

4. The Global Burden of Disease in 1990

A key aim of the GBD was to quantify the combined burden of fatal and non-fatal health outcomes in a single measure, the Disability-Adjusted Life Year (DALY). This section presents the key results of the assessments of overall burden for each region.

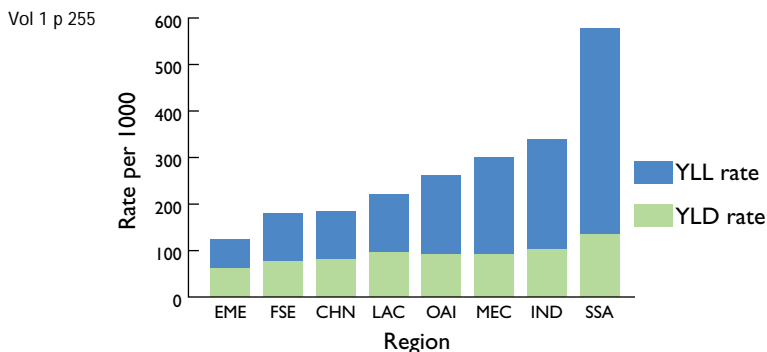
The methods for developing the DALY are described in section 1. To calculate DALYs due to each disease or injury in a given year and population, the researchers added together: (a) the years of life lost through all deaths in that year, and (b) the years of life expected to be lived with a disability for all cases beginning in that year summed, and weighted for the severity of the condition.

4.1 Results: Stark regional imbalances in the burden of disease

The peoples of Sub-Saharan Africa and India together bore more than four-tenths of the total global burden of disease in 1990, although they make up only 26 per cent of the world's population. By contrast, the Established Market Economies and the Formerly Socialist Economies of Europe, with about a fifth of the world's population between them, together bore less than 12 per cent of the total disease burden. China emerged as substantially the most "healthy" of the developing regions, with 15 per cent of the global disease burden and a fifth of the world's population. Put differently, about 579 years of healthy life were lost for every 1000 people in Sub-Saharan Africa, compared with just 124 for every 1000 people in the Established Market Economies. This assessment demonstrates clearly the glaring inequalities of world health at the end of the 20th century.

The rates of premature death varied sharply between regions, with rates 7 times higher in Sub-Saharan Africa than in the Established Market Economies. By contrast, the rates of disability were less varied, with Sub-Saharan Africa having twice the rate of YLDs as the rich countries (Figure 12).

Figure 12 DALYs per 1000 population by region broken down into YLL and YLD rates, 1990



Traditional Enemies Remain a Significant Force

The grip of the traditional enemies—communicable, maternal, perinatal conditions and nutritional deficiencies—persists as a problem for the whole world. Even though these Group I conditions accounted for only 7 per cent of the burden in the Established Market Economies and less than 9 per cent in the Former Socialist Economies, they nevertheless made up more than four-tenths the total global burden of disease in 1990, and almost half of the burden (49 per cent) in developing regions. In Sub-Saharan Africa, two out of three years of healthy life lost were due to Group I conditions. Even in China, where the epidemiological transition is far advanced, a quarter of years of healthy life lost were due to this Group. Worldwide, five out of the ten leading causes of disease burden are Group I conditions: lower respiratory infections (pneumonia); diarrhoeal disease; perinatal conditions; tuberculosis and measles. In developing countries, malaria is added to this already daunting list (Figure 13).

Injuries Are a Large, and Neglected, Health Problem in All Regions

The burden of injury in 1990 was highest in the Formerly Socialist Economies of Europe, where almost 19 per cent of all burden was attributed to this group of causes. China had the second highest injury burden, Latin America and the Caribbean the third, and Sub-Saharan Africa the fourth. Even in the Established Market Economies, however, the burden of injuries—dominated by road traffic accidents—was almost 12 per cent of the total.

In almost all regions, unintentional injuries were a much bigger source of ill-health in 1990 than intentional injuries such as interpersonal violence and war. The only exception was the Middle Eastern Crescent, where unintentional and intentional injuries took an approximately equal toll because of a particularly high burden of war in the region at the time.

