment for SAM out of the estimated national burden of 151,798 children.[62] The proportion of SAM children accessing treatment remains unacceptably low due to missed opportunities in identifying children with SAM at community-level.

It is therefore critical to intensify active case finding and to recognize and treat children with acute malnutrition before they become severely wasted. Many countries have decentralized the diagnosis of acute malnutrition from a strictly hospital-based approach to the current model of outpatient care for children with uncomplicated SAM, and inpatient care for children presenting with complications or failing to respond to treatment. Yet, in South Africa, the outpatient care model has not been fully realized due to the hospicentric healthcare system, in which all acute malnourished children are treated in a hospital.

Preventing acute malnutrition generally requires that children are born to healthy, well-nourished mothers who receive appropriate antenatal care and live in households with access to adequate food, potable water, safe sanitation, good hygiene and care practices and quality primary health care. It is also vital to strengthen early detection of growth faltering and acute malnutrition. It has been shown that identification of children at risk of acute malnutrition at a community level can be performed by using low-literacy and low-cost mid upper arm circumference (MUAC) tape, which can be performed by minimally trained personnel such as community health workers (CHWs) and even mothers and caregivers.

The Family Mid Upper Arm Circumference (MUAC) approach trains mothers and other caregivers to identify early signs of malnutrition in their children using a simple to use MUAC tape.[63] The family MUAC approach puts mothers, caregivers and family members at the centre of wasting screening, acknowledging that families are in the best position to detect wasting early as well as other danger signs. Involving mothers in screening their children and checking for edema and other danger signs is a key step in increasing access to care for children in any area where SAM poses a high risk of death or illness and can lead to a reduction in costs. Given this challenge at the community level, various countries have started to implement and scale-up the family MUAC approach, also known as MUAC for mothers or Mother-MUAC.[63,64] An ongoing pilot project in selected districts in South Africa will shed some light on how this approach can improve coverage and active case finding of children at community level for prevention, early identification, referral and treatment of childhood illnesses, including acute malnutrition.

Improving quality of care for children in need of SAM treatment is critical. A key recommendation is to make treatment of SAM a routine part of primary and community health care, by leveraging and integrating into existing platforms at facility and community level. This will require prioritization of funding for SAM treatment. Making the treatment of SAM routinely available and accessible will require targeted actions across several components of the health system, including healthcare workers, financing, governance and service delivery. It will also require modifications to ensure that health services treat children with SAM until they achieve full recovery from the condition, and that key commodities (e.g. Ready to Use Therapeutic Food) are routinely available and managed as part of the essential medicines list. Additional complementary action will be needed to increase caregivers' capacity to seek care and offer those living in hard-to-reach areas equitable access to the care they need.

i UNICEF South Africa

Yet 25 years after apartheid, South Africa remains one of the most unequal countries in the world. Nearly 60% of young children live below the upper bound poverty line (with a per capita income less than R1,183 per month), and 33% live below the food poverty line of R547, a more extreme form of poverty with insufficient income to meet a child's nutritional needs.[14] COVID-19 has exposed and intensified inequalities, with unemployment rising sharply due to lockdown. Hunger and malnutrition are projected to increase during the subsequent economic recession, with young children being especially vulnerable.

Poverty is multidimensional, and children in poor households are likely to experience multiple forms of deprivation that are mutually reinforcing. Thirty percent of young children live in households without safe and adequate water, 23% without adequate sanitation and 11% without electricity for heating and cooking,[15] compromising both hand and food hygiene and increasing the risk of infection. One in ten young children still live in informal housing, and one in five live in overcrowded households.[15] These poor living conditions are further compounded by reduced access to services, with 20% of young children travelling more than 30 minutes to reach a healthcare facility[16]. In addition, poor households seldom have access to learning resources such as reading material, and adults' functional literacy rates are relatively low.

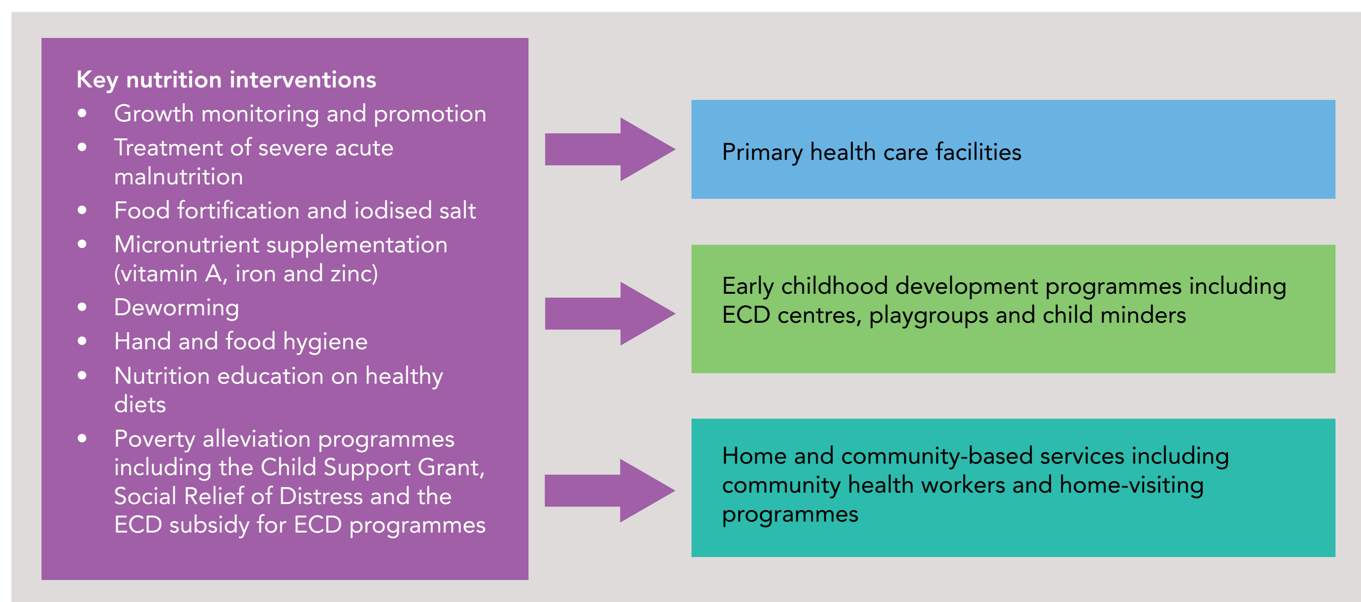
It is, therefore, not surprising that a study assessing children attending 10 different early learning programmes in six provinces found that only 29% of children (4 – 6 years old) were developmentally on track in 2018. Key gaps included cognitive and executive functioning (the ability to plan, focus attention, remember instructions and control impulses) together with early literacy, numeracy, fine motor control and visual-motor integration.[17] Taller children (with higher height-for-age Z-scores) performed better on these early learning outcome measures than stunted children,[17] reinforcing the importance of investing early in nutrition to support early learning and development.

