USING GBD TO ASSESS COUNTRIES' HEALTH PROGRESS

GBD found that factors such as population growth, increasing average age, and decreasing mortality are driving up DALYs, or healthy years lost, 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. For example, when comparing the age-standardized rates in 1990 and 2010, there was a clear decline in cardiovascular and circulatory diseases and newborn disorders in Europe and Central Asia over that two-decade period.

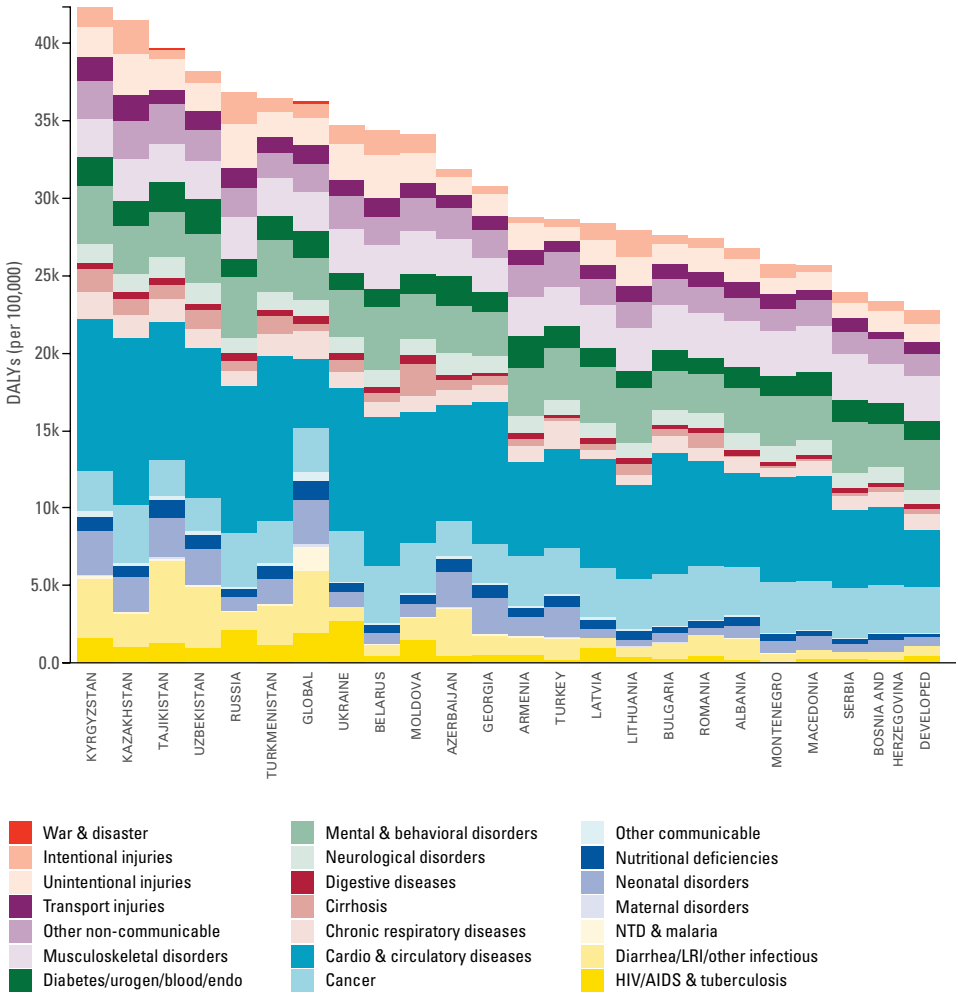
GBD can also be used to compare and contrast disease patterns across countries. Figure 21 shows age-standardized DALYs per 100,000 people in Europe and Central Asia. The leading causes of premature death and disability are aggregated. For example, causes such as low back pain and neck pain are grouped into the category of musculoskeletal disorders. In the low-income countries of Kyrgyzstan and Tajikistan, rates of communicable, newborn, nutritional, and maternal conditions exceeded 10,000 DALYs for every 100,000 people, while other lower- and upper-middle-income countries in Figure 21 had lower rates. For example, Bosnia and Herzegovina, Macedonia, and Montenegro had age-standardized DALY rates of communicable, newborn, nutritional, and maternal disorders of about 2,000 per 100,000 people or lower. Serbia had the lowest rates of DALYs due to communicable, newborn, nutritional, and maternal disorders at approximately 1,500 per 100,000 people. Russia and Ukraine had the highest rates of DALYs due to HIV/AIDS and tuberculosis in comparison to other countries, but not by a large margin. All countries had sizeable rates of DALYs from non-communicable diseases, underscoring the double burden of disease from both communicable and non-communicable diseases that many middle-income countries face. For example, Belarus, Bulgaria, Russia, and Ukraine had high age-standardized DALY rates of cardiovascular and circulatory diseases.

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 improve-

ment. IHME invites countries interested in collaborating on benchmarking exercises to contact us.

