

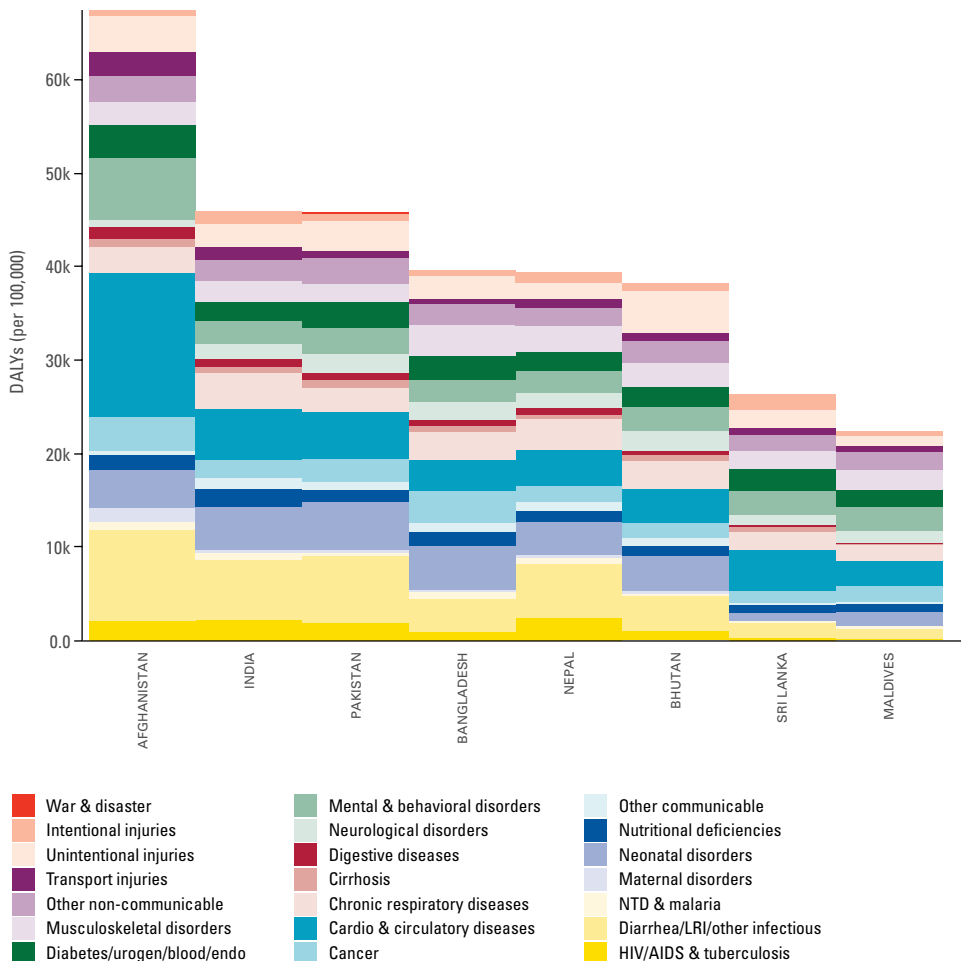
## USING GBD TO ASSESS COUNTRIES' HEALTH PROGRESS

GBD found that factors such as population growth, longer lives, and decreasing mortality are driving up years of healthy life lost, or DALYs, from non-communicable diseases in many countries. Although non-communicable diseases are increasing relative to other health problems as a result of these demographic changes, GBD found that many countries are actually showing improvements in health as measured by age-standardized DALY rates.

Differences in population growth and ages across countries can make a country with a younger population appear better in terms of health performance than a country with an older population. Similarly, countries with low population growth will add less disease burden over time than countries with a fast-growing population. Researchers can remove the impact of these factors to isolate what is important for comparisons of health performance using age-standardized rates of DALYs and YLLs, or years of life lost due to premature death. When this is done, we can see a clear decline in COPD, stroke, and most communicable diseases in South Asia from 1990 to 2010.

GBD compared and contrasted disease patterns across countries by removing the effect of differences in population size and age structure across countries, permitting more direct comparisons of specific disease burdens. Figure 22 shows age-standardized causes of DALYs per 100,000 people. The leading causes of premature death and disability are aggregated. For example, causes such as low back pain and neck pain are grouped into the category musculoskeletal disorders. In the low-income countries (Afghanistan, Bangladesh, and Nepal) and lower-middle-income Bhutan, rates of communicable, newborn, nutritional, and maternal conditions exceeded 10,000 DALYs for every 100,000 people, while the lower- and upper-middle-income countries, aside from India and Pakistan, shown in Figure 22 had lower rates. For example, the Maldives and Sri Lanka had rates of communicable, newborn, nutritional, and maternal conditions that were about 6,000 per 100,000 people or lower. Notably, Afghanistan and Pakistan posted relatively high rates of DALYs due to war and disaster, about 960 and 200, respectively, per 100,000 people. All countries had sizable rates of DALYs from non-communicable diseases, underscoring the double burden of disease from both communicable and non-communicable diseases that many South Asian countries face.

The GBD approach affords countries a unique opportunity to explore their success in improving health outcomes over time. GBD can also be used to better understand how fast a country's health is improving relative to similar countries. This type of progress assessment is called benchmarking. Benchmarking is a tool that can help countries put their health achievements in context and identify areas for improvement. IHME invites countries interested in collaborating on benchmarking exercises to contact us.

