



The prevention of obesity and NCDs: challenges and opportunities for governments

"World Health Organization data show that rates of obesity nearly doubled in every region of the world from 1980 to 2008. Worldwide, one in three adults has raised blood pressure. One in ten adults has diabetes. These are the diseases that tax health systems to the breaking point. These are the diseases that break the bank. These are the diseases that can cancel out the gains of modernization and development. These are the diseases that can set back poverty alleviation, pushing millions of people below the poverty line each year."

Margaret Chan, Director General, World Health Organization, May 2012

The major non-communicable diseases (NCDs) – cancer, cardiovascular disease, diabetes and chronic pulmonary disease now account for more than 36 million deaths (65% of all deaths) every year. Most of these deaths occur in low- and middle-income countries, almost a quarter of which occur in people under age 60 years. By 2030, NCDs are expected to cause for four times as many deaths as the combined figure for infectious diseases, and maternal, perinatal and malnutrition-related conditions. Tobacco, alcohol, poor diets and sedentary behaviour lie behind much of the disease burden. The rapid rise in obesity prevalence worldwide indicates that diet and lack of physical activity are replacing tobacco as the leading cause of preventable disease. The disease burden from obesity-related conditions is already putting health services under stress.

Besides the significant health consequences, obesity and NCDs pose a major economic burden to countries, causing lower productivity, reduced earning capacity and increased household costs. Such burdens on society and individuals are not inevitable. Health behaviours depend on health promoting environments – the protection and promotion of food supplies for optimum nutrition, opportunities for plentiful physical activity, and adequate education and training for healthy behaviour patterns – are shaped by policies at local, national and international levels. They are also shaped by markets and the commercial operators who promote the over-consumption of products which undermine healthy behaviour patterns and raise the risk of chronic disease.

This briefing explores some of the challenges and opportunities that governments face when creating health promoting policies and it makes recommendations for the next steps that need to be taken to tackle obesity and NCDs. It will focus on policy issues linked to food environments and diet, with learnings from other areas such as tobacco and alcohol control.

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GOVERNMENTS ARE COMMITTED TO TAKE ACTION

At the 66th World Health Assembly in May 2013, member states resolved to reduce NCDs by 25% by the year 2025. This resolution is an important step forward for the reduction of preventable deaths from NCDs globally and follows the commitments made in 2011 in the United Nations Political Declaration on the Prevention and Control of NCDs. The Assembly adopted a *Global action plan for the prevention and control of non-communicable diseases 2013–2020* and an *NCD Global Monitoring Framework* which focuses on a series of targets and indicators to reduce the prevalence of NCDs and their risk factors.

The Assembly approved nine targets: to halt in the rise of obesity and diabetes, reduce high blood pressure by 25%, reduce physical inactivity by 10%, reduce the harmful use of alcohol by 10%, reduce tobacco use by 30% and reduce salt/sodium intake by 30%.

To support member states in their strategies to tackle NCDs, the WHO has issued a number of publications related to NCDs, obesity, and diet including: A set of Recommendations on the Marketing of foods and non-alcoholic beverages to children; Population based intervention for childhood obesity prevention; Global recommendations on physical activity and health; a Global Strategy to reduce the harmful consumption of alcohol; and the International Code of Marketing of Breastmilk Substitutes.



HEALTH-PROMOTING POLICIES: THE CHALLENGE

Despite these resolutions and the publications supporting strategic planning for NCD reduction, progress is hampered by factors which are commonly experienced in public health. These factors include (a) difficulties providing robust evidence on the likely effectiveness of policies before they have been introduced, (b) competition for resources between public health preventive services and other government-provided services, and (c) conflicting advocacy from commercial interests which promote the consumption of products liable to harm health, and non-health government departments which prioritise free market activity and economic growth.

The problem of evidence generation is familiar in public health. The development of sophisticated modelling techniques alongside examples of effective policy implementation can help to resolve the issue. Economic modelling showing the costs of preventative action and the comparable costs of failing to take action can help identify cost-effective interventions.

