

ADDRESSING INEQUALITIES

The Heart of the Post-2015 Development Agenda and the Future We Want for All

Global Thematic Consultation

**ADDRESSING GLOBAL INEQUALITIES
IN NCD PREVENTION AND CONTROL
FOR A HEALTHY FUTURE**

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October 2012

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Summary

Death and disability from non-communicable diseases (NCDs)—cancer, diabetes, cardiovascular diseases, and chronic lung diseases—are causes and outcomes of social and economic inequalities. Evident within and across countries and at all income levels, stark disparities between and within countries exacerbate poor health outcomes and threaten to negatively impact progress made across all dimensions of human development.

The September 2011 UN High-level Meeting (HLM) and Political Declaration on NCDs established NCDs as “one of the major challenges for development in the twenty-first century.”¹ As the global community evaluates the present development framework and begins to conceptualize the post-2015 development agenda, it is imperative to better understand the NCD burden and its equity dimensions, and ensure that the NCD challenge is embraced as an indispensable component of efforts to ensure equitable development.

This consultation provides an essential forum for:

1. Discussing the global burden, including the economic impacts of NCDs
2. Illustrating how inequalities magnify the already-detrimental effects of widespread exposure to NCD risk factors
3. Providing the rationale for including a comprehensive approach to NCD prevention and control in the post-2015 development framework
4. Considering priority interventions to address NCDs and inequalities in development frameworks

The global disease burden

Non-communicable diseases (NCDs)—primarily cancer, cardiovascular disease, diabetes, and chronic lung disease—are a crosscutting equity issue and a major burden on the world’s poor, disproportionately affecting the most vulnerable nations and populations. NCDs are influenced by policies and initiatives across a wide range of sectors (e.g. health, education, environment, and economy) and contribute substantively to global social and economic disadvantages. The growth in global NCD incidence is largely due to increased exposure to the four common NCD risk factors—tobacco use, unhealthy diets, physical inactivity and the harmful use of alcohol—as well as expected demographic transitions (e.g. ageing populations, rapid urbanization).

The global health burden attributable to NCDs outpaces many established global health priorities. According to the World Health Organization (WHO), NCDs claim more than 35 million lives each year and account for about 60% of all deaths worldwide.^{2,3} NCDs account for 48% of the global health burden as measured in DALYs (disability adjusted life years).⁴

Of the global NCD-attributable deaths, 80% are in low- and middle-income countries (LMICs).⁵ In low-income nations, the disease burden in adults (ages 15-59) attributed to NCDs is higher than that for communicable, maternal, and nutritional conditions combined.⁶ Globally, NCD deaths are projected to increase by 17% in the next ten years.⁷ The growth in the NCD burden is projected to be especially pronounced in LMICs. For instance, NCD deaths are projected to increase by 27% in the African region alone in the next ten years.⁸

In all regions of the world, except Africa, mortality rates are higher for NCDs than for communicable diseases among men and women age 15 to 59.⁹ Importantly, NCDs are not just a health burden on the elderly, with 25% of NCDs afflicting those 60 and younger, and 50% afflicting those 70 years and younger.¹⁰ For men, NCD age-standardized death rates are 65% higher in LMICs than in high-income countries. For women, differences between countries in mortality rates are even more pronounced: NCD age-standardized death rates for women are 85% higher in LMICs than in high-income countries.¹¹

Patterns of increased incidence and the correlation to national income level are also evident in specific NCDs. For example, the growth in cancer incidence by 2030 is projected to be over twice as high in low income countries (82% growth) compared to high-income countries (40% growth).¹² For diabetes, the number of people with diabetes in LMICs is projected to grow from 291.1 million in 2011 to 457.6 million people in 2030.¹³

Impacts on development

While inequities in health in LMICs impact all diseases, they are compounded in the case of NCDs, due to the historical marginalization of NCDs as public health priorities in most LMICs, the tendency to view NCDs as a disease of the affluent, the chronic care needs of NCDs, and the high costs typically associated with NCD screening and treatment relative to many established global health priorities. Meanwhile, the impacts of the NCD burden on global health and human development are projected to expand dramatically in the coming decades—widening health gaps between and within countries, placing added strain on health and economic systems in LMICs, and thereby complicating equitable access to care and the right to health.

NCD prevention and control has been a victim of failures to operationalize the more holistic conception of development articulated in the Millennium Declaration and other global commitments and policies. These limitations of current development frameworks, including the Millennium Development Goals (MDGs) have inhibited the recognition of, appraisal of, and adequate resource mobilization for NCD prevention and control. The neglect of NCDs has also prevented a more thorough and nuanced understanding of the extent of interrelations between the social and economic wellbeing and equity, nutrition, employment, consumption patterns, the environment, and health systems.