**Figure 22: Age-standardized DALY rates across countries in South Asia, 2010**

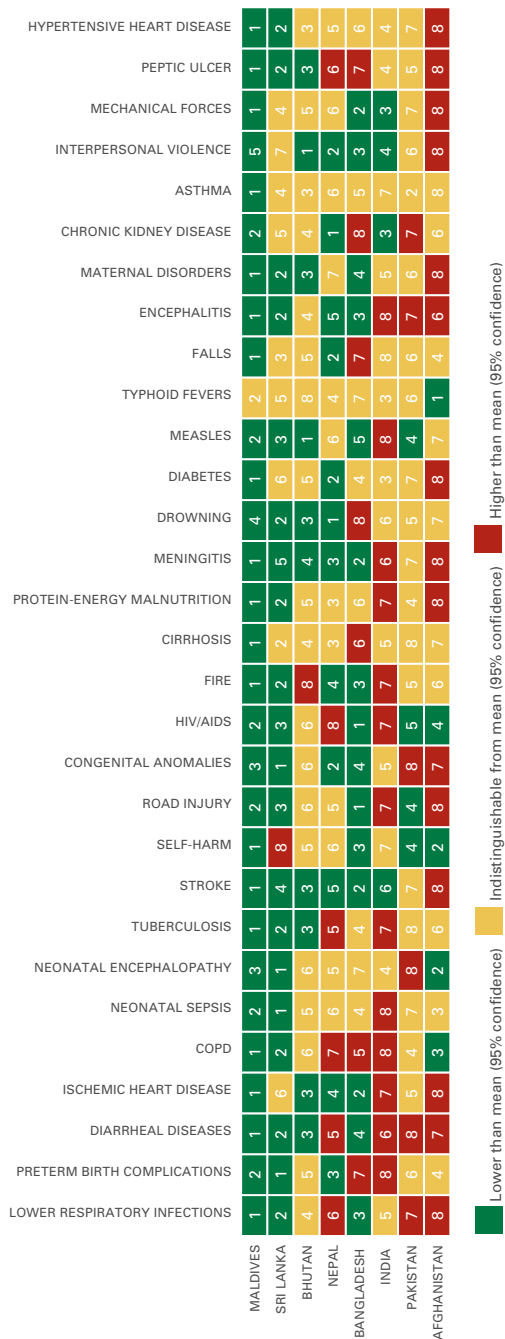
*Note: The size of the colored portion in each bar represents number of age-standardized DALYs per 100,000 people attributable to each cause. The causes are aggregated. For example, musculoskeletal disorders include low back pain and neck pain. To view an interactive version of this figure, visit IHME's website: <http://ihmeuw.org/gbdcausepattern>.*

As an example of a benchmarking exercise, Figure 23 shows levels of YLLs in countries within the South Asia region, ranked relative to the regional average in 2010. The columns are arranged by the top 30 causes of YLLs in South Asia. For each cause, rankings are coded to reflect each country's level of age-standardized YLLs relative to the others. The best performers for each cause are in green while the worst performers for each cause are in red; yellow indicates that, for the given cause, the country's rank is not statistically distinguishable from the regional rank in 2010. In South Asia, the Maldives and Sri Lanka generally performed significantly better than the region as a whole. Exceptions include typhoid fevers (i.e., the only country that performed better than the region was Afghanistan); a host of non-communicable diseases for Sri Lanka (i.e., the country and regional performances were not significantly different); and self-harm (i.e., Sri Lanka performed significantly worse than the region and all other countries in the region). Lower-income countries, such as Bangladesh, Bhutan, and Nepal, generally outperformed wealthier countries on several non-communicable conditions (e.g., ischemic heart disease and stroke), as well as on some communicable diseases (e.g., meningitis). Afghanistan, India, and Pakistan performed significantly worse than the regional average concerning diarrheal diseases and encephalitis. In comparison to overall regional trends, Afghanistan and India recorded significantly more YLLs from several communicable and childhood diseases (e.g., lower respiratory diseases and congenital anomalies).

To further illustrate how benchmarking can be implemented at the country level, IHME is currently working with public health experts in the United Kingdom to explore changes in population health over time and to compare its health performance with those of other countries with similar and higher levels of health spending. Through close collaboration with decision-makers at the National Health Service and Public Health England, the IHME-UK benchmarking project is examining the context in which health progress has occurred, such as the United Kingdom's provision of universal health coverage and its implementation of numerous public health interventions.

For the United Kingdom, GBD estimates of life expectancy and healthy life expectancy (HALE), years lost due to premature death (YLLs), years lived with disability (YLDs), and healthy years lost (DALYs) will provide a detailed and comprehensive picture of changes in health outcomes over time. Comparing GBD estimates across countries will elucidate areas of health where the United Kingdom performs both better and worse than its peers. In addition, analysis of potentially modifiable risk factors can shed light on ways that public health policy could address major causes of ill health and premature death. The IHME-UK benchmarking study aims to identify key opportunities to speed up the pace of health improvements in the nation.

**Figure 23: Causes of leading years of life lost, South Asia countries relative to regional average, 2010**



Note: The columns are ordered by the absolute number of YLLs for that particular year. The numbers indicate the rank across countries for each cause in terms of age-standardized YLL rates, with 1 as the best performance and 8 as the worst.