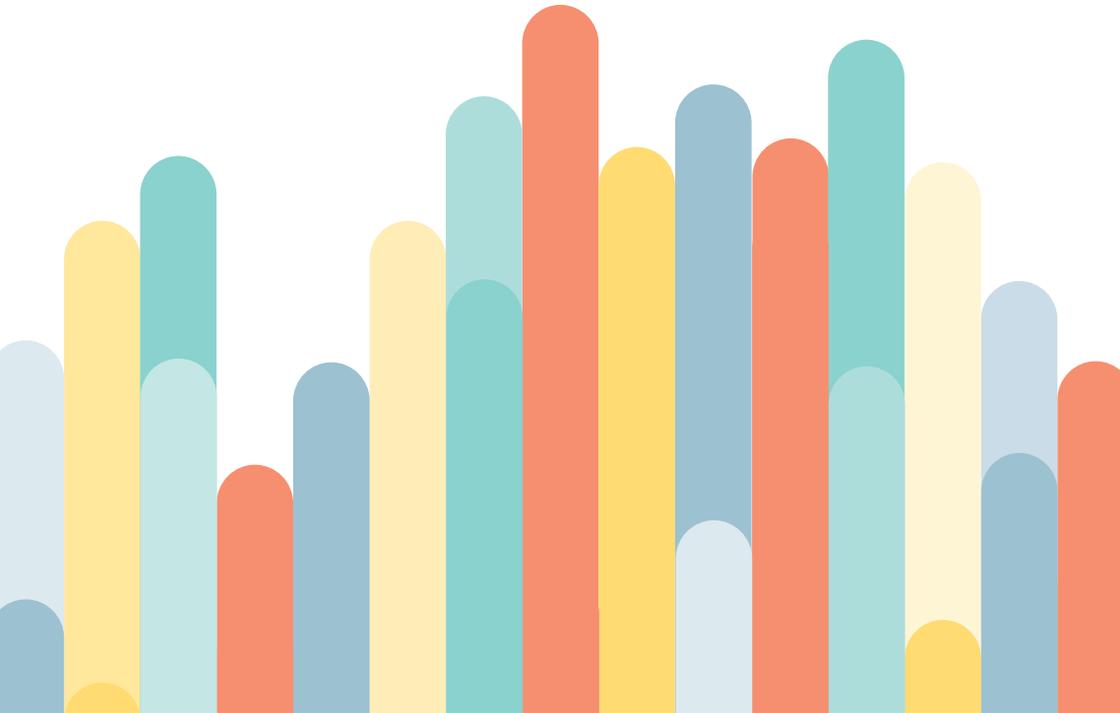


Proximity of Care

A New Approach to Designing
for Early Childhood
in Vulnerable Urban Contexts



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Creative Assemblages

This document is a product of the collaboration between Arup and the Bernard van Leer Foundation.

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ARUP

Arup is an independent multi-disciplinary firm with more than 14,000 specialists working across every aspect of today's built environment. Our mission to Shape a Better World is driven by our commitment to make a real difference, stretch the boundaries of what is possible, help our partners solve their most complex challenges and achieve socially valuable outcomes.

The Arup International Development team partners with organisations operating in the humanitarian and development sector; to contribute to safer, more resilient and inclusive communities and urban settings in emerging economies and fragile contexts around the globe.



URBAN95

The Bernard van Leer Foundation is an independent foundation working worldwide to inspire and inform large-scale action to improve the health and well-being of babies, toddlers, and the people who care for them.

The Urban95 Initiative aims to improve, through urban planning, policy, and design, the way babies, toddlers, and the people who care for them live, play, interact with and travel through cities.

The Urban95 Initiative asks a bold but simple question:

"If you could experience the city from 95cm - the height of a 3-year-old - what would you change?"

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Introduction



Despite the importance of early years to our personal and social development, the experience of 0-5 year olds has been largely ignored in the design of our cities.

If we design and plan from their perspective - 95cm off the ground - the environments we create can include and bring together people of all ages.

Jerome Frost

Global Cities Leader, Arup

This publication presents the challenges and opportunities confronting early childhood development in vulnerable urban contexts, derived from specialised research by Arup and the Bernard van Leer Foundation (BvLF).

The data is clear: vulnerable urban areas such as refugee and informal settlements house a growing population in critical need, and the number and size of these areas will only increase in the coming decades.

While the specifics of these vulnerable areas vary, they consistently pose major challenges for children's optimal development.¹ Living in these contexts has particularly significant negative impacts on young children aged 0 to 5.²

At present, governments, development and humanitarian organisations, and urban practitioners devote little attention to the specific needs of the 0-5 age group in projects aimed at improving conditions in informal and refugee settlements.

This age group's needs are different than those of older children but are often 'lumped in' with them from a planning and policy perspective, or worse, go entirely unrecognised.

In addition, the complexity of vulnerability in these contexts makes it difficult to design and implement effective early childhood development solutions that consider the influence of the built environment.

Arup and BvLF have partnered to help bridge this gap. The Proximity of Care approach was developed to better understand the needs and constraints faced by young children, their caregivers, and pregnant women in informal and refugee settlements; and to ultimately help improve their living conditions and well-being.

The Proximity of Care approach is at the core of a Design Guide that we are developing to help decisionmakers and urban planners mainstream in their projects, policy, and processes the needs of young children, caregivers, and pregnant women living in vulnerable urban contexts, and to profile their work as child- and family-friendly.

To ensure the needs of the Design Guide's end users are properly met, we are working closely with urban practitioners operating in informal and refugee settlements, and with development and humanitarian organisations.

In particular, we are partnering with Civic, Catalytic Action, Konkuey Design Initiative (KDI), and Violence Prevention through Urban Upgrading (VPUU), who are operating in vulnerable urban contexts in various sites across Jordan, Lebanon, Kenya, and South Africa respectively.

We are also strengthening relationships with government authorities in the countries in which we operate, as they are the standard bearers for development.

The Design Guide will be released in the fall of 2020, and is intended to be a practical tool of first resort for urban planners, city authorities and development actors working in challenging urban contexts.

Arup and BvLF's ultimate aim is to support these professionals to design and build inclusive, liveable, safe and climate-resilient urban spaces where young children can thrive.

Why Early Childhood Development Matters



The early years of a child’s life are crucial for healthy physical and mental development.³ Neuroscience research demonstrates that a child’s experiences with family, caregivers and their environment provides the foundation for lifelong learning and behaviour.⁴

Cognitive evolution from birth to age five is a ‘golden period’ during which the stage is set for all future development, including core skills acquisition, establishment of healthy attitudes and behaviours, and flourishing of mature relationships.⁵ 80% of brain architecture develops in the prenatal period, and 60% of adult mental structures develop in the first three years of life.⁶



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Negative outcomes resulting from compromised Early Childhood Development are significant.

Long-term studies of children from birth show that developmental inhibition in the first two years of life has harmful effects on adult performance, including lower educational attainment and reduced earning.¹²

The lifelong costs of early deficits are physical as well as cognitive: evidence indicates that adult illnesses are both more prevalent and more serious among those who have experienced adverse early life conditions. These socioeconomic and health issues can persist over generations.¹³

Without effective intervention, developmental deficits can become a cycle of lost human capital.

Improving early childhood development, on the other hand, acts as a social and economic engine for communities and societies. Cognitively healthier children are more productive citizens, and quality early childhood development provides a competitive advantage for national populations.¹⁴

To develop to their full potential, babies and toddlers require not only the minimum basics of good nutrition and healthcare, clean air and water and a safe environment; they also need

.....

Improving early childhood development acts as a social and economic engine for communities and societies.