NCD prevention and control will diminish the economic burden of NCDs on vulnerable populations and limit the potential economic burden of NCDs on health systems and government social protection resources. As a leading cause of death for women in most countries and a significant social and economic burden on women, preventing NCDs supports gender equity and women's health and empowerment.

A variety of similar and complementary solutions can be applied to both NCDs and other established global health priorities. For example, universal access to affordable medications and treatments—including NCDs and infectious diseases like HIV/AIDS—is urgently needed worldwide. NCD prevention and control can help improve maternal health, by contributing to services for women's health and by improving models of universal access to sexual and reproductive health.

Social protection programs to protect against low incomes and their structural causes, as well as sharp declines in income due to illness, old age, and other contingencies (disasters, market risks etc.) are especially relevant to equitably address the NCD challenge. Moreover, given the 1) links between equity, social determinants, and NCD risk factor exposure; 2) the crosscutting nature of addressing the NCD challenge; and 3) the unique and formidable challenges of chronic care delivery, the stronger incorporation of NCDs within the development agenda provides an important justification for elevating social protection programs and other policies targeting structural inequities within the post-2015 development agenda.

The economic burden of NCDs

In addition to the human catastrophe, NCDs are a major cause of poverty and a barrier to equitable economic development and overall economic stability, posing a severe threat to global, national, and household economies. And with NCDs affecting populations at younger ages in LMICs, the result is longer periods of ill health, early death of the main income earner, and a great loss of the economic productivity that is vital for development.¹⁴

At the micro level, NCDs can have a devastating economic impact on families—through diminishing household income, impacting un-monetized labor, and/or placing a hefty financial burden for care and indirect costs—with long-lasting effects on the financial status of families and effects that ripple through social networks and communities. For many people throughout the globe, the financial and structural barriers of poverty are too great to surmount, preventing them from seeking preventive services or care at early stages.¹⁵

For instance, the economic impact of diabetes can be huge, through spending a large proportion of income on care, loss of income or work, or reduced productivity. In India, up to 25% of annual household income is spent on diabetes care; and in 2003, 40-60% of expenditure on diabetes care was paid out of families pockets in Latin America.^{16,17}

At the national level, a high proportion of total health expenditures in many low-income countries are spent on private, out-of-pocket payments which has especially significant consequences for NCDs and other chronic conditions.¹⁸

The World Economic Forum recently highlighted chronic diseases as one of the three greatest risks to the global economy—alongside fiscal crises and asset price collapse—based on a combination of likelihood and severity.¹⁹ NCDs are estimated to cause cumulative economic losses of nearly \$500 billion USD per year, for a total of \$47 trillion USD by 2030. This loss is equivalent to approximately 75% of the 2010 global GDP.²⁰

A recent study found that cancer is the disease with the largest global financial impact. This study indicates that the financial impact of death and disability caused by cancer in 2008—not including direct treatment costs—was US\$895 billion, the equivalent of 1.5% of the global GDP.²¹

Inequities in exposure to NCD risk factors

Underlying social and economic conditions play a large role in the growing global NCD incidence rates and patterns, with much to be said about the causes and interventions to address these factors. However, for the purpose of this consultation, this submission will examine perhaps the main drivers behind the growing NCD burden, namely, the exposure of individuals and populations to the shared modifiable risk factors that cause these diseases: tobacco use, unhealthy diets, physical inactivity, and the harmful use of alcohol.

Distributions of NCD risk factors along the socio-economic, geographic, ethnic, and gender spectrums are locally variable products of unique and often uneven economic development histories, dietary norms, lifestyle choices, employment patterns, and other environmental factors (e.g. urban planning). Thus, generalizations are difficult to make given the relative lack of surveillance efforts and studies. Still, some important patterns emerge that are important for the discussion at hand.

Although in many LMICs exposure to some NCD risk factors, such as tobacco and unhealthy diets, is lower among poor populations, there is an increasing generalized trend towards replicating the typical pattern of health disparities in high income countries, in which vulnerable and socially disadvantaged people get sicker and die sooner as a result of NCDs than people of higher socio-economic status.²²

In addition to their linkages with socio-economic status, patterns of exposure and disease incidence for NCDs are also significantly shaped by gender. There has been a feminization of NCD risk in all resource settings, with some risk factors that have been historically most prevalent among men becoming increasingly prevalent among women, including smoking, obesity, physical inactivity, and alcohol use. The increasing exposure of women to NCD risk factors, combined with the aforementioned socio-economically downward shift in NCD risk factor exposure is leading to an increased NCD burden among women in LMICs with profound implications for women's health and development.

