

# Effective prevention strategies for NCDs targeting children and youth:

## learning from the CD experience

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The Member States of the United Nations (UN) have only twice convened on matters specifically related to public health: First, in 2001, the UN General Assembly Special Session on HIV/AIDS agreed on a comprehensive statement of intent to address the global HIV pandemic; second, in 2011, a High Level Meeting convened by the UN General Assembly agreed on a Political Declaration that outlined a response to the global rise in non-communicable diseases (NCDs). This specific focus stemmed from the recognition that preventing and treating these diseases is critical to social and economic development and the achievement of the Millennium Development Goals (MDGs). NCDs alone accounted for 63 per cent of global deaths in 2008, with approximately 9 million of these deaths in people under 60 years of age and 80 per cent occurring in low- and middle-income countries.

Children and youth<sup>1</sup> will be central to an effective response to the global epidemic of NCDs. Not only do a significant number of children and adolescents die from NCDs (in 2002 there were 1.2 million deaths in people under the age of 20, accounting for over 13 per cent of all NCD deaths under 60) but the vast majority of the behaviours and addictions that underlie NCDs start during adolescence (Mathers, 2009). Despite these alarming statistics and the obvious need for a lifecourse approach to the prevention and treatment of NCDs, children, adolescents and the role of youth more generally have not received adequate attention.

In order to mobilise a stronger focus on children and youth in the global response to NCD prevention, it is useful to review the experiences of the global response to communicable diseases (CDs) in recent decades. This will help us understand why certain prevention strategies are likely to be more effective and sustainable than others and highlights the need to identify common ground so that Ministries of Health, non-governmental organisations (NGOs), donors and other sectors see NCDs and CDs not as competing priorities but rather as global health issues that disproportionately affect children and youth, frequently have common determinants and require an integrated response. This will build sufficient capacity in national health systems to protect our children across the spectrum of health threats to growth and development, be they infectious or non-communicable.

### The power of a rights-based approach

The importance of a human-rights approach was acknowledged early in the HIV/AIDS movement, leading to the development in 1996 of Guidelines on HIV/AIDS and Human Rights by the Joint



*A man paints a girl's face as part of a campaign to prevent cigarette smoking in India*

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UN Programme on HIV/AIDS (UNAIDS) and the Office of the High Commissioner for Human Rights (OHCHR) and in 2001 to the Declaration of Commitment on HIV/AIDS. The 2001 Declaration is a human rights-based document that recognised the vulnerability of children and adolescents (United Nations, 2011). The UN Committee on the Rights of the Child has also provided specific guidance on State obligations to address HIV/AIDS.

While the Political Declaration on NCDs had one reference to rights, there was no specific focus on the rights of children or adolescents. However, central to the progression of the NCD movement is the need to ensure that Member States recognise and uphold their obligations under the Convention on the Rights of the Child and make specific efforts to respect, protect and fulfil the rights of children. Greater focus on human rights and the vulnerability of children and adolescents to NCDs will help prioritise prevention strategies.

## The need for a lifecourse approach

There is increasing evidence to suggest that a lifecourse approach to NCD prevention is essential. Such an approach extends from pre-conception to end of life, and the case for preventing the long-term effects of gestational diabetes mellitus, as well as maternal and childhood over- and under-nutrition, are relevant examples (see Box 1). The HIV/AIDS experience demonstrated success in specific efforts that addressed issues at different life stages, with the prevention of mother-to-child transmission of HIV (PMTCT) and development of paediatric doses of antiretroviral therapy (ART) being outstanding examples. Moreover, the value of a focus on the behaviour of adolescents is another clear lesson learned from work to prevent HIV/AIDS, and specific attention