.....

plenty of opportunities to explore, to play, and to experience warm, responsive human interactions.¹⁰

To a large degree, the establishment of healthy patterns in human relationships depends upon the physical environment children inhabit in their very first years.¹¹

The characteristics of physical space impact learning and memory formation;⁸ chronic noise exposure can result in lower cognitive functioning and unresponsive parenting;⁹ crowding can elevate physiological stress in parents and cause aggressive behaviour in young children.

For young children to make the most of their surrounding built environment, those places need to cater to age-relevant developmental needs, while providing affordances and barrier-free access for caregivers.

While young children have very different needs than those over age 5, those needs often remain invisible to government leaders or are 'lumped in' with those of older children from a planning perspective.

Young children need well-developed and well-maintained child-friendly infrastructure, a network of places that allow them to develop physically, mentally, and socially.³⁹

Age-appropriate design can mean changes in scale,⁴⁰ as well as inclusion of different types and sources of stimulation to help develop fine and gross motor skills, engage language and cognition abilities, and foster socialisation.⁴¹

Young children also need clearly communicated, well-understood and consistently enforced plans and policies that defend and support their rights without distinction, regardless of where they live.

The involvement of young children, their caregivers, and pregnant women in municipal and community decision-making, policy development and urban planning is key to shaping child-friendly urban environments that account for very young children's specific needs, capacities, and interests.⁴²

.....

While young children have very different needs than those over age 5, those needs often remain invisible to government leaders or are 'lumped in' with those of older children from a planning perspective.

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Child-friendly urban planning should engage children, parents/ caregivers and the wider community in assessment and co-creation activities early in the process. Differences in age groups need to be considered to fully address beneficiaries' requirements and engagement modes.

Early childhood development is the key to ensuring that children grow up into strong, resilient, thriving adults. Ensuring that children reach their developmental potential requires support from families, communities, and policy; this holistic approach is particularly important in vulnerable urban contexts.

نائل



Why an Early Childhood Focus in Vulnerable Urban Contexts



With cities worldwide growing exponentially and global population displacement on the rise, the coming decades will see increasing numbers of children growing up in informal, resource-restricted, and otherwise fragile urban settings. In these areas, the needs of the youngest and most vulnerable often go unheard in decisionmaking and planning.

By 2030, cities will contain 60% of the global population.¹⁸ More than 90% of urban growth through 2035 is projected to occur in South Asia and Sub-Saharan Africa. Over this period, the urban population of both regions is expected to more than double.

Currently, over 250 million children in developing countries are at risk of not attaining their developmental potential.¹⁹ As the speed of growth inevitably outpaces that of planning, the number of children living in informal settlements in these regions will increase significantly in the coming years.²⁰

Alongside unprecedented global urban growth, refugee flows are projected to increase in the next decades. Between 2003 and 2018, the worldwide population of people forcibly displaced annually due to persecution or conflict rose from



3.4 million to 16.2 million. Nearly half of the world's 25.4 million refugees reside in cities.²¹ 85% of these displaced people are being hosted in developing countries.

52% of the global refugee population are children,²³ and 4.25 million of these refugee children are under the age of five.²⁴

While the typologies of vulnerable urban contexts can vary, living in these environments is consistently demonstrated to have significant negative impacts on the optimal development of very young children, as well as their support networks.^{25 26}

These trends of urbanisation and displacement are occurring against a backdrop of increasingly frequent and severe impacts of climate change. Children will bear the brunt of these effects, with those age 0-5 at particular risk.

Investing in early childhood development has been proven to be the single most effective method for poor and vulnerable societies to break out of poverty and vulnerability cycles.²⁷

Every USD\$1 invested in high-quality 0-to-5 early childhood education for disadvantaged children

delivers a 13% annual return on investment, significantly higher than the 7-10% return delivered by preschool programmes alone.

Despite these clear benefits, only two percent of global humanitarian funding is allocated to education; early childhood development programmes only account for a tiny fraction of that amount.²⁸

Existing early childhood investments focus mainly on formal educational facilities, which, due to lack of resources and a universalistic approach, tend to underestimate cultural and contextual differences and largely disregard learning opportunities outside the classroom.²⁹ Learning occurs both in and out of the classroom, and to date little has been done to capitalise on out-of-school time and on the benefits of the built environment in child development.

For urban planners, development actors, and government authorities alike, there is no greater chance to reap long-term, society-wide benefits than by improving early childhood development for the generations being raised in vulnerable urban contexts around the globe.

What we mean by 'Vulnerable Urban Contexts'



Vulnerable urban contexts are built environments subject to ongoing shocks and stresses which pose a threat to residents' lives, livelihoods, and the maintenance of social, physical, political and economic systems.⁸⁴ We have identified two classes of vulnerable urban context that Arup and BvLF seek to engage: informal settlements and refugee settlements.

While each vulnerable urban context is unique, it is helpful to identify throughlines common to these settings.

Settlements in these contexts tend to be overcrowded, polluted, and lacking health and safety measures considered common elsewhere. Infrastructure in these areas is often incomplete or unsafe; poor waste, sewage and stormwater management is common, as is a shortage or absence of green space.⁸⁶

Vulnerable urban contexts tend to have compromised access to urban services, including WASH, power and transit infrastructure.⁸⁷

The universal urban issues of car and street safety, crime and violence are endemic concerns in both refugee and informal settlements.

In general, conditions in these areas (corruption, poverty, hopelessness, resource competition, and lack of oversight) create fertile environments for petty and violent crime, drug trafficking and gang activity. Type and intensity of crime and violence depends on local norms as well as levels of unemployment and marginalisation.

Finally, vulnerable urban contexts tend to be particularly exposed to climate change impacts.

In general, the elements upon which planners, policymakers and practitioners from the global north-west traditionally rely - hierarchy, predictability, and control - are often overwhelmed by the tendency of vulnerable urban contexts to magnify and intensify complexity.



TYPOLOGIES OF VULNERABLE URBAN CONTEXTS

In determining broad typologies of vulnerable urban contexts, we consider two variables of a specific settlement: **location** and **duration**.

Mapping a settlement's age against integration with urban systems can provide insight into the type of vulnerabilities likely to occur.

Location

Refers to the siting of a settlement's physical footprint in relation to the nearest urban area, and can be either:

Integrated:

Settlements which are directly enmeshed in the urban fabric. Can exhibit improved (but not necessarily high quality) access to urban systems.

Isolated:

Settlements constructed on the urban periphery or interstitial spaces. Isolation generally impairs access to urban systems.

Duration

Refers to the length of time a settlement has been in existence, and can be either:

Established:

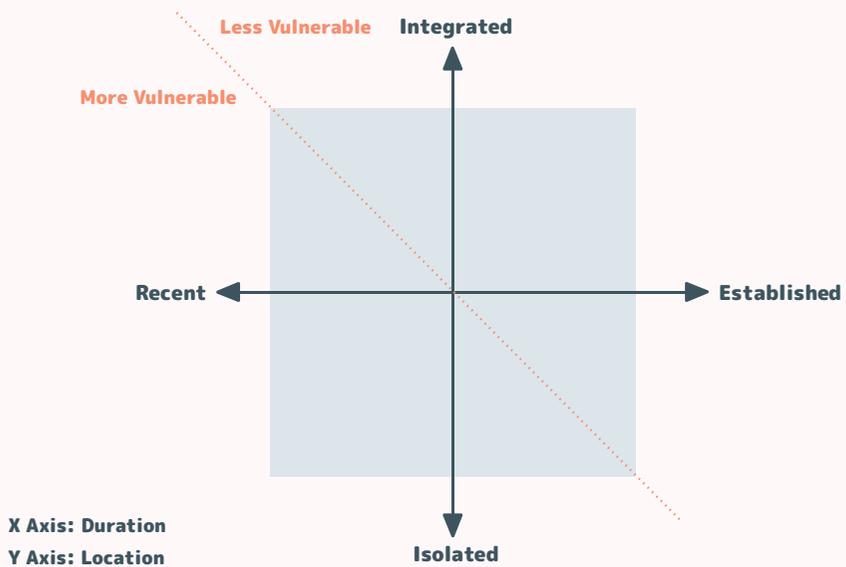
In existence for ten years or longer. Infrastructure and political relationships in these settlements have often assumed a settled order.