What are the key interventions and platforms to promote optimal nutrition in young children?

The 2015 National Integrated Early Childhood Development (NIECD) Policy[18] outlines the South African government's commitment to providing a comprehensive, universally available and equitable ECD service that supports children from conception until the year before they enter formal schooling. It defines an essential package of ECD services to promote children's physical, cognitive, emotional and social development by providing maternal and child health services, nutritional support, support for primary caregivers, social services and protection, and early learning programmes.

The NIECD Policy has a strong focus on nutrition and calls for the review and strengthening of a national food and nutrition strategy for children under five as a key priority to ensure the delivery of a comprehensive package of food and nutrition support, and improve the nutrition, health and development of young children.[18] This strategy requires a coordinated response across different sectors to ensure:

Figure 20: Key nutrition interventions and delivery platforms to reach young children



- The delivery of essential nutrition and healthcare services;
- The establishment of norms, standards, menus and curricula for ECD practitioners to promote the provision of nutritionally balanced food through ECD programmes;
- The development of national norms and standards for hygiene and food safety, and improved access to environmental health services including water, sanitation and refuse removal;
- A food and nutrition communication and education campaign to prevent all forms of malnutrition;
- The establishment of food gardens in homes, communities and ECD centres; and
- Improved household food security by stabilising food prices and increasing access to income-generating projects and social grants.

In other words, a range of nutrition-specific and nutrition-sensitive interventions are needed to promote optimal nutrition during early childhood and to prevent and respond timeously to signs of malnutrition (Figure 20).

Potential delivery channels for these interventions include facility-based services (such as primary healthcare clinics and ECD centres) and community-based services that reach out to children and families in their homes. Community-based services are better able to support the most at-risk families who cannot access facilities or afford to pay for childcare.

The review that follows focuses on the potential of health care services, ECD programmes and social protection programmes to enhance the nutrition and food security of young children and identifies current gaps and opportunities for systems strengthening.

Healthcare services

The NIECD Policy identifies the Ministry of Health as the lead department for providing a package of services to promote health, nutrition and development during antenatal care, immunisation and well-baby visits during the first 1,000 days of life. This focus on nurturing care marks a paradigm shift, from an earlier focus on child survival to support for children's optimal health, growth and development.[19] It also requires the reorientation of health workers to play a more proactive role in supporting children's caregivers and families through the national under-five Side-by-Side Campaign.

The Road to Health Book (RTHB) is used as the central tool to deliver the full package of services to children under five and to guide conversations between health workers and children's parents and caregivers. The booklet focuses on five pillars: nutrition, love, protection, health care, and extra care.[20] It promotes exclusive breastfeeding, encourages counselling of mothers on appropriate and responsive complementary feeding and monitors children's growth to identify and respond to early signs of under- or overnutrition. Health workers are encouraged to use the booklet to support caregivers to love, play and talk to children to stimulate healthy development, and to screen children to identify and respond to developmental delays. It provides a record of children's medical treatment and guides the provision of vitamin A supplements, deworming and immunisation to strengthen children's immunity and prevent common childhood illnesses. Health workers are also encouraged to identify children in need of extra care such as children with disabilities, long-term health conditions and those exposed to poverty, violence or neglect, and to refer them for additional services and support, including social grants.

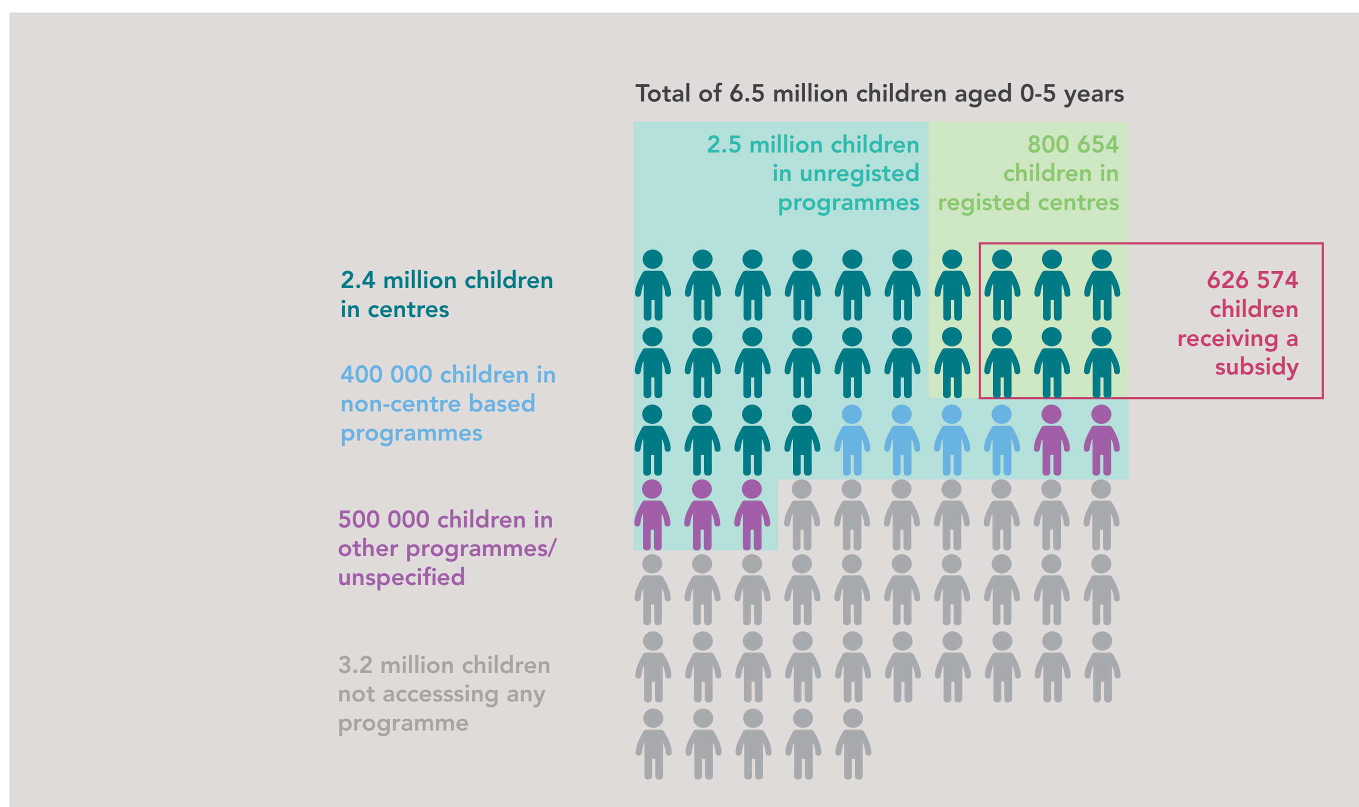
Facility-based care is convenient and desirable to ensure young children have access to quality and responsive health care. Yet 20% of children under five live more than 30 minutes away from a healthcare facility.[16] Furthermore, due to the expanded immunisation programme schedule requiring only two additional visits between 18 months and 12 years, attendance in health facilities drops significantly. Therefore, facility-based care needs to be complemented with outreach services through community-based health services, ECD programmes and home-visiting programmes. (see Case 16)

Dietitians, health promotion officers, occupational therapists and community health workers form part of primary health care outreach teams to screen, identify and support children at risk of malnutrition, developmental delays and disease. Key health and nutrition interventions such as immunisation, nutrition supplementation and health education are provided on-site. Environmental health practitioners also provide essential support services to ECD programmes to ensure compliance with food, hygiene and safety standards. Relationships between ECD programmes and health services can help increase access to health and nutrition services. Yet, the numbers and distribution of community health workers, environmental health practitioners, nutrition and allied health professionals, and ECD programmes remains limited. Greater investment is needed to take these community-based services to scale.