Tobacco

Tobacco is the single largest avoidable cause of death in the world, accounting for almost 6 million deaths each year. Smoking accounts for 6% of all female and 12% of all male deaths in the world.²³ Tobacco uptake within particular countries typically begins among more affluent populations, but over time becomes most prevalent among lower income populations. The latter scenario is typical of most high- and middle-income countries and is becoming increasingly common in low-income countries. Tobacco use is an especially significant burden among the poor due to the high relative costs of tobacco use to household economies and the costs of care for the wide range of tobacco related diseases. The poor may also be more

strongly exposed to secondhand smoke in the workplace, and less able to negotiate smoke-free environments.

In 2010 an estimated 200 million adult women were smokers, with half of them being in LMICs.²⁴ WHO has estimated that from 2010 to 2025, the proportion of female smokers will rise from 12% to 20%; and that, from 2004 to 2030, deaths due to tobacco use among women are projected to increase from 1.5 million to 2.5 million.²⁵ The prevalence of smoking among women continues to be lower than among men, but women represent a growing proportion of smokers, with the prevalence of smoking among women in developing countries on the rise as they become more aggressively targeted by the tobacco industry. In 2009, it was estimated that 9% of women in developing countries smoked on a daily basis. Although tobacco consumption has begun to decline among women in most high-income countries (due to increasing awareness of the effects of tobacco use, coupled with effective tobacco control policies),²⁶ in most LMICs smoking prevalence among girls and women is alarmingly on the rise—especially in Asia and Africa.²⁷ In addition, smoking during pregnancy is on the rise in LMICs.²⁸

Secondhand smoke also represents a significant risk to women's health, especially in social contexts where women may not be able to negotiate smoke-free spaces in workplaces and even in their own homes.^{29,30,31} An estimated 47% of secondhand smoke deaths occur among adult women, compared to 26% in men.³²

Unhealthy diets

Global dietary patterns are undergoing profound transformations through a variety of development-related changes in how food is produced, distributed and consumed. These changes also include shifts in exposure to food marketing, and altered employment/income patterns. In addition to impacting food security and malnutrition, these changes have led to the increasing adoption in all resource settings of dietary patterns that increase NCD risk (i.e. calorie-dense diets high in saturated fat, sugar, and salt, and with insufficient amounts of fruits and vegetables).

Demographic dynamics also play a role in determining the availability and access to healthy foods. In rural environments, there is much variation in the quality of diets (e.g., proportion of fruits, vegetables, and starches) due to a variety of factors (e.g., food culture, land availability/tenure, subsistence techniques, the social organization of rural labor, market engagements, availability/accessibility of industrialized foods). While some rural communities may have poor diets, others have high quality diets that are superior to those of urban residents; however, the adoption of unhealthy diets that elevate NCD risk is increasingly common in rural communities. Changing food production patterns and increasing access to,

and purchase of, nutritionally poor processed foods have diminished diet quality in important regards among poor rural communities in LMICs, thereby, contributing to NCD risk and prevalence in these communities.

In urban contexts, poor diets are increasingly common, especially among lower income groups in all resource settings. Barriers to adequate nutrition often disproportionately afflict the poor, including affordability, physical access, and nutritional “literacy”. These barriers contribute to a rising NCD burden among low-income urban populations. Urban planners have increasingly given attention to equity, urban food systems, food security, and the links between urban development patterns and healthy diets.

Women’s ability to choose healthy ways of life may also be more strongly constrained than men, due to economic and other factors, especially women in lower income groups. The availability and affordability of fresh fruits and vegetables and opportunities to engage in physical activities are important factors in global gender obesity patterns, and the strong socioeconomic differences in obesity among women within countries. Women typically play a crucial role in household food consumption patterns and are critical for food security and household nutritional practices.

Physical inactivity and obesity

Obesity and overweight rates among vulnerable populations in developing countries are on the rise including the poor, indigenous peoples, children, and women. The growth in global obesity rates is driven by changes in diet, physical activity, and employment linked with urbanization and economic development.³³ In 2008, an estimated 205 million adult men (one in ten) and 297 million adult women (one in seven) worldwide were obese.³⁴ Between 1980 and 2008, the world obesity rate was found to have doubled for both men (from 4.8% to 9.8%) and women (from 7.9% to 13.8%).³⁵

WHO estimates that, by 2015, over 30% of adult women will be obese in various LMICs, including the Middle East, Central and South America, Eastern Europe, and Africa.³⁶ Gender disparities in obesity rates tend to be more pronounced in developing countries. Obesity rates are more than two times higher for women than men in some LMICs (including South Africa, Russia, and Brazil), while other countries have smaller, yet still notable gender differences (e.g. Chile, Mexico).³⁷ Women of low socioeconomic status in high-income countries have higher rates of obesity, while obesity rates among women of low socioeconomic status are lower in LMICs.^{38,39,40} However, obesity trends in developing countries are replicating the shift towards the poor that has occurred in most developed countries.⁴¹

Harmful use of alcohol

The harmful use of alcohol varies widely in different cultures, countries, and regions, but globally is an important risk factor for NCDs as well as other diseases. In many countries, the harmful use of alcohol is especially prevalent among vulnerable groups, including the poor and indigenous communities.