Recent:

Settlements less than a decade old, often developed in response to ongoing crises. Layout, materiality and population are often in flux.

In general, settlements in the Established / Integrated quadrant tend to exhibit lower vulnerability than those in the Recent / Isolated category.

This is not a hard and fast rule; some informal and refugee settlements sited in city centres exhibit complex multi-source vulnerabilities.



Diagrammatic layout of vulnerable urban context typology variables
(developed by Arup, 2019)

INFORMAL SETTLEMENTS

Informal settlements are residential areas of any scale where residents lack legal tenure.

UN-Habitat describes an informal settlement as a residential area whose inhabitants face three primary deprivations:

1. Inhabitants have no security of tenure vis-à-vis the land or dwellings they inhabit, with modalities ranging from squatting to informal rental housing.
2. Neighbourhoods usually lack, or lack access to, basic services and city infrastructure.

3. Housing may not comply with planning and building regulations, and is often situated in geographically and environmentally hazardous areas.⁸⁸

This absence of legal tenure and compromised access to urban systems affects health and safety, and exposes residents to exploitation, eviction, and crime.

Despite these challenges, migration to informal settlements is largely due to pull factor of economic opportunity, often with future generations in mind.

“Informal Settlements” vs “Slums”

These terms are not interchangeable.

Informal settlement refers to an absence of legal land tenure, whereas **slum** is a qualitative term indicating a severe lack of basic urban services.

The UN definition of a slum household⁸⁹ describes “a group of individuals living under the same roof lacking one or more of the following five conditions:”

1. Access to improved water
2. Access to improved sanitation facilities
3. Sufficient living area, not overcrowded
4. Structural quality/durability of dwellings
5. Security of tenure

In many cultures and languages 'slum' carries a pejorative connotation, and any use of the term as an intensifier must be defined explicitly.⁹⁰



Khayelitsha, South Africa

Khayelitsha was created in the 1950s as worker housing for Cape Town. With the advent of free internal movement in 1994, residents of the rural Eastern Cape flocked to the Cape Town area seeking economic opportunity. Within a decade, Khayelitsha had quintupled its planned population and massively expanded its footprint due to construction of informal housing

Khayelitsha's population was 301,000 at the last census in 2011; since then the settlement may have reached 700,000+ inhabitants.

The settlement's distance from the metro centre remains a key obstacle for residents. Caregivers must spend hours on trains or in taxis to reach city jobs; consequently children are left on their own or in unregulated daycare facilities for large stretches of the day.

Safety is a key issue in Khayelitsha. The settlement has the lowest police-to-population ratio in the country, and with few diversions for young adults, gang activity, drug trafficking and gun violence are facts of everyday life.



Kibera, Kenya

Founded in the early 1950s in a forest at the edge of Nairobi, Kibera has since been entirely enveloped by the city. Estimates of the current population range from 300,000 to over 1 million; the settlement has garnered media attention due to the (inaccurate) label of ‘the largest slum in Africa’.

Whatever the real figure of Kibera’s population, national and regional authorities do not acknowledge the settlement’s legality, leaving the entire population without access to services or infrastructure from the surrounding city.

A significant majority of Kibera’s population lives without electricity or an in-home water supply. Due to minimal sanitation services, Kibera’s streets are heavily contaminated with waste. The severe topography of the area, poor soil conditions, heavy seasonal rainfall and proximity to the Nairobi river combine to result in regular flooding and structure collapse.

Kibera’s age and size have led to the rise of robust informal economic and educational systems.⁹²



REFUGEE SETTLEMENTS

Refugee settlements are urban areas where refugees self-settle in unclaimed properties or join pre-existing informal settlements.⁹³

These settlements generally arise in response to armed conflict, political unrest, natural disasters, resource shortages, or other crises.

Refugee settlements tend to accrete near national borders, often just inside countries nearest a given crisis, or where an economically vibrant nation with restrictive immigration laws controls access from a state with relatively less economic opportunity but fewer restrictions on movement.

By definition, refugees originate elsewhere and have migrated under duress. Whether from another region or nation, weak ties to the host city expose refugees to obstacles not faced by indigenous residents

These obstacles may include marginalisation, discrimination, marginal social support networks, vulnerability to crime, violence, and exploitation, as well as issues associated with lack of documentation.

Migration to refugee settlements is largely due to push factors of conflict- or climate-related dispossession.

“Refugee Settlements” vs “Refugee Camps”

Arup and BvLF’s work does not encompass *planned refugee or internally displaced persons camps*. Our work is focused on *settlements*, e.g. urban spaces where refugees have self-settled, often after leaving planned camps.

Planned camps are intended as sites of temporary refuge; management and layout requirements related to this intent can conflict with those usual in built environment interventions.

More significantly, legal and regulatory structures around planned camps are delicate balances between humanitarian organisations, funding bodies and national governments; engaging with these structures can indirectly result in instability or conflict.

Principles from our work generalise well to camp environments, and practitioners are encouraged to adapt our findings where possible.



Photo courtesy of Catalytic Action

© Catalytic Action

Zaatari, Jordan

Established in 2012 as a temporary camp for refugees from the Syrian conflict, Zaatari is gradually transitioning into a self-provisioning urban conglomeration. As of 2019 the site hosts 78,000 refugees, 20% of whom are under five years old.

Since 2016, UNHCR has been moving away from a top-down model of service provision at the site and instead providing refugees with financial assistance only, intending

that the settlement's increasingly robust internal economy and organic social organisations will suffice to address the material and nutritional needs of residents.

Zaatari is a category-leading example of this type of transition from planned camp to urban settlement, a phenomenon likely to become increasingly widespread over the next 20 years.



Bar Elias, Lebanon

The Bekaa Valley town of Bar Elias had a population of 50,000 prior to the Syrian conflict; refugee influx has more than doubled that number in just under five years.

While the local guest culture embraces the newcomers, the city's service provision and social fabric have been overwhelmed by the sheer number of refugees seeking shelter and economic opportunity in the municipality.

Materially, this influx results in conflicts over space: the town is increasingly ringed by ad-hoc landfills, and available grave sites for deceased family have become a hotly contested commodity.

Socially, this overcrowding results in economic tension: the massive labour market for low-end jobs has significantly disrupted the city's established financial order, leading to resentment and violence.



The Proximity of Care Approach



The Proximity of Care approach is at the core of the Design Guide that Arup and BvLF are developing to support government authorities, urban practitioners, development and humanitarian organisations working in vulnerable urban contexts, to mainstream in their work the needs of young children, their caregivers, and pregnant women, and to profile their work as child and family friendly.

The Proximity of Care Approach was developed to better understand and frame the relationship between the built environment and early childhood development in vulnerable urban contexts, whose interdependencies are not always fully appreciated and addressed.

Proximity of Care describes how various urban systems relate to a child's developmental needs. This approach provides a structure to enable holistic consideration of both hard and soft assets - physical space and infrastructure, human interactions and relationships, and policy and planning support - at different urban scales.