Early childhood development programmes

ECD programmes provide a range of services and support to young children or their caregivers to promote early childhood development. These programmes can be offered through ECD centres and other facilities, as well as non-centre-based programmes such as playgroups, toy libraries, child-minding

Figure 21: Access to early childhood development programmes for children (0 – 5 years)



Note: This excludes five-year-olds attending Grade R, which marks the start of formal schooling.
Source: Ilifa Labantwana, 2020.
Data sources: Statistics South Africa (2019) *General Household Survey 2018.* Pretoria: Stats SA.
National Department of Social Development (2020) *Social Development sets up workstreams to conduct risk assessment and state of readiness for the early childhood development ECD centres.* Media Statement. 4 June 2020. Accessed 4 December 2020: https://www.dsd.gov.za/index.php/latest-news/21-latest-news/183-social-development-sets-up-workstreams-to-conduct-risk-assessment-and-state-of-readiness-for-the-early-childhood-development-ecd-centres

services and home visiting programmes. Of the seven million children aged 0 – 5 years old, 3.3 million children are accessing some kind of early learning programme.[21] Older children are more likely to attend an ECD centre, with 69% of 3 – 5-year-olds attending a learning programme or Grade R, while 70% of 0 – 2-year-olds are cared for at home. ECD programmes, therefore, provide a useful platform for delivering services and support to young children at a time when they are no longer attending clinics regularly, while home- and community-based programmes are needed to reach out to younger children and their caregivers in their homes.

ECD learning programmes offer multiple benefits. They stimulate early learning, provide affordable childcare that enables primary caregivers to work or seek employment, and, for those that offer meals, they provide a critical contribution to children's daily nutrition intake.

The ECD subsidy

The Department of Social Development (DSD) provides a R15[iv] per-child per-day subsidy to support poor children attending registered ECD centres. The subsidy is intended to ensure more equitable access to ECD programmes and to help ECD centres provide nutritious food to children, pay salaries and provide educational materials – and 40% of the subsidy should be allocated for food.[22, 23]

However, access to the subsidy is not guaranteed and is subject to rigorous and onerous application processes for both the centre and caregivers. Individual children only qualify if their caregiver's income falls below the means test.[24] The current income threshold is applied variably as determined by the fiscal source (conditional grant or equitable share). However, the threshold and application process is not aligned to that of the Child Support Grant (CSG), creating duplicate application processes for poor families. There is concern that the subsidy's means test is lower than the CSG's (which came to R4,500 and R9,000 in October 2020) and effectively excludes many children living in poor households. This raises questions about why CSG beneficiaries do not automatically qualify for the subsidy in the same way that they are entitled to a school-fee exemption and a fee-waiver at public health facilities. The NIECD Policy calls for such alignment across systems to enable the most vulnerable families to access essential support seamlessly.[18]

iv This amount is set to increase to R17 per child/day in the new financial year. Some provinces are offering it at R16 per child/day.

ECD centres also need to comply with a set of minimum requirements to become registered. The Children's Act specifies a set of minimum norms and standards intended to protect children's health and safety and promote their development.[25] Yet the registration requirements, including the norms and standards, are impossible for many centres to achieve – prejudicing those centres serving poor and rural communities, and reinforcing inequalities in children's early childhood education, care and nutrition.[24]

Case 16: Philani's Mentor Mother Programme: An effective response to undernutrition

Claudine Bill[i]

The first 1,000 days of life are an important foundation for adult health and productivity – and thus a vital point of intervention.

Philani Maternal, Child Health and Nutrition Trust was established in 1979 to promote the health and well-being of mothers and children in impoverished communities on the Cape Flats. Philani's programmes include a community health worker programme called the 'Mentor Mother Programme', nutrition rehabilitation clinics, early learning centres, and an income generation project. The Mentor Mother Programme promotes family health, focusing on the support of pregnant mothers, care for newborn babies and children, and the support of people with chronic diseases. Philani uses community health workers called 'mentor mothers' (MMs) to identify growth faltering and malnourished children in the community, and to intervene to put these children back onto a healthy growth trajectory. In a country where a quarter of children under five years are stunted,[65] a fifth of households have insufficient food[66] and more than half of the children who die are undernourished,[67] this is crucial work.

The success of the Mentor Mother Programme is based on five key elements. The first is the **recruitment** of mentor mothers who are resilient and have successfully raised their own children in conditions of poverty. Their good coping skills form a foundation for the intervention and a passion for the job. MMs receive initial **training** in maternal and child health and nutrition, with subsequent modules in mental health, early learning, home-based care and alcohol harms reduction. Training is based on principles of adult learning and includes four weeks of interactive classroom teaching and two weeks of in-field pairing with an experienced MM. The **practical home-based intervention** is premised on an MM developing a relationship of trust with her clients, through which she can impart knowledge and foster coping skills. Within this supportive partnership, clients are enabled to change behaviour to improve health outcomes for themselves and their family, using resources available to them. MMs carry scales and weigh children, plotting and interpreting growth. They assist with breastfeeding; demonstrate bottle hygiene, formula preparation, and preparation of oral rehydration solution; and facilitate early learning and positive parenting. Supervisors lead small teams of MMs by providing hands-on, daily, in-field **support and supervision**. This continuous in-service training further develops the skills of MMs and fosters a culture of accountability. MMs have clear targets and outcomes and actively participate in the **monitoring and evaluation** of their cases.

Philani's 290 MMs work in two sub-districts of the Cape Town Metro, and in the rural OR Tambo district in the Eastern Cape. Philani has trained CHWs from other NGOs in South Africa and abroad, extending the footprint of the MM model. MMs work in the area where they live, are known and trusted, and become a valuable asset to their community. Each MM is responsible for visiting 300 – 500 households and has a caseload of 50 – 100 clients. MMs are skilled at identifying malnourished children, and refer severe cases or children not responding to the home-based intervention for nutritional support. Four hundred of these vulnerable children are treated every year in Philani's Nutrition Clinics in the Western Cape.