In 2005, annual alcohol consumption was estimated to be 6.13 litres of pure alcohol per person aged 15 years or older. However, a true measure of alcohol consumption is difficult to arrive at, due to the fact that over a quarter of alcohol produced is both unrecorded and unregulated. Additionally, regions of the world with sizeable Islamic populations that abstain from the consumption of all alcohol influence global trends and ability to capture accurate data (a total of 45% of the population abstains). The highest levels of alcohol consumption are found in the developed world. Yet, data show increasing levels of alcohol-attributable mortality in middle-income countries with expanding economies. Countries with higher incomes often show lower levels of unrecorded alcohol consumption.⁴² According to WHO, young people are notably at risk, with data indicating that 320,000 young people between the age of 15 and 29 die from alcohol-related causes (or 9% of all deaths in that age group).

The harms caused to individuals and society at-large by alcohol consumption are numerous. These include, but are not limited to, the toxicity of the individual consumer's organs and tissues; potentially diminished household income owing to loss of productivity/work absenteeism caused by alcohol consumption; increased rates of interpersonal violence; increased road traffic deaths associated with vehicle operation while impaired; and other incidents linked to heavy-drinking events.⁴³

Environmental NCD risk factors

While interventions addressing the main modifiable risk factors provide opportunities for greatest gains in NCD prevention, efforts for preventing exposure to environmental carcinogens, particularly among women and other vulnerable populations, are an important equity concern that reaches beyond the health sector. For example, environmental and occupational carcinogens, while playing a fairly limited role in overall cancer and NCD burden, are an important equity concern, as exposure to these typically marked by significant socioeconomic disparities.

Among the most important environmental pollutants in LMICs is indoor air pollution from unventilated stoves used for cooking and heating. Household pollution and indoor smoke from inefficient biomass and coal stoves can lead to respiratory diseases, especially among women and children. Indoor pollution from cooking with solid fuels is linked to respiratory diseases, including chronic obstructive pulmonary disease (COPD) and asthma, as well as lung cancer.^{44,45}

Indoor air pollution from solid fuel use is responsible for almost 2 million deaths per year, with 64% of these deaths occurring in LMICs, especially in South-East Asia and Africa.^{46,47,48,49}

Given their typical roles in domestic duties, women and girls bear the brunt of exposure to the smoke, soot and dust created by cooking with solid fuels.⁵⁰ Deaths linked to indoor air pollution from solid fuel use are concentrated in LMICs and among women in low-income groups (especially women in rural areas).⁵¹ Exposure to indoor air pollution is also linked to the more common and severe onset of adult asthma in women compared to men.⁵²

Inequities in access to NCD control (screening, care, and management)

Despite the epidemiological and economic significance of the NCD burden in the developing world and the existence of efficacious strategies to reduce incidence, morbidity, and mortality, stark inequities in access to NCD control resources prevail. For most of the developing world, NCD prevention, early detection, and treatment technologies are inaccessible. Even where these technologies are available, accessibility is delineated by severe inequities, fostering systematic disparities in outcomes that are both avoidable and unjust.⁵³

As in the case of maternal conditions, HIV/AIDS, and other infectious diseases, access to proven NCD interventions are highly inequitable, with most people in developing countries having very limited access to effective screening, treatment, and management options.^{54,55,56} The result is disparities in health outcomes in lower income countries, and in underserved populations within countries.

In countries where more robust NCD control capacity is present (e.g., middle- and high-income countries), the accessibility of care, quality of care, diversity of care options, and infrastructure available tends to vary widely between income groups. In lower resource countries, where health systems are limited, access to NCD prevention and control among the poor and other vulnerable groups is highly limited or entirely absent. Given the chronic nature of NCDs, cost barriers can be especially prohibitive for low-income populations where healthcare is heavily dependent on out-of-pocket payments. WHO has documented the limited availability and affordability of NCD medications in developing countries.⁵⁷

Substantial inequities in access to pain control are also evident, which is important for comprehensive cancer and HIV/AIDS care, as well as for the management of other diseases and conditions. Despite the fact that pain relief medications are low cost drugs on the WHO essential medicines list, access is highly limited in developing countries. Developing countries consume only 6% of the pain medicines dispensed globally and 74% of those who die in severe pain are from LMICs. Two out of three people dying of cancer in developing countries do not receive pain relief. In sub-Saharan Africa, weak health systems, regulatory restrictions, inadequate training of health care providers, concern and misperception about diversion,

addiction and abuse create barriers that keep safe, effective and inexpensive pain relief out of reach for more than 1 million people with treatable pain.⁵⁸

Impoverished women living in LMICs are least likely to have access to affordable diagnosis, management, and treatment, with limited availability and access to vaccination, screening, treatment, and management for NCDs.^{59,60,61} Simple, affordable and effective prevention, treatment, and care interventions are not implemented as standard care for women, while services for women outside their childbearing years remain highly limited among the poor in most developing countries. The lack of health care coverage outside of traditional women's health care focused on family planning, pregnancy, and HIV/AIDS, creates barriers to seeking secondary prevention and care for NCDs.⁶² Services are either unavailable or inaccessible due to costs.