The resulting understanding of the full spectrum of urban interactions allows planners, authorities and built environment professionals to create a healthy, stimulating, safe and supportive environment that contributes to young children's optimal development, and enhances caregivers' and pregnant women's living conditions and wellbeing.

Proximity of Care assesses four primary Dimensions foundational to early childhood development: Health, Protection, Stimulation and Support.

Within each dimension, the framework focuses on beneficiaries' needs at three primary scales of urban interaction: the household, neighbourhood and city levels.



PROXIMITY OF CARE: DIMENSIONS

The Proximity of Care approach assesses four primary Dimensions foundational to optimal early childhood development, focusing on the **Health, Protection, Stimulation** and **Support** needs of young children, their caregivers, and pregnant women as they move through their daily lives and routines in a vulnerable urban context.

Each of these four dimensions engages four key factor areas, examining a range of indicators against benchmarks of ‘what good looks like’ at three distinct levels of the urban fabric. This cross-cutting assessment encourages a nuanced understanding of the specific areas most critical to improving early childhood development in a given context.

Dimension: Support

This dimension considers elements that contribute to a knowledgeable and supportive environment for optimal early childhood development, looking at how to enhance knowledge, support from city authorities and community members, and include beneficiaries’ voices in decision-making and planning.

Dimension: Stimulation

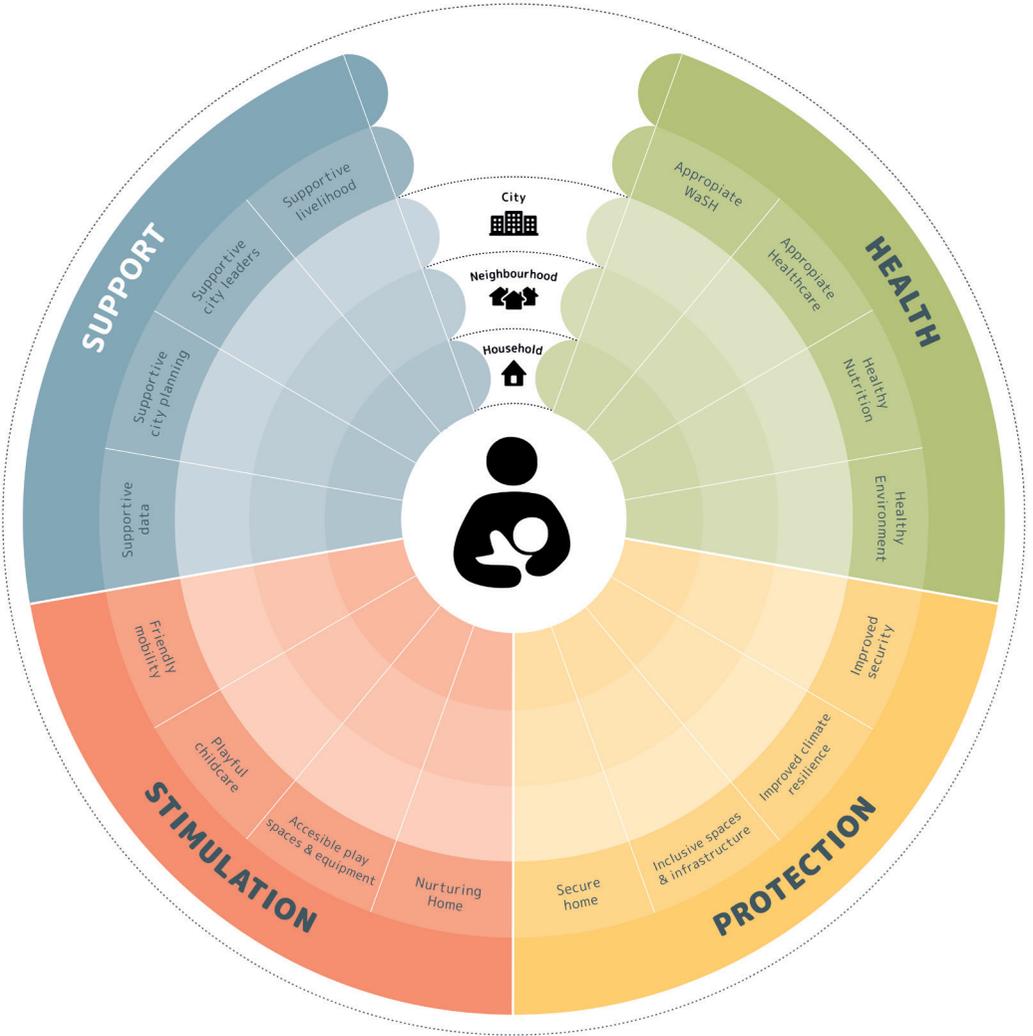
This dimension considers elements that contribute to a nurturing and stimulating environment for optimal early childhood development, addressing how to enhance the quality of children’s interaction with caregivers, peers, other adults, and the physical space around them.

Dimension: Health

This dimension considers elements that contribute to a healthy and enriching environment for optimal early childhood development, examining how to improve physical, mental, and emotional health and support cognitive development among young children, their caregivers, and pregnant women.

Dimension: Protection

This dimension considers elements that contribute to a safe and secure environment for optimal early childhood development, determining how to reduce risks, mitigate hazards and increase safety for children, and improve caregivers’ perception and experience of safety and security.



Visualisation of the Proximity of Care Approach

PROXIMITY OF CARE: LEVELS

The Proximity of Care Approach engages with three key scales of urban interaction significant for children and caregivers throughout early childhood development: the **Household**, **Neighbourhood**, and **City** levels.

These levels are highly context-dependent. Particularly in informal and refugee settlements, definitions of ‘household’ and ‘neighbourhood’ may be mutable, encompassing single dwellings, compounds and shared spaces.

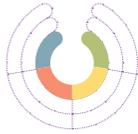
Similarly, the ‘city’ level may depending on context include a provincial or national dimension, where policies that impact early childhood development originate beyond municipal authority.

To improve early childhood development in vulnerable urban contexts, it is necessary to understand the spatial and relational specifics of each level by assessing challenges and opportunities, and to engage with all three levels simultaneously for greatest effect.

Description

Relationships

Spaces



Household

The Household is where the child lives and spends the most time. It is a personal, intimate, and immediate space, where a young child feels confident, can move freely and likely has the most support from and interactions with caregivers. How children are treated in the household will influence relationships throughout their life.

Interactions at the household level are intimate and ideally reciprocal, nurturing, supportive and stimulating for the young child, involving parents, siblings, and extended family.

The physical space of the household level describes the house, flat, shelter or compound, any associated space such as a garden or yard, and immediate street frontage.



Neighbourhood

The Neighbourhood is where the child develops many spatial and relational skills, interacting with the community alongside a caregiver. It is a local, communal, public space, accessible from home, where a child requires guidance and protection from adults. This level includes links between home and nursery, workplace, and healthcare, and between family and community.

Interactions at the neighbourhood level are social, educational and commercial, involving neighbours, friends, classmates, merchants, clergy, and other adults regularly known to the caregiver.

The physical space of the neighbourhood includes play areas, nurseries, schools, stores, markets, and places of worship; it also includes streets, local transit, and connections between these spaces.



City

The City is a distributed, institutional and administrative space, distant from the home and generally not accessible by walking, encompassing both neighbourhoods and households. This level includes regulatory and governance policies which impact early childhood development.

Interactions at the city level are functional, involving transit and emergency staff, administrators, politicians and decision makers. Young children's visibility and consideration as a group to actors at this level has key impacts on early childhood development, including budgeting.