Leading Causes of Disease Burden

When causes of death are compared, in rank order, with causes of disease burden, substantial differences emerge, again reinforcing the need to take non-fatal conditions into account as well as deaths when assessing a

Figure 13 The burden of disease, by broad cause Group, 1990

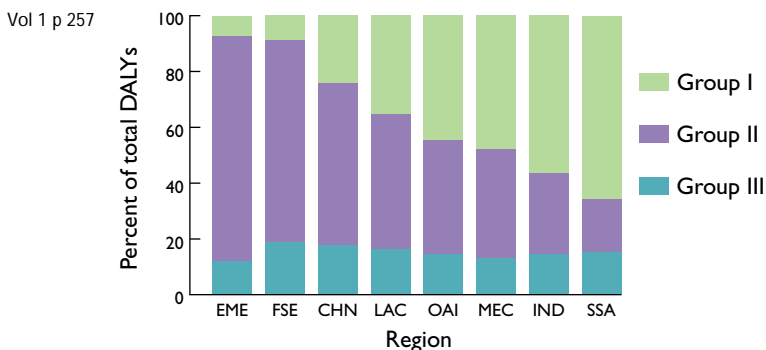
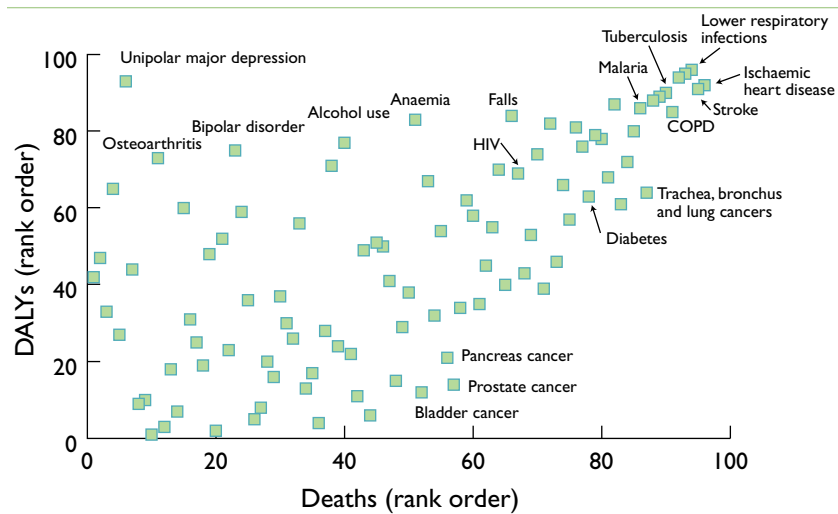


Figure 14 The relationship between the rank order of causes of global ill-health when measured using deaths alone or total disease burden, 1990



population's health status. While a few leading conditions—such as lower respiratory infections, diarrhoeal diseases and perinatal conditions—are at the top of both lists, there are 14 conditions in the top half of the list for disease burden that are in the bottom half of the list for deaths. Depression is the most marked of these, falling within the top ten for disease burden, but the bottom ten for deaths (Figure 14).

The leading causes of disease burden worldwide in 1990 were broadly similar to those for the developing regions. (Table 4).

Sex Differences in Disease Burden

Although in infancy and early childhood, girls and boys suffer from broadly similar health problems, striking sex differences emerge in adults. First, and most obviously, women suffer disproportionately from their reproductive role. Although the burden of reproductive ill-health is almost entirely confined to the developing regions, it is so great that even worldwide, maternal conditions make up three out of the ten leading causes of disease burden in women aged between 15 and 44. In developing regions, five out of the ten leading causes of DALYs are related to reproductive ill-health, including the consequences of unsafe abortion and chlamydia. Almost all of this loss of healthy life is avoidable.

However, poor reproductive health is far from being women's sole concern (Figure 15). In both developing and developed regions, depression is women's leading cause of disease burden. In developing regions, suicide is the fourth. Thus, while programmes to reduce the unacceptably high burden of poor reproductive health must remain a high priority for years to come, women's psychological health also deserves much more attention.

Table 4 Ten leading causes of disease burden (DALYs), developing world, 1990

	Total (millions)	Per cent of total
All Causes	1 218.2	
1 Lower respiratory infections	110.5	9.1
2 Diarrhoeal diseases	99.2	8.1
3 Conditions arising during the perinatal period	89.2	7.3
4 Unipolar major depression	41.0	3.4
5 Tuberculosis	37.9	3.1
6 Measles	36.5	3.0
7 Malaria	31.7	2.6
8 Ischaemic heart disease	30.7	2.5
9 Congenital anomalies	29.4	2.4
10 Cerebrovascular disease	29.1	2.4

For men aged 15–44, road traffic accidents are the biggest cause of ill-health and premature death worldwide, and the second biggest in developing regions, surpassed only by depression. Alcohol use, violence, tuberculosis, war, bipolar affective disorder, suicide, schizophrenia and iron-deficiency anaemia make up the remainder of the list in developing countries. The high toll of road traffic accidents in developing regions has received relatively little attention from public health specialists in the past.

Figure 15 The ten leading causes of disease burden for women, aged 15–44, 1990