



# Disparities in paediatric weight management

Policy Brief



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**Socio-economic status and ethnic background are recognised as predictors of risk for the development of obesity in childhood. It follows that paediatric treatment effectiveness may be affected by social disparities, mediated through family-level factors including attitudes to overweight, understanding of the causes of weight gain, motivation to make and maintain family-level changes in health behaviours, and the resources families have to ensure these changes can be sustained.**

Furthermore, access to treatment and availability of a range of treatment options may not be equitably distributed, with absent services and cost barriers adding to disparities in health outcomes.

When services are available, treatment may be affected by prevailing assumptions and biases among health care professionals discriminating against some families more than others.

It follows that interventions should be culturally and socially sensitive, avoid stigma, encourage motivation, recognise barriers and reinforce opportunities, and be achievable within the family's time and financial resources.

**This briefing aims to outline some of the barriers and provide some case studies where service provision attempts to overcome social disparities for children needing care.**



# Childhood obesity – an urgent global problem

The World Health Organization (WHO) has identified childhood obesity (CHO) as one of the most serious public health challenges of the 21st century. Globally, rates of CHO are on the rise: by 2020 nearly 160 million children and adolescents globally were living with obesity. World Obesity's Global Atlas on Childhood Obesity<sup>1</sup> estimates that this number will increase to over 254 million by 2030. Furthermore, the majority of children experiencing obesity live in low- and middle-income countries (LMICs).

## Countries predicted to have over 1 million school-age children and youth living with obesity in 2030.<sup>1</sup>

Country	Number of persons with obesity, aged 5-19, 2030	Country	Number of persons with obesity, aged 5-19, 2030
China	61,987,920	Vietnam	1,939,173
India	27,481,141	Ethiopia	1,926,697
United States of America	16,986,603	Saudi Arabia	1,864,250
Indonesia	9,076,416	Malaysia	1,770,631
Brazil	7,664,422	Sudan	1,757,471
Egypt	6,818,532	Morocco	1,757,152
Mexico	6,550,276	Yemen	1,646,485
Nigeria	6,020,182	Venezuela	1,611,444
Pakistan	5,412,457	Colombia	1,583,123
South Africa	4,146,329	Syrian Arab Republic	1,552,255
Bangladesh	3,555,050	Kenya	1,463,954
Iraq	3,477,305	France	1,368,893
Turkey	3,389,941	Uganda	1,345,197
Philippines	3,376,420	Germany	1,318,415
Iran	3,023,603	United Kingdom	1,309,702
Algeria	2,703,722	Italy	1,307,765
Russian Federation	2,550,607	Myanmar	1,288,929
DR Congo	2,421,404	Afghanistan	1,286,177
Argentina	2,248,509	Guatemala	1,262,281
Tanzania	2,185,879	Canada	1,109,002
Thailand	2,152,598	Peru	1,079,543



## Commission on Ending Childhood Obesity

In-light of the growing CHO prevalence trends, WHO established the Commission on Ending Childhood Obesity<sup>2</sup> which presented its final report in 2016. The Commission identified weight management as a key action area (**Box 1**) involving health services and the family, and ensuring access is available to all under a system of universal health coverage (UHC). Comprehensive access to paediatric weight management should be seen as a basic right under the Convention on the Rights of the Child, ratified by all but one country in the world.

### BOX 1. COMMISSION ON ENDING CHILDHOOD OBESITY

#### **Action Area 6 - Provide family-based, multi-component services on lifestyle weight management for children and young people who are obese.**

Develop and support appropriate weight management services for children and adolescents who are overweight or obese that are family-based, multicomponent (including nutrition, physical activity and psychosocial support) and delivered by multi-professional teams with appropriate training and resources, as part of universal health coverage.

- Implement a context-appropriate multicomponent weight management protocol that covers diet, physical activity and psychosocial support services tailored to children and families
- Align services with existing clinical guidelines and clearly configure the roles of primary health care providers for effective multidisciplinary work
- Educate and train concerned primary health care providers in identification and management of childhood obesity and associated stigmatisation
- Include childhood weight management services as part of universal health coverage



# Inequities in childhood obesity

In developed economies, children who are socially disadvantaged, specifically from families with low incomes or those who are in ethnic minorities, are at greater risk of developing overweight.<sup>3</sup> In contrast, in lower-income economies, children from middle- and higher-income population groups tend to have a higher risk of overweight,<sup>4</sup> although this trend appears to be changing as economic development spreads more widely.<sup>5,6</sup>

This present briefing paper is primarily concerned with the provision of weight management services for children who need support but who suffer social disadvantages in terms of gaining access to and using such services.

