Disability-adjusted Life Years (DALYs)

The DALY is a health gap measure that extends the concept of potential years of life lost due to premature death to include equivalent years of healthy life lost by virtue of individuals being in states of poor health or disability. One DALY can be thought of as one lost year of healthy life and the burden of disease as a measure of the gap between current health status and an ideal situation where everyone lives into old age free from disease and disability.

DALYs for a disease or health condition are calculated as the sum of YLL in the population and YLD for incident cases of the health condition. YLL is calculated from the number of deaths at each age multiplied by a global standard life expectancy for the age at which death occurs. To estimate YLD for a particular cause for a particular time period, the number of incident cases in that period is multiplied by the average duration of the disease and a weight factor that reflects the severity of the disease on a scale from 0 (perfect health) to 1 (dead).

In addition, in calculating DALYs, a 3 percent time discounting is applied (but not non-uniform age weights). A death in infancy then corresponds to 30 DALYs, and deaths at age 20 to around 28 DALYs. Thus a disease burden of 3,000 DALYs in a population would be the equivalent of around 100 infant deaths or to approximately 5,000 persons aged 50 years living one year with blindness (disability weight 0.6).

Note: YLL are years of life lost due to premature mortality, and YLD are years of healthy life lost as a result of disability weighted by the severity of the disability, as noted above.

Source: http://www.dcp2.org/pubs/GBD/1/Box/1.1

For further information, see The Burden of Disease and Mortality by Condition: Data, Methods, and Results for 2001 [chapter 3 of Global Burden of Disease and Risk Factors]