The physical space of the city includes local, provincial, regional or national offices, regulatory bodies and administrative facilities which the caregiver and child may visit infrequently, but which have a key role in defining the policy and infrastructure environment in which early childhood development occurs.

Beneficiaries and their Needs

The Proximity of Care Approach considers four key groups living in vulnerable urban contexts:

- + Children 0-3
- + Children 3-5
- + Caregivers
- + Pregnant Women

These four beneficiary groups are particularly exposed to and severely affected by inadequate basic services, poor living conditions, limited economic and educational opportunity, and lack of representation in urban policy and planning.³¹

Children Age 0-3

The ‘first 1000 days’ from conception to 24 months is a critical window of rapid brain development.³² During this time, children are extremely physically and psychologically vulnerable, and are entirely dependent on adults.

Children Age 3-5

A child’s growing independent mobility at this age provides a broader range of stimulating experiences, but can place strain on caregivers in terms of safety, supervision, and transportation.³³ Health care, nutrition and protection remain important at this stage, as does the developmental significance of relationship-building.⁴

Pregnant Women

During the antenatal period, health, nutrition and protection are essential for both mother and unborn baby.³⁵ The physical and psychological health of the mother, and the support she receives from her community are particularly important.

Caregivers

Caregivers are children’s direct support networks: parents, siblings, extended family and non-related carers.³⁶ Parents, as natural primary caregivers, are crucial initial influences, as they demonstrate affection, introduce the child to language, and make the child’s world safe and interesting to explore.³⁷



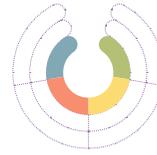
CHILDREN AGE 0-3 THROUGH THE PROXIMITY OF CARE LENS

Optimal development at age 0-3 is characterized by variety of stimulation, nurturing relationships, attachment to primary caregivers, and provision of optimal nutrition.

Children at this age should not, save in exceptional circumstances, be separated from their mother or caregiver.⁴⁵

Nurturing, responsive interactions with caregivers forge emotional bonds and are essential for optimal cognitive development.

Loving, engaged, undistracted and particularly nonviolent caregiving helps ensure positive developmental outcomes. Absent or unreliable caregivers negatively affect development; coping strategies developed in response to caregiver neglect can severely compromise children's later relationships.



HOUSEHOLD

Health:

At age 0-3, healthy nutrition is crucial. Ideally this begins with exclusive breastfeeding, starting within the first hour of the child's life and continuing for the first six months.⁴⁷ After six months, optimal nutrition (adequate calorie intake, dietary diversity, and a variety of macro- and micro-nutrients) is key for brain development as well as physical growth.⁴⁸

Protection:

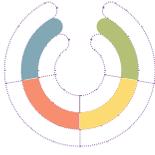
Healthcare, including immunization, disease treatment and prevention, and regular check-ups, is critical. Access to WASH facilities should be considered a necessity.⁴⁹

Stimulation:

Rest is as important as stimulation: infants from 0-3 months of age need 14-17 hours of good quality sleep including naps; sleep requirements decline to 12-16 hours from 4-11 months, and 11-14 hours at age 1-2.⁵⁰

Support:

Nurturing relationships are of primary importance and centre around 'serve-and-return' interactions,⁴⁶ where caregivers engage with a child's noise, gesture or expression.



NEIGHBOURHOOD

Health:

Healthcare provision should be safely accessible from the home, without physical, social or financial barriers to access.

Protection:

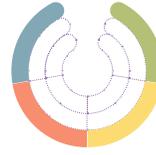
Optimally, infants should not be restrained continuously for more than an hour at a time. Access to safe streets for travel with caregivers is crucial for very young children, as is regular access to green space for exploratory play and exposure to nature.

Stimulation:

At this stage children are totally reliant on their parents for both interaction and mobility. Infants should be physically active several times a day, particularly through interactive floor-based play, the more the better.

Support:

Creches and daycare facilities can fill a critical gap for working caregivers; these facilities should be hazard-free, safely and easily accessible from the home, and staffed by trained, qualified, motivated caregiving professionals. Certification of both the facility structure and individual staff members is desirable.



CITY

Health:

Programmes intended to improve early childhood development should recognise the interdependencies between security, nutrition, healthcare, and early learning, especially for prenatal children and 0- to 3-year-olds⁵²

Protection:

Births should be registered, either by authorities, or by humanitarian and development organisations. Documentation is key to providing children with access to the full range of developmentally necessary urban assets and services.⁵³

Stimulation:

Planning and programming of public spaces and institutions should recognise the specific physical needs of caregivers visiting those spaces with 0-3 year old children.

Support:

Authorities should champion documentation, healthcare provision, and daycare availability by ensuring these services are funded, regulated and certified, by including education and awareness of the necessity and availability of these services in planning and policy, and by modelling these offerings through municipal institutions.

CHILDREN AGE 3-5 THROUGH THE PROXIMITY OF CARE LENS

Optimal development at this age is characterized by an expansion of the number and complexity of a child's relationships with other children and adults across a variety of settings.³

A child at age 3-5 requires more varied and complex sources of stimulation and opportunities for exploratory play.

Young children experience the world at a much smaller scale than other humans and have far shorter, and more assistance-dependent, range of mobility than older children and adults.⁵¹

Increasing independent mobility allows access to new experiences, particularly dynamic social interactions with siblings, family and visitors to the household, but this greater freedom of movement raises new concerns around safety.



HOUSEHOLD

Health:

Proper nutrition remains important at age 3-5. Through this age span the developing child should ideally broaden intake of a variety of fresh, healthy foods with a wide diversity of macro- and micro-nutrients.

Protection:

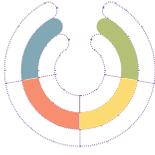
The increasing mobility of children at this age presents opportunities for a wider variety of stimulation but requires that caregivers ensure the child's safety with regard to navigating, handling and ingesting objects in the home. Reduction of caregivers' physical and environmental stress is of primary importance; a household environment that supports the caregivers' physical and mental well-being is critical.

Stimulation:

Rest requirements at this age are 10-13 hours of good quality sleep including naps, with a regular bedtime and wake-up time.⁵⁴

Support:

Well-balanced mental health allows caregivers to recognize the child's needs and respond appropriately. This includes empathizing with the young child's experiences, managing their own emotions and calibrating reactions to their child's dependence.



NEIGHBOURHOOD

Health:

At age 3-5, development focus shifts to playing and exploring more independently in neighbourhood streets and expanding the range of relationships with peers and adults.⁵⁵

Protection:

Mobility challenges are beneficial, as are complex interactions with other adults and children.⁵⁶ Independent mobility is important to development, resulting in higher levels of physical activity, increased sociability, and improved mental wellbeing, freedom and dignity,⁵⁷ which can also benefit their parents and caregivers.

Stimulation:

Physical exercise and a connection to the natural world are associated with a range of physical and mental health benefits, including lower rates of obesity, depression, stress and attention disorders.⁵⁸ Active forms of mobility not only encourage healthier routines, contributing to reduced childhood obesity, but also more frequent social interactions.

Support:

ECD programmes help foster social competency as well as continued cognitive, emotional and language development, preparing a child for success in school.



CITY

Health:

Children age 3-5 require advocacy at the highest levels of urban planning and decisionmaking.

Protection:

The best interests of young children should lead the design and implementation of tools and policy.⁶² This can be achieved through data-driven decision-making that includes perceptions and opinions of beneficiaries in data collection.

Stimulation:

The limitations of very young children's participation in planning processes are self-evident, but their inclusion in these processes (with reasonable adjustments to account for their age) can help normalise both interaction with municipal authorities and an expectation of civic participation.