## Impact of COVID-19 on child obesity

The measures taken to help curb COVID-19 are likely to have substantial repercussions on children's health services. National lockdowns have reduced the opportunities for seeking treatment and may have reduced the services available to those referred for specialist services. The impact of COVID-19 may widen disparities in access between better-off households and those most severely affected by job losses and

income reductions. At the same time, lockdowns around the world reduced opportunities for physical activity, increased sedentary behaviour and the consumption of ready-prepared foods and snacks, while school closures have reduced access to nutritious school meals and health-promoting education, potentially increasing the numbers of children needing help with weight management.<sup>2</sup>



<sup>2</sup> For more information about COVID-19 and obesity, please visit our policy dossier: <https://www.worldobesity.org/resources/policy-dossiers/obesity-covid-19>



## Inadequacies in paediatric weight services

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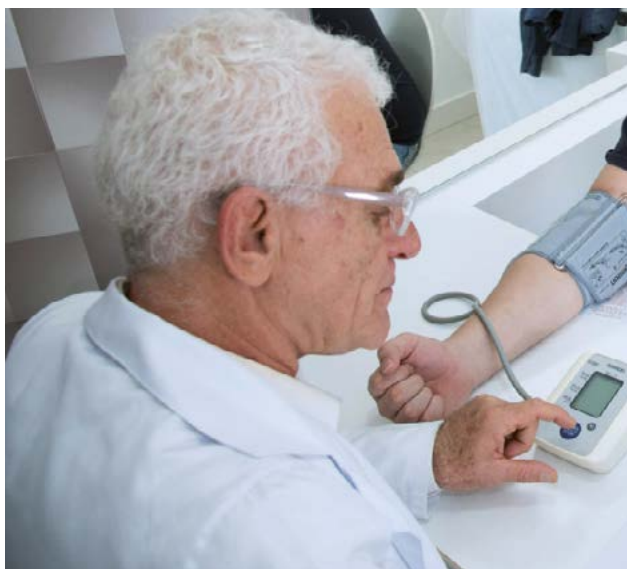
While several obesity management and prevention interventions exist, health systems around the world are not adequately equipped to ensure their delivery, even in high-income countries.<sup>7,8</sup> Rising rates of obesity are placing pressure on health systems worldwide, but in virtually all health systems CHO services are inadequate for the potential demand. This can be explained by a lack of resources, combined with a rising demand for such services.<sup>9</sup> In 2017 the WHO published guidelines<sup>10</sup> for the “management of children in primary health care to prevent obesity in the context of the double burden of malnutrition” and included a management plan linked to clinical and local hospital referrals for children needing weight management interventions.

Such management plans are not universally available, and in many countries, especially LMICs and for families without resources to obtain private health care, health services may lack the human and technical capacity to treat obesity in paediatric age-groups.

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***“Our hospital care model is very traditional: it lacks creative, multi-disciplinary care and it does not offer child-friendly clinic times or clinic facilities. Many patients default follow-up.” Dr. L Long, Hong Kong, Consultant Paediatrician of KWH***

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## Limited data evidence and evidence

Despite the acknowledgement that social disparities are likely to affect the success or failure of weight management interventions, such disparities are rarely examined in studies of paediatric treatment or systematic reviews of interventions. This was confirmed in a systematic review conducted as part of the STOP project and noted:

- A remarkable **lack of high-quality evidence** concerning the influence of social disparities on the effectiveness of paediatric obesity treatment, and on recruitment, drop-out and follow-up phases on interventions
- Baseline data on social disparities, when they are collected in treatment trials, are **heterogeneous in nature**. Measures may include ethnicity or racial descriptors, household income, parents'

education, a composite index of deprivation used in one country only, or an indirect indicator such as health insurance status

- Where baseline data are collected and reported, there is **often no further published analysis**, for example no differentiation by social sub-group of the processes or the outcomes of an intervention

The absence of high-quality information on social disparities in CHO treatment is one of the key barriers to the development and implementation of good practices when following national guidelines for paediatric weight management services. From the data available in published intervention studies and systematic reviews<sup>11</sup> a series of challenges are apparent (see **Box 2**).

