



HEALTH EXPENDITURE IMPACTS GLOBAL HEALTH

Health Budgets Affect Global Disease Burden, Life Expectancy

In 2004, the world spent a total of Intl \$4.9 trillion on health. But the geographical distribution of these financial resources was uneven, and it continues to remain so, according to the World Health Organization's *National Health Accounts* (<http://www.who.int/nha>). *

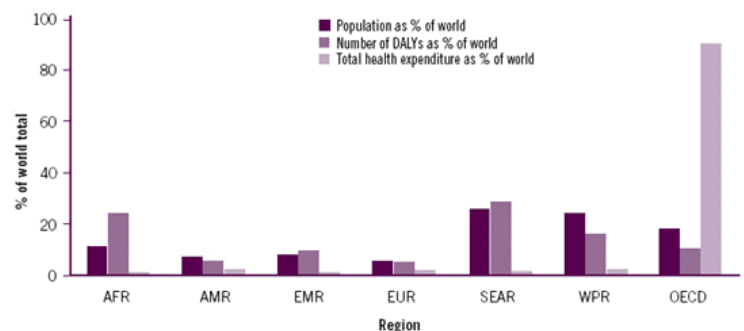
In fact, a mere 30 countries spend 90 percent of the world's health resources. Even more telling is that these countries – all members of the Organisation for Economic Co-operation and Development (OECD) – comprise less than 20 percent of the world's population.

Including countries such as Australia, Japan, most Western European nations, Canada and the United States, OECD countries spend an average of 11 percent of their gross domestic product (GDP) on health. This is a significantly larger share than other nations, including those in WHO's African and South-East Asia regions, where health expenditures average only 4.7 percent of GDP. Such percentages translate into per capita spending on health of about Intl \$3,080 in OECD countries compared with Intl \$102 in countries in the African and South-East Asia regions, which are much poorer. **

LINKING THIS SPENDING TO EPIDEMIOLOGY, WHO DATA SHOW THAT:

- Poorer regions, such as Africa and South-East Asia, comprise 37 percent of the world's population and account for the largest share of the global disease burden, with more than 50 percent of global disability-adjusted life years lost, but spend only about 2 percent of the world's health resources.
- The Western Pacific Region, excluding Australia, Japan, New Zealand and the Republic of Korea, accounts for 24 percent of the world's population (dominated by China) and about 18 percent of the

Percentage distribution of population, disability-adjusted life years (DALYs) and total health expenditure by WHO region and membership of Organisation for Economic Co-operation and Development (OECD), 2004²⁶



AFR, African; AMR, Americas; EMR, Eastern Mediterranean; EUR, European; SEAR, South-East Asia; WPR, Western Pacific. Note: Totals for the following regions calculated after subtracting the 30 OECD members: Americas, European and Western Pacific. DALYs are from 2002.

Source: National Health Accounts, WHO, 2007

global burden of disease, but only another 2 percent of the world's health resources.

- The Region of the Americas and the European Region, excluding the OECD countries, account for about 12 percent of the world's population and 11 percent of the global burden of disease, and spend slightly less than 5 percent of all global health resources.

In short, richer countries with smaller populations and lower disease burdens use more health resources than poorer countries with larger populations and higher disease burdens. Not only does this fact highlight the need for additional resources for poorer countries and raise questions about the efficiency of spending on health in richer countries, but it also clarifies the correlation between health



expenditure and disease burden. Such a situation also explains the global differences in life expectancy, according to WHO's *World Health Statistics 2007* (<http://www.who.int/whosis/en/>), which compares the latest (2005) life expectancy figures for 193 member countries and notes that many of the nations that fared badly spent much less money on health.

In essence, and not surprisingly, people in richer countries with smaller populations and lower disease burdens due to higher health expenditures live longer than individuals in poorer countries with larger populations and higher disease burdens due to lower health expenditures.

According to the May 2007 report, San Marino, a tiny republic surrounded by Italy that spent Intl \$3,198 per person or 7.4 percent of its GDP on health in 2004, offers the world's longest male life expectancy at 80 years. Meanwhile, females in Japan, an OECD country that traditionally leads the world tables and spent 7.8 percent of its GDP, or Intl \$2,293 per capita, in 2004, have a life expectancy of 86 years.



Following San Marino on the male side were Australia, Iceland, Japan, Sweden and Switzerland at 79 years and then Canada, Israel, Italy, Monaco and Singapore at 78. At 77 years, France was in a group of countries including New

Zealand and Britain. Germany was at 76 years. Cuba was among the countries that tied the United States at 75 years.