CHWs have an important role to play in maternal and child health in South Africa. Rigorous research provides evidence that Philani's MMs have a significant positive impact on the health outcomes of mothers and children. Mothers are more likely to breastfeed and breastfeed for longer; HIV positive mothers adhere better to treatment; and children are more likely to be well-nourished.[68] The intervention achieved a lower stunting rate of 18%; reduced child hospital admissions;[69] and reduced levels of harmful drinking. Philani's experience shows that CHWs who are properly trained, adequately equipped and well supported are capable of monitoring the growth of children and implementing a quality intervention for families.

i Philani Maternal Child Health and Nutrition Programme

The limited access to nutritional support through registered ECD centres stands in stark contrast to the state's support for school children. While 77% of children (9.6 million) attending public schools are supported by the National School Nutrition Programme,[26] the ECD subsidy supports fewer than 10% of young children, as illustrated in Figure 21, with regulatory exclusion and a rigorous application process excluding the majority of poor children who are most in need of nutritional support.[26-28]

A 2020 report calling for relief for the ECD workforce during COVID-19 noted that "while government may view unregistered ECD operators as non-compliant, they play a crucial role in caring for South Africa's children and allowing primary caregivers to either work or seek work, and are thus as important as any other part of the economy that government is aiming to protect from the damages brought on by COVID-19."[30] These facilities exist in low-income areas where the demand for affordable childcare is high, and where ECD programmes struggle to meet registration requirements.

The ECD subsidy is just one of a broader package of interventions and support that could and should be delivered through ECD programmes. Others include active support and outreach from primary healthcare services to provide deworming and vitamin A supplements, prevent and treat common childhood illnesses and identify and respond to signs of under- and overnutrition.

The food environment

It is equally important to pay attention to the quality of the food environment. The Nutrition Guidelines for Early Childhood Development Centres[31] provide ECD practitioners with clear guidance on planning, preparing and serving appropriate, nutritious, adequate and safe foods to children in their care. This includes guidelines on how to feed babies and young children, sample menus, recipes and shopping lists, personal hygiene, food safety, child health services and how to communicate this information and instil a positive attitude to healthy eating amongst children and their caregivers. The guidelines are an important addition, but unsubsidised ECD programmes may struggle to meet the requirements due to lack of finances. Therefore, the lack of adequate funding for the ECD sector should be addressed prior to the stringent monitoring of these guidelines. Similarly, it is likely that operators and staff of registered centres will need training and continuous support and mentoring to implement the guidelines.

Nutrition education

Nutrition education has also been identified as an essential element of the National Curriculum Framework for Birth to Four,[32] and as a specialized subject that needs to be incorporated into the education and training of ECD practitioners[33] (see case 17). It is, therefore, important to increase access to training opportunities for ECD service providers and practitioners.

Food gardens

Interesting innovations in nutrition-related programmes are being introduced by government and NGOs. For example, some ECD centres have established food gardens to supplement the children's nutrition and generate income, while the Expanded Public Works Programme (EPWP) has supported gardens at some ECD centre by providing stipends for gardeners.[34]

Social protection programmes

The NIECD Policy highlighted how "protecting households with young children from the stress and insecurity related to poverty is one of the most promising and cost-effective investments to secure early childhood and human development – with social assistance and cash transfers in the early years improving children's cognitive, emotional, language and fine motor development."[35] Local evidence confirms that early access to the CSG has a significant impact on both early childhood and later developmental outcomes.[36]

The ECD subsidy forms part of a broader package of support designed to alleviate poverty. Yet it provides only a small contribution to the daily nutritional requirements of a child. It is not available during weekends and school holidays, and it reaches only 10% young children - or 626,574 learners,[37] as illustrated in Figure 21. Nearly half of all young children (3.2 million) do not access any ECD programme,[38] and are therefore not receiving the subsidy.

Given the limited reach of the subsidy and ECD programmes, the CSG offers essential income support to young children. It is well-targeted, reaching 81% of children (0 – 5 years) living in poor households.[39] Access to the CSG has been associated with a decrease in child poverty and improved health, nutrition and education outcomes.[40]

Yet, the grant amount remains small at R450 a month (or R15 per day) in October 2020. As such, it falls well below the food poverty line and is not sufficient to eradicate stunting and micronutrient deficiencies or bring children

out of poverty.[23, 41] In addition, uptake is particularly low in the first year of life, with 36% of poor infants not receiving social assistance,[38] despite the NIECD Policy recommending registration for the CSG during pregnancy and the provision of birth registration services through health facilities to address administrative barriers[18]. This highlights significant gaps in social protection for young children who are most adversely affected by both the immediate shocks and long-term damage/deficits caused by malnutrition.

In the Western Cape, malnourished children can also access social relief of distress (SROD), a form of emergency relief in the form of vouchers or food parcels or cash in kind through the Department of Social Development's (DSD) Zero Hunger Campaign. The campaign aims to prevent child malnutrition by strengthening referral systems and ensuring that malnourished children and those living in food-insecure households identified by health facilities and community health workers can access social relief of distress

Case 17: Nutrition education for early childhood development

Juliana Seleti[i]

Early Childhood Education (ECE) focuses on the education and early stimulation of young children. One of the critical aspects of ECE is the training of educators and ECD practitioners. Food and nutrition are a major component of all ECE policies, standards and guidelines, based on the understanding that children need to be well-nourished in order to learn. The following is a brief analysis of food and nutrition in ECE-related policy frameworks that inform educator training and early learning programmes.

These policy instruments have helped inform the nutrition content of training programmes from certificate to degree levels, and modules on nutrition, health and safety are an integral part of ECD practitioner training. These policies have also informed the curricula of early learning programmes and the provision of food to young children through the National School Nutrition Programme and ECD subsidy. For example, Ntataise, an ECD resource and training organisation, is using videos to teach practitioners how to incorporate cognitive and social skills during snack time, using food to count, share and learn about food groups.