Support:

Cultivating an awareness and enthusiasm for engagement with civic and planning issues from the youngest possible age sets the stage for long-term political and community awareness, providing the building blocks for residents of vulnerable urban contexts to increase a sense of ownership, agency and dignity.

PREGNANT WOMEN THROUGH THE PROXIMITY OF CARE LENS

Early childhood development can be properly understood to begin well before a child is born.

Healthcare is crucial for pregnant women, who need easy access to health services and parental coaching activities.

Supportive partners (or family and friends if partners are absent) are key to improved pregnancy outcomes, as are regular prenatal health check-ups. Pregnant women should obtain a copy of their own medical record, if possible, to improve continuity and quality of care.

Counselling on birth spacing and family planning can have significant positive effects on improving material and emotional resource availability for both children and caregivers.



HOUSEHOLD

Health:

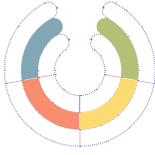
Diverse nutrition is a key contributor to both maternal and foetal health, as is a supportive, low-stress environment with adequate exercise and rest. Pollution and environmental hazards are a key concern during pregnancy: toxins can severely impact foetal birth weight as well as long-term development of the child.

Protection:

Supportive care during labour is an oft-overlooked component of antenatal care. The continuous presence of a 'companion of choice' for emotional and practical support is proven to shorten labour, reduce the incidence of emergency C-sections and lead to better labour outcomes.⁷⁵ This companion can be any person chosen by the pregnant woman: her spouse or partner, a friend or relative, a community member or a doula.⁷⁶

Support:

Postpartum women should receive family and social support; family and friends should be educated about the symptoms of postpartum depression and monitor the new mother's emotional wellbeing for three weeks after birth.



NEIGHBOURHOOD

Health:

Antenatal medical assessment is a key part of improving women's pregnancy experience. At least four antenatal check-ups are recommended.

Medical assessments should include blood testing for anaemia, urine testing for asymptomatic bacteriuria, and clinical inquiry into tobacco use, substance abuse, and the possibility of intimate partner violence.⁷⁹

Protection:

If possible, pregnant women should have an ultrasound scan before 24 weeks; this can detect foetal anomalies and multiple pregnancies and reduce post-term pregnancy labour induction.⁸⁰

Support:

Counselling and medical visits should ideally take place at a facility near the woman's home, without physical, social or financial barriers to access. Transportation options to and from assessment visits should take into account pregnant women's pace, size and need for rest while walking long distances or standing for prolonged periods.



CITY

Health:

Pregnant women need healthy, safe and supportive environments at work, at home and access to health services and parental support.⁷⁷

Adequate pre- and post-natal care,⁸¹ including parental coaching, is crucial to positive outcomes and should be included in city health planning and budgets.⁸²

Protection:

There is a pressing need for better health assistance for pregnant women during delivery at hospitals. Municipal policy should recognise the developmental importance of breastfeeding and support both time and space for breastfeeding in municipally-associated institutions and the design of transit systems, public buildings, and public spaces.

Support:

Governance tools should aim for a holistic approach to early childhood development issues and include specific legislation, programmes, budgets, regulatory frameworks and training.⁸³ For instance, adequate parental leave for both parents should be guaranteed through both government and employer's policies.

CAREGIVERS THROUGH THE PROXIMITY OF CARE LENS

All young children need frequent, warm, responsive interactions with loving adults;⁶³ this requires that caregivers have sufficient time and energy to devote to their charges.

Violence, abuse and neglect produce high levels of cortisol, a hormone that contributes to stress, limiting neural connectivity in developing brains.⁶⁴

Positive and non-violent caregiving, where caregivers are sensitive to an infant's signals and respond appropriately, builds stable and responsive relationships. This has long-term effects on the child's cognitive and emotional development,⁶⁵ especially with regard to language acquisition and behaviour



HOUSEHOLD

Health:

The relationship between child and caregiver is a mutually reinforcing cycle. Providing adequate support for physical wellness, mental health and reducing stress for caregivers results in more affectionate, interactive, and consistent care for the child.

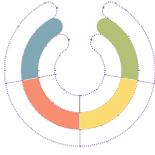
Protection:

Use of positive discipline builds quality of communication, understanding, and trust between caregiver and child, with positive long-term impacts on brain development and social interactions.⁶⁶

Caregivers should provide consistent, engaged feedback to the child, and absolutely never use physical violence against a child in any situation.

Support:

City policy and neighbourhood awareness are critical to providing the economic, nutritional and safety underpinnings of a secure home life for children at the upper end of this age bracket.



NEIGHBOURHOOD

Health:

Parents and caregivers' mental wellbeing and confidence in their ability to support and provide for a child measurably improves young children's development.⁶⁷ Ensuring that caregivers' daily routines run smoothly, and that they have the support of community networks, has a significant impact on mental health and facilitates positive interactions with children.⁶⁸

Protection:

Play and green public areas are key for young children's stimulation and development. Properly implemented, child-friendly spaces increase caregivers' perception of safety, reducing stress and allowing more outdoor play time for children, and more socialisation between neighbours.⁷¹ Improving parents' and caregivers' perception of safety can foster freer play and contribute to reducing caregiver stress.⁷²

Support:

Places for children are also places for adults, hence they should be designed for young children, their caregivers, and pregnant mothers. Any place where children linger with caregivers can be a place of learning, from a supermarket to a bus stop.⁷³



CITY

Health:

Caregivers and pregnant women should be involved in planning and policy design through community outreach, ethnographic research and co-design initiatives.

Protection:

The developmental importance of parental leave for both parents (or caregivers if not biological parents) should be understood at the municipal level and supported through policy, planning and financial incentives.

Municipal policy can incentivise corporations operating in the city to provide support and wellbeing services to employees; city leadership can take a championship role in this by ensuring city institutions model parental leave and support policy.

Support:

Optimal, holistic early childhood development hinges on caregivers' knowledge and awareness. Communication campaigns and public education to ensure that parents and caregivers possess a knowledge of the full range of care practices (health, nutrition, hygiene and stimulation) is critical.

INFORMAL SETTLEMENTS THROUGH THE PROXIMITY OF CARE LENS

Informal settlements present a number of common challenges to early childhood development at each level of the Proximity of Care scale.



HOUSEHOLD

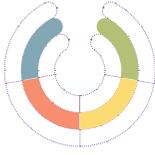
General challenges at the household level:

Pollutant exposure tends to be higher in informal settlements. Cramped living arrangements affect physical and psychological wellbeing.⁹⁵ Overcrowding in the home can cause withdrawal mechanisms in young children, as their developing brains attempt to cope with noise and lack of privacy.⁹⁶

Informal housing is typified by improvised structures, exposed to weather and climate impacts, often without waste and water management.⁹⁴

Residents can be severely affected by temperature extremes; coping with heat or cold increases physiological stress and can have critical health impacts for young children

Many adult residents of informal settlements can only access informal, unstable and often illegal jobs. Parents without stable employment often have difficulty providing sufficient healthy food for young children, in addition to experiencing increased caregiver stress.



NEIGHBOURHOOD

General challenges at the neighbourhood level:

Informal settlements tend to suffer from minimal WASH provision, substandard roads, poor electrical availability, and an absence of green, public and play areas.

Reduced opportunity, corrupt or under-resourced policing, and resource competition can lead to crime and substance abuse.¹⁰⁰ These activities cause violence and insecurity, with impacts on young children's daily freedom and physical safety.

The trauma of living in an area where violence is prevalent can impede proper neural development and lead to coping behaviours such as aggression or withdrawal.