### BOX 2: SUMMARY OF SOCIAL DISPARITY CHALLENGES

- Families' **perceptions and attitudes to overweight in children**, including family members' understanding of the underlying causes of weight gain, their motivation to make family-level changes, and the resources they have available to make and maintain these changes and sustain them beyond the period when they are receiving professional weight management support.
- **External environments**, including the pre-existing social, commercial, financial and physical environments which have contributed to excess weight gain, such as the widespread availability of relatively low-cost ultra-processed food and beverages, and incentives for sedentary behaviour.
- **Attrition from treatment**, including scheduling conflicts (time required for clinic visits, missed school, missed work, costs of transport), treatment disappointment (lack of immediate results, effort required to comply with intervention protocol, difficulty to maintain child's interest) and communication issues (including weight prejudice, race prejudice, language and second language difficulties).
- **Costs, including time costs**, consultation costs if not covered by insurance, costs for secondary or tertiary treatments, including surgery and pharmaceutical costs.
- **Definitions of obesity**, including the use of weight for height or body mass index (BMI) growth standards developed for healthy children (which may lead to confusion between mild stunting and overweight, and result in erroneous treatment to reduce weight to match short height).

## Tackling inequity in paediatric weight management

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Around the world, examples are emerging highlighting successes, challenges and good practices in paediatric weight management. In 2018, World Obesity launched a series of policy dossiers which aim to be a “one-stop shop” for policymakers and other relevant stakeholders. The dossiers include summaries and links to systematic reviews, cost studies, case studies,

advocacy reports, recommendations, stakeholder position statements and other resources which may be of use. Below are a few examples highlighting existing global interventions, and more can be found [here](#). Further submissions to the dossiers are welcome by contacting:

[advocacy@worldobesity.org](mailto:advocacy@worldobesity.org)

### CASE STUDY: HENRY, HEALTHY START, BRIGHTER FUTURE<sup>12</sup>

**HENRY (Health, Exercise, Nutrition for the Really Young)**, a programme developed in 2007 was designed to support parents from lower socio-economic groups in Britain to provide a healthy start in life for their children. The intervention focuses on children aged 0-5 years and their families, and uses an ecological approach towards encouraging healthy child development. This involves:

- Support for parents to enable them to adopt a healthy lifestyle
- Training for practitioners working with young families
- Community capacity building

The intervention recognises the importance of parents as ‘messengers’ and takes place over 8 weeks, with group sessions delivered by trained practitioners. Positive changes include increased consumption of fruit, vegetables, water, and reduced consumption of energy dense foods and sugary drinks in both adults and children. More time spent as a family, reduced screen time and increased physical activity are also noted outcomes of the intervention.



### CASE STUDY: 'SACBE', A COMPREHENSIVE INTERVENTION TO DECREASE BODY MASS INDEX IN CHILDREN WITH ADIPOSITY<sup>13</sup>

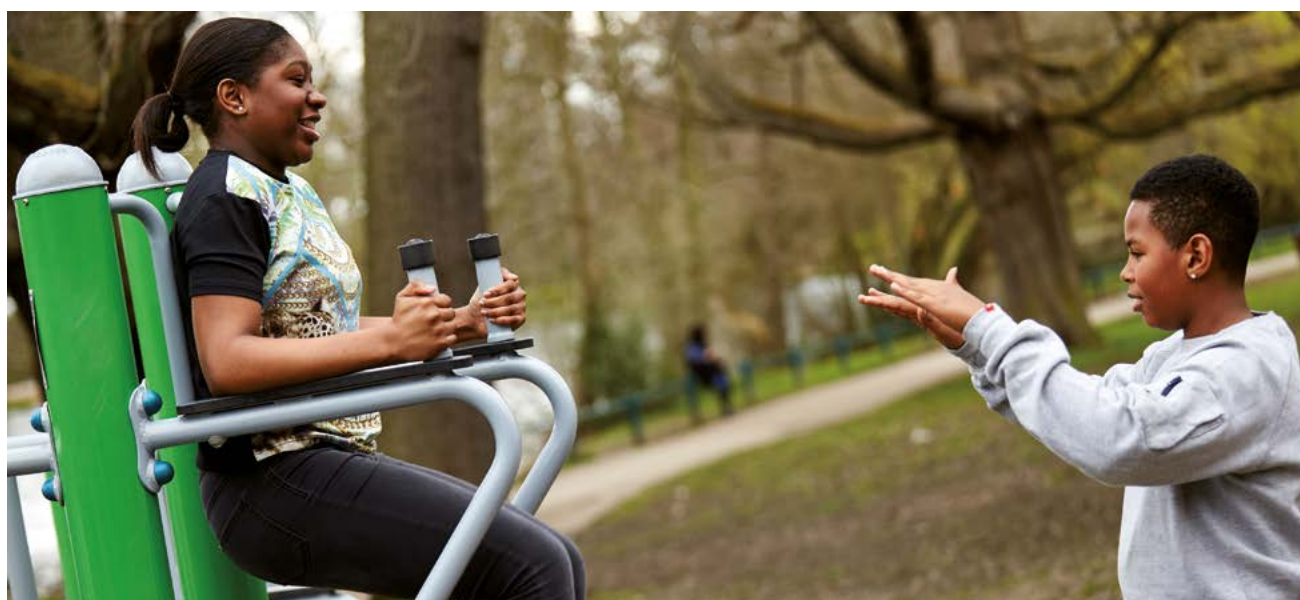
Traditionally, interventions to decrease CHO only had a moderate impact in a handful of cases. With trends going in the wrong direction, experts acknowledged the need for a more comprehensive approach to CHO, focusing on promoting the adoption of a healthy lifestyle within a specific sociocultural context. 'Sacbe' was made to offer an alternative to Latino children in Boston.

