C2 | NON-COMMUNICABLE DISEASES: IS BIG BUSINESS HIJACKING THE DEBATE?

Non-communicable diseases (NCDs) have been promoted as a global health priority for the past ten years, culminating in a UN High Level Meeting in September 2011 on this subject. There is evidence that the incidence and prevalence of NCDs has increased over the past decades, and this has happened in both high-income countries (HICs) and low- and middle-income countries (LMICs). At the same time, available 'burden of disease' data shows that infectious diseases, maternal conditions, perinatal conditions and nutritional diseases (clubbed together as Type I diseases[1] and traditionally termed 'diseases of poverty') continue to be the priority in low-income countries, as well as in many middle-income countries.

This chapter explores the various issues involved in what has been called the 'epidemic of NCD diseases'. We first examine the evidence regarding various claims about the increase in NCD incidence. We then turn to the causal factors driving the rise of NCDs. We also discuss the role of various actors in the current attempt to project NCDs as a priority issue, including in LMICs. Finally we take a critical look at the strategies being promoted to tackle NCDs.

Evidence as a marketing tool

Non-communicable diseases are described as the biggest killers worldwide. The focus is on four diseases (cardiovascular diseases, cancers, chronic respiratory diseases and diabetes) and on four risk factors (tobacco use, unhealthy diet, physical inactivity and harmful use of alcohol), embodied in a neat four-by-four matrix. Recently mental disorders have been included as a fifth priority condition.

Unfortunately, the debate on NCDs is being conducted virtually in the form of a corporate advertisement campaign, rather than as a reasoned scientific debate. The four diseases and four risk factors approach is in sync with such a format. In the process evidence is often presented to confuse rather than to educate. UN agencies, including the World Health Organization (WHO), often in partnership with philanthropic foundations and organizations such as the World Economic Forum, project strategies for combating NCDs as a market opportunity. In a typical promotional brochure (WHO 2005), the WHO urges national leaders to 'Invest now!', alerting them to 'substantial gains in countries' economic growth' and 'appreciable economic dividends for countries' (ibid.: 26).
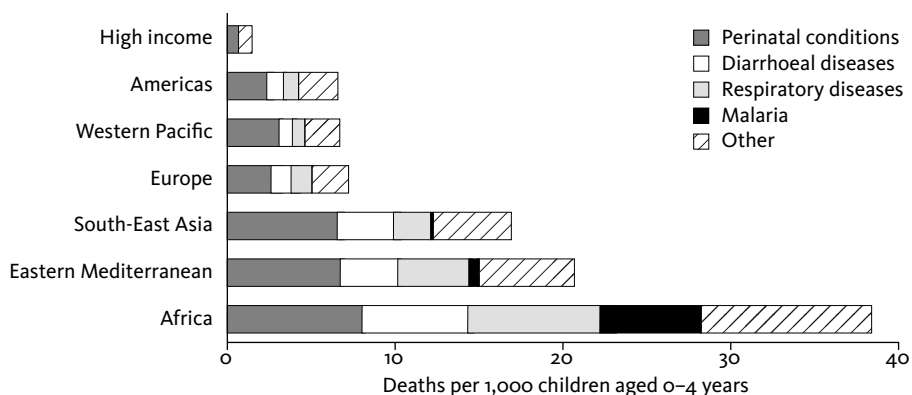
Image C2.1 Living conditions still determine the dominance of Type I diseases in poor countries (Roger Ciza)

The style and tone of these 'promotional' documents are remarkably similar to articles in business magazines, thus projecting an impression that NCDs are being 'sold' by the international health community to the private sector because health, as the reader is constantly reminded, represents a trillion-dollar market. This is unfortunate as it skews the terms of the debate and deflects attention away from NCDs as real public health priorities in many countries (including all high-income countries and a significant number of middle-income countries), and as future potential priority in many other countries. It is also unfortunate because this manner of 'hard sell' appears to create hierarchies between NCDs and traditional health priorities in LMICs – triggering discussions regarding which is a 'higher' priority.

From the standpoint of public health *all* morbid conditions that compromise health need to be addressed. The setting of priorities needs to be based on evidence regarding local conditions. Let us examine the evidence, with a view, not to minimize the importance of NCDs as a public health issue, but to scientifically analyse their impact on public health.