Informal settlements are often sited in environmentally hazardous areas, exposed to impacts of climate change, natural and manmade disasters.⁹⁸ Droughts can mean long, stressful journeys to secure daily water needs; poor drainage provision can mean severe flood risk and exposure to waterborne pathogens



CITY

General challenges at the city level:

Participation in interventions may be seen as dangerous due to risk of visibility to authority. Eviction is a constant threat, particularly in newer informal settlements sited on developable land.¹⁰¹

Data collection is a key issue in informal settlements. The speed with which informal spaces are adapted and inhabited often outpaces official census or survey assessments; fluid physical boundaries and constant population flux can further complicate accurate recordkeeping.

Datasets must be collected in an apolitical and agnostic manner; accurate mapping and categorizing of informal settlements' structures and populations is essential for adequate, and adequately apportioned, service delivery

Informal settlements tend to have complex relationships with local and even national authorities. Officials may view informal settlements as less deserving of policing and service provision or may simply refuse to acknowledge a settlement's existence.

REFUGEE SETTLEMENTS THROUGH THE PROXIMITY OF CARE LENS

Refugee settlements present a number of common challenges to early childhood development at each level of the Proximity of Care scale.



HOUSEHOLD

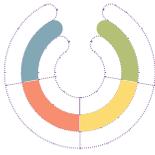
General challenges at the household level:

Regardless of material living conditions, the stress of transition for refugees is universally severe.

Prolonged displacement of refugee children from their homes introduces a variety of traumas, any one of which would be sufficient to cause toxic stress. Refugee families will likely have encountered military or ethnic violence, some degree of privation or malnutrition, and exposure to natural hazards, crime and abuse along their relocation journey

Displacement reduces caregivers' individual agency and opportunity to provide income, adding to stress and contributing to destructive coping behaviours among adults, including domestic violence.¹⁰⁷

The combined strains of migration impose an overhead on mental bandwidth that measurably reduces parenting capacity and caregivers' emotional engagement, intensifying cumulative developmental risk for children.



NEIGHBOURHOOD

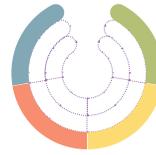
General challenges at the neighbourhood level:

The neighbourhood level can be a place of social tension in refugee settlements.

Refugee populations can place pressure on local services already struggling to meet the needs of the urban poor.¹⁰⁸ Refugees often find themselves in conflict with local communities over resources, land, or religious differences. These conflicts cause insecurity for both young children and caregivers, compromising freedom of movement and social integration.

The most vulnerable populations (unaccompanied and separated minors, single-parent families and child-led households) are at particular risk from the threats of vulnerable urban contexts, including theft, street violence, and sexual and physical abuse.¹¹⁰

Refugees face the additional threat of detention and deportation, especially when host country policy excludes them from the official labour market.¹¹¹



CITY

General challenges at the city level:

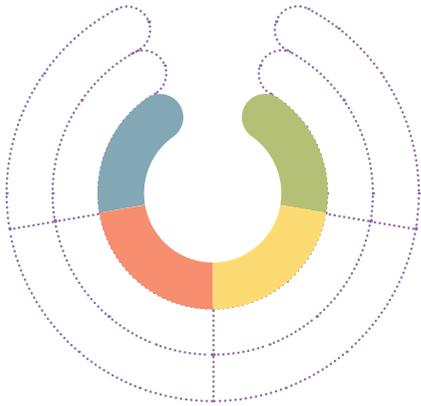
While city authorities may welcome refugees, national host government policies are generally becoming more restrictive in countries of first asylum globally.

Host governments are crucially important in providing early childhood care. In many countries, responsibilities for provision of this care is delegated to local municipal government, where budgets may not be adequate to the task.

Refugees often devise organic solutions to issues which in more established contexts would be handled by municipal authorities: these include the development of informal social protection networks, self-funded revolving loan groups, and community-generated schools and clinics

Birth registration is a critical issue for children born in urban refugee settlements.¹¹⁴ Complicated or costly administrative registration procedures, coupled with insufficient awareness among expectant mothers of the importance of registration, leads to undocumented children. Lack of birth registration can have lifelong consequences.

Recommendations: Household Level



Young children living in vulnerable urban contexts face a complex set of challenges and cumulative developmental risk.¹¹⁶

For children, exposure to physical and health threats, poor WASH facilities, nutrition, service access, and caregiver stress are among the most significant challenges.

A single stressor (overcrowded dwellings, unsafe surroundings, or chronic noise) has a fixed detrimental effect on early childhood development, but the additive effects of multiple stressors (chronically noisy, overcrowded dwellings in unsafe surroundings) scale exponentially.

These compounding stressors, and the resulting onset of toxic stress, are what place young children in vulnerable urban contexts at such an extreme developmental disadvantage.

Every opportunity to reduce caregiver stress is a chance to indirectly improve early childhood development.

Safety and security, economic opportunity, and free time are all constrained resources for caregivers in vulnerable urban contexts.

Freeing up these resources leads to more engaged caregiving; more engaged caregiving leads to thriving children.

Children's spaces need to be safe, peaceful, healthy and stimulating.

Protection from violence, particularly domestic abuse, is an absolute need for early childhood development. Young children need proper nutrition and sanitation as a bare minimum.

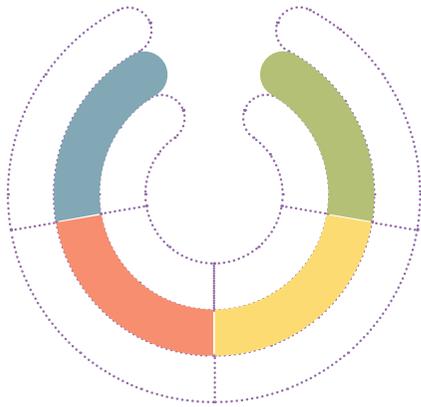
Reduction of chronic noise and sensory disruption is as important as health and hygiene. Beyond these minimum standards, children need street and playspace designs that support stimulating play.

Nonviolent, nurturing and engaged cognitive and socio-emotional caregiving is a critical need, not a nice-to-have.

Telling stories to, playing with, and singing to a young child, and responding to 'serve-and-return' interactions are neither universally instinctual nor superfluous.

These interactions are as crucial to thriving development as are safety, nutrition and physical health. Ensuring that these behaviours are treated seriously by designers, planners and city authorities as grounds for both physical interventions and caregiver education is a key component of ECD support.

Recommendations: Neighbourhood Level



Local knowledge is critically important for successful early childhood development initiatives.

The complexity of vulnerable urban contexts' relationship with the surrounding urban area often spurs the development of local solutions to issues that in other situations might be dealt with by municipal authorities.

Understanding the evolution of these workarounds and adapting them to support external interventions can help make the difference between a merely well-intentioned project and a successful one.

Absent official engagement, community structures and leadership are key gatekeepers and allies in developing interventions. Where official engagement can be relied upon, community structures and leadership are key facilitators and can help ensure community buy-in.

Lack of agency is corrosive to people and communities; dignity should be a core value in any intervention.

Feelings of personal helplessness are a significant source of stress and contribute to cycles of addiction and abuse. If this feeling permeates a community, it can dissolve the social bonds upon which safe, healthy, vibrant neighbourhoods depends

Restoring a sense of agency and dignity to residents of vulnerable urban contexts is critical to delivering change.

Decision-making creates a durable sense of ownership.

While any development project must be approached from in both the top down (permitting, buy-in, safety) and bottom up (local knowledge and perspective), pushing decision-making as far down the chain of authority as possible can empower vulnerable communities, providing a sense of ownership which can help initiatives succeed over the long term.