'Sacbe' was a "clinical and nutritional education programme to learn about the diabetes epidemic and scientific evidence about healthy lifestyle to decrease BMI inside a sociocultural context previously analysed." In addition to focusing on promoting healthy lifestyles, 'Sacbe' carefully considered the sociocultural context and required active involvement from the entire family. The programme consisted of two workshops:

- **A medical one** where children and their families were taught about the obesity epidemic, its consequences and associated risk factors. This workshop aimed to increase the overall understanding of obesity as a chronic disease and get a better understanding of some of the key drivers.
- **A nutritional one** based on the Mexican Model "Plate of Good Eating" while simultaneously improving nutritional literacy.

'Sacbe' showed very promising results, with the programme showing a reduction in BMI in 72% of the cases. In addition to a decrease in BMI z-score from baseline over a 12-months period, children and their families also improved the quality of their diet with increased consumption of vegetables and decreased intake of unhealthy products. Finally, children and their families also learned to identify the real status of their weight and recognise obesity and overweight as a chronic disease.

While the programme would require longer follow-up to identify whether the benefits are sustained over time, this is nonetheless a promising intervention. A key benefit of the programme was the active participation of parents as well as the educational component with regards to healthy lifestyle within their sociocultural context.



### CASE STUDY: A NOVEL HOME-BASED INTERVENTION TO CHILD AND ADOLESCENT OBESITY: THE RESULTS OF THE WHĀNAU PAKARI RANDOMISED CONTROLLED TRIAL<sup>14</sup>

In light of the growing prevalence of CHO, governments around the world are committed to address this epidemic through new policies and interventions. In New Zealand, improving access to nutrition and physical activity for families is a target initiative. 11% of New Zealand's children between the ages of 2 and 14 are living with obesity in the country, with Māori being 1.6 times more likely to have obesity compared to their non-Māori counterparts. The country also found that children living in more socioeconomically deprived households are five times more likely to have obesity than children living in the least deprived areas. Given the apparent social gradient associated with CHO, it is essential that multidisciplinary interventions promote the engagement and retention of these more vulnerable groups. Whānau Pakari is a randomised controlled trial of a multidisciplinary obesity intervention programme for children and adolescents, specifically focused on targeting high-risk groups.

Referred to the programme by a wide range of professionals, assessments were completed in the participants' home and included a comprehensive medical history and examination, a psychological assessment as well as a physical activity assessment, both conducted through questionnaires. The active participation of the family represented a key component of the intervention, with members required to attend at least 70% of the weekly sessions as well as be present for home visits and assessments.

Overall, the study found that a home-based model was very successful in reaching at risk children and adolescents. Both those assigned to the modest and intense intervention groups observed a clinically meaningful reduction in BMI, improvements in cardiovascular fitness and an improvement in psychological characteristics at the 12-months assessment point. Specifically, this intervention aimed to "demedicalise" the approach to CHO treatment, to which indigenous groups and people from the most deprived areas appeared to be more responsive towards. This model suggests that a multi-disciplinary, home-based child and adolescent obesity programme could increase participation and adherence to treatment, especially for more vulnerable groups.