ECE Policies	Comments on nutrition promotion and action
White Paper 5 on Early Childhood Education[55]	The White Paper promotes an integrated approach to early childhood development (ECD) and acknowledges the importance of supporting children's nutrition by expanding the reach of the Primary School Nutrition Programme to Grade R learners (p. 32) and addressing the health and nutrition requirements of younger children
National Early Learning Development Standards[56]	The standards affirm the importance of "nutritious food" as an essential strategy to enable positive growth and development. (p. 11)
National Curriculum Framework (NCF) for Birth to Four[57]	The NCF identifies nutrition as one of the rights of young children. – together with proper health care and a safe environment. (p21). The curriculum is divided into six early learning and development areas, one of which focuses on "wellbeing" and aims to ensure that children are well-nourished. It includes developmental guidelines for the nutrition of babies, toddlers and young children; a series of age-appropriate learning activities; and broad assessment guidelines to help educators identify children at risk of malnutrition and know when refer them for specialist attention.
Policy on Minimum Requirements for Programmes Leading to Qualifications in Higher Education for Early Childhood Development Educators[58]	The policy highlights the need for ECD Educators to have a sound understanding of nutrition, and identifies 'nutrition, health and wellbeing' as one of the specialized subjects that need to be incorporated into the education and training of ECD educators (p.14)
National Integrated ECD Policy[59]	The NIECD Policy promotes the development of norms and standards for nutrition education, meal planning and training curricula for ECD practitioners for the provision of nutritionally balanced food through ECD programmes.

i Independent consultant

Table 13: Policies and programmes supporting South Africa's provision of nutrition interventions for preschool children

Policy	Current status	Department	Opportunities for improvement
Infant and Young Child Feeding Policy (2013)	• Strong focus on promotion and support for exclusive breastfeeding and complementary feeding, and treatment and rehabilitation of children with severe acute malnutrition. • Little or no mention of older children or obesity • No efforts to address poverty and food insecurity • Updated Policy circulated for comment in 2020 but not yet finalised.	DoH	• Clearer guidance is needed to counsel caregivers around overweight and obesity drawing on the paediatric food based dietary guidelines. • Should include clear guidelines on how to identify children at risk of malnutrition or living in food insecure households and refer them to SASSA and DSD for income support and food relief
Nutrition Guidelines for Early Childhood Development Centres (2016)	• Operational guide on the minimum standards for nutrition in ECD centres including healthy menus • Unsubsidised ECD programmes struggle to meet the requirements due to lack of finances	DoH	• The lack of adequate funding for the ECD sector should be addressed prior to stringent monitoring of these guidelines
Child Support Grant (1998)	• Introduced in 1998, the CSG offers partial income support for children living in poor households. • The R450 cash transfer is paid to primary caregivers who meet the income-means test requirements, subsidising the costs associated with raising a child such as nutrition, transport, and healthcare costs. • Widespread uptake of the CSG resulting in reductions in the child poverty rate over time. • Yet the CSG amount falls below the food poverty line and has failed to reduce the high prevalence of stunting • Vulnerable children remain excluded such as those without birth certificates, and infants	DSD/SASSA	• Address the barriers that exclude young children in poverty from accessing vital income support • Increase the value of the CSG to at least the food poverty line • Introduce regulations and fiscal measures such as taxes and subsidies to make a basket of healthy food more affordable.
Social Relief of Distress (SROD)	• Provides emergency relief to food insecure households by a food voucher, food parcel or cash-in-kind • Only offers temporary relief	DSD/SASSA	• Ensure that children at risk of malnutrition or living in food insecure households can qualify for SROD • Strengthen referrals systems between health facilities, SASSA offices and DSD's Community Food Distribution Centres

from SASSA and food relief from DSD's Community Nutrition Distribution Centres.[42] This kind of child-centred intersectoral collaboration is essential to strengthen referral systems and ensure that vulnerable families and children do not fall through the cracks and should be actively rolled out to other provinces. It is also important to recognise that SROD is intended to provide only temporary relief and fails to address the structural challenges facing poor households.

The current gaps and weaknesses in both the ECD and social protection systems left the most vulnerable children exposed to the ravages of food insecurity during the COVID-19 pandemic.

Impact and responses to COVID-19

During the COVID-19 lockdown, all ECD services were instructed to shut down, putting both the children's nutrition security and the survival of ECD programmes at risk. Food NGOs supporting these facilities were themselves experiencing financial instability, leading to either the short-term or long-term closure of their operations. Furthermore, there were indications that up to 99% of primary caregivers were either unwilling or unable to continue paying fees while ECD programmes remained closed.[30] The knock-on effect of this decision has not only impacted children's nutrition security but has jeopardised ECD operators' livelihoods and left staff unpaid, with concerns that these services will be unable to reopen in the long term.[43] Only 13% of young children were attending ECD centres in July 2020, down from 47% in March, with attendance at the lowest level in 18 years.[43] Even post-lockdown, 68% of centres had not reopened because they could not afford it or could not meet the DSD's safety requirements.[44]

ECD centres in the Western Cape were more fortunate, with approximately 60% of funded ECD centres being tasked by the ECD Directorate to use their existing subsidy allocations to make food parcels for registered children.[v] Technical age-appropriate advice for food parcels was provided, and food relief mapping was conducted. Whilst the provision of food in ECD centres serving economically marginalised communities is normally quite limited, government's decisions to keep ECD centres closed has had a devastating impact on the sector and children's food security.

The closure of the centres not only denied access to direct nutrition support, it also undermined household income. Some 3.4 million women reported they were either unable to work or were finding work difficult due to their child care responsibilities.[44] Three million jobs were lost during lockdown, driving the expanded unemployment rate up from 43% to 53%, with women more adversely affected than men. Most of these jobs still had not been recovered by June 2020, despite the easing of lockdown. Nearly half of all households (47%) reported running out of food during hard lockdown, with reported hunger affecting 22% of adults and 15% of children in May/June. Despite some improvement, rates of hunger and household food insecurity remained high in July/August.[44] Households in rural areas and urban shack dwellers were more adversely affected, with CSG recipients in Langa describing how they were running out of food two weeks into the month and becoming increasingly indebted to loan sharks, with their normal reciprocity networks stretched to breaking point.[45]

While it is hoped that South Africa will recover from the devastating impacts of COVID-19 as a country, the profound effects of poverty, hunger and the closure of ECD programmes on young children will be felt for many years to come.

How can programmes to support optimal nutrition be strengthened?

There are a number of interventions currently in place that could be further strengthened to optimise the nutrition and food security of young children, as outlined in Table 13. There are also a number of cross-cutting priorities to ensure a more supportive policy environment and more effective implementation, especially in disaster settings.

The National Integrated Food and Nutrition Security Plan 2017 – 2030[46] acknowledges many of these gaps and identifies a series of strategic interventions including plans to:

- introduce universal registration of eligible children at public health facilities to improve early access to the CSG
- integrate nutrition education with social protection
- ensure children attending ECD sites receive good quality and quantity of nutritious foods
- improve the nutrition education of community health workers and food handlers in ECD centres
- improve the ability of ECD centres to address malnutrition
- improve coverage of vitamin A supplementation and deworming
- improve the coverage of growth monitoring and promotion and actions to prevent and manage malnutrition
- ensure access to energy and nutrient-dense food supplements for children with moderate and severe acute malnutrition.

The plan also has a strong emphasis on monitoring and evaluation linked to a series of clear process and outcome indicators, together with the introduction of national and provincial coordinating structures to enhance collaboration and drive implementation.

Review the legislative framework to ensure an enabling environment

A key opportunity exists to amend the ECD legislative framework through the Children's Act Amendment Bill, and to review both the funding of ECD programmes and the registration requirements of ECD centres and programmes. As things stand, the minimum requirements intended to protect children's rights and well-being have introduced an arduous compliance process that ultimately excludes many ECD programmes from registration.[47-49] Without the revision of legislation to enable access to funding support and resources from the state, ECD programmes cannot become the public good that the state envisages them to be,[18] and poor children will not benefit from the subsidies they require to support their health and development.