In open market economies, companies fulfil their duty to obtain maximum shareholder return by promoting their products aggressively. Their collective actions encourage over-consumption. This poses a severe problem for public health proponents seeking to reduce consumption of specific products. The conflicting interests of commerce and public health in relation to tobacco consumption have been well documented, but it is now increasingly evident that similar conflicts exist in relation to the consumption of alcohol and food. ¹⁴ ¹⁵

Lessons from tobacco and alcohol indicate:

- Business interests can gain more influence than public health interests in the policy making process due to their economic power and their anticipated support for the status quo.¹⁶
- Changing the status quo can face significant resistance from policy makers, who put the burden of proof on the advocates for change.
- Industry lobbying power is significant and undermines public health. In 2012 the US alcohol industry employed 256 lobbyists, the tobacco industry 174 lobbyists, and the food and beverage industry 327 lobbyists to influence the 553 members of the US Congress.¹⁷
- Public health promoters need to use the media, make data politically relevant, challenge the opposition and produce consensus statements.
- Community action is vital in order to increase the political will of legislators to challenge business freedoms / practices and to implement the necessary policies.
- In food supplies, the greatest profit is often gained from processed and long shelf-life products which disproportionately contribute to NCDs and obesity. 18

While commercial operators accept the need to ensure that their products are safe and reliable, they have no specific need to be interested in the cumulative nutritional impact of their products. Increasingly 'Big Food' is being accused of undermining public health moves to prevent chronic disease, ¹⁹ and the WHO Director General, Dr Margaret Chan, has warned "... It is not just Big Tobacco anymore. Public health must also contend with Big Food, Big Soda, and Big Alcohol. ... Let me remind you. Not one single country has managed to turn around its obesity epidemic in all age groups. This is not a failure of individual will-power. This is a failure of political will to take on big business." ²⁰

Even in situations where the influence of commercial interests is not apparent, the prevailing ideology in favour of economic growth and open market development can lead policy-makers to resist proposals for stronger public health intervention and increased consumer protection. There is a need for governments and civil society to recognise these conflicts and develop procedures which properly manage them, in order to be able to implement policies which protect and promote better health.

Commercial operators may seek to engage in 'public-private partnerships' with government and civil society, if the activities – such as physical activity initiatives – do not threaten their markets. While interaction and cooperation with the commercial sector can be important for service delivery, health policies need to be developed in policy arenas that are not unduly influenced by commercial interests. Potential conflicts of interest of this nature need to be managed appropriately to ensure that the public's interest is protected. Full transparency of any such relationship is essential. It is important to recognise the main drivers of business practices include a company's responsibility to provide increased returns to its stakeholders, including investors who seek short-term gain, its need to generate consumer demand, its need to respond to commodity prices and competitors' marketing activities, and its need to promote itself in the media, protect itself in the law courts, and lobby for favourable regulatory regimes.

Case study 1: The Public Health Responsibility Deal (England)

An example of a voluntary public-private partnership is the Department of Health England's 'Public Health Responsibility Deal' which coordinates a series of voluntary industry commitments and pledges on food, alcohol, physical activity and healthy workplaces, including civil society organisations (who largely play a watchdog role in the process). The government considered this approach would be faster and cheaper than regulation, and some progress has been made, for instance with the introduction of smaller portion size options for soft drinks and confectionery. Experience with public-private partnerships suggest that such schemes need strong monitoring and evaluation,²¹ with clearly agreed definitions and areas of action, independent standards-setting with sanctions or targets.²² Civil society organisations have been cautious to offer support to the Responsibility Deal, especially around proposals regarding alcohol consumption, with most preferring to call for regulatory measures.²³ ²⁴

If properly implemented and monitored, voluntary agreements can be an effective policy approach, though we know of no evidence to show they are cheaper and more effective than compulsory approaches.²⁵ In the case of marketing of foods and beverages to children there is increasing evidence that the voluntary initiatives are failing to protect children and that stronger measures are needed.²⁶ To be effective, voluntary agreements

should include substantial disincentives for non-participation and sanctions for non-compliance. In order to ensure that voluntary activities are not used to stall or prevent more effective regulatory measures, governments should establish clear targets and timelines, with a threat of statutory regulation, at the outset.²⁷

STRATEGIES FOR CHANGE

Obesity prevention interventions should be supported by policies at all levels of government – national, regional and local. National policies can create supportive environments; regional policies can facilitate pooling of resources; and local tailoring of interventions results in more effective targeted interventions. Global (intergovernmental) support for obesity prevention can help to address transnational environmental factors, such as creating a healthier food supply.