## ELIGE VIVIR SANO – A MULTI-SECTORIAL APPROACH TO PAEDIATRIC WEIGHT MANAGEMENT<sup>15</sup>

Following a pioneering law passed by the Chilean Government in 2013, the **Elige Vivir Sano** (Choose to Live Healthy) Secretariat was created within the Ministry of Social Development and Family to promote health interventions with a combination of social, economic, and political actions. The programme adopts an intersectoral and systemic approach to convene and coordinate public and private initiatives to facilitate healthy eating, physical activity and wellbeing in order to prevent obesity. The primary objective is to contribute to the promotion of healthy habits and lifestyles, with an emphasis on the most vulnerable populations. Today, 38% of individuals familiar with the programme claim to have changed their behaviours as a response to it.

The intervention's objectives include addressing obstacles that stand in the way of healthy habits and lifestyles for the most vulnerable sections of the population. An external evaluation found the intervention to be both highly relevant and highly valued. The System now implements Chile's Zero Obesity Strategy, which aims to stop the rise of obesity rates in Chile by 2030.

The Obesity Strategy is supported through Chile's strong primary care health system and the Vida Sana programme. Launched 10 years ago as a pilot, Vida Sana aims to improve levels of physical activity and diets among patients with obesity, overweight and other risk factors. Run by dedicated councillors, the treatment programme is free and aims to improve health education and healthy lifestyle across the population, with a specific focus on children and adolescents with overweight or obesity. The programme consists of (i) eight individual sessions with doctors, psychologists and dieticians, (ii) five group interventions, (iii) guided physical activity sessions for 12-months three times a week and (iv) biological exams.





### PROCESS EVALUATION OF AN UP-SCALED COMMUNITY-BASED CHILD OBESITY TREATMENT PROGRAM: NSW GO4FUN®<sup>16,17</sup>

CHO has been identified as a major public health problem in Australia, with both immediate and future repercussions on health services. In New South Wales (NSW), the prevalence of overweight and obesity among children aged 2 to 17 years is around 25%. In light of the evolution of these trends, alternative treatment options like secondary prevention interventions “such as community-based programmes that have large population reach, are a priority.” The United Kingdom’s Mind, Exercise, Nutrition, Do it (MEND) programme is “an example of a community-based child obesity programme which has demonstrated efficacy in weight outcomes.” Adapted to the NSW context, Go4Fun® focuses on promoting healthy behaviours and habits for the entire family. The programme is free and focuses on reaching families from disadvantaged communities and low socioeconomic backgrounds.

Run by qualified health and community professionals including psychologists and dietitians, Go4Fun® targets children between 7 and 13 years of age with a BMI greater or equal to 85th percentile. A key aim of Go4Fun® is to increase the training of local staff and ensure their continuous professional development to better manage childhood obesity. The programme delivers weekly two-hour sessions for a duration of ten weeks. The first hour simultaneously engages parents and children through nutritional education, while the second one is dedicated to game-based activities for children and behavioural change discussions for the adults. Go4Fun® relies on a coordinated delivery system at state and local level, with state delivery being managed by the NSW Office of Preventive Health.

Fundamentally, Go4Fun® engages “families in the process of weight management by addressing key components for individual-level behavioural change and considering the need to engage multiple, interacting systems of influence with the family context.” Between July 2011 and June 2015, 6,288 children and families participated in the programme, with around 80% of participants completing the entire programme. 16% of participants were referred by health professionals and general practice promotion. Amongst the participants who completed the entire programme, a number of significant improvements were observed:

- Improvements in weight and body composition
- Improvements in nutrition related behaviours
- Improvements in physical activity related behaviours
- Improvements in cardiovascular fitness
- Improvements in a participant’s self-esteem

The sustained implementation of Go4Fun® in NSW highlights the programmes’ ability to reach families from more disadvantaged backgrounds and ameliorate short-term health outcomes for children living with overweight or obesity. To learn more about Go4Fun®, visit <http://go4fun.com.au/>

Family and community interventions that rely on individuals and families making behavioural changes to improve health are generally harder to sustain unless the social and structural factors that shape behaviour can be changed, at community or larger, national level. Supporting families through tackling economic and political barriers to change are likely to be most effective and most supported by the families concerned. In contrast, interventions that rely on behaviour change through

education and information alone are less likely to succeed, especially among families without the resources and the motivation to maintain changes in behaviour, are less likely to make progress in health improvement. Furthermore an emphasis on individual agency in making behaviour changes can be stigmatising, as failure implies that the family with a child experiencing obesity is to blame for their health problems.