Priority actions for addressing NCDs and inequalities

Effectively addressing NCDs in the future development framework requires an integrated approach, with special attention to reducing inequalities via efforts to both prevent and control these diseases and their risk factors. Promoting greater equity in NCD control between *and* within nations is important to diminish health disparities, benefit the greatest number of people, and create a broader and more sustainable impact on the global NCD burden.

Improving global NCD control is inherently an equity issue given the disjunction between the current policy/financing priorities of the global health community and the disease burden. Less than 3% of overall global development assistance for health—public and private—is allocated to preventing and controlling NCDs.⁶³ The Center for Global Development estimates that in 2007, in terms of investment relative to disease burden, there is an alarming disconnect between development assistance and NCD burden relative to communicable diseases (investments were US\$0.78/DALY attributable to NCDs, compared to \$23.9/DALY attributable to HIV, TB, and malaria).

Currently, a process is being defined for a global monitoring framework for NCDs with voluntary targets and options are being explored for a global coordinating mechanism. In addition, a new Global Action Plan for NCDs is being developed for 2013 to 2020. These processes will help address the NCD disparities faced by countries and should provide the foundation and the monitoring mechanism for NCDs within the post-2015 development agenda. A robust multisectoral NCD framework with strong support, buy-in, and uptake from Member States, diverse UN agencies, and other multilateral institutions is an important pillar for addressing the NCD burden and its equity components within future development goals, targets, and indicators.

Key priorities for addressing NCD inequities include:

- **Strengthened frameworks and surveillance systems that capture inequities:** Highlighting equity concerns in goals, targets, and indicators for NCDs will help drive solutions that promote equitable development frameworks (e.g. universal access to health and social protection mechanisms). NCD and other health targets and indicators could be fortified by greater reflection of inequalities through surveillance that captures sex, income/wealth, and rural-urban disaggregation.

There is a need for targets that move beyond average outcomes and aim to improve the health status of those in marginalized social groups. The MDG targets have not adequately incorporated health equity concerns since they are “stated in terms of societal averages—meaning that a country may be able to achieve MDG targets related to health ... while failing to improve the health status of the worst-off groups.”⁶⁴

- **Increased resource mobilization:** Policies and financial support for the development and implementation of evidence-based, resource-appropriate NCD prevention and control strategies can reduce the significant social and economic impacts of the disease and play a crucial role in promoting the development of more efficient and sustainable health systems, as well as being essential to fostering sustainable economic development. There is a need to “take steps to balance the global response to both communicable diseases and NCDs.”⁶⁵

Given the profound role that global development goals, targets, and indicators have in global health priorities and resource allocation decisions, incorporating NCDs and setting “firm targets for controlling these diseases are important steps toward more fully addressing the world’s leading causes of death and disability.”⁶⁶

- **Strengthened multisectoral partnerships and frameworks:** There is an important need for the development of robust, adequately-resourced, and empowered global partnerships and frameworks for NCD prevention and control that more strongly engage other relevant sectors. Stronger awareness of, commitment to, and integration of NCDs within other UN agencies and existing global multisectoral platforms and frameworks for health, sustainable development, and poverty eradication is needed.
- **Universal health care access:** Equitable access to health care is a prerequisite for equitable and sustainable development. It is vital that health systems strengthening efforts ensure more equitable access to acute *and* chronic care to ensure equity and rights to health. Health systems are needed that offer a wider range of care, with special attention the health needs of vulnerable populations (e.g. women, children, indigenous peoples). Health care models with high out-of pocket expenses are particularly detrimental to vulnerable peoples facing chronic conditions. Increased

access to essential drugs and technologies is vital for prevention and treatment of NCDs.⁶⁷

NCDs and the strengthening of development

Integrating these NCD priorities will support wider global development goals. Attention to the importance and challenge of NCDs can guide the development of policy instruments targeting structural factors that undermine equality of outcomes (e.g. policies to support social protection programs and widely accessible basic services for education, health, food, housing and social security). Better access to quality education, health services, and other resources can help poor and excluded people be better equipped to contribute to economic growth and care for their children.⁶⁸

NCD prevention efforts can also complement interventions to ensure environmental sustainability through promoting biodiversity-friendly, sustainable food production, promoting green urban development, limiting production of and exposure to air and water pollution, and limiting occupational exposure to toxic compounds, among other measures. Given the important links between urbanization and decreases in physical activity, transformation and impoverishment of dietary quality, air pollution, and health disparities, NCD prevention and control is a vital component of urban sustainable development policies and programs. Similarly, attention to NCD prevention is important in developing urban planning and transportation policies and plans that promote health, environmental, and economic goals.