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1. Systems thinking

Experience in the field of public health suggests that the most cost-effective initiatives are likely to be population wide and use integrated, multi-disciplinary, comprehensive and sustainable approaches, involving a wide variety of complementary actions which address the individual, community, the environment, and society at large. Social norms and immediate environments strongly influence behaviour: to achieve sustained changes in behaviour requires making sustained changes in social and environmental influences.

Furthermore, much food-related behaviour is influenced by subconscious, pre-cognitive stimuli, ²⁹ so that the provision of information about healthy choices is likely to be ineffective if there is no change to the stimuli which shape behaviour. The provision of information about healthy choices is less effective for individuals unable to access the means to achieve healthy behaviour – such as locally available low cost fruit and vegetable supplies, or local, safe recreation facilities. Health education strategies need to be complemented with practical measures to support health behaviour if inequalities in health are not be widened.

A 'systems approach' to tackling NCDs and obesity means the creation of health-promoting environments – social, economic and policy environments as well as physical environments – and the involvement of key actors, including different government departments, in the systems that create these environments, such as the media, educators, the food industry, healthcare providers, leisure and entertainment companies, transport providers and urban planners.

2. Working with civil society

Civil society organisations (a collective term for non-profit organisations undertaking voluntary, non-commercial activities) are important stakeholders, representing public health and consumer interests, health promotion and health delivery, upholding and influencing social norms and encouraging community organisation. They can act as watchdogs, monitoring organisations, holding companies and policy-makers to account and stimulating action and change at local and national policy levels. The history of the struggle to draft and implement the *International Code of Marketing of Breast-milk Substitutes*, for example, shows how effective advocacy can emerge through monitoring and challenging commercial activity as much as through consensus, especially where there are significant commercial and economic interests at stake.

A key role of civil society is to challenge the market dominance and power discussed above, and can be particularly important in low- and middle-income countries where 'Big Food' has only recently entered the market. Such activity is becoming well-recognised among public health funding agencies, where it is seen as a valuable contributor to the development of public awareness and the need for change through political action. This is exemplified by the support of Bloomberg Philanthropies for community activity and advocacy to tackle obesity in Mexico (see Case Study 2).

Case Study 2: Bloomberg uses philanthropic support to promote change through community action

Bloomberg Philanthropies has launched an Obesity Prevention Program to support community advocacy and popular awareness-raising.³⁰ The Foundation's \$10m support for obesity prevention in Mexico is designed to promote what the organization believed are the policies likely to have the most impact:

- Banning junk food and sugary beverage advertising to children
- · Raising taxes on sugar-sweetened beverages
- · Promoting healthy public sector food policies
- Introducing front-of-package nutrition labels
- Developing obesity prevention advertising campaigns

The 3-year programme includes subway advertising campaigns in Mexico City depicting the negative effects of obesity, TV ads calling for a tax on soft drinks, media stories in popular newspapers and in social media, and research reports on children's exposure to commercials, the foods and beverages available in schools, and the national economic damage caused by obesity. Within the first year of the Bloomberg-supported program, the Mexican government had introduced an 8% tax on 'junk' food and a 1 peso tax per litre of soft drinks.³¹

An alliance of civil society organisations and skilled researchers can help to fill the evidence gaps to support specific policy proposals, including the policies which will emerge as the WHO NCD and obesity targets are defined operationally. The WHO's monitoring proposals for NCDs touch only lightly on the factors which influence population health, and specifically child health in the 21st century. A continuing programme of child health surveillance which includes growth monitoring at regular stages throughout childhood is needed, as well as regular monitoring of the key environmental influences on health behaviour, especially the food environment and the environment for physical activity and sedentary behaviour.

A programme for monitoring food environments is being developed by INFORMAS, a global NGO-academic network (see Case Study 3) and a similar network for physical activity could be formed. Such developments need support from governments, and the results need to be fed into government policy-making.