## Recommendations for policy makers and health care professionals

Based on the available evidence and existing case studies, World Obesity formulated the following recommendations for policy makers and health care professionals to improve equitable access to paediatric weight management services:

- **Ensure equitable access to treatment:** aim to provide universal and equitable access to treatment and follow-up services.
- **Increase capacity:** to ensure services are child-friendly and staff are well trained to encourage attendance and to communicate with families and children.
- **Involve families:** Ensure staff can engage with families and respond to challenging parental attitudes and poorly-motivated children. Staff need to understand the underlying causes of weight gain which are likely to be driving the problem in lower-income or minority ethnic groups, and to appreciate that lack of resources families may have available to make and maintain these changes.
- **Design interventions:** in consultation with families and young people, ensuring the recommended treatments are culturally and socially sensitive, avoid stigma, encourage motivation, and recognise problems.
- **Use whole-of-systems approaches:** A holistic approach incorporating physical activity, diet and psychological components should be adopted to maximise the positive effects of an intervention.
- **Prevent weight re-gain:** Obesity treatment is undermined and can be reversed if the individual being treated is embedded in an environment that encourages over-consumption of highly processed foods and a high level of sedentary behaviour. Actions to prevent weight re-gain

are also actions that prevent weight gain in the first instance, and regulatory authorities need to ensure policy coherence to reduce overconsumption and increase physical activity. This will also require structural changes to be made to tackle external issues such as affordability of nutritious foods and access to green spaces, access to physical activity services, free clean drinking water, and nutritious foods at school.

- **Institute political leadership:** to ensure comprehensive policies and investments to prevent and treat overweight as part of universal health coverage. Strong governance and coordination mechanisms need to be established to ensure intersectoral and multisectoral.



### BOX 3: OBESITY AS A CORE ELEMENT OF UNIVERSAL HEALTH COVERAGE

**“Universal health coverage (UHC) means that all individuals and communities receive the health services they need without suffering financial hardship. It includes the full spectrum of essential, quality health services, from health promotion to prevention, treatment, rehabilitation, and palliative care. UHC enables everyone to access the services that address the most significant causes of disease and death, and ensures that the quality of those services is good enough to improve the health of the people who receive them.”** World Health Organization<sup>18</sup>

The inclusion of obesity in UHC would ensure children, adolescents and their families have access to adequate prevention and treatment services. Under the Convention on the Rights of the Child governments are obliged to ensure **“no child is deprived of his or her right of access to health care services, irrespective of nationality, residence or legal status”** and that every child can enjoy **“the highest attainable standard of health”** (article 24).

Including CHO in UHC means that governments must strive to ensure access to equitable access to health services. At present, governments are falling short of this obligation: a survey of over 100 obesity specialists from 32 countries around the world found that adults living with obesity often cannot get a diagnosis, cannot access specialist treatment, must incur substantial out-of-pocket expenses, and struggle to maintain any weight loss achieved. The situation is unfortunately not dissimilar for children: common barriers include absence of referral services and eligibility, lack of capacity, high costs of treatment, as well as stigma and weight bias.<sup>19</sup>

Ensuring UHC should help address these issues. Furthermore, UHC provides a framework for the achieving the 2025 targets on obesity and NCDs and the 2030 Sustainable Development Goals. The World Obesity Federation has proposed seven steps to achieving UHC for obesity, available [here](#). The document urges governments to:

- Strengthen political commitment to tackle obesity, ensuring efforts are cross-departmental and cross-sectoral.
- Leave no one behind, regardless of race, gender, age, citizenship, ability, or income.
- Invest in health workers to deliver high-quality weight management.
- Empower communities and patients to strengthen their engagement in healthy weight promotion.
- Increase public financing to ensure all citizens have access to the care they need.
- Improve surveillance and accountability to monitor progress towards obesity targets.

## Conclusion

This briefing aimed to outline some of the barriers and provide some case studies where service provision attempts to overcome social disparities for children needing care. The main disparities in paediatric weight management services include the inadequacy of health systems to deliver and sustain such interventions, a lack of strong, robust evidence, and social disparities including the role of the family

and external environments as well as treatment-related costs. However, COVID-19 has also brought obesity in the spotlight, putting pressure on governments and health care professionals for better access to integrated and equitable paediatric weight management services within our health systems.



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