Ensure policy implementation and meeting of targets

The 2015 NIECD Policy[18] outlines a clear commitment to the nutrition, health and development of young children and defines an essential package of ECD services and programmatic priorities. This includes the call to review and strengthen a comprehensive national food and nutrition strategy to eliminate stunting, reduce obesity and prevent hunger and food insecurity in young children. While some progress may have been made with the National Integrated Food and Nutrition Security Plan 2017 – 2030, there are clear gaps in the implementation of nutrition services and support, and the 2020 country profile indicates that South Africa needs to intensify its efforts in tackling the double

v Feedback by the ECD directorate in the Western Cape indicates that approximately 60% of ECD centres in the province were tasked and given approval to use their existing subsidy allocations to make food parcels for registered children.

burden of malnutrition.[50] While it may be possible to catch up growth during the school years and adolescence, emerging evidence suggests that this does not address the cognitive deficits, and that those children who have gained in height still lag academically compared to their peers. Thus early intervention starting in the antenatal period is critical.[51]

Promote intersectoral collaboration to strengthen safety nets for children

Integrated services have been found beneficial and to eradicate malnutrition and stunting requires a collaborative and multi-sectoral approach.[3,52,53] This includes building stronger partnerships between health workers and caregivers, working collaboratively with ECD programmes in implementing initiatives such as the RTHB and Side-by-Side campaign,[19] and strengthening referral pathways between ECD programmes, health facilities and social protection services to strengthen safety nets for vulnerable children and families. This partnership could extend to health workers' active participation in ECD forums, the introduction of WASH capacity-building programmes in ECD centres, monitoring children's nutritional status and providing nutrition education and information on how to prepare affordable, nutritious foods to both the programme operators and primary caregivers. Using ECD programmes as a delivery platform could also help map the needs of young children, track their progress and identify opportunities to strengthen nutrition

Case 18: Mbizana stop stunting campaign 2020

Julika Falconer[i] and Anna-Marie Müller[ii]

The Zero2Five Trust provides nutritional and educational support to children attending more than 400 under-resourced early childhood development (ECD) centres in vulnerable, mostly rural communities in KwaZulu-Natal and the Eastern Cape. Zero2Five also provides education and training for ECD practitioners and assists centres to register with the Department of Social Development (DSD) and apply for the ECD subsidy.

In early 2020, Zero2Five expanded its work to the Mbizana Local Municipality in the Eastern Cape through a partnership with Impande SA, adding 168 ECD centres to their programme. Zero2Five rolled out a large-scale nutrition programme reaching 4,000 children with a daily nutrient-dense breakfast and three rice/soy meals per week at their centres. To track the impact of the project on child nutrition status, the team collected anthropometric measurements of 159 children across five selected centres in February and March 2020. The results suggest a double burden of malnutrition in these communities: 23% of children suffer from stunting, with overweight and obesity found in 12% of the children.

Following the announcement of school closures and the lockdown in March 2020, the Zero2Five team distributed a month's supply of fortified porridge (2 kg per child) to all ECD centres just before the hard lockdown started. Their agility and ability to collaborate enabled them to continue providing nutritional support throughout lockdown. Between April and July, the Port Edward Build-It and Bizana SPAR served as distribution points and Zero2Five organised stock to reach the provincial border. From there, Impande's field team delivered a total of 3,000 bars of soap and 9 tons of food every month to the 168 centres for further distribution to 4,000 children and their families spread out over 2,500 km². This impressive effort from the team required working long hours to impact the poverty in households. As for many civil society organisations, the pandemic demanded that Zero2Five adapt to implement disaster relief efforts. Since August 2020, the team has supported ECD centres to re-open and delivered its usual nutritional support. The team is also implementing more water, sanitation and hygiene (WASH) components in the ECD programme.

Zero2Five's core operation is providing nutritional support to children attending ECD centres, but their value extends to relationships with local primary health facilities. By conducting anthropometric measures of children in the ECD centres, they can identify and refer children at risk of malnutrition. Over time, they hope to demonstrate how ECD practitioners, community health workers and local clinics can work together to improve child nutrition in their communities. Although children not attending ECD centres may still fall through the cracks, establishing such mechanisms is vital for effective community-based management of malnutrition. As the full impact of the lockdown on children's nutritional status is realised in the coming months, nutrition surveillance will be a useful tool to inform responses. This well-oiled intervention serves the children of Mbizana well.

i Zero2Five Trust
ii Grow Great

support for those children not attending ECD programmes. Ultimately, by responding proactively to early signs of growth faltering, malnourished children in ECD centres and home-based programmes can be treated.

Provide adequate funding

Given the high levels of poverty and unemployment, it is essential to increase the value of the CSG to above the food poverty line,[23] improve access to the ECD subsidy and enable all CSG beneficiaries to qualify for the ECD subsidy automatically. Funding for the most disadvantaged communities must remain a priority and should be mandatory in the Children's Amendment Bill. These investments in social protection need to be supplemented with food provision from the private sector and civil society to improve the food security and dietary diversity of young children attending ECD centres and community-based programmes. These safety nets also need to extend to the families of young children not attending ECD programmes. The NIECD Policy sets out guidance for the funding of ECD programmes to enable equitable access for the most vulnerable young children and families, in a manner that ensures that ECD programmes are state-supported and funded through multiple partners. Yet these guidelines have not been prioritised.

Prioritise child hunger in disaster settings

The child hunger crisis during the COVID-19 lockdown period was exacerbated by the closure of schools and ECD programmes, forcing many young children and their families to queue for food relief. It is, therefore, critical to develop child-centred response plans and practical guidelines to ensure that the nutritional needs of young children are adequately addressed and prioritised in disaster management and humanitarian efforts. This includes harnessing community healthcare services and ECD sites as platforms to identify vulnerable children and channel food relief efforts as demonstrated by Case 18.

Conclusion

Interventions that promote, protect and support the nutrition and food security of preschool children must be prioritised during this critical and time-sensitive period of development if South Africa's children are to thrive and reach their full physical, cognitive, social and economic potential. Healthcare and ECD practitioners can play an essential role in identifying children and families in need of care and support and can facilitate preventative and responsive care. Nutrition is rooted in the South African Constitution as a fundamental human right.[54] For this to be fully realised, policies and programmes must be inclusive and prioritise the most vulnerable children. Improving early access to birth registration and the CSG, and relaxing the current registration requirements for ECD programmes, will help make young children more visible and strengthen the delivery of nutrition and health interventions through ECD and community-based programmes that will contribute to the nutrition, education and health of all children.