Case Study 3: INFORMAS

INFORMAS – the International Network for Food and Obesity/NCDs Research, Monitoring and Action Support – is a global network of researchers and NGOs which aims to monitor and benchmark policies and actions to create healthy food environments. The project is concerned initially with monitoring food environments as important determinants of dietary choices. Examples of specific benchmarking approaches are shown here:

Module	Examples of information sources	Examples of indicators
Food environments		
Composition	Comparison sites; crowd sourcing of label data	Nutrient profiles; levels of salt, sugar, and fat in key foods
Labelling	Retailers' websites; crowd sourcing; image search engines	Proposition of foods with health and nutritional claims that are healthy; presence of nutrition information panels
Provision	Crowd sourcing; suppliers' databases	Food quality; adherence to standards; availability; affordability
Promotion	Spot-surveys; social media probes; purchased data; site hits; Facebook friends; tweets	Usage, impacts and exposure of children to unhealthy food advertisements
Prices	Comparison sites; household budget surveys; commercial databases	'healthy' vs 'current' diets; affordability by socio- economic status SES); price trends
Retail	GPS data; food outlet lists; Google Street View; instore sampling	Outlet density; shelf space; checkout displays
Trade & investment	Trade data; cross-border agreements; stockbroker advisories	Trade trends; inward investment; domestic protection
Food policies and actions		
Public Sector	Policy text analysis; key interviews; departmental budgets	Infrastructure (leadership, governance, funding); impact (standards, regulations, health assessments)
Private Sector	Text analysis; key interviews; consumer and market surveys; investor forecasts	Access to Nutrition Index (ATNI); plus indicators of industry influence on policies
Source: INFORMAS, a global network for monitoring food environments ³²		

3. Promoting Nutrition Security

It is important to recognise that many commonalities exist between the dietary drivers and solutions available for overweight and obesity and those for malnutrition. Policies need to focus on the creation of healthier environments for all children, improving food and nutrition security and promoting healthy feeding practices for mothers and infants, and healthy diets and physical activity practices for children of all ages.

Nutrition security refers to more than food security. Whereas food security concerns the assured supply, availability and affordability of adequate food to make a healthy diet possible, nutrition security embraces food security and also the factors which promote and protect *the consumption* of a healthy diet, in accordance with recommended food-based dietary guidelines. Such consumption may be jeopardised by lack of facilities, skills, or knowledge, or by persuasive messages and inducements to consume unhealthy products. Population-based strategies to improve food security *and* to promote societal norms and standards, and restrict marketing practices that undermine healthy choices, will enhance nutrition security.

By looking at consumption as well as supply, nutrition security takes into account cross-cutting issues such as life course phases, social inequalities and under-nutrition. For children, policies to ensure optimum growth and development need to focus on ensuring a supply of healthful foods *and* ensuring that consumption is promoted and protected fully from competing interests. Nutrition security for an infant includes the nutrition security of the mother before and during pregnancy, appropriate weight gain in pregnancy, the protection of exclusive breastfeeding for the first six months, and appropriate complementary feeding³³ thereafter.

Similarly, *physical activity security* implies the supply *and use* of the optimum environments for active behaviour (green spaces, safe play, active transport facilities, widely available, affordable and accessible to all) and ensuring the favourable determinants of their use, including cultural practices, social norms, education and skills, and information, and protection from inducements to increase sedentary behaviour, for example through the promotion of sedentary games and entertainments, and prolonged screen-watching. As with nutrition security, there is a need for governments to recognise their role in the protection and promotion of healthy behaviour through consistent national policies.³⁴

GOVERNMENTS CAN TAKE THE LEAD

If governments are to be effective in reducing the burden of NCDs and meet their obesity targets agreed through the World Health Assembly, then they need to take action to create health-promoting environments and ensure nutrition security for all. This includes building the case for intervention, so that public health has a stronger voice in cross-government strategic planning. It means encouraging advocacy and developing social marketing campaigns to increase public support for population-wide interventions, and it means making a series of interventions in the marketplace to reduce over-consumption and protect consumer health.