The Rio+20 Outcome Document (*The Future We Want*) acknowledges that the “goals of sustainable development can only be achieved in the absence of a high prevalence of debilitating communicable and non-communicable diseases” and that the “global burden and threat of non-communicable diseases constitutes one of the major challenges for sustainable development in the twenty-first century” and commits to “strengthen health systems towards the provision of equitable, universal coverage and promote affordable access to prevention, treatment, care and support related to non-communicable diseases, especially cancer, cardiovascular diseases, chronic respiratory diseases and diabetes.”⁶⁹

As the global community evaluates the strengths and weaknesses of past development efforts, gauges current and emerging development challenges, and reflects upon the future we want, equity in economic development and health needs to be at forefront. At the same time, the magnitude of the NCD burden, future projections in demographic and lifestyle changes among vulnerable populations (e.g. aging populations, increasing urbanization, changing dietary and physical activity patterns), the inequitable impacts of NCDs in vulnerable groups, the inadequacy of current policy and investments for NCD prevention and control, and the

necessity of multisectoral efforts to address these challenges, have raised the stakes and urgency of effectively acknowledging and tackling the NCD epidemic. Therefore, NCD prevention and control must be an important part of a post-2015 agenda in which equity is central.

References

- ¹ 2011. UN *Political Declaration of the High-level Meeting on the Prevention and Control of Non-communicable Diseases*. A/Res/66/2
- ² Seffrin, John R., David Hill, Werner Burkart, Ian Magrath, Rajendra A Badwe, Twalib Ngoma, Alejandro Mohar, and Nathan Grey. It Is Time to Include Cancer and Other Noncommunicable Diseases in the Millennium Development Goals. *CA Cancer J Clin* 2009; 59: 282-284
- ³ http://whqlibdoc.who.int/publications/2009/9789241597418_eng.pdf
- ⁴ WHO. 2008. *The global burden of disease: 2004 update*. WHO Press, Geneva Switzerland.
- ⁵ Ibid
- ⁶ Ibid
- ⁷ http://whqlibdoc.who.int/publications/2009/9789241597418_eng.pdf
- ⁸ http://whqlibdoc.who.int/publications/2009/9789241597418_eng.pdf
- ⁹ http://whqlibdoc.who.int/publications/2009/9789241597418_eng.pdf
- ¹⁰ Seffrin, John R., David Hill, Werner Burkart, Ian Magrath, Rajendra A Badwe, Twalib Ngoma, Alejandro Mohar, and Nathan Grey. It Is Time to Include Cancer and Other Noncommunicable Diseases in the Millennium Development Goals. *CA Cancer J Clin* 2009; 59: 282-284
- ¹¹ WHO. 2011. *Global status report on noncommunicable diseases*. Geneva, World Health Organization.
- ¹² World Health Organization. 2011. *Global status report on noncommunicable diseases*
- ¹³ International Diabetes Federation, *Diabetes Atlas: 5th Edition* (2011)
- ¹⁴ Mackay, Judith, Ahmedin Jemal, Nancy C. Lee, D. Maxwell Parkin. (2006) *The Cancer Atlas*. American Cancer Society.
- ¹⁵ Farmer P et al. 2010. Expansion of cancer care and control in countries of low and middle income: a call to action. *Lancet* 376: 1186–93.
- ¹⁶ Mahal A, Karn A, Engleau M (2010), *The Economic Implications of Noncommunicable Disease for India*, World Bank, Washington D.C.
- ¹⁷ Barceló A, Aedo C, Rajpathak S, et al. 'The cost of diabetes in Latin America and the Caribbean,' *Bull World Health Organ*, 81:1, 29-27 (2003)
- ¹⁸ Labonté, Ronald and Ted Schrecker. 2007. Globalization and social determinants of health: Promoting health equity in global governance (part 3 of 3). *Globalization and Health* 3(7): 1-15