### Box 1

#### Gestational diabetes mellitus (GDM) and the case for a preconception NCD prevention agenda

More than 10 million women have GDM every year, most in low- and middle-income countries, and most are undiagnosed. The majority of countries do not even have policies in place for GDM screening or management. GDM is linked to four of the five major causes of maternal morbidity according to the WHO – haemorrhage, infections, high blood pressure and obstructed labour – and screening has been recommended as an intervention to prevent stillbirth in some countries. Likewise, children born to women with GDM have long-term increased risks of NCDs: a 5-fold increased risk of diabetes and pre-diabetes; 4-fold increased risk of metabolic syndrome; 2-fold increased risk of overweight; 8-fold increased risk of impaired glucose tolerance at age 12 years; and 30 per cent increased weight at the age of 8 (Clausen et al., 2008; Clausen et al., 2009). Likewise, over- and under-nutrition across the lifecourse must be addressed. Maternal and childhood malnutrition represent an enormous burden globally, playing a role in half of all under-5 deaths each year in developing countries and directly associated with NCD risk later in life. Equally serious, in 2010 global estimates suggest more than 42 million children under the age of 5 are overweight, and close to 35 million of these are living in developing countries (World Health Organization, 2010). In addition to a higher risk of obesity and NCDs later in life, affected children may experience breathing difficulties, increased risk of fractures, hypertension, early markers of cardiovascular disease, insulin resistance and psychological effects (Caprio et al., 2008; Daniels et al., 2005; Franks et al., 2010).

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to interventions that address tobacco, alcohol, nutrition and physical activity in the context of NCD prevention is an urgent priority (see Box 2).

## Engaging with existing platforms and infrastructure

One of the greatest opportunities for addressing NCDs in children and adolescents comes from the platforms and infrastructure created to address CDs. The work to address vaccine-preventable diseases in children continues to be one of the leading examples of effective primary prevention, resulting in major reductions in mortality and morbidity in all age groups. Global partnerships such as the GAVI Alliance and the Global Fund for AIDS, TB and Malaria successfully mobilise and allocate resources to the world's poorest countries for vaccines, treatment and health systems capacity building with high-level political and financial support and in partnership with governments and the development sector. Vaccine-preventable NCDs are already leveraging off these impressive achievements, with human papilloma virus (HPV) and Hepatitis B vaccines, for example, being targeted to adolescent girls and infants, respectively.

### Box 2

#### Three reasons to focus on risk behaviours of adolescents to combat the NCD epidemic

- 1. Large numbers of adolescents:** In 2009, there were 1.2 billion adolescents aged 10–19 in the world, comprising 18 per cent of the world's population. The vast majority – 88 per cent – live in developing countries, with the least developed countries home to roughly 1 in every 6 adolescents.
- 2. Behaviours developed during adolescence endure:** Most tobacco users starts before age 18, and almost 1/4 of those before the age of 10. Initiation at an early age increases dependency and makes quitting harder as an adult. Between 20 and 40 per cent of the world's youth are overweight or obese, and rates continue to increase due to physical inactivity and unhealthy diet. Nearly three out of four obese adolescents will remain obese as adults, increasing their risk of heart disease, type 2 diabetes, stroke and cancers. In addition, alcohol use is the largest single contributor to risks to the health of young people. Patterns of substance use established during adolescence predict chronic patterns of use, mortality and morbidity in later life. Moreover, industry knows that brand loyalty is established early and grows with age.
- 3. Youth are a great force for change:** Young people are better equipped than ever to find ways of improving their own lives and the lives of those around them.

Likewise, learning from the field of tuberculosis (TB) and asthma (see Box 3) is worthy of study.

Identifying other synergies with existing platforms and infrastructure, such as maternal, newborn and child health (MNCH), will likewise strengthen health systems, increase versatility and improve cost-efficiencies (Maina, 2011). With clear evidence of the benefits of exclusive breastfeeding and optimal nutrition, the importance of the first 1,000 days movement to NCD prevention cannot be over-emphasised. Similarly, newborn screening for congenital hypothyroidism is a classic example of a cost-effective health-system strengthening action that segues well with the MNCH platform, prevents enormous disability and mortality, can be scaled to address a range of NCDs and positively affects social and economic development. Broader efforts to address the social determinants of health will also be an essential factor in the prevention of NCDs in children and young people, with rheumatic heart disease a classic example of an NCD with CD roots affecting the 'bottom billion' (see Box 4).