1. Strengthen the case for action

- Monitor and predict national productivity losses and health costs, accumulated throughout the lifecourse from the burden of NCDs, and assess the economic case for taking action. Examples: OECD³⁵ ³⁶, UK ³⁷
- Monitor progress and change in relation to the drivers of obesity/food environments. Examples INFORMAS³⁸, Canada³⁹

2. Develop cross-departmental action plans embracing a broad range of initiatives at multiple levels of intervention

- Establish inter-departmental taskforces to coordinate government strategies to tackle NCDs, considering all aspects of food supplies and nutrition security, the physical environment and secure physical activity. Examples: Australia⁴⁰, USA⁴¹,
- Review relevant policies and evidence for their effectiveness and cost-effectiveness. Example: WHO-elena who-elena who-elena who-elena evidence for their effectiveness and cost-effectiveness.

- Review policy success and failures in related areas of public health promotion and protection, and interventions to achieve behaviour change. Examples: WHO⁴⁵, UK^{46 47}
- Involve public health and civil society organisations in developing strategies and action plans, and providing evidence of good practices. Example: WHO^{48 49}, WCRF⁵⁰
- Develop a systems-based analysis of opportunities for intervention at multiple levels. Example: Victoria (Australia)⁵¹

3. Establish guidelines and standards for protecting nutrition security

- Monitor and strengthen standards for commercial practices which threaten nutrition and physical activity security. Examples UK-OFCOM⁵², Korea⁵³, USA⁵⁴
- Monitor and strengthen standards for the provision of food in state-controlled institutions.
- Support the construction of operational tools including nutrient profiling schemes, food formulation standards, food environment indicators, health impact assessments.

4. Use government purchasing power to build healthier consumption patterns

- Support the inclusion of health and nutrition criteria for awarding government supply contracts. Examples: UK⁵⁵
- Use school and hospital food policies as beacons of good practice in the community. Example: New York City⁵⁶

5. Use government legislative powers to strengthen public health legislation

• Review and strengthen public health legislation in order to allow increased intervention across market sectors for public protection. Example: British Columbia⁵⁷, Victoria⁵⁸

6. Use multilateral negotiation opportunities to strengthen national health programs

• Negotiate better health protection through cross-border agreements on marketing. Example: Keyhole⁵⁹, WHO Europe⁶⁰

7. Encourage behaviour change and a shift in cultural norms

- Use social marketing to encourage changes in cultural norms and to build public acceptability for interventions Examples: UK ⁶¹, NSMC⁶²
- Disseminate examples of good practice from other countries. Example: IOTF⁶³, WCRF⁵⁰

8. Strengthen Ministry of Health leadership

- Ministries of Health need to demonstrate a strong business case for public health action, especially fiscal action such as taxes and subsidies to influence purchasing patterns, and market interventions on advertising, prices and labelling.
- Ministries can demonstrate their obligations to follow international charters (e.g. for child rights) and agreements (e.g. for tobacco) and recommendations from authorities such as WHO.

9. Gather support and counter resistance

- Ministries can demonstrate popular support from non-governmental organisations, including health and consumer advocacy groups but also pro-family and child interest groups (e.g. churches, charities) and campaigns by parents/mothers networks.
- Ministries can counter resistance from commercial interests by making more transparent the role and activities of commercial lobbyists and political donors.

10. Establish accountability agencies

- Establish independent agencies which can monitor and report publicly on policy development, implementation and progress towards targets.
- Extend accountability for health impact to other sectors, including the commercial operators and their federal bodies, non-governmental organisations and the media.

REFERENCES

- 1 WHO (2013).10 facts on non-communicable diseases. URL: http://www.who.int/features/factfiles/none (accessed 7 January 2014)
- 2 WHO. (2013) Projections of mortality and causes of death, 2015 and 2030. URL: who.int/healthinfo/global_burden_dise (accessed 7 January 2014)
- 3 Begley S (2012) As America's waistline expands, costs soar. Reuters. URL: .reuters.com/article/2012/04/30/us-obesity-idUSBRE83T0C820120430 (accessed 7 January 2014)
- 4 WHO (2013). Diabetes: the cost of diabetes. URL:
- http://www.who.int/mediacentre/factsheets/fs236/en/ (accessed 7 January 2014).