- ¹⁹ *Global Risks 2010 A Global Risk Network Report*. A World Economic Forum Report (2010).
- ²⁰ World Economic Forum and Harvard School of Public Health, *The Global Economic Burden of Non-communicable Disease*, September 2011.
- ²¹ American Cancer Society and LIVESTRONG, *Global Economic Cost of Cancer*, 2011
- ²² WHO. 2011. *Global status report on noncommunicable diseases*. Geneva, World Health Organization.
- ²³ Ibid.
- ²⁴ Eriksen, Michael, Judith Mackay, and Hana Ross. 2012. *The Tobacco Atlas: 4th Edition*. Atlanta, GA: American Cancer Society.
- ²⁵ NCD Alliance. 2011. *Non-communicable Diseases: A priority for women's health and development*.
- ²⁶ WHO. 2009. *Report on the global tobacco epidemic, 2009: implementing smokefree environments*. Geneva, World Health Organization.
- ²⁷ Shafey O, Dolwick S, Guindon GE. 2003. *Tobacco control country profiles*, 2nd edn. Atlanta: American Cancer Society.
- ²⁸ Partnership for Maternal, Newborn & Child Health. 2001. *PMNCH Knowledge Summary 15-Non-communicable diseases*.
- ²⁹ WHO. 2010. *Gender, women, and the tobacco epidemic*. Geneva, Switzerland: World Health Organization.
- ³⁰ Hirayama, T. 1981. Non-smoking wives of heavy smokers have a higher risk of lung cancer: a study from Japan. *British Medical Journal (Clin Res Ed)* 282: 183.
- ³¹ Fontham ET, Correa P, Reynolds P, Wu-Williams A, Buffler PA, Greenberg RS, Chen VW, Alterman T, Boyd P, Austin DF, Liff J. 1994. Environmental tobacco smoke and lung cancer in nonsmoking women: A multicenter study. *JAMA* 271:1752–9.
- ³² Eriksen, Michael, Judith Mackay, and Hana Ross. 2012. *The Tobacco Atlas: 4th Edition*. Atlanta, GA: American Cancer Society.
- ³³ Moore, Spencer, Justin N. Hall, Sam Harper, and John W. Lynch. 2010. Global and National Socioeconomic Disparities in Obesity, Overweight, and Underweight Status. *Journal of Obesity* 2010.
- ³⁴ Mariel M Finucane, Gretchen A Stevens, Melanie J Cowan, Goodarz Danaei, John K Lin, Christopher J Paciorek, Gitanjali M Singh, Hialy R Gutierrez, Yuan Lu, Adil N Bahalim, Farshad Farzadfar, Leanne M Riley, and Majid Ezzati. 2011. National, regional, and global trends in body-mass index since 1980: systematic analysis of health examination surveys and epidemiological studies with 960 country-years and 9.1 million participants. *The Lancet* 377 (9765): 557 – 567.
- ³⁵ Mariel M Finucane, Gretchen A Stevens, Melanie J Cowan, Goodarz Danaei, John K Lin, Christopher J Paciorek, Gitanjali M Singh, Hialy R Gutierrez, Yuan Lu, Adil N Bahalim, Farshad Farzadfar, Leanne M Riley, and Majid Ezzati. 2011. National, regional, and global trends in body-mass index since 1980: systematic analysis of health examination surveys and epidemiological studies with 960 country-years and 9.1 million participants. *The Lancet* 377 (9765): 557 – 567.
- ³⁶ Anne McTiernan, Peggy Porter and John D. Potter. 2008 Breast cancer prevention in countries with diverse resources. *Cancer Supplement: Guidelines for International Breast Health and Cancer Control–Implementation* 113 (S8).
- ³⁷ Franco Sassi. 2010. *Obesity and the Economics of Prevention: FIT NOT FAT*. OECD.
- ³⁸ World Cancer Research Fund / American Institute for Cancer Research. Policy and Action for Cancer Prevention. 2009. *Food, Nutrition, and Physical Activity: a Global Perspective*. Washington DC: AICR.
- ³⁹ Franco Sassi. 2010. *Obesity and the Economics of Prevention: FIT NOT FAT*. OECD.
- ⁴⁰ Spencer Moore, Justin N. Hall, Sam Harper, and John W. Lynch. 2010. Global and National Socioeconomic Disparities in Obesity, Overweight, and Underweight Status. *Journal of Obesity* 2010.