Countries with long-living women include Monaco at 85 years, and Andorra, Australia, France, Italy, San Marino, Spain and Switzerland at 84. Canada tied Iceland and Sweden at 83 years, and Germany was in a group at 82 years. Britain came in at 81 years, with Costa Rica, Denmark and the United States at 80 years.

Sierra Leone registered the shortest male life expectancy at 37 years – the same as that of girls in Swaziland, who were at the bottom of the female list. These countries spent Intl \$34 per person or 3.3 percent of GDP, and Intl \$367 per capita or 6.3 percent of GDP on health in 2004 respectively, with Swaziland women also battling social and economic exclusion. Meanwhile, Afghanistan is the toughest place for babies, with an infant mortality rate of 165 in 1,000 live births, compared with the two babies who die per 1,000 born in Singapore or Iceland.

But Sierra Leone is worse than Afghanistan for mothers' survival, with a maternal mortality rate of 2,000 per 100,000 live births compared to Afghanistan's 1,900. Ireland had the lowest rate at four deaths per 100,000, followed by Spain, Italy, Finland, Canada and Austria at five deaths.

Health expenditures, or the lack thereof, appear to play a major role in life expectancy. To this end, it behooves the global community to consider what it can do to balance out the disease burden by leveling the financial playing field.

In addition to health expenditures, the *World Health Statistics* note that tobacco use has a "high prevalence among the world's poorest people," and suggest that the low life expectancy in some countries could be linked to high rates of diseases like HIV/AIDS and tuberculosis. As the world considers how to balance the global health "budget," it must therefore take into account cultures, lifestyles, and prevailing health priorities.

* International dollars are a hypothetical currency used to account for the purchasing power of different national currencies. They are a means of translating and comparing costs from one country to the other using the U.S. dollar as a common reference point. \$4.9 trillion international dollars equals \$4.1 trillion U.S. dollars.

** \$3,080 and \$102 international dollars are equivalent to \$3,170 and \$36 U.S. dollars.

Companion Piece

Shifts in Global Disease, Death Linked to Lifestyle, Income

In the recently published *World Health Statistics 2007*, the World Health Organization (WHO) projects that the world

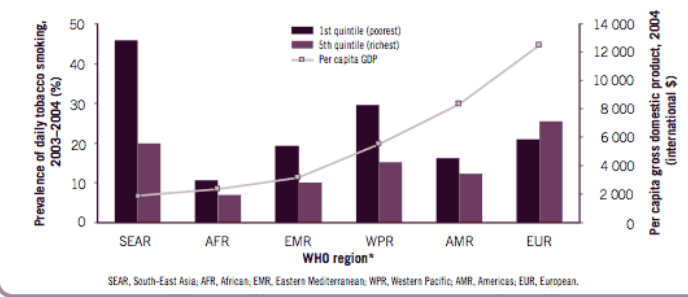
will experience a substantial shift in the proportion of deaths from communicable to noncommunicable diseases (and



from younger to older age groups) during the next 25 years. Thanks to medical advances and widespread vaccination programs, large declines in mortality have already occurred and are anticipated to continue between now and 2030 for all principal communicable, maternal, perinatal and nutritional causes. The only exception to this is HIV/AIDS, global deaths from which are expected to more than double, despite increased awareness and antiretroviral drug coverage.

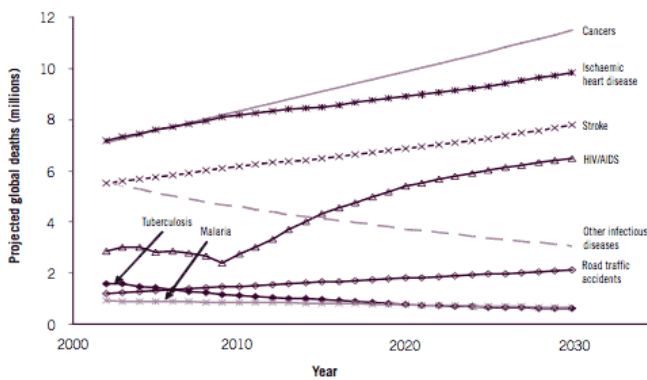
In addition to HIV/AIDS, the leading causes of death globally in 2030 are projected to be noncommunicable conditions: ischaemic heart disease, cerebrovascular disease (stroke) and chronic obstructive pulmonary disease. Cancers will top the list, accounting for a projected 11+ million global deaths (see chart). Overall, noncommunicable diseases will comprise almost 70 percent of all deaths in 2030 under the baseline scenario, spurred by urbanization, increasingly sedentary lifestyles and the graying of the global population.