 5 WHO (2013) Follow-up to the Political Declaration of the High-level Meeting of the General Assembly on the Prevention and Control of Non-communicable Diseases. URL: http://apps.who.int/gb/ebwha/pdf_files/WHA66-REC1/2.A66_R1_Res10-en.pdf#page=14 (accessed 7 January 2014)
 6 UN General Assembly (2011). Political declaration of the High-level Meeting of the
- General Assembly on the Prevention and Control of Non-communicable Diseases URL: http://www.un.org/ga/search/view_doc.asp?symbol=A/66/L.1 (accessed 7 January 2014)
- 7 WHO (2013) Global action plan for the prevention and control of non-communicable diseases 2013–2020 [WWW Document] URL: http://apps.who.int/gb/ebwha/pdf_files/WHA66-REC1/A66_R1_ANX4-en.pdf (accessed 7 January 2014)
- 8 WHO (2013). NCD Global Monitoring Framework URL:
- www.who.int/nmh/global_monitoring_framework/en/ (accessed 7 January 2014)
- 9 WHO (2010) Set of recommendations on the marketing of foods and non-alcoholic beverages to children. [WWW Document] URL: http://whqlibdoc.who.int/publications/2010/9789241500210_eng.pdf (accessed 7 January 2014)
- 10 WHO (2012). Population-based approaches to childhood obesity prevention. [WWW Document] URL:
 - http://apps.who.int/iris/bitstream/10665/80149/1/9789241504782_eng.pdf (accessed 7 January 2014)
- 11 WHO (2010) Global recommendations on physical activity for health. [WWW Document] URL: http://whqlibdoc.who.int/publications/2010/9789241599979_eng.pdf (accessed 7 January 2014)
- 12 WHO (2010) Global strategy to reduce the harmful use of alcohol. [WWW Document] URL: http:/ ouse/alcstratenglishfinal.pdf (accessed 7 January
- 13 World Health Organization (1981) International Code of Marketing of Breast-Milk Substitutes URL:
 - http://www.who.int/nutrition/publications/infantfeeding/9241541601/en/ (accessed 7 January 2014)
- 14 Freundenberg N (2011) Appropriate medicine and public health for marketing Ill health. Corporations and Health Watch. URL:
- http://corporationsandhealth.org/2011/12/21/appropriating-medicine-and-public-health-for-marketing-ill-health/ (accessed 7 January 2014)

 15 Brownell KD, Warner KE (2009) The Perils of Ignoring History: Big Tobacco Played
- Dirty and Millions Died. How Similar Is Big Food? The Milbank Quarterly 87(1):259-
- 16 Mahoney C (2008). Brussels Versus the Beltway: Advocacy in the United States and the European Union, Georgetown University Press. Pg. 200
- 17 Center for Responsive Politics. Alphabetical Listing of Industry. URL: http://www.opensecrets.org/lobby/alphalist_indus.php (accessed 7 January 2014)
- 18 See the IASO *Briefing Paper on Sugar-sweetened Beverages*, (in preparation 2014). 19 PLoS Medicine Editors (2012). PLoS Medicine series on Big Food: the food industry is ripe for scrutiny. PLoS Med 9(6):e1001246.
- 20 Chan M (2013). Opening address by the Director-General of the World Health Organization, 8th Global Conference on Health Promotion, Helsinki, Finland, 10 June 2013. URL: http://www.who.int/dg/speeches/2013/health-promotion-20130610/en/
- (accessed 7 January 2014) 21 Petticrew M et al (2013). The Public Health Responsibility Deal: how should such a complex public health policy be evaluated? J Public Health (Oxf) 35:495-501.
- 22 Panjwani C, Caraher M (2013). The Public Health Responsibility Deal: Brokering a deal for public health, but on whose terms? *Health Policy* Nov 17. [Epub ahead of print]. 23 Triggle N (2011). Health groups reject 'responsibility deal' on alcohol. *BBC News Online*
- 14/3/2011. URL: http://www.bbc.co.uk/news/health-12728629 (accessed 7 January 2014)
- 24 Limb M (2013). Public health body quits responsibility deal over government's failure to act on tobacco and alcohol. *BMJ* 347:f4590.
- 25 Bryden A et al (2013). Voluntary agreements between government and business a scoping review of the literature with specific reference to the Public Health Responsibility Deal. Health Policy 110:186-97.
- 26 Galbraith-Emami S, Lobstein (2013). The impact of initiatives to limit the advertising of food and beverage products to children: a systematic review. Obes Rev Jul 12 [Epub
- 27 Hawkes C, Lobstein T (2011). Regulating the commercial promotion of food to children: a survey of actions worldwide. Int J Pediatr Obes 6(2):83-94.
- 28 World Health Organization (2012). Population-based approaches to childhood obesity prevention. Op cit.
 29 Cohen D (2014) A Big Fat Crisis. New York: Nation Books.
- 30 Bloomberg Philanthropies (2013). Supporting Strong Policies To Reduce Rising Rates Of Obesity. URL: http://www.bloomberg.org/initiative/obesity_prevention (accessed 7 January 2014)
- 31 Anon (2013). Mexico passes 'junk food tax' reform. BBC News Online 1/11/2013. URL: http://www.bbc.co.uk/news/world-latin-america-24766027 (accessed 7 January 2014) 32 Swinburn B et al (2013) INFORMAS, a global network for monitoring food
- environments: Overview and key principles. Obes Revs 14 (Supp 1):1-12.