A fresh look at mortality and 'burden of disease' data

The brochure (referred to earlier) claims that: 'Globally, of the 58 million deaths in 2005, approximately 35 million will be as a result of chronic

C2.1 Child mortality rates by cause and region, 2004 (*source*: WHO 2008: 15)

diseases. They are currently the major cause of death among adults in almost all countries and the toll is projected to increase by a further 17% in the next 10 years' (ibid.: vii). The first part of the claim is correct, the second part is a projection that may or may not be borne out by future dynamics. The problem, however, is that such statements present a picture that conceals more than it reveals. The statement, by failing to specify age at death (that is, five, twenty, fifty or eighty years of age) ignores the very high rates of premature mortality that continue to prevail in many parts of the world. Further, it does not convey the fact that because most NCDs (except mental disorders like unipolar depression) are diseases of ageing (true, for example, for all the four priority conditions identified by the WHO), more people would be expected to die of NCDs when they get older. The fact that more people still die of Type I diseases in poorer regions of the world is an indication of gross inequity that persists between countries and within countries – it is a barometer of the unjust world that we live in. This does not mean, of course, that preventing premature deaths due to NCDs is not a public health issue.

Instead of looking at overall data on mortality, it is much more important to examine data regarding premature mortality. It is not as if such data is not available – WHO continues to produce reports on the global burden of diseases (GBD) (WHO 2008) that present a more nuanced picture of morbidity, mortality and major risk factors worldwide (see Figure C2.1 showing the causes of deaths in the 0–4 age group).

If we examine age-specific and region data on mortality (ibid.) we see a very different picture:

- More than seven out of ten child deaths globally take place in Africa and South-East Asia.
- In the African region, 46 per cent of all deaths were of children aged less than fifteen, whereas only 20 per cent were people aged sixty and over.

- In low-income countries, the dominant causes (of death) are infectious and parasitic diseases (including malaria) and perinatal conditions.
- Six causes of death account for 73 per cent of the 10.4 million deaths annually among children under five. Four communicable diseases (acute respiratory infections, diarrhoeal disease, neonatal infections such as sepsis, and malaria) account for one half of these deaths.
- An estimated 35 per cent of child deaths are due to undernutrition and 5 per cent are associated with HIV.
- The two leading causes of burden of disease in the world are infectious diseases – lower respiratory infections and diarrhoeal disease. HIV/AIDS is now the fifth cause of burden of disease globally and three other infectious diseases also appear in the top fifteen causes. In low-income countries, of the top ten causes, eight were Type I (communicable, maternal, perinatal and nutritional causes).

The above contradicts blithe assurances in NCD documents about 'successes against infectious disease' and 'health risks [which] have become globalized'.

As the WHO's GBD document explains, 'the contribution of premature death varied dramatically across regions' (ibid.: 40), with Years of Life Lost being seven times higher in Africa than in high-income countries. Most of the NCD documents, including those prepared for the UN Summit,[2] are addressed to national leaders who are not epidemiologists or even health experts. As the international health authority, WHO has a duty to present facts and figures to the public and to governments, in context, with careful explanations and cautionary notes. It does this in its GBD documents, but not in the documents that it produces in collaboration with various partners, notably the private sector.

The GBD data incorporates a methodology – using a computation method called 'Disability Adjusted Life Years' (DALYs) (Arnesen and Kapiriri 2004) – to calculate the total impact of both mortality and morbidity. It calculates the impact by setting a global standard life expectancy (currently taken as eighty years for males and 82.5 years for females) and then calculating 'Years of Life Lost' (YLL for deaths) and partial life years lost as a result of morbidity ('years lived with disease' – YLD). For the latter, different weights are assigned to different levels of 'disability' caused by a disease that leads to long-term morbidity. This method of calculating health impact assigns greater weight to deaths (or long-lasting morbidity) at a young age. YLL are calculated from the number of deaths at each age multiplied by a global standard life expectancy for the age at which death occurs. In this calculation, a female child dying at 5 years of age is calculated to have lost 77.5 years while a male dying at 78 years of age is calculated to have lost 2 years (so the burden of disease ratio is 77.5:2). In calculations that use only mortality data, both deaths are assumed to have equal impact.