-
- ⁴¹ PATH. 2009. The growing chronic disease burden: implications for reproductive health. *Outlook* 26(1).
- ⁴² WHO. 2011. Global Status Report on Alcohol and Health. http://www.who.int/substance_abuse/publications/global_alcohol_report/msbgsruprofiles.pdf
- ⁴³ Ibid.
- ⁴⁴ Kagawa-Singer, Marjorie, Annalyn Valdez Dadia, Mimi C. Yu, and Antonella Surbone. 2010. Cancer, Culture, and Health Disparities: Time to Chart a New Course? *CA: A Cancer Journal for Clinicians*. 60(1).
- ⁴⁵ Elizabeth T. H. Fontham, Michael J. Thun, Elizabeth Ward, Alan J. Balch, John Oliver L. Delancey, and Jonathan M. Samet. 2009. American Cancer Society Perspectives on Environmental Factors and Cancer. *CA: A Cancer Journal for Clinicians* 59 (6).
- ⁴⁶ WHO. 2011. *Global status report on noncommunicable diseases*. Geneva, World Health Organization.
- ⁴⁷ World Health Organization. 2011. *Health in the Green Economy: Health Co-benefits of Climate Change Mitigation – Housing Sector*.
- ⁴⁸ NCD Alliance. 2012. *Tackling Non-communicable Diseases to Enhance Sustainable Development*.
- ⁴⁹ WHO. *Indoor air pollution and health* (Fact sheet N°292), September 2011. Available at <http://www.who.int/mediacentre/factsheets/fs292/en/index.html>
- ⁵⁰ Kagawa-Singer, Marjorie, Annalyn Valdez Dadia, Mimi C. Yu, and Antonella Surbone. 2010. Cancer, Culture, and Health Disparities: Time to Chart a New Course? *CA: A Cancer Journal for Clinicians*. 60(1).
- ⁵¹ Kagawa-Singer, Marjorie, Annalyn Valdez Dadia, Mimi C. Yu, and Antonella Surbone. 2010. Cancer, Culture, and Health Disparities: Time to Chart a New Course? *CA: A Cancer Journal for Clinicians*. 60(1).
- ⁵² NCD Alliance. 2011. *Non-communicable Diseases: A priority for women's health and development*.
- ⁵³ Gospodarowicz, Mary K, Cazap Eduardo, Jadad Alex R. 2009. Cancer in the world: a call for international collaboration. *Salud pública* 51(2): s305-s308 .
- ⁵⁴ WHO. 2011. *Global status report on noncommunicable diseases*. Geneva, World Health Organization. Available at: http://www.who.int/nmh/publications/ncd_report2010/en/
- ⁵⁵ Lamptey P, Merson M, Piot P, Reddy KS, Dirks R. 2011. Informing the 2011 UN Session on Noncommunicable Diseases: Applying Lessons from the AIDS Response. *PLoS Med* 8(9): e1001086.
- ⁵⁶ Farmer P et al. 2010. Expansion of cancer care and control in countries of low and middle income: a call to action. *Lancet* 376: 1186–93.
- ⁵⁷ “WHO/Health Action International Project on Medicine Prices and Availability”, http://www.who.int/medicines/areas/access/Medicine_Prices_and_Availability/en/index.html
- ⁵⁸ American Cancer Society. 2011. *Global Cancer Facts & Figures 2nd Edition*.
- ⁵⁹ WHO. 2011. *Global status report on noncommunicable diseases*. Geneva, World Health Organization. Available at: http://www.who.int/nmh/publications/ncd_report2010/en/
- ⁶⁰ Lamptey P, Merson M, Piot P, Reddy KS, Dirks R. 2011. Informing the 2011 UN Session on Noncommunicable Diseases: Applying Lessons from the AIDS Response. *PLoS Med* 8(9): e1001086.
- ⁶¹ Farmer P et al. 2010. Expansion of cancer care and control in countries of low and middle income: a call to action. *Lancet* 376: 1186–93.
- ⁶² NCD Alliance. 2011. *Non-communicable Diseases: A priority for women's health and development*.
- ⁶³ Rachel A. Nugent and Andrea B. Feigl. 2010. “Where Have All the Donors Gone? Scarce Donor Funding for Non-Communicable Diseases.” CGD Working Paper 228. Washington, D.C.: Center for Global Development. <http://www.cgdev.org/content/publications/detail/1424546>
- ⁶⁴ Labonté and Schrecker (2007: 2)
- ⁶⁵ Seffrin, John R., David Hill, Werner Burkart, Ian Magrath, Rajendra A Badwe, Twalib Ngoma, Alejandro Mohar, and Nathan Grey. It Is Time to Include Cancer and Other Noncommunicable Diseases in the Millennium Development Goals. *CA Cancer J Clin* 2009; 59: 282-284
- ⁶⁶ Seffrin, John R., David Hill, Werner Burkart, Ian Magrath, Rajendra A Badwe, Twalib Ngoma, Alejandro Mohar, and Nathan Grey. It Is Time to Include Cancer and Other Noncommunicable Diseases in the Millennium Development Goals. *CA Cancer J Clin* 2009; 59: 282-284
- ⁶⁷ “WHO/Health Action International Project on Medicine Prices and Availability”, http://www.who.int/medicines/areas/access/Medicine_Prices_and_Availability/en/index.html
- ⁶⁸ ECE, ESCAP, UNDESA, UNICEF, UNRISD, and UN Women. *Addressing inequalities: The heart of the post-2015 agenda and the future we want for all* (Thematic Think Piece). May 2012.
- ⁶⁹ UN. *The Future We Want*. June 2012. Available at: http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/66/288&Lang=E