References

1. Moore DT, Arefadib N, Deery A, West S. *The First 1000 Days: An Evidence Paper*. Parkville, Victoria: Centre for Community Child Health, Murdoch Children's Research Institute; 2017.
2. Schwarzenberg SJ, Georgieff MK. Advocacy for improving nutrition in first 1000 days to support childhood development and adult health. *Pediatrics*. 2018;141(2):e20173716.
3. Hurley KM, AK. Y, F L-B. Early child development and nutrition: A review of the benefits and challenges of implementing integrated interventions. *Advances in Nutrition*. 2016;7(2):357-63.
4. Hoddinott J, Maluccio JA, Behrman JR, Flores R, R. M. Effect of a nutrition intervention during early childhood on economic productivity in Guatemalan adults. *Lancet*. 2008;371(9610411-416).
5. Gertler P, Heckman J, Pinto R, Zanolini A, Vermeersch C, Walker S, et al. Labor market returns to an early childhood stimulation intervention in Jamaica. *Science*. 2014;344(6187):998-1001.
6. World Health Organization, United Nations Children's Fund, World Bank Group. *Nurturing Care for Early Childhood Development: A framework for helping children survive and thrive to transform health and human potential*. Geneva: WHO; 2018.
7. World Health Organization. *Improving Early Childhood Development: WHO guideline*. Geneva: WHO; 2020.
8. National Department of Health, Statistics South Africa, South African Medical Research Council, ICF. *South Africa Demographic and Health Survey 2016* Pretoria, South Africa and Rockville, Maryland, USA: NDoH, Stats SA, SAMRC and ICF; 2016.
9. Sambu W. *Nutrition* [Internet]. Cape Town: Children's Institute, UCT; 2019. Accessed 10 December 2020: http://childrencount.uct.ac.za/domain.php?domain=4
10. Shisana O, Labadarios D, Rehle T, Simbayi L, Zuma K, Dhansay A, et al. *South African National Health and Nutrition Examination Survey (SANHANES-1)*. Cape Town: HSRC Press; 2013.
11. Kruger HS SR, Labadarios D, Dannhauser A, Nel JH. Anthropometric status. In: Labadarios D, editor. *National Food Consumption Survey-Fortification Baseline (NFCS-FB): South Africa, 2005*. Stellenbosch, University of Stellenbosch: Directorate Nutrition, DOH; 2007.
12. *2020 Global Nutrition Report: Action on equity to end malnutrition*. Bristol, UK: Development Initiatives; 2020.
13. Hall K. *Demography*: Children Count website, Children's Institute, University of Cape Town; 2019. Accessed 20 November 2020: http://childrencount.uct.ac.za/indicator.php?domain=1&indicator=2
14. Hall K. *Income Poverty & Grants*. [Internet]. Cape Town: Children Count website, Children's Institute, University of Cape Town; 2019. Accessed 20 November 2019: http://childrencount.uct.ac.za/indicator.php?domain=2&indicator=98
15. Hall K. *Housing & Services*: Children Count website, Children's Institute, University of Cape Town; 2019. Accessed 20 November 2020: http://childrencount.uct.ac.za/domain.php?domain=3
16. Hall K. *Health*: Children Count website, Children's Institute, University of Cape Town; 2019. Accessed 20 November 2020: http://childrencount.uct.ac.za/domain.php?domain=5
17. Dawes A, Biersteker L, Girdwood L, Snelling M, J H. *Early Learning Programme Outcomes Study Technical Report*. Claremont, Cape Town: Innovation Edge & Ilifa Labantwana; 2019.
18. Republic of South Africa. *National Integrated Early Childhood Development Policy*. Pretoria; 2015.
19. Slemming W, Bamford L. The new Road to Health Booklet demands a paradigm shift. *South African Journal of Child Health*. 2018;12(3):86-7.
20. National Department of Health. *Road to Health Booklet*. Pretoria: NDoH; 2018.
21. Statistics South Africa. *General Household Survey 2017*. Pretoria: Stats SA;