Daily tobacco smoking among adults aged 18 years and older, by income quintile and WHO region



is most prevalent among the lowest-income households in developing economies – that is, among the poorest of the poor (see chart). Indeed, prevalence is highest among the poor in all WHO regions except the European Region, where high smoking culture and price may be key determining (and discouraging) factors. The difference in prevalence between the poor and the (relatively) rich is greatest among the group of South-East Asian countries surveyed, where average per capita income is lowest.

Projected global deaths for selected causes of death, 2002–2030



Meanwhile, the total number of tobacco-attributable deaths is projected to rise from 5.4 million in 2005 to 6.4 million in 2015 to 8.3 million in 2030. Tobacco is expected to kill 50 percent more people in 2015 than HIV/AIDS and to be responsible for 10 percent of all deaths worldwide.

Three of the 10 causes of mortality highlighted in the *World Health Statistics 2007* are briefly discussed below.

TOBACCO, POVERTY AND MORTALITY

The burden of disease attributable to tobacco use weighs increasingly heavily on the world in general, and on populations in developing economies in particular. According to the latest estimates, more than 80 percent of the 8.3 million deaths attributed to tobacco and projected to the year 2030 will occur in low-income and middle-income countries.

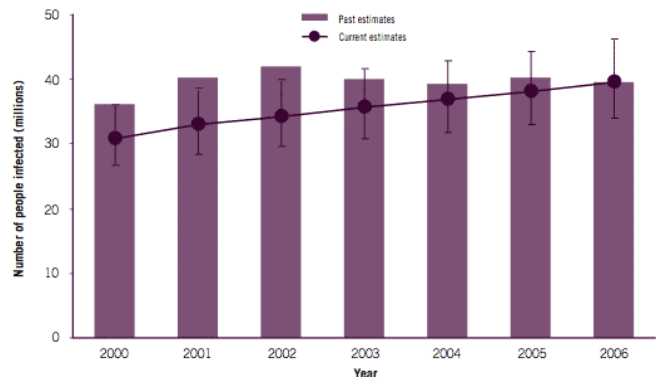
Unfortunately, data on the prevalence of smoking among adults in developing countries are limited. The results of WHO’s 2003–2004 World Health Survey, however, indicate that daily tobacco smoking among adults aged 18 and older

While developing countries and their impoverished populations are practically force-fed tobacco and its deleterious effects, they are often denied access to much-needed healthcare and global health resources. This combination of a higher prevalence of tobacco use and more limited access to health resources results in severe health inequalities. In fact, these disparities serve to perpetuate the vicious circle of illness and poverty that plagues these already struggling economies. This unfortunate situation has implications for health systems at all levels and underlines the need for additional resources to raise awareness of the dangers of tobacco use among targeted populations, while ensuring them more equitable access to global health resources and preventative care.

HIV/AIDS

With the impact of tobacco looming large, global deaths from HIV/AIDS are projected to rise from 2.8 million in

Number of people living with HIV: comparing past and current estimates



2002 to 6.5 million in 2030 under a baseline scenario that assumes antiretroviral drug coverage reaches 80 percent by 2012.

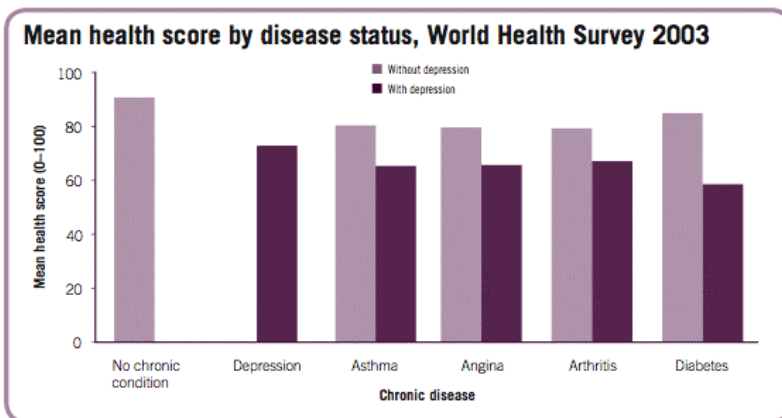
The exact number of people living with HIV is undetermined, but we know it is substantial, with current estimates putting the number around 40 million (see figure). The bars in the figure approximate the number of people infected with HIV at the time of publication of each annual AIDS epidemic update since 2000. The line shows the best estimates for each year that were made in 2006 (the most recent update), revealing not only that the size of the epidemic had been previously overestimated but also that it is still growing.