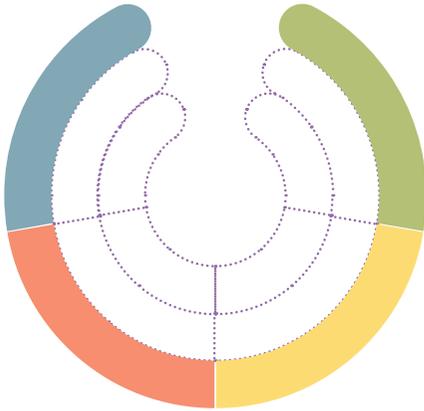
Interventions in vulnerable urban contexts should benefit the surrounding community as well as targeted populations, and these benefits should be clearly communicated.

Singling out vulnerable areas, or inhabitant groups specific to those areas, for intervention projects can generate ill-will from surrounding urban communities and risks stoking sectarian, tribal or political conflict.

Ensuring that both the messaging and implementation of interventions highlight benefits to the broader urban community at large can defuse resentment.

Each intervention should be treated as an opportunity to create dialogue and build rapport between residents of vulnerable urban areas and members of surrounding communities.

Recommendations: City Level



Understanding the history and nature of an area's relationship to authority is key to effective interventions.

Relationships between vulnerable communities and authority are often complex. Official stances towards informal settlements vary: an area that in one city presents an opportunity to burnish municipal credentials via upgrading may in another city be considered an eyesore under threat of eviction. Careful assessment of local political relationships is key to developing successful approaches.

Life-course economic analysis can shift stakeholder perceptions.

Children's issues naturally encourage adult decision-makers to take a long-term view. Public expenditures compounding over the lifetime of a developmentally compromised child can be substantial; the cumulative social efficiencies of improving early childhood development should be quantified for stakeholders.

Pregnant women's needs are a powerful case-building tool.

While children's needs often fall 'below the radar' of municipal or regional authorities, pregnant women are generally afforded respect and compassion across cultures and societies; their position as adults with agency allows their needs to be 'taken seriously' by authority structures in a way often unavailable to children.

Built environment affordances for pregnant women -- including reduced exposure to pollution, material protection from environmental and human hazards, and rest areas incorporated into public spaces and transit systems -- generalize well to the needs of young children. Pregnant women can be thought of as 'needs ambassadors' when interacting with local, regional or national officials with regard to interventions in a vulnerable context.

Nuanced, accurate data is critical for addressing complex ECD challenges.

A lack of regularly updated, nuanced datasets is common in vulnerable urban contexts. Municipal or national data collection is often infrequent, incomplete or affected by political considerations, down to the level of basic demographics.

Where data is current, population averages can blur subgroup inequities that affect conditions in vulnerable urban contexts. The number of overlapping challenges to healthy early childhood development in these areas can be overwhelming; starting with data-gathering and constantly challenging assumptions can help find effective, efficient solutions.

What's Next?



The Proximity of Care Approach will be field-tested in collaboration with project partners in four pilot sites, each featuring a distinct vulnerable urban context:

- The informal settlement of Khayelitsha in Cape Town, South Africa, in collaboration with Violence Prevention through Urban Upgrading (VPUU).
- The informal settlement of Kibera in Nairobi, Kenya, in collaboration with Konkuey Design Initiative (KDI).
- The refugee neighbourhood of El Mina in Tripoli, Lebanon, in collaboration with Catalytic Action.
- The refugee settlement of Azraq in Mafrqa Governate, Jordan, in collaboration with Civic.

Data gathered through our field research at these pilot sites will support development of the **Proximity of Care Design Guide**, a modular toolkit for government authorities, development and humanitarian organisations, and urban practitioners working in vulnerable urban contexts.

The Design Guide will provide robust, user-friendly, context-sensitive design principles, tools, and policy recommendations to help design meaningful interventions that overcome barriers and address unmet needs of the target beneficiaries -- ultimately helping to build inclusive, liveable, safe and climate-resilient urban settlements where young children can thrive.

The Design Guide will be finalised in October 2020.



Definitions



Beneficiaries

The intended beneficiaries of the Design Guide are children from 0–5 years old, their caregivers, and pregnant women. While these groups form the focus of our efforts, the Guide is expected to deliver benefits to the wider community in vulnerable urban settlements where interventions described in this document take place.

Built Environment

The physical and functional characteristics of an urban settlements, including buildings, infrastructure (blue, green and grey) and open spaces.

Context

The characteristics (physical, environmental, cultural, socio-economic, historical and governance) that constitute the setting where the project takes place. This project addresses vulnerable urban contexts, such as informal settlements and refugee areas

Early Childhood Development (ECD)

The physical, cognitive, linguistic, and socio-emotional development of children from the prenatal stage up to age five, a developmental period during which many adult capabilities and characteristics are shaped.

Informal Settlements

Residential areas that by at least one criterion fall outside official rules and regulations. This document adopts the UN-Habitat definition of informal settlements¹¹⁷ as residential areas facing three primary deprivations:

1. Inhabitants have no security of tenure vis-à-vis the land or dwellings they inhabit, with modalities ranging from squatting to informal rental housing
2. Neighbourhoods usually lack, or lack access to basic services and city infrastructure
3. Housing may not comply with current planning and building regulations and is often situated in geographically and environmentally hazardous areas

Mental Bandwidth

A colloquial term for cognitive function capacity, humans' fixed amount of cognitive resources available for processing complex tasks. The cognitive overhead imposed by poverty, prolonged stress or material vulnerability can measurably and lastingly impair decision-making performance, focus, attention span, and fluid intelligence. Cognitive capacity can be reduced by circumstance or environment even when biological markers of stress are absent.

Refugee Settlements

Urban areas where refugees self-settle, either in unclaimed properties or in pre-existing informal settlements.¹¹⁸ Refugee settlements generally arise in response to a crisis, such as armed conflict, political unrest, natural disaster, or resource shortage. Refugee settlements can accrete near national borders, often just inside countries nearest a given conflict or disaster, or where an economically vibrant nation with restrictive immigration laws controls access from a more permissive state.

Toxic Stress

A physiological response occurring when a child experiences strong, frequent, and/or prolonged adversity – such as physical or emotional abuse, chronic neglect, exposure to violence, or accumulated family hardship – without adequate adult support. Prolonged activation of biological stress response systems can disrupt brain development and increase risk for stress-related disease well into adulthood.

Urban Context

The definition of ‘urban’ varies between, and often within, countries over time.¹¹⁹ Common criteria include administrative or political boundaries of a physical area; minimum threshold population (typically 2,000 people, although this varies globally between 200 and 50,000); or the presence of urban services (power, water and waste systems). Urban contexts can be understood

as “diverse, dense and dynamic¹²⁰” settlements, exhibiting high population density; a greater proportion of built-up area than their surroundings; diverse economic functions and income opportunities; and complex, interdependent social pressures.¹²¹

Users

Parties who will implement and advocate for the Design Guide. These include urban practitioners, decision makers, development and humanitarian organisations, and private investors.

Vulnerability

Vulnerability encompasses a variety of concepts and elements, including sensitivity or susceptibility to harm and lack of capacity to cope and adapt.¹²² Vulnerability addresses the degree to which a population, individual or organization is unable to anticipate, cope with, resist and recover from the impact of natural, social, political, or economic shocks and stresses to a satisfactory and sustainable quality of life.¹²³

Vulnerable Urban Contexts

Vulnerable urban contexts are built environments whose residents are exposed to ongoing stresses and shocks that pose a threat to residents’ lives, livelihoods, and the maintenance of social, natural, physical, political and economic systems.¹²⁴

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