2018.
22. Van Niekerk LJ, Ashley-Cooper M, Atmore E. *Effective early childhood development programme options meeting the needs of young South African children*. Cape Town: Centre for Early Childhood Development; 2017.
23. Jonah CM, Sambu WC, May JD. When progressive fiscal policies do not reduce health inequalities: An examination of child malnutrition in South Africa. *In: United Nations Department of Economic and Social Affairs (UNDESA) expert group meeting*. New York. 2018. p. 6-1.
24. Giese S, Budlender D. *Government Funding for Early Childhood Development. Learning Brief 1*. Cape Town: Ilifa Labantwana; 2011.
25. Children's Act 38 of 2005.
26 Statistics South Africa (2019) *General Household Survey 2018*. Available at: http://www.statssa.gov.za/publications/P0318/P03182018.pdf.
27. Carter J, Biersteker L, Streak J. *Costing Centre-Based Early Childhood Development Programmes for Children Under Age Five: Case Studies from the Western Cape*. 2008. Accessed 10 December 2020: https://www.gtac.gov.za/Researchdocs/Costing%20Centre-Based%20Early%20Childhood%20Development%20Programmes%20for%20Children%20Under%20Age%20Five.pdf.
28. Atmore E, van Niekerk L, Ashley-Cooper M. Challenges facing the early childhood development sector in South Africa. *South African Journal of Childhood Education*. 2012;2(1):120-39.
29. Levy B. *Strengthening Western Cape ECD Through Social Partnership: Initial Scoping and Diagnosis*. 2017. Accessed 10 December 2020: https://www.fedusa.org.za/wp-content/uploads/Levy-Brian-Townships-ECD-Centres-and-job-creation.pdf.
30. BRIDGE et al. *The Plight of the ECD workforce: An urgent call for relief in the wake of covid-19*. 2020. Accessed 12 December 2020: https://ilifalabantwana.co.za/wp-content/uploads/2020/04/Final-report-The-plight-of-the-ECD-workforce.pdf.
31. National Department of Health. *Nutrition Guidelines for ECD Centres*. Pretoria: NDoH; 2016.
32. Department of Basic Education. *National Curriculum Framework for Birth to Four*. Pretoria: DBE; 2015.
33. Department of Higher Education and Training. *Policy on Minimum Requirements for Programmes Leading to Qualifications in Higher Education for Early Childhood Development Educators*. Pretoria: DHET; 2017.
34. City of Cape Town. *Food Gardens Policy in Support of Poverty Alleviation and Reduction. Policy No. 12399C*. Cape Town: CoCT; 2013.
35. Britto P, Engle PL, Super CM. *Handbook of Early Childhood Development Research and its Impact on Global Policy*. New York: Oxford University Press; 2013.
36 Department of Social Development, South African Social Security Agency, UNICEF. *The South African Child Support Grant Impact Assessment: Evidence from a survey of children*. Pretoria: UNICEF South Africa; 2012.
37. National Department of Social Development. *Social Development sets up workstreams to conduct risk assessment and state of readiness for the early childhood development ECD centres*: Media Statement; 4 June 2020. Accessed 20 November 2020: https://www.dsd.gov.za/index.php/latest-news/21-latest-news/183-social-development-sets-up-workstreams-to-conduct-risk-assessment-and-state-of-readiness-for-the-early-childhood-development-ecd-centres
38. Statistics South Africa. *General Household Survey 2018*. Pretoria: Stats SA; 2019.
39. Hall K, Sambu W, Almeleh C, Mabaso K, Giese S, Proudlock P. *South African Early Childhood Review 2019*. Cape Town: Children's Institute, UCT & Ilifa Labantwana; 2019.
40. Grinspun A. No small change: The multiple impacts of the Child Support Grant on child and adolescent well-being. In: Delany A, Jehoma S, Lake L, editors. *South African Child Gauge 2016*. Cape Town: Children's Institute, UCT; 2016.
41. Devereux S, Waidler J. *Why does malnutrition persist in South Africa despite social grants?* Food Security SA Working Paper Series No 001. Cape Town: DST-NRF Centre of Excellence in Food Security, South Africa.; 2017.
42. Western Cape Department of Health. *SASSA Social Relief of Distress Programmes: Accessing the resource*. Circular Minute H 156 of 2017. Cape Town: WCDoH; 2017.
43. Department of Social Development. *Minister Lindiwe Zulu: Social Development response to Coronavirus Covid 19 Level 4 Risk Adjusted Approach* 11 May 2020. Accessed 11 December 2020: https://www.gov.za/speeches/statement-minister-lindiwe-zulu-regards-social-development-response-covid19-level-4-risk
44. Spaull N, Ardington C, Bassier I, Bhorat H, Bridgman G, Brophy T, et al. *NIDS-CRAM Wave 2 Synthesis Report*. NIDS-CRAM Working Paper (1); 2020. Accessed 11 November 2020: https://cramsurvey.org/wp-content/uploads/2020/10/1.-Spaull-et-al.-NIDS-CRAM-Wave-2-Synthesis-Report.pdf.
45. Zembe-Mkabile W, Ramokolo V, Doherty T. *Social protection in a time of crisis: Exploring the experiences of the Child Support Grant recipients and non-recipients in the time of Covid-19*. Forthcoming.
46. Republic of South Africa. *National Integrated Food and Nutrition Security Plan 2017 – 2030*. Pretoria; 2017.
47. Charman A, Tonkin C, Denoon-Stevens S, Demeestere R. *Post-Apartheid Spatial Inequality: Obstacles of land use management on township micro-enterprise formalisation*. A report by the Sustainable Livelihoods Foundation. Stellenbosch: Sustainable Livelihoods Foundation; 2017. Accessed 10 December 2020: http://livelihoods.org.za/wp-content/uploads/2018/05/Post-Apartheid_Spatial_Inequality.pdf.
48. The Project Preparation Trust of KZN. *Informal Settlements: Informal early childhood development centres*. 2014. Accessed 10 December 2020: http://thehda.co.za/pdf/uploads/multimedia/ISU_Guidelines_Informal_Early_Childhood_Development_Centres_in_Informal_Settlements-ilovepdf-compressed-compressed.pdf.
49. Sustainable Livelihoods Foundation. *The Township Educare Sector*. Cape Town: SLF; 2013.
50. UNICEF South Africa (2020). South African Nutrition Brief.
51. Casale D (2020) Recoverinf from stunting in early childhood and subsequent schooling outcomes: Evidence form NIDS waves 1 – 5. Development SouthernAfrica. 37(3): 483-500.
52. World Health Organization. *Essential Nutrition Actions: Mainstreaming nutrition through the life-course*. Geneva: WHO; 2019.
53. Alderman H, Fernald L. The nexus between nutrition and early childhood development. *Annual Review of Nutrition*. 2017;37:447-76.
54. South African Human Rights Commission. *Right to Food: Fact Sheet*. 2016. Accessed 10 December 2020: https://www.sahrc.org.za/home/21/files/brochure_A3_English.pdf.
55. Education DoB. *White Paper 5 on Early Childhood Education*. Pretoria: DBE; 2001.
56 Education DoB. *National Early Learning Development Standards*. Pretoria: DBE; 2009.
57. Department of Basic Education. *National Curriculum Framework for Birth to Four*. Pretoria: DBE; 2015.
58. Department of Higher Education and Training. *Policy on Minimum Requirements for Programmes Leading to Qualifications in Higher Education for Early Childhood Development Educators*. Pretoria: DHET; 2017.
59. Republic of South Africa. *National Integrated Early Childhood Development Policy*. Pretoria; 2015.
60. *Child Health Problem Identification Programme, 2018 data*. Personal communication, Dr Cindy Stephen.
61. Black RE, Allen LH, Bhutta ZA, Caulfield LE, De Onis M, Ezzati M, et al. Maternal and child undernutrition: Global and regional exposures and health consequences. *The Lancet*. 2008;371(9608):243-60.
62. Department of Health. *District Health Information System*. Pretoria: NDOH; 2019.
63. Blackwell N, Myatt M, Allafort-Duverger T, Balogoun A, Ibrahim A, Briend A. Mothers understand and can do it (MUAC): A comparison of mothers and community health workers determining mid upper arm circumference in 103 children aged from 6 months to 5 years. *Archives of Public Health*. 2015;73(1):26.
64. Daures M, Phelan K, Issoufou M, Kouanda S, Sawadogo O, Issaley K, et al. New approach to simplifying and optimising acute malnutrition treatment in children aged 6–59 months: The OptiMA single-arm proof-of-concept trial in Burkina Faso. *British Journal of Nutrition*. 2020;123(7):756-67.
65. National Department of Health, Statistics South Africa, South African Medical Research Council, ICF. *South Africa Demographic and Health Survey 2016*: Key Indicators. Pretoria, South Africa and Rockville, Maryland, USA: NDoH, Stats SA, SAMRC and ICF. 2017.
66. Statistics South Africa. *Towards Measuring the Extent of Food Security in South Africa: An examination of hunger and food adequacy*. Pretoria: Stats SA. 2019.
67 Bamford L, McKerrow N, Barron P, Aung Y. Child Mortality in South Africa: Fewer deaths, but better data are needed. *South African Medical Journal*. 2018;108(3):25-32.
68. Rotheram-Borus MJ, Tomlinson M, le Roux IM, Harwood JM, Comulada S, O'Connor MJ, Worthman CM. A cluster randomised controlled effectiveness trial evaluating perinatal home visiting among South African mothers/infants. *PLoS One*. 2014;9(10):e105934.
69. Tomlinson M, Rotheram-Borus MJ, le Roux IM, Youssef M, Nelson SH, Scheffler A, Worthman CM. Thirty-Six-Month Outcomes of a Generalist Paraprofessional Perinatal Home Visiting Intervention in South Africa on Maternal Health and Child Health and Development. *Prevention Science*. 2016;17(8):937-948.