What we have presented is a very simple explanation of how GBD is calculated using DALYs. There are other complexities that are part of the calculations which we shall only indicate here. While calculating YLL and YLD, different weights are given for different ages. Use of such an 'age weighted' calculation assumes a value (for each year) that rises from infancy to a peak at early adulthood and then gradually declines till old age.

GBD calculated using DALYs has been critiqued for several reasons, and is not a perfect methodology. For example, 'age weighting' has been critiqued as not valuing life equally across a person's life cycle (the logic for 'age weights' is that it assumes that a person is more 'productive' at a certain period of her/his life cycle). Disability adjustment has also been critiqued for the need to assign weights for different kinds of disability which may not be universally acceptable.

However, in spite of the imperfections, GBD data still remains much more useful to examine. The first reason for this relates to the purpose of examining data on mortality and morbidity. If we assume that the purpose is to use data as a tool to set priorities, then the 'burden of disease data' is far superior because it assigns a greater burden to premature deaths. Further GBD data captures the burden of both mortality and morbidity.

What does the GBD data show?

The GBD reports show that if premature mortality (that is, in children and young adults rather than in mature adults over fifty years of age) is a criterion, then NCDs have a relatively lower impact in low-income countries and notably in three WHO regions (Africa, South-East Asia and the eastern Mediterranean). Very high levels of avoidable disease and premature death due to infectious disease, maternal, perinatal and nutritional conditions (Type I causes) persist in low-income countries. If we look at the global burden, then Type I conditions still continue to be the major contributors to the global burden of disease (see Table C2.1). The top two conditions (respiratory infections and diarrhoeal diseases) are Type I conditions, as are six of the top ten.

Overall the GBD report projects that the burden of non-communicable diseases accounts for nearly half of the global burden of disease (all ages), and that almost 45 per cent of the *adult* disease burden in low- and middle-income countries globally is now attributable to non-communicable disease. The report further predicts that 'the proportional contribution of the three major cause groups to the total disease burden is projected to change substantially. Group I causes are projected to account for 20% of total DALYs lost in 2030, compared with just under 40% in 2004. The non-communicable disease (Group II) burden is projected to increase to 66% in 2030, and to represent a greater burden of disease than Group I conditions in all income groups, including low-income countries' (WHO 2008: 50).

The GBD report does not minimize the risk of NCDs, but is a much

TABLE C2.1 Leading causes of burden of disease (DALYs), all ages, 2004

Disease or injury	DALYs (millions)	Percentage of total DALYs
Lower respiratory infections	94.5	6.2
Diarrhoeal diseases	72.8	4.8
Unipolar depressive disorders	65.5	4.3
Ischaemic heart disease	62.6	4.1
HIV/AIDS	58.5	3.8
Cerebrovascular disease	46.6	3.1
Premature and low birth weight	44.3	2.9
Birth asphyxia and birth trauma	41.7	2.7
Road traffic accidents	41.2	2.7
Neonatal infections	40.4	2.7

Source: WHO (2008: 43)

more sober articulation of the present situation. Also to be kept in mind is that the projections for 2030 are based on assumptions of a certain rate of economic growth. The GBD report cautions: 'If economic growth is slower than in recent World Bank projections, or risk factor trends in low- and middle-income regions are adverse, then the global burden of disease will fall more slowly than projected' (ibid.: 50). We need to remember that the latest comprehensive data available is for 2004 (the update published in 2008 doesn't use later data, only refines the data from 2004). Since then, the global economic meltdown has halted, or even reversed, economic progress in many parts of the world. Moreover, a reduction in emphasis on Type I diseases in a period of economic slowdown (the burden of which is now being passed on to LMICs by the rich countries) can further skew the 2030 projections.

We now turn to another important issue – the distinction between Type I and Type II conditions. Traditionally, the former have been characterized as 'diseases of poverty' while the latter have been believed to be 'lifestyle' diseases, brought on by relative affluence. However, the GBD report indicates that 'non-communicable disease risks, as measured by age-standardized DALY rates, are higher in low- and middle-income countries than in high-income countries (LMICs)'. What this means is that many NCDs are affecting people at a younger age in LMICs. This is happening for a number of reasons, and blurs the distinction between Type I and Type II diseases. NCDs are killing people earlier and faster for the same reasons as Type I diseases – the conditions of living and poor access to healthcare services.