### Time-bound targets and indicators

The ability to engage a diverse range of development agencies was another key strength of the HIV/AIDS movement and resulted in

#### Box 3

##### TB and asthma – overcoming childhood neglect

The International Union Against Tuberculosis and Lung Disease (The Union) has considerable experience in helping put TB in children onto the global public health agenda. It has provided the major forum for child TB for more than a decade through the Global Lung Health conference; facilitated the establishment of the child TB subgroup of the WHO Stop TB partnership in 2003; lobbied for and supported National TB control programmes (NTPs) to include the needs of children with TB in routine activities such as training, drug procurement, strategic plans, recording and reporting; provided technical assistance on child TB to NTPs in high burden countries in Africa and Asia; and assisted with the development of technical guidelines, training tools and operational research. It is currently engaged in a range of activities from implementation in resource-limited setting to providing input into the research agenda – including novel diagnostics, which is such a pivotal issue for child TB. It has also recognised the burden of TB in pregnancy and promoted and integrated a family-based approach to TB management for mothers and infants, especially in HIV-endemic settings.

Leveraging on this experience with TB in children, The Union is now also focusing on NCDs, especially asthma, indoor air pollution and diabetes – all of which have been shown to be associated with an increased risk of TB (Ait-Khaled et al., 2006; The Union, 2011). The Union was a collaborative partner in the important global epidemiological studies that evaluated the prevalence of asthma in children. More recently, it established the Asthma Drug Facility, which aims to improve access to preventive and therapeutic asthma medication in low- and middle- income settings.

the monitoring of HIV/AIDS outcomes as part of the 2001 Declaration of Commitment, with children and young people included in specific time-bound targets. The inclusion of children and youth in targets and indicators for NCDs has yet to be achieved, but there is still an opportunity to correct this (see Table 1). States should recognise prior commitments made in the UN Political Declaration and support the inclusion of children and youth within NCD surveillance programmes and evidence-based solutions for prevention, early diagnosis and treatment as part of the global monitoring framework for NCDs. Inclusion of children and youth within goals and targets will be a major driver in attracting development assistance for future interventions as it was for the CDs that were part of the framework of the MDGs.

#### Box 4

##### Poverty and NCDs – rheumatic heart disease as a case study

Current estimates suggest that 62–78 million individuals worldwide may have rheumatic heart disease (RHD), which could potentially result in 1.4 million deaths per year from the disease and its complications (Paar et al., 2010). These individuals are predominantly children, adolescents and young adults and live overwhelmingly in the poor and under-resourced areas of the world. A key priority is creating political awareness around this disease and building organisational structures to promote control activities that will be supported by national funding and concerted political will. RHD has not been called a 'disease of social injustice' without good reason (Brown, McDonald and Calma, 2007). Without commercial interests or dynamic action groups to drive intervention, it remains a neglected disease. This has resulted in the lack of political will to significantly improve awareness and education of the disease in communities, schools and hospitals. RHD is preventable by simple and inexpensive means, and organisations such as the NCD Alliance and World Heart Federation are advocating for increased political and urgent action.

#### Box 5

##### Education and raising awareness

Community education campaigns have been highly cost-effective in raising awareness of CDs and NCDs in children and adolescents, with significant reductions in mortality and morbidity. An 8-year follow-up study of a campaign in schools and private practices in Africa demonstrated clear reduction in deaths from type 1 diabetes in children (Vanelli et al., 2007). Likewise, key messaging of the value of newborn screening in preventing growth failure and mental retardation caused by congenital hypothyroidism has been very successful, with enormous consequences in terms of quality of life and societal costs. Preventing diabetic ketoacidosis with a simple poster awareness programme has been documented in developed as well as developing countries and saves children's lives. World Awareness Days are also effective strategies for highlighting key issues relevant to children and adolescents within the context of NCDs.