As an example of a benchmarking exercise, Figure 22 ranks levels of years of life lost in Europe and Central Asia in 2010. The columns are arranged by the top 30 causes of YLLs in the region. The countries are ordered according to levels of premature mortality. For each cause, rankings are coded to reflect each country's level of age-standardized years of life lost relative to the others. The best performers for

Figure 21: Age-standardized DALY rates across select countries in Europe and Central Asia, 2010



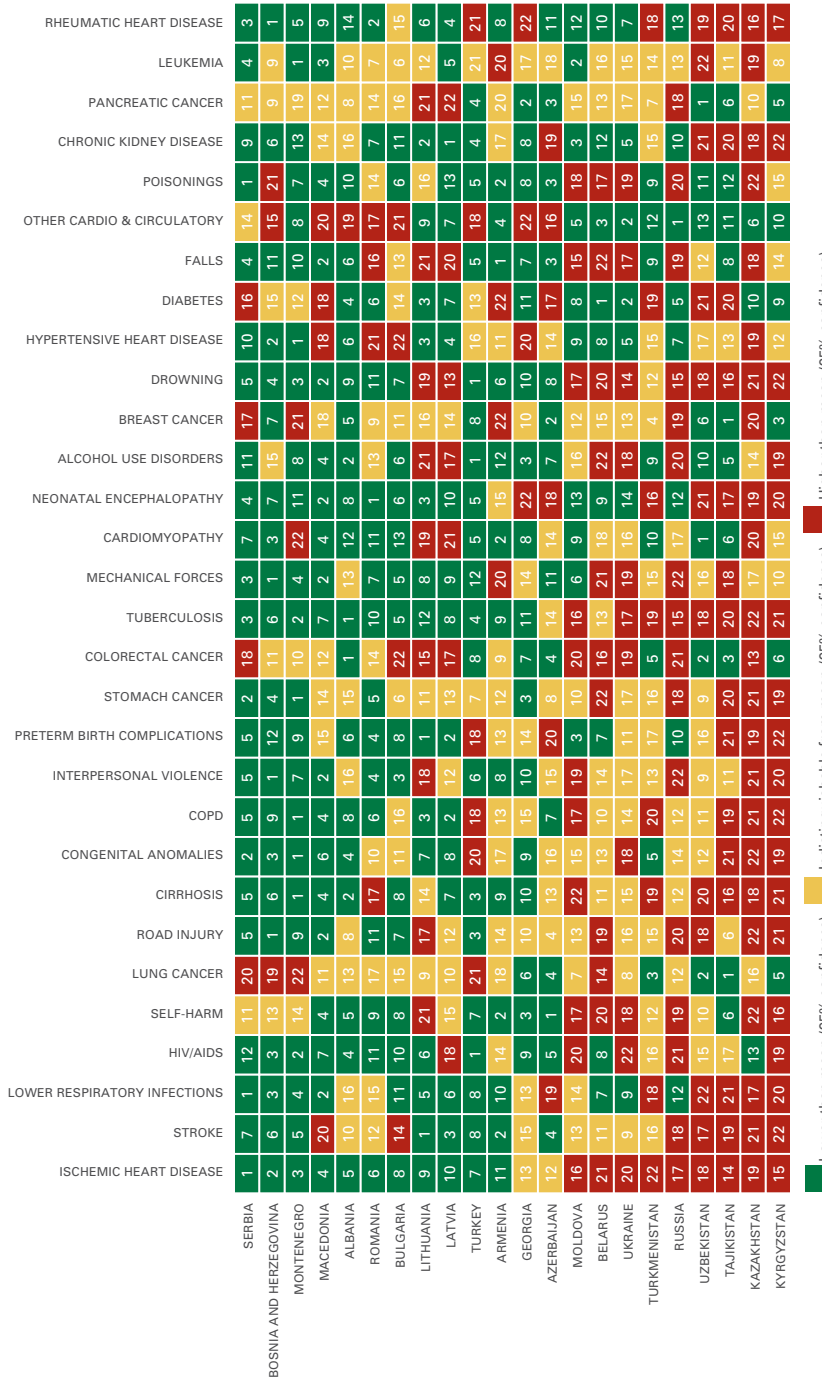
Note: The size of the colored portion in each bar represents the number of age-standardized DALYs per 100,000 people attributable to each cause. The height of each bar shows which age groups had the most age-standardized DALYs per 100,000 people in 2010. The causes are aggregated. For example, musculoskeletal disorders include low back pain and neck pain. To view an interactive version of this figure, visit IHME's website: http://ihmeuw.org/gbdcausepattern.

each cause are in green while the worst performers for each cause appear in red. Yellow shading indicates that the ranking for a particular country is not statistically significant from the regional average. For example, in comparison to the 20 other countries, Latvia performed better than average for stroke (third-best in the region), preterm birth complications (second), COPD (second), and chronic kidney disease (first). Relative to the other countries shown in Figure 22, Belarus was among the worst performers for conditions including ischemic heart disease (21st in the region), self-harm (20th), stomach cancer (22nd), and alcohol use disorders (22nd).

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 to 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 UK's provision of universal health coverage and its implementation of numerous public health interventions.

For the UK, GBD estimates of life expectancy and healthy life expectancy, 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 UK 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 22: Causes of leading years of life lost, Europe and Central 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 22 as the worst.