- 33 See Annex 2 in WHO (2013) Maternal, infant and young child nutrition: Report by the Secretariat. EB134/15. [WWW Document] URL: http://apps.who.int/gb/ebwha/pdf_files/EB134/B134_15-en.pdf (7 January 2014)
- 34 Weiler R et al (2013). Is the lack of physical activity strategy for children complicit mass child neglect? *Br J Sports Med* Dec 11 (e-pub ahead of print).

 35 OECD (2012) *Obesity Update 2012* URL: http://www.oecd.org/health/49716427.pdf
- (accessed 7 January 2014)
- 36 OECD (2009). Health working paper 48: Improving lifestyles, tackling obesity: the health and economic impact of prevention strategies URL: http://search.oecd.org/officialdocuments/displaydocumentpdf/?doclanguage=en&cote=de
- Isa/hea/wd/hwp(2009)6 (accessed 7 January 2014)
 37 Government Office for Science (2007). Tackling Obesities: Future Choices Modelling Future Trends in Obesity & Their Impact on Health, 2nd Edn. [WWW Document] http://www.bis.gov.uk/assets/foresight/docs/obesity/14.pdf accessed 7 January 2014)
- 38 Swinburn B et al (2013) op cit.
- 39 Active Healthy Kids Canada (2013) Report Card on Physical Activity for Children and Youth. URL: http://www.activehealthykids.ca/ReportCard/ReportCardOverview.aspx (accessed 7 January 2014)
- 40 Obesity Working Group, National Preventative Health Taskforce (2009). Obesity in Australia. [WWW Document] URL:
- http://www.health.gov.au/internet/preventativehealth/publishing.nsf/Content/E233F8695 823F16CCA2574DD00818E64/\$File/obesity-jul09.pdf (accessed 7 January 2014)
- 41 The White House (2010). Childhood Obesity Task Force Unveils Action Plan: Solving the Problem of Childhood Obesity Within a Generation. URL: http://www.whitehouse.gov/the-press-office/childhood-obesity-task-force-unveils-actionn-solving-problem-childhood-obesity- (accessed 8 January 2014)
- 42 WHO (2013) e-Library of Evidence for Nutrition Actions (eLENA) URL: http://www.who.int/elena/en/index.html (accessed 8 January 2014)
- 43 WHO (2013) Global database on the Implementation of Nutrition Action (GINA) URL: http://www.who.int/nutrition/gina/en/index.html (accessed 8 January 2014)
- 44 Department of Health, State of Victoria (2006). ACE-Obesity Assessing Costeffectiveness of obesity interventions in children and adolescents [WWW Document] URL:http://docs.health.vic.gov.au/docs/doc/0AE260B1268E0450CA257B2C000F9178/\$
 FILE/ace_obesity.pdf (accessed 7 January 2014)
- 45 WHO (2009). Interventions on diet and physical activity: what works: summary report. URL: http://www.who.int/dietphysicalactivity/whatworks/en/ (accessed 8 January 2014)
- 46 NICE (2010). Health systems and health-related behaviour change: a review of primary and secondary evidence. [WWW Document] URL: http://www.nice.org.uk/media/0E6/62/SpecialReportHealthSystemsAndHealthRelatedBe
- naviourChange.pdf (accessed 7 January 2014)
- 47 House of Lords (2011). Behaviour Change. Science and Technology Committee -Second Report. URL: http://www.parliament.uk/business/committees/committees-at/science-and-technology-committee/inquiries/behaviour/ (accessed 8 January 2014)