As we are able to achieve more accurate data, we may begin to understand the full extent of the HIV and AIDS epidemic. In the meantime, the world must view HIV/AIDS as a continuing and serious threat. It must also see HIV/AIDS as a target for global health resources, with more than an eye towards allocation, since the majority of HIV/AIDS sufferers live in sub-Saharan Africa and are victims of the same healthcare inequities that surround tobacco.

THE MIND-BODY CONNECTION

Lack of resources negatively impacts the health of people with chronic diseases. So does depression. In fact, depression affects all chronic illnesses and is a considerable global public health problem due to its relatively high lifetime prevalence and the significant disability that it causes.

In 2002, depression accounted for 4.5 percent of the worldwide total burden of disease (in terms of disability-adjusted life years). It is also responsible for the greatest proportion of burden attributable to non-fatal health outcomes, accounting for almost 12 percent of total years lived with disability worldwide, according to WHO. Without treatment, depression has the tendency to assume a chronic course, to recur, and to be associated with increasing disability over time.



According to WHO's World Health Survey, individuals 18

years and older without depression and without other chronic conditions score higher on health, with a mean health count of 90 out of a top score of 100 (see figure). Adults with only one chronic disease tend to come in lower, around 80, while those with depression but no chronic diseases score around 73. Individuals with depression and another chronic condition produce much lower mean health scores when compared with those who have only a chronic condition. These patterns were consistent after adjusting for socio-demographic variables.

This analysis does not indicate whether people are more depressed because they have a coexisting chronic condition; however, it is clear that the timely diagnosis and treatment of depressive disorders are essential, irrespective of causality. In many primary care settings, when patients present with multiple disorders that include depression, the depression often remains undiagnosed, or, if it is diagnosed, treatment usually focuses on the other chronic diseases.

Thankfully, depression can be treated in primary care or community settings using locally available and cost-effective interventions, which means that detection and diagnosis are the keys to helping eliminate depression and its deleterious effects from the healthcare equation.

CONTRIBUTING CAUSES

A number of other conditions and diseases contribute to the worldwide disease burden and distribution of global deaths. Undernutrition, for example, continues to plague developing countries. Based on WHO's new Child Growth Standards (<http://www.who.int/childgrowth/en>), the global estimate of wasting (defined as being -2 standard deviations below the median of weight-for-height) among children under 5 years of age is 10 percent, or 55 million, with 29 million of these estimated to live in south-central Asia. The same regional pattern is found for severe wasting (defined as being -3 standard deviations below the median), with an estimated total prevalence of 4 percent, or 19 million children affected. Many of these children are likely to die before reaching the age of 5.

Although incidence rates are now stable or falling in all WHO regions, tuberculosis (TB) remains a serious health threat. An estimated 8.8 million new TB cases occurred in 2005, including 7.4 million in Asia and sub-Saharan Africa, and 1.6 million people died of the disease, including 195,000 patients infected with HIV.

The global burden of TB is not falling fast enough to satisfy the more demanding targets set by the Stop TB Partnership. At the current pace, 1990's prevalence and mortality rates will not be halved worldwide by 2015 as ambitiously projected. Further strides are necessary in case detection and cure, and

major efforts are needed to boost collaborative activities between TB and HIV programs.



CONCLUSION

WHO's *World Health Statistics 2007* makes clear that there are substantial health inequities among populations with different socioeconomic or demographic characteristics. In part, this is because richer countries with smaller populations and lower disease burdens use many more health resources than do poorer countries with larger populations and higher disease burdens. Furthermore, the rising global death toll from noncommunicable diseases disproportionately affects older age groups – and poorer ones – that are more susceptible to chronic conditions and less likely to receive the necessary treatment or aid for prevention. Thus, there is an absolute need for additional resources for many poorer countries, as well a need to

reassess the efficiency of spending on health in richer countries.

WHO points out that it is crucial for the international community to invest in better data collection; valid, reliable and comparable use indicators; and well-defined strategies for monitoring progress and evaluating health programs. Finally, to allow poor nations a fighting chance towards reducing the global disease burden and lowering global deaths due to preventable factors, international leaders must give high priority to primary prevention programs and public education in poorer nations.



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