For most NCDs, obesity is a major risk factor. We now have evidence that children who are undernourished have higher risks of being obese during adulthood, if they get access to sufficient food (in calorific terms) (see Chapter C3). We also know that obesity in many LMICs is a consequence of the dumping of obesogenic foods by the global food industry (see Chapter C3). LMICs also have a higher incidence of risk factors that contribute to a

number of cancers: exposure to harmful chemicals, low-fibre diets, smoking and alcohol abuse, exposure to some infectious diseases (viz. hepatitis C infections linked to liver cancers), etc. Poor primary-level care also contributes to development of NCDs in LMICs – for example, untreated hypertension and diabetes lead to early onset of cardiovascular complications. Finally, when affected by NCDs, patients tend to die early because of poor access to healthcare and because treatments are unaffordable. Most of the new anti-cancer drugs, for example, are protected by patents and are priced at levels that few in LMICs can afford.

A critical look at the GBD

The GBD data is an important tool for estimating burden of diseases at a global scale. However, it has several limitations that need to be understood while using the data to set priorities.

The first limitation is the global span of the data. Because the data collected is *projected for the entire globe* there are certain assumptions that are made. The most important assumption underlying burden of data calculations is that of 'standard life expectancy'. As we have discussed earlier, this is set at 80 years for males and 82.5 years for females. However, if we look at the existing situation, such a level of life expectancy is far removed from the reality in all LMICs, which have an average life expectancy ranging from approximately 50 to 70 years (with some LMICs being outside this range). Consequently calculations of burden of disease for individual countries based on a global standard life expectancy have obvious limitations. It would be fairly obvious that when the standard life expectancy is set high it will overestimate the burden of NCDs (where a majority of the mortality and morbidity burden occurs in a relatively older age group) as against that of Type I diseases, where most deaths occur in the early years of life. This is only partly accounted for by factoring in 'age weights' (where the value of life is not the same across the entire lifespan, as explained earlier). However, the practice of assigning age weights has come in for criticism, as we have discussed earlier.

It has been argued that the 'value choices currently used, tend at underestimating the burden of young populations and diseases that are predominant among poor populations. This contrasts the efforts of the WHO towards reducing the health gap between the rich and the poor countries' (Arnesen and Kapiriri 2004). As a consequence of this limitation of the GBD data, it is generally recommended that in order to set priorities in countries (or farther down at local levels), it is more reliable to set expected life expectancy closer to the national (or local) average while calculating the national or local burden of disease and while evaluating different interventions (Fox-Rushby and Hanson 2001). If this were done, in almost all LMICs the burden of Type I diseases would be consistently higher than what shows up in the GBD data.

Promoting NCDs as a profit-making arena

In 2011, the WEF produced a report on NCDs (WEF and Harvard School of Public Health 2011: 1) to 'strengthen the economic case for action'. Readers were told that 'a large portion of health spending is appropriately viewed as investment – one that yields a handsome rate of return' (ibid.: 15).

The 'values' of NCDs in terms of direct and indirect costs of illness are set out in the WEF's report. The figures for cancer are US$290 billion rising to US$458 billion in 2030; cardiovascular disease: US$863 billion rising to US$1.04 trillion; chronic obstructive pulmonary disease: US$2.1 trillion rising to US$4.8 trillion; diabetes: US$500 billion rising to US$745 billion; and, finally, mental illness: US$2.5 trillion rising to US$6 trillion (ibid.: 35).

The WEF not only alerts the business community to a tremendous market opportunity but also makes clear its ambition and intention of influencing the spending decisions of national governments. 'It is our hope that the report informs the resource allocation decisions of the world's economic leaders – top government officials, including finance ministers and their economic advisers – who control large amounts of spending at the national level.' WEF Executive Chairman, Klaus Schwab boasts that 'practically all G20 governments – at the highest level – are now involved in working together with the Forum' (WEF 2012).

It is necessary to ponder the reasons that drive this 'hard sell' by industry. Clearly, industry (especially big pharmaceutical manufacturers) sees a booming market for their products in the midst of the NCD debate. Interestingly, while the tobacco, alcohol and (to some extent) food and beverages industry has been at the receiving end of criticisms for contributing to the NCD 'epidemic', 'big pharma' is routinely seen as a reliable partner. Big pharma has latched on to this opportunity and it has been quick to grab the 'pole position' in all NCD-related platforms.