- 48 WHO and IOTF (2000). Obesity: Preventing and managing the global epidemic.
 49 WHO and IASO (2011). Nutrient Profiling: Report of a WHO/IASO Technical Meeting.
- 50 World Cancer Research Fund International (2013) Food Policy Framework for Healthy Diets: NOURISHING. Online database. URL:
- http://www.wcrf.org/policy_public_affairs/nourishing_framework/index.php?utm_source NOURISHING (accessed 8 January 2014)
 Department of Health, State of Victoria (2011). Building the Victorian Prevention
- System. URL: http://www.health.vic.gov.au/prevention/initiatives/prevention_system.htm (accessed 7 January 2014)
- 52 Ofcom (2007). Television Advertising of Food and Drink Products to Children URL: http://stakeholders.ofcom.org.uk/consultations/fooda January 2014)
 53 Kim S et al (2013). Restriction of television food advertising in South Korea: impact on
- advertising of food companies. Health Promot Int 28(1):17-25
- 54 Ng SW, Dunford E (2013). Complexities and opportunities in monitoring and evaluating US and global changes by the food industry. *Obes Rev* 14 (Suppl 2):29-41.
- 55 Defra (2011). New Government Buying Standards for food and catering URL: http://sd.defra.gov.uk/2011/06/new-government-buying-standards-for-food (accessed 7 January 2014)
- 56 NYC Dept of Health and Mental Hygiene (2013) NYC Agency Food Standards URL: gov/html/doh/html/living/agency-food-standards.shtml (accessed 7 January 2014)
- 57 Government of British Columbia (2008) Public Health Act 2008 (Part 3, Division 3). URL: http://ww January 2014) bclaws.ca/Recon/document/ID/freeside/00_08028_01 (accessed 7
- 58 State of Victoria (2008). Public Health and Wellbeing Act 2008. See especially Section 49. [WWW Document] URL: http://www.legislation.vic.gov.au/Domino/Web_Notes/LDMS/PubStatbook.nsf/f932b662
 - 41ecf1b7ca256e92000e23be/8B1B293B576FE6B1CA2574B8001FDEB7/\$FILE/08-46a.pdf (accessed 7 January 2014)
- 59 Nordic Council of Ministers (2013). About the Keyhole. URL: http://www.norden.org/en/nordic-council-of-ministers/council-of-minister ministers-for-fisheries-and-aquaculture-agriculture-food-and-forestry-mr-fjls/keyhole-nutrition-label (accessed 7 January 2014)
- 60 WHO (2013) Reducing marketing pressure on children URL: http://www.euro.who.int/en/health-topics/disease-prevention/nutrition/policy/member-states-action-networks/reducing-marketing-pressure-on-children (7 January 2014)
- 61 Change4Life (2014) Change4Life website resource and TV advertising promotion (January 2014). URL: http://change4life.icnetwork.co.uk/ (accessed 7 January 2014) 62 NSMC (2010) Big Pocket Guide to using social marketing for behaviour change.
- [WWW Document] URL:
- http://www.thensmc.com/sites/default/files/Big_pocket_guide_2011.pdf (7 January 2014) 63 Popkin B et al (2013) Overview: Bellagio Conference on Program and Policy Options for Preventing Obesity in the Low- and Middle-Income Countries Obes Revs 14 (Supp 2):1-8