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### Civil society engagement and involvement of young service users

The HIV/AIDS movement saw the creation of global, regional and national networks of people living with HIV. Moreover, the pivotal role of youth and behaviours in the prevention and control of the epidemic was recognised early, and a broad range of NGOs and

civil society representatives were engaged in determining solutions for change. By contrast, specific efforts have been required to ensure children, youth and the elderly are engaged in the NCD policy discourse, with the concept of youth as powerful vectors for change and prevention an important message that still needs to be fully embraced. Raising awareness of NCDs among the broader civil society is a challenge but will be essential to effective prevention (see Box 5).

### Conclusion

A new mindset is emerging that builds on the lessons learned from CDs that successful NCD prevention will require a lifecourse approach, embracing broad partnerships and effective multisectoral action in order to develop strong, comprehensive, health systems capable of protecting and caring for our future generations. For children and youth in particular, there is an imperative to broaden the reach of prevention activities to sectors beyond health (such as

**Table 1** Commitments in the UN Political Declaration

Commitments in the UN Political Declaration that will aid prevention of NCDs in children and adolescents and proposed global targets and indicators	
Commitments in UN Political Declaration on NCDs for children and adolescents	WHO proposed targets to prevent NCDs in children and adolescents
<b>43c</b> Accelerate implementation by States Parties of the WHO Framework Convention on Tobacco Control (FCTC), recognizing the full range of measures	40% relative reduction in prevalence of current tobacco smoking among persons aged 15+ years
<b>43e</b> Promote the implementation of the WHO Global Strategy to Reduce the Harmful Use of Alcohol, as well as raise awareness of the problems caused by the harmful use of alcohol, particularly among young people	10% relative reduction in per capita alcohol consumption among persons aged 15+ years
<b>43f</b> Promote the implementation of the WHO set of recommendations on the marketing of foods and non-alcoholic beverages to children, including foods that are high in saturated fats, trans-fatty acids, free sugars, or salt	(No targets for the marketing of unhealthy foods and beverages to children)
<b>43g</b> Promote the development and initiate the implementation, as appropriate, of cost-effective interventions to reduce salt, sugar and saturated fats, and eliminate industrially produced trans fats in foods	Elimination of industrially produced trans fats (PHVO) from the food supply; and mean population intake of salt less than 5 grams per day
<b>43i</b> Promote, protect and support breastfeeding, including exclusive breastfeeding for about six months from birth	(No targets for breastfeeding)
<b>43j</b> Promote increased access to cost effective vaccinations to prevent infections associated with cancers, as part of national immunisation schedules	(No targets for vaccines to prevent infection with Hepatitis B or HPV)
<b>44a</b> Advance the implementation of the WHO Global Strategy on Diet, Physical Activity and Health, including, where appropriate, through the introduction of policies and actions aimed at promoting healthy diets and increasing physical activity in the entire population	(No targets on physical activity for children and adolescents)
<b>45f</b> Promote multisectoral and multi-stakeholder engagement in order to reverse, stop and decrease the rising trends of obesity in child, youth and adult populations respectively	No increase in obesity prevalence (no specific targets on childhood obesity)
<b>45o</b> Promote the inclusion of non-communicable disease prevention and control within sexual and reproductive health and maternal and child-health programmes, especially at the primary health-care level, as well as other programmes, as appropriate, and also integrate interventions in these areas into non-communicable disease prevention programmes	

Source: World Health Organization, 2011.

education and the environment) if we are to achieve wide-ranging benefits – from creating health-promoting cultures in communities and schools to the sustainable delivery of primary prevention strategies. Legislation will likewise play a key role in protecting children and adolescents from exposure to NCD risk factors, limiting access to harmful products such as alcohol and tobacco and regulating the marketing of unhealthy foods and other products to children. It is imperative that specific efforts be made by all policy makers and members of society if we are to protect and promote the rights of children and youth to healthy and fulfilling lives, free from the preventable burdens associated with NCDs.

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## Endnote

<sup>1</sup> To clarify, this paper acknowledges the definition of 'child' as under 18 years of age as taken from the Convention on the Rights of the Child; the WHO definition of 'adolescents' as those between the ages of 10–19 years; and the UN definition of 'youth' as those between the ages of 15–24 years.

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