The NCD Alliance is ubiquitous in all global platforms on NCDs. Its website (www.ncdalliance.org/who-we-are) claims: 'The NCD Alliance was founded by four international NGO federations representing the four main NCDs – cardiovascular disease, diabetes, cancer, and chronic respiratory disease. Together with other major international NGO partners, the NCD Alliance unites a network of over 2,000 civil society organizations in more than 170 countries. The mission of the NCD Alliance is to combat the NCD epidemic by putting health at the centre of all policies.' Even a cursory look at some of the people who lead the alliance provides insights regarding the deep penetration of the private sector. The alliance has five 'steering group' members. Among them is Cary Adams, CEO of the International Union against Cancer. In his previous assignment he worked as chief operating officer of Lloyds TSB Group International Banking.[3] Petra Wilson, as CEO of the International Diabetes Federation, also sits in the group. In her previous incarnation she was a director in the European Health Management Association.[4]

On its website the NCD Alliance lists 'private sector partners that have made financial contributions to the work of the Alliance'. Listed as 'current supporters' are twelve organizations – of these five (Bristol-Myers Squibb, Eli Lilly & Company, Merck, Novo Nordisk and Sanofi) are pharmaceutical MNCs.

Big pharma (pharmaceutical MNCs) has been particularly innovative in getting on to the NCD bandwagon. For decades it has prepared the ground by insidiously working to ratchet up standards of 'normalcy' in NCD patients. Pharma has consistently lobbied to set treatment thresholds so low that people with mild problems or modest risks are exposed to the harms and costs of treatment with little or no benefit (Moynihan 2011). For example, among the twelve members of the panel that created the controversial diagnostic category 'pre-hypertension' in 2003, eleven received money from drug companies, and half of those people declared extensive ties to more than ten companies each (ibid.). Further evidence of pharma influence on widening disease definitions comes from the *Diagnostic and Statistical Manual of Mental Disorders*. An examination of those who produced its fourth edition found that 56 per cent of panel members had financial ties to drug companies, although for some panels, including that for mood disorders, the figure was 100 per cent (ibid.). Again, eleven of the twelve authors of a 2009 statement on Type 2 diabetes were heavily conflicted, with authors working as consultants, speakers or researchers for an average of nine companies each. That panel advocated a contentiously low blood sugar target (ibid.). These are just a small sample of how the pharmaceutical industry is setting standards of treatments for NCDs, in a clear ploy to sell their medicines.

Pharmaceutical companies also use front organizations to promote apparently useful causes. Underlying their 'charity' are attempts to hijack the agenda on how treatments should be scientifically evaluated. (See Chapter D1 on the way pharma hijacked the observance of 'World Psoriasis Day'.)

If pharmaceutical companies are setting the terms of the debate on NCDs, the blame squarely lies with the World Health Organization (WHO). The WHO has 'dumbed down' the debate on NCDs through its four-by-four approach (see earlier). The approach is 'victim blaming' in its conception, placing the burden of action on individuals. There has been very little coordinated action to address the structural reasons for NCDs (many of them very similar to the underlying causes of the high incidence of Type I diseases, as we discuss earlier) and too little attention on real strategies to combat the rise in NCDs. The latter would need to include a scrutiny of the food and beverage industry, the erosion of food sovereignty in LMICs, deterioration of environmental conditions, and the role of strengthened public health services.

Conclusions

The rise in the incidence and prevalence of non-communicable diseases poses a complex challenge. Vigilance is necessary to ensure that the agenda

is not hijacked by very powerful interests which seek to profit from disease and suffering. At the same time it is necessary to carefully scrutinize data and trends, to arrive at a balanced view of the problems posed by NCDs. A motivated reading of the situation should not allow a deflection of focus away from the existing threats that Type I diseases continue to pose in a large number of LMICs. The creation of a false hierarchy between communicable diseases and NCDs does not serve the interests of public health.

Notes

1 WHO categories: Type I causes: communicable, maternal, perinatal and nutritional conditions; Type II causes: non-communicable diseases; Type III causes: injuries.

2 It is interesting that WHO's GBD report was omitted from the UN Summit documents.

3 www.uicc.org/uicc-appoints-new-chief-executive-officer.

4 www.idf.org/news/idf-appoints